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The Factors of Labor Demand Changes: Evidence from the Slovak Republic

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Abstract:

The dynamic changes in Slovak industry significantly influenced the labor market as well as the demand for individual skill levels. Despite the favorable output growth, the unemployment remained one of the most important problems of the Slovak economy. The aim of this paper is to evaluate the impact of factors on skill structure of labor demand in the case of Slovak republic and to compare their evidence for different industry types (manufacturing and services). The traditional approach is applied using the concept of translog cost function. The results indicate that the factors the most influencing the labor demand in Slovakia are the wages and prices of intermediate inputs as well as growing influence of offshoring activities. Interestingly, the effect of capital is not as pronounced as expected.

Keywords: employment; skill structure; offshoring; labor demand; translog cost function.

JEL Classification: J31; F14; F16

Introduction

During last two decades many advanced as well as advancing economies experienced increasing trend of automatization in manufacturing. At the same time, internationalization of individual stages of a production process significantly contributed to the intensive emergence of global supply chains in which the production stages are divided and distributed across countries. As a result, the significant changes in the internal structure of the workforce appeared in many countries participating in global value chains. For example, in Germany and France the share of high skilled labor in value added creation increased and opposite the share of low-skilled labor decreased during last two decades. Thus, the loss of jobs occurred mainly in the case of low-skilled work positions. In Slovakia, the share of capital and labor in value added creation has unusual unbalanced ratio (capital has unusual high share and labor low share). High share of capital is typical for the electronics industry. This development is related to the massive inflow of foreign capital. In Germany and France, the share of capital in the value added creation declined in favor of work. The high share of high skilled labor in the value added creation is due to the high contribution of the service sector in production of vehicles. Conversely in Slovakia and other CEE countries the share of inputs from services is low. The share of high skilled labor in value added creation in the industry of vehicles production in Slovakia was one of the lowest in the EU. Therefore, Slovakia competed mainly with large stock of (foreign) capital and average high proportion of medium skilled labor (Slušná, Balog *et al.* 2015).

In the paper we analyze changes in the labor structure associated with economic and industrial evolution and growing participation of the Slovak economy in global value chains during the period of 1995-2009. Our main objective is to evaluate the impact of selected factors on skill structure of labor demand in the case of Slovak republic and to compare their evidence for different industry types (manufacturing and services). The traditional approach is applied using the concept of translog cost function. The paper is divided into five sections. Following the introduction, the relevant empirical literature is reviewed in Section 1. In Section 2 we provide a description of characteristics regarding analyzed industries and skill upgrading in Slovakia. In Section 3 we provide a brief overview of model that we employ to examine the impact of factors on labor demand. In Section 4 we discuss main results. Finally, concluding remarks are made in Section 5.

1. Literature review

The small and open countries such as Ireland, Estonia, Malta, the Czech Republic and Slovakia indicated the lowest importance of domestic demand for their output creation. The collapse in international trade due to the economic recession in 2009 led to a substantial increase in domestic demand, particularly in India, Canada, Russia, China, Brazil and the rest of the world. Among the smaller economies, the Slovak Republic was affected significantly, as decline in demand for domestic products in foreign markets led to an increase of output generated by domestic demand for more than 2 percent (Lábaj 2013, 2014, Kubala, Lábaj and Silanič 2015, Lábaj, Luptáčik, and Rumpelová 2008). Despite the very high openness of the Slovak economy and regular high growth of exports and GDP, employment is not growing as the economists, politicians and the public would expect. The reason is that the Slovak exports create low value added, which is a serious problem of the Slovak economy. Despite the rising importance of export in Slovakia, most of jobs are created by domestic demand. Employment generated per unit of value added in sectors producing for export corresponds with the sectors producing for the domestic demand. In automotive industry, the greater part of the value added is generated in modules and systems manufacturing, including the development of those parts. The extremely small proportion of modules and systems production compared to the production of finished automobiles is the reason why in Slovakia the share of domestic value added in export is low (Habrman 2013), (Habrman, Kočíšová and Lábaj 2013).

Recent decades have seen the emergence of global supply chains in which production stages are divided and distributed across countries. Rising participation in global value chains (GVCs) caused not only changes in sectorial performance but also important socio-economic impacts. The recent empirical studies supposed that the demand for skilled workers relative to unskilled workers as well as the relative wages of skilled workers have risen in OECD countries. The question is whether increased participation in GVCs is a cause of the rising demand for skilled workers or whether outsourcing and offshoring is a large enough activity to have an adverse effect on labor market. Foster-McGregor, Stehrer, De Vries (2013) suggest that the demand for skilled workers was closely related to various measures of technology such as R&D but not with measures of trade. The changes of skill demand away from medium skilled workers toward high-skilled workers are explained by changes in ICT capital inputs. Michaels *et al.* (2014) concluded that ICT polarized labor market by increasing demand for the highly educated at the expense of the medium educated workers.

The World Input–Output Database (WIOD) that provides annual time-series of world input–output tables from 1995 onwards, allows a revisit of the debate on the effects of offshoring on labor demand as well (*e.g.* Foster-McGregor, Stehler 2013). The WIOD provides data on the factor inputs used in production, low, medium and high-skilled workers and capital. Timmer *et al.* (2015) studied the German automotive industry and the effects of offshoring on labor demand. Their findings showed that the decline in domestic value added appears to reflect declining contributions from less-skilled domestic labor, in particularly medium-skilled workers. The value added by domestic capital and high-skilled workers in contrast held up well as their shares did not, or only slightly, decline. The change in the factorial distribution of foreign value added did not mirror these domestic changes. Value added by less-skilled foreign workers increased somewhat but by much less than the decrease in Germany. Obviously, this is due to lower foreign wages, which is an important driver for international production fragmentation. In addition, it might also indicate that activities carried out by these workers are increasingly automated as they are typically routine-based. This hypothesis is buttressed by the finding that the income shares of capital abroad rapidly increased, by more than seven percentage points. (Timmer *et al.* 2015)

2. Stylized facts

During the period of 1995-2011 Slovak economy has experienced significant changes *e.g.* transformation, integration processes as well as world crisis consequences. It becomes attractive destination for foreign direct investments mainly in new millennium. The growing participation of Slovak economy on international trade clearly reflects the rate of openness which becomes more than 180%. The new investments in automotive industry move Slovakia in the first place of the world ranking car producer per inhabitant. It can give the impression that Slovak industry and output creation is orientated mainly on manufacturing. However, the data from WIOD database shows

that the position of manufacturing in output and value added creation remarkably decreased (Table 1). The drivers of manufacturing as mentioned are only Electrical and optical equipment and Transport equipment industry. The shares of these two sectors in value added and significantly in output creation increase. In all others, the share in value added and output creation fall. The positive situation in services statistics despite the turbulent period was caused by optimistic data concerning gross output and value added of Construction sector, Wholesale trade and Renting of machinery and other business services (*i.e.* computer and relative activities, hardware, software consultancy data processing *etc.*). Interestingly, opposite to manufacturing, the services sectors experiences higher growth of value added than the output creation.

Table 1. The Share of Manufacturing and Services in Value Added (VA) Creation and Gross Output (GO) Creation (%)

	Value Added (VA)		Gross Output (GO)	
	1995	2011	1995	2011
MANUFACTURING	34	24	44	38
SERVICES	66	76	56	62

Source: WIOD, own calculations

Despite the favorable output growth during observed period the unemployment remained one of the most important problems of the Slovak economy. The disaggregation of gross output creation indicates not very favorable situation for the labor participation (see Table 2). Especially in manufacturing the domination of gross output creation was based on intermediate inputs that indicate the relatively low value added creation.

Table 2. The Share of Labor (LAB), Capital (CAP) and Intermediate Inputs (II) in Gross Output Creation (%)

	TOTAL			Manufacturing			Services		
	LAB	CAP	II	LAB	CAP	II	LAB	CAP	II
1995	14	24	62	13	18	69	19	28	53
2011	16	25	59	13	18	69	22	30	48

Source: WIOD, own calculations

The indicator of the share of labor and capital in value added creation (Table 3) reveal the remarkable increase of capital in value added creation of manufacturing during observed period. The data for dominant growing Slovak manufacturing industries *i.e.* Transport and Electrical and optical equipment indicate that the new investments require more capital (70% transport equipment in 2011) than labor (30% transport equipment) for value added creation. It raises the question whether the orientation of Slovak manufacturing on these sectors is beneficial in terms of future new jobs creation. As expected, the services sectors are more labor intensives for example the share of labor in Renting of machinery and other business activities is approximately 48% (in 2011).

Table 3. The Share of Labor (LAB/VA) and Capital (CAP/VA) in Value Added Creation (%)

	TOTAL		Manufacturing		Services	
	LAB/VA	CAP/VA	LAB/VA	CAP/VA	LAB/VA	CAP/VA
1995	37	63	40	60	47	53
2011	39	61	33	67	46	54

Source: WIOD, own calculations

As mentioned above, the intermediate inputs represent the largest part of output creation. The Table 4 illustrates the share of imported and domestic intermediate in total intermediate consumption. In 2011 the share of imported intermediate of manufacturing was almost 43% (59% for transport equipment) that underline its increasing participation on global value chains. The positive indirect effects of automotive for whole industry is the large chain of subcontractors and the creations of product and jobs also in other sectors linked to automotive. However, this is difficult to quantify and the increasing foreign share of imported intermediate don't let the optimistic impression. Contrariwise the share of foreign intermediate in services decreased (18% in Construction and 20% in Other business activities). From this point of view policy recommendation for new jobs creation clearly pointed to services

sectors that produced more value added, employed more labor for output creation and create demand for domestic intermediate inputs than automotive.

Table 4. The Share of Imported Intermediate Inputs (II) and Domestic Intermediate Inputs (DI) in Total Intermediate Consumption (%)

	II_manufacturing	II_services	II_Total	DI_manufacturing	DI_services	DI_Total
1995	30	25	27	70	75	73
2011	43	22	32	57	78	68

Source: WIOD, own calculations

The capital intensification of manufacturing as well as growing foreign competitors and decreasing domestic demand is reflected in employment ratio as well (Table 5). The sectors most affected was agriculture (decrease of employment between the years of 1995 and 2011 more than 57%), mining and quarrying (-57%) chemical (-69%) and textile (-51%). However, these sectors were particularly influenced by decreasing of product demand. The employment in automotive industry due to launch of new factories between 1995 and 2011 grew by 24%. The total employment of transport equipment in 2011 was 34 000 persons while in agriculture sector 81 000 (instead of 189 000 in 1995). The relatively small drop in employment is reported in basic metal and fabricant metal, one of the leader sector before economic transformation (-7% and employed 74 000 persons in 2011). Among the services, the sectors employed the most persons in 2011 was retail trade (248 000 persons), construction (198 000) and other business activities (almost 198 000). Significant positive changes in employment between 1995 and 2011 was recorded in sectors as Other water transport (924% growth rate), Sale, maintenance and repair of motor vehicle (166% growth rate) and Other business activities (107% growth rate). Moreover, these data reveal how the transformation process and other significant changes of industry effected the employment in Slovakia.

Table 5. The Share of Manufacturing and Services in Total Employment (%) and Growth Rate of Employment between the years of 1995 and 2011

	1995	2011	Growth rate
Manufacturing	37	24	-22
Services	63	76	86
TOTAL	100	100	7

Source: WIOD, own calculations

The image of CEE as relatively abundant cheap labor force countries has been related to Slovakia as well. At the beginning of observed period the investors from the so called "western Europe countries" offshore in CEE the activities required low skilled labor. Fortunately, the situation has changed and Slovakia became the attractive even for investments requiring more skilled labor. Slowly the favorable economic situation made possible for domestic firms as well to modernize their processes and increase the demand for skilled labor. The skill upgrading can be observed in whole industry as well as separately in manufacturing and services (Table 6). The share of hours worked by high skilled labor significantly increased to the detriment of the low skilled labor, while the medium skilled labor shares in total hours remain almost unchanged.

This is true when considering the industry as whole. The separate analyses discover that the share of medium skilled labor hours worked in manufacturing raised (+4.7%) opposite to services (-1.8%). The other output from this data revealed, that the share of hours worked by high skilled labor raise by 5.4% while the share of high skilled labor compensation in total compensations increase up to 8.4%. However, the share of hours worked by medium skilled labor raised by 0.2% whilst the share on total labor compensation dropped by 4.6%. This would tend to suggest that the labor compensation of high skilled labor raised significantly compared to medium skilled labor in this period. Additionally, the fall of medium skilled labor compensation share (-5.2%) in services sectors is higher than the fall of low skilled labor compensation share (-1.7%) in these sectors. The services sectors significantly increased the share of high skilled labor hours (+5%) as well as the share of high skilled labor compensations (+6.9%) compared to manufacturing. To conclude these observations, it can be possible to state

that the manufacturing sectors in Slovakia demand more skilled labor and opposite the demand for low skilled labor fall however the skill upgrading is more pronounced in services sectors.

Table 6. Averages Hours Worked by High, Medium and Low Skilled Workers (shares in total hours) and Labor Compensation (share in total compensation)

Average hours (H) worked by high (HS), medium (MS) and low (LS) skilled workers (share in total hours)									
	H_HS			H_MS			H_LS		
	TOT	Manu	Serv	TOT	Manu	Serv	TOT	Manu	Serv
1995	13.4%	6.6%	14.5%	77.1%	82.2%	78.1%	9.5%	11.2%	7.4%
2009	18.8%	8.4%	19.9%	77.3%	86.9%	76.3%	3.8%	4.7%	3.8%
High (HS), medium (MS) and low (LS) skilled labour compensation (LAB) (share in total labour compensation)									
	LAB_HS			LAB_MS			LAB_LS		
	TOT	Manu	Serv	TOT	Manu	Serv	TOT	Manu	Serv
1995	20.4%	11.5%	21.9%	72.9%	79.7%	72.6%	6.6%	8.8%	5.4%
2009	28.8%	14.3%	28.8%	68.3%	82.2%	67.4%	2.9%	3.5%	3.7%

Source: WIOD, own calculations

This is true when considering the industry as whole. The separate analyses discover that the share of medium skilled labor hours worked in manufacturing raised (+4.7%) opposite to services (-1.8%). The other output from this data revealed, that the share of hours worked by high skilled labor raise by 5.4% while the share of high skilled labor compensation in total compensations increase up to 8.4%. However, the share of hours worked by medium skilled labor raised by 0.2% whilst the share on total labor compensation dropped by 4.6%. This would tend to suggest that the labor compensation of high skilled labor raised significantly compared to medium skilled labor in this period. Additionally, the fall of medium skilled labor compensation share (-5.2%) in services sectors is higher than the fall of low skilled labor compensation share (-1.7%) in these sectors. The services sectors significantly increased the share of high skilled labor hours (+5%) as well as the share of high skilled labor compensations (+6.9%) compared to manufacturing. To conclude these observations, it can be possible to state that the manufacturing sectors in Slovakia demand more skilled labor and opposite the demand for low skilled labor fall however the skill upgrading is more pronounced in services sectors.

As mentioned, the significant changes in whole industry influenced the employment as well as skill upgrading of Slovak labor force. It is important to study what was the main driver of labor demand changes in Slovak industry. This will be our interest in the next sections.

3. Model specification

To analyses the effect of selected factors on the skill structure of labor demand we follow the approach that considers the relative demand for labor. Model will be based on translog cost function (see Berndt, Wood 1975) that is frequently used in empirical studies. Instead of estimating the translog cost function directly, we estimate a system of cost share equations derived from it. The translog cost function, so-called flexible functional forms, allows substitution elasticities to be unrestricted and they should not even be constant. Cost minimizing relative input demands may depend on the level of output.

Denoting C as total variable costs, w_i represents wages for different skill types and prices of material that are optimally selected for $i = 1, \dots, M$, x_k represents fixed inputs and outputs (fixed input capital K and gross output Y), z represents proxies for technological change, O represents offshoring and DO represents domestic outsourcing (quasi-fixed) (notation of variables see in Appendix). The general formulation of the translog cost function is as follows (Foster-McGregor, Stehrer, De Vries 2013):

$$\ln C = \alpha_0 + \frac{1}{2} \sum_{i=1}^M \alpha_i \ln w_i + \sum_{k=1}^K \beta_k \ln x_k + \sum_{y=1}^Y \gamma_y z_y + \frac{1}{2} \sum_{i=1}^M \sum_{j=1}^M \gamma_{ij} \ln w_i \ln w_j + \frac{1}{2} \sum_{k=1}^K \sum_{l=1}^K \delta_{kl} \ln x_k \ln x_l + \frac{1}{2} \sum_{y=1}^Y \sum_{p=1}^R \gamma_{yp} z_y z_p + \frac{1}{2} \sum_{i=1}^M \sum_{k=1}^K \theta_{ik} \ln w_i \ln x_k + \frac{1}{2} \sum_{i=1}^M \sum_{y=1}^Y \delta_{iy} \ln w_i \ln z_y + \frac{1}{2} \sum_{k=1}^K \sum_{y=1}^Y \delta_{ky} \ln x_k \ln z_y \quad (1)$$

Taking first derivatives of the cost function with respect to wages and material we obtain $\frac{\delta \ln C}{\delta \ln w_i} = \left(\frac{\delta C}{\delta w_i} \right) \left(\frac{w_i}{C} \right)$ where $\left(\frac{\delta C}{\delta w_i} \right)$ represents the demand for input i . Differentiating the translog cost function (1) with respect to input prices we obtain a set of N cost share equations of the form:

$$s_i = \alpha_i + \frac{1}{2} \sum_{j=1}^M \gamma_{ij} \ln w_j + \frac{1}{2} \sum_{k=1}^K \theta_{ik} \ln x_k + \frac{1}{2} \sum_{y=1}^Y \delta_{iy} \ln z_y, \quad i = 1, \dots, M \quad (2)$$

Taking differences between two periods the equations for wage shares of different labour skill and material in industries $n = 1, \dots, N$ become:

$$\Delta s_i = \alpha_0 + \sum_{j=1}^M \gamma_{ij} \ln w_j + \theta_k \Delta \ln K + \theta_y \Delta \ln Y + \delta_o \Delta \ln O + \delta_{DO} \Delta \ln DO + \varepsilon_i \quad (3)$$

Instead of estimating the translog cost function directly, most authors estimate the system of cost share equations because the number of parameters to be estimated is lower (Hertveldt, Michel 2013). Specification of our model follows approach employed by Foster-McGregor, Stehrer, De Vries, (2013) and Hertveldt, Michel (2013) that considers labor and material inputs to be flexible and other inputs to be quasi-fixed. Dependent variables in the model are represented by the shares of each labor type on total variable costs. Total variable costs are calculated as the sum of total labor compensation plus the value of intermediate input purchases.

The source of data is the WIOD database consisting of a complete dataset for industries over the period of 1995-2009. When examining effects of offshoring and domestic outsourcing the WIOD data allows to measure the intermediate input purchases by each industry from each industry. In our analysis we consider a broad measure of inter-industry offshoring O calculated as:

$$O_n = \frac{\sum IIM_n}{V_n} \quad (4)$$

where IIM refers to imported intermediate purchases from industry, n is the industry index and V refers to value added. Measures of domestic intermediate use DO are constructed in a same manner:

$$DO_n = \frac{\sum DIM_n}{V_n} \quad (5)$$

where: DIM stands for domestic intermediate purchases, n is the industry index and V refers to value added.

Domestic intermediate use or domestic outsourcing can capture efficiency gains due to a reallocation of production within industries in a country while international offshoring capture efficiency gains due to fragmentation and includes industry specialization across borders.

Data for labor is split into three different skill categories (low, medium and high skilled) according to ISCED classification. The average wages by education level are calculated as the ratio of labor compensation for each labor skill type to the total hours worked of each labor skill type (according to Foster-McGregor, Stehrer, De Vries 2013). The values for gross output and capital stock are available directly from the WIOD. The cost functions are estimated as a system of demand equations for all variables. The complete system of equations is estimated using seemingly unrelated regression (SUR) method.

4. Results and discussion

The estimation results for equation (3) are discussed. To save the space the descriptive statistics for the variables are not reported here, they are available upon request. We estimate the system of variable factor demands rather than single equation estimation. The variable factors are individual skilled types of labor (shares of high, medium and low-skilled labor in total variable costs) and material. In our analysis we drop the equation for the share of material in total variable costs as the sum of shares adds up to one. The complete system of equations is estimated using SUR methods. On the full sample of industries, the approach assumes the same cost function across industries. In addition, the results for different industry types (manufacturing and services) are reported as well. Considering different industry types could overcome an aggregate problem when considering all industries together.

The next tables (Table 7, 8, 9) presents the mix set of coefficients describing the effects of one-unit increase in a specific factor on the change of shares of high, medium and low-skilled labor. Regarding the effects of relative wages, it may be expected negative coefficients based on theories and empirical studies (*i.e.* Herverth, Michel, 2013 or Foster-McGregor, Stehrer, De Vries 2013). However, the results for whole Slovak industry indicate that the changes in relative wages positively influence the development of its cost share. It can be explained by continuously increasing wages for all skilled types that don't influenced negatively their shares on total variables costs that is opposite to prices of material that had negative influence on shares of all skilled labor costs. The negative coefficients for output and capital are in line with the results of Foster-McGregor, Stehrer, De Vries (2013) and for output with Hijzen, Swaim (2005). As expected, offshoring and domestic outsourcing has negative and significant coefficient *i.e.* it contributes to reducing relative demand for all skilled types.

Table 7. SUR results for full sample of industries

	Δ SLS	Δ SMS	Δ SHS
Δ wLS	1.040295*** (0.058267)	0.011611 (0.027843)	0.023215 (0.048290)
Δ wMS	-0.496045* (0.257696)	0.664300*** (0.123140)	-0.687518*** (0.213572)
Δ wHS	0.138613 (0.200619)	0.018980 (0.095866)	0.960065*** (0.166268)
Δ wll	-0.486591*** (0.087124)	-0.658359*** (0.041632)	-0.547782*** (0.072206)
Δ K	-0.068275 (0.042968)	-0.110277*** (0.020532)	-0.115853*** (0.035611)
Δ GO	-0.403801*** (0.063051)	-0.584543*** (0.030129)	-0.513520*** (0.052255)
Δ O	-0.136900*** (0.027179)	-0.139506*** (0.012987)	-0.146398*** (0.022525)
Δ DO	-0.038651* (0.022226)	-0.031856*** (0.010621)	-0.021261 (0.018421)
Constant	-0.077530	-0.000771	0.049908
R-squared	0.593939	0.681677	0.407590
Observations	470	470	470

Note: The set of equations are estimated by SUR, standard errors are reported in parentheses. ***, **, *, Significant at 1, 5 and 10% respectively. Notation of variables - see Appendix 1.

Source: own calculations

Concerning the absolute value of coefficients, the variables that seems to have more influence on labor cost share are wages and prices of intermediate inputs. Interestingly, the effect of capital is not as pronounced as expected.

The factors that influenced the demand for low and medium labor in manufacturing the most negatively were prices of intermediates, gross output and offshoring (Table 8). Regarding differences of results for only manufacturing industries, it can be monitored significantly strongest effect of offshoring that influence negatively the labor demand mainly for low and medium skilled labor. The results also revealed that international offshoring have squeezed labor demand in much greater extent than domestic outsourcing. The coefficients for offshoring differ upon the individual skilled types. The low and medium skilled labor seems to be more negatively affected than high skilled labor demand. This may be explained by the fact that offshoring is more likely to replace low-skilled employment, as the cost competitiveness matter a lot more in low-tech than in high-tech industries (Herwerth, Michel 2013).

Table 8. SUR results for manufacturing

	ΔSLS	ΔSMS	ΔSHS
ΔwLS	0.985995***	-0.010477	-0.149875
	(0.072712)	(0.038068)	(0.101826)
ΔwMS	-0.030507	0.732681***	-0.071788
	(0.356287)	(0.186530)	(0.498943)
ΔwHS	0.101594	0.056059	0.190894
	(0.260887)	(0.136585)	(0.365346)
Δwll	-0.683406***	-0.755415***	-0.619388***
	0.091217	(0.047756)	(0.127741)
ΔK	-0.052130	0.105642*	-0.000280
	(0.106297)	(0.055651)	(0.148858)
ΔGO	-0.527575***	-0.736270***	-0.557711***
	(0.069872)	(0.036581)	(0.097848)
ΔO	-0.231969***	-0.226446***	-0.164097***
	(0.040378)	(0.021139)	(0.056545)
ΔDO	-0.033901*	-0.028682***	-0.014104
	(0.018057)	(0.009454)	(0.025288)
Constant	-0.109714	-0.013239	0.065773
R-squared	0.744458	0.817273	0.289108
Observations	220	220	220

Note: The set of equations are estimated by SUR, standard errors are reported in parentheses. ***, **, *, Significant at 1, 5 and 10% respectively. Notation of variables - see Appendix 1.

Source: own calculations

When considering the services (Table 9), we observe that the labor demand for all skilled types is mostly determined by labor wages. Compared with manufacturing, the coefficients for material prices are much smaller. It can be explained by the higher involvement of labor in services sectors than in manufacturing. The differences can be also noticed in the case of coefficients for offshoring. They are much smaller than for manufacturing. Interestingly, the coefficient related to offshoring is lower for low-skilled labor than for high-skilled labor, which means that the high-skilled labor is influenced more negatively by offshoring than low-skilled labor. It goes counter to results for manufacturing. As mentioned above, the services sectors witness the decrease of demand for low and medium-skilled labor. The factors influencing these negative changes were mainly wages of medium skilled labor in the case of low-skilled labor demand and prices of material inputs for medium skill-labor.

Table 9. SUR results for services

	ΔSLS	ΔSMS	ΔSHS
ΔwLS	1.073942***	0.033810	0.084716*
	(0.085401)	(0.037225)	(0.051070)
ΔwMS	-0.652566*	0.649934***	-0.939340***
	(0.358576)	(0.156299)	(0.214430)

	ΔSLS	ΔSMS	ΔSHS
ΔwHS	0.108266 (0.285097)	-0.057799 (0.124271)	1.258488*** (0.170490)
ΔwII	-0.307069** (0.144000)	-0.559706*** (0.062768)	-0.468040*** (0.086113)
ΔK	-0.050149 (0.054647)	-0.106751*** (0.023820)	-0.111286*** (0.032679)
ΔGO	-0.280329*** (0.098365)	-0.463185*** (0.042876)	-0.475700*** (0.058823)
ΔO	-0.088857* (0.046229)	-0.109909*** (0.020151)	-0.132731*** (0.027645)
ΔDO	-0.080131* (0.046363)	-0.059472*** (0.020209)	-0.037454 (0.027725)
Constant	-0.071148	0.000305	0.041536
R-squared	0.541864	0.652913	0.551684
Observations	250	250	250

Note: The set of equations are estimated by SUR, standard errors are reported in parentheses. ***, **, *, Significant at 1, 5 and 10% respectively. Notation of variables - see Appendix 1.

Source: own calculations

To conclude it can be noted that the factors the most influencing the skill upgrading in Slovakia was the wages and prices of intermediate inputs as well as growing influence of offshoring activities. As expected, the offshoring tends to reduce the labor demand of all skill types but mainly the demand for low skilled labor in manufacturing. This finding is consistent with previous studies *i.e.* Foster-McGregor, Stehrer, De Vries (2013), Ekholm, Hakkala (2005) and Hertveld, Michel (2012). However, the most negative influence on labor demand is caused by intermediate input prices changes. This finding highlight the possible risk from close relationship between labor market and situation on external markets with intermediate inputs. As expected, the prices of intermediates inputs are most pronounced in manufacturing with the greatest influence upon the medium skilled labor. As the observed period finish in 2009 (the expected upgrading of WIOD data is at the end of 2017), it will be important to update this study and compare the results with the recent evolution, the more the situation in the Slovak labor marker fortunately improve.

Conclusion

The dynamic changes in industries sectors of Slovakia during the period of 1995-2009 significantly influenced the labor market as well as the demand for individual skill levels. Despite the favorable output growth during observed period the unemployment remained one of the most important problems of Slovak economy. Especially in manufacturing the domination of gross output creation was based on intermediate inputs. The share of imported intermediate of manufacturing was almost 43% that underline its increasing participation on global value chains. Contrariwise the share of foreign intermediate in services decreased. Moreover, the new investments in manufacturing require more capital than labor for value added creation. The manufacturing sectors in Slovakia demand more skilled labor however the skill upgrading is more pronounced in services sectors. From this point of view policy recommendation for new jobs creation clearly pointed to services sectors that produced more value added, employed more labor for output creation and create demand for domestic intermediate inputs than manufacturing.

The analyses of factors influencing changes of labor demand pointed out the variables that seem to have more influence, namely wages and prices of intermediate inputs. Interestingly, the effect of capital is not as pronounced as expected. Regarding differences of separate results for manufacturing industries, it can be monitored significantly strongest effect of offshoring that influence negatively the labor demand mainly for low and medium skilled labor. When considering the services, we observe that the labor demand for all skilled types is mostly determined by labor wage. Compared with manufacturing, the coefficients for material prices are much smaller. It can be explained by the higher involvement of labor in services sectors than in manufacturing. The

differences can be also noticed in the case of coefficients for offshoring. They are much smaller than for manufacturing. However as mentioned by Hertveldt, Michel (2013) the raise of offshoring activities and use of imported intermediate may contribute to worsening the labor market position by putting pressure on wages or weakening the bargaining power especially of low and medium-skilled workers.

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References

- [1] Berndt, E., Wood, D. 1975. Technology, Prices and the Derived Demand for Energy. *The Review of Economics and Statistics*, 57(3): 259-268. Available at: <http://www.aae.wisc.edu/aae705/References/Berndt.pdf>
- [2] Ekholm, K., and Hakkala, K. 2005. *The Effect of Offshoring on Labour Demand: Evidence from Sweden*. [RIIE Working Paper, no. 654], Stockholm, The Research Institute of Industrial Economics, 36 pp. Available at: <http://www.ifn.se/Wfiles/wp/WP654.pdf>
- [3] Foster-Mcgregor, N., Stehrer, R., De Vries, G.J. 2013. Offshoring and the Skill Structure of Labour Demand. *Review of World Economics*, 149(4): 631-662. Available at: <http://dx.doi.org/10.1007/s10290-013-0163-4>
- [4] Foster-Mcgregor, N., and Stehrer, R. 2013. Value added content of trade: A comprehensive approach. *Economics Letters*, 120 (2): 354–357. Available at: <http://dx.doi.org/10.1016/j.econlet.2013.05.003>
- [5] Habrman, M., Kočíšová, M., and Lábaj, M. 2013. *Štruktúrne súvislosti slovenskej ekonomiky v roku 2008*. Nová ekonomika: vedecký časopis Národohospodárskej fakulty Ekonomickej univerzity v Bratislave, Roč. 6: 40 – 51
- [6] Hertveldt, B., and Michel, B. 2013. Offshoring and the Skill Structure of Labour Demand in Belgium. *De Economist*, 161 (4): 399-420. DOI 10.1007/s10645-013-9218-0
- [7] Hijzen, A., and Swaim, P. 2007. Does Offshoring Reduce Industry Employment? *National Institute Economic Review*, 201: 86-96. Available at: <http://www.jstor.org/stable/23879219>
- [8] Kubala, J., Lábaj, M., and Silanič, P. 2015. *Štruktúrne väzby v slovenskej ekonomike v roku 2010: Identifikácia kľúčových odvetví*. Ekonomický Časopis, 63 (8): 795-816.
- [9] Lábaj, M. 2013. Vývoj slovenskej ekonomiky v rokoch 2008 a 2009 z pohľadu input-output analýzy. *Ekonomický Časopis*, 61 (10): 994-1010.
- [10] Lábaj, M. 2014. *Štruktúrne aspekty ekonomického rozvoja – Slovenská ekonomika v globálnych súvislostiach*, Ekonóm, Bratislava, ISBN 978-80-7144-223-3.
- [11] Lábaj, M., Luptáčík, M., and Rumpelová, D. 2008. Štruktúrne súvislosti slovenskej ekonomiky na báze input-output analýzy. Bratislava: *Ekonomický Časopis*, 56 (5): 477 – 494.
- [12] Michaels, G., Natraj, A., and Van Reenen, J. 2014. Has ICT polarized skill demand? Evidence from eleven countries over 25 years. *Review of Economics and Statistics*, 96 (1): 60-77
- [13] Slušná, L., Balog, M., et al. 2015. *Automobilový priemysel na Slovensku a globálne hodnotové reťazce*. Slovenská inovačná a energetická agentúra, Bratislava, ISBN 978-80-88823-60-5. Available at: https://www.siea.sk/materials/files/inovacie/publikacie/studia_Automobilovy_priemysel_na_Slovensku_a_globalne_hodnotove_retazce_SIEA_web.pdf
- [14] Timmer M.P., Dietzenbacher E., Los B., Stehrer R., and De Vries G.J. 2015. An Illustrated User Guide to the World Input–Output Database: the Case of Global Automotive Production, *Review of International Economics* 23 (3) :575–605, DOI: 10.1111/roie.12178

APPENDIX 1 - Notation of variables for translog cost function

Cost shares	
SLS	Cost share of low skilled labour
SMS	Cost share of medium skilled labour
SHS	Cost share of high skilled labour
SII	Cost share of intermediate inputs
Input quantities	
LS	Number of hours worked by low skilled labour
MS	Number of hours worked by medium skilled labour
HS	Number of hours worked by high skilled labour
II	Intermediate inputs
Flexible factor prices	
wLS	Wage of low skilled labour
wMS	Wage of medium skilled labour
wHS	Wage of high skilled labour
wII	Prices of intermediate inputs
Fixed input and output quantities	
K	Capital
Y	Gross output
Offshoring and domestic outsourcing	
O	Offshoring
DO	Domestic outsourcing

APPENDIX 2. Industry Classification in WIOD

INDUSTRY NAME	ISIC Code	Industry Type
TOTAL INDUSTRIES	TOT	
AGRICULTURE, HUNTING, FORESTRY AND FISHING	AtB	Manufacturing
MINING AND QUARRYING	C	Manufacturing
FOOD , BEVERAGES AND TOBACCO	15t16	Manufacturing
Textiles and textile	17t18	Manufacturing
Leather, leather and footwear	19	Manufacturing
WOOD AND OF WOOD AND CORK	20	Manufacturing
PULP, PAPER, PAPER , PRINTING AND PUBLISHING	21t22	Manufacturing
Coke, refined petroleum and nuclear fuel	23	Manufacturing
Chemicals and chemical	24	Manufacturing
Rubber and plastics	25	Manufacturing
OTHER NON-METALLIC MINERAL	26	Manufacturing
BASIC METALS AND FABRICATED METAL	27t28	Manufacturing
MACHINERY, NEC	29	Manufacturing
ELECTRICAL AND OPTICAL EQUIPMENT	30t33	Manufacturing
TRANSPORT EQUIPMENT	34t35	Manufacturing
MANUFACTURING NEC; RECYCLING	36t37	Manufacturing
ELECTRICITY, GAS AND WATER SUPPLY	E	Services
CONSTRUCTION	F	Services
Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of fuel	50	Services
Wholesale trade and commission trade, except of motor vehicles and motorcycles	51	Services
Retail trade, except of motor vehicles and motorcycles; repair of household goods	52	Services
HOTELS AND RESTAURANTS	H	Services
Other Inland transport	60	Services
Other Water transport	61	Services
Other Air transport	62	Services

INDUSTRY NAME	ISIC Code	Industry Type
Other Supporting and auxiliary transport activities; activities of travel agencies	63	Services
POST AND TELECOMMUNICATIONS	64	Services
FINANCIAL INTERMEDIATION	J	Services
Real estate activities	70	Services
Renting of m&eq and other business activities	71t74	Services
PUBLIC ADMIN AND DEFENCE; COMPULSORY SOCIAL SECURITY	L	Services
EDUCATION	M	Services
HEALTH AND SOCIAL WORK	N	Services
OTHER COMMUNITY, SOCIAL AND PERSONAL SERVICES	O	Services
PRIVATE HOUSEHOLDS WITH EMPLOYED PERSONS	P	Services

Source: WIOD

APPENDIX 3. The Cost Shares of Wages and Intermediate Inputs in Total Costs

	MANU				SERVICES				TOTAL			
	SLS	SMS	SHS	SII	SLS	SMS	SHS	SII	SLS	SMS	SHS	SII
1995	1,4	10,9	1,6	86,1	1,2	16,7	6,0	76,1	1,3	13,9	3,9	80,9
2009	0,5	11,1	2,0	86,4	0,8	17,8	9,3	72,2	0,6	15,0	6,2	78,2

Source: WIOD, own calculations

Price Effect of Changing in the Stock Exchange of Thailand 100 Index's Constituents

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Abstract:

This research studies the price effect after the announcement of changing in constituents of SET100 index in Thailand from 2012-2017. By applying the event study and market model methodology, the results show that there is significantly positive abnormal return on the announcement date of the inclusion, and one day after the announcement date for the exclusion, which is consistent with previous studies in US and other stock market indices. The results of this study support the price-pressure hypothesis for inclusion stocks as the positive cumulative abnormal return is not sustained and fully reverses 5 days after the announcement while the persistence of negative abnormal return from exclusion stock events supports the downward-sloping demand curve hypothesis. These also identify the inconsistency to the efficiency market hypothesis of the equity market in Thailand in term of changing in index composition.

Keywords: price effect; index constituents; announcement date; event study; abnormal return

JEL Classification: G10; G11; G14

Introduction

Stock index is used to identify the overall performance of the equity market, be a benchmark of investment, and also accommodate the issue of derivative instruments and mutual funds tracking the market performance. The example criteria to calculate the component stocks are market capitalization, the number of share trades of its stock, liquidity and traded value. As these basic components change all the time, the indexes have to be reviewed and revised their constituents on a periodical basis for instance quarterly or semi-annually. The changes in index composition cause some investors and index funds to adjust their portfolio by rebalancing the shares of affected stocks.

Many researchers studied various aspects resulting from stock revision events such as the price effect, the trading volume effect and also the return volatility. In the developed United States stock market, many researchers identified the revision events in the Standard & Poor's (S&P) 500 index. Most study results confirm the positive (negative) abnormal return of the inclusion (exclusion) after the announcement of index changes.

This research explores the price effect of the revision of components in Stock Exchange of Thailand (SET) 100 index which is calculated from the market capitalization of the top 100 listed companies on SET. The results can be a guidance to private or financial institution investors who follow index investing strategy, where stock should be attractive to them as measured by its abnormal price performance during the changes in the index. The results also identify the informational efficiency of Thailand equity market in terms of stock revision event.

1. Literature review

Most studies in either developed or emerging market are inconsistent with the efficiency market hypothesis of prices fully reflect the information. Two main hypotheses are also mentioned mostly regarding to the price behavior. The

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price pressure hypothesis (PPH) claims that abnormal return from the index revision are caused by a demand shock which the stock market cannot fully absorb at the current stock price level. PPH assumes that the demand curve is temporarily inelastic.

If stock is added to the index, it will lead to an upward shift in the stock demand curve over a short period of time, consequently increasing the stock price. On the other hand, if a stock is excluded from the index, the downward shift in the demand curve will lead to a sudden decrease in stock price as the demand curve is downward sloping. The significant upward or downward shift of the demand curve is due to investors and index funds rebalancing their stock portfolio. Once investors and index funds have adjusted their portfolios, the demand for those stocks will decrease and the stock price will revert and reflect long-term equilibrium price. It presumes that the positive abnormal return over the rebalancing activity should be offset by the subsequent negative abnormal return (Shleifer 1986).

Downward-Sloping Demand Curve Hypothesis (DSDC) extended study of the price pressure hypothesis and states that stock securities are not perfect substitutes for each other. If the stocks included in the index do not have perfect substitutes, the rightward (leftward) shift demand curve of these added (deleted) stocks will result in higher stock prices. Investors look at stocks differently because each stock has different firm-specific characteristics. The demand curve will be downward sloping and shift leftward or rightward permanently in the long run until another event shifts the demand curve. This is because the absence of perfect substitutes will reduce arbitrage activity to flatten the demand curve. (Shleifer 1986)

Many empirical studies have examined the compositional changes in the S&P 500. Harris and Gurel (1986) found evidence that supports the Price Pressure Hypothesis (PPH). They studied stock inclusion in (exclusion from) the index between 1978 and 1983, and also found a significant abnormal price reaction on the announcement date. The authors concluded that the price effect was due to price-pressures generated by large trading volumes around the announcement date. However, the price effect was not permanent as it disappeared a few weeks after the change in index composition.

In contrast, Shleifer (1986) found against the PPH that index addition stocks have a persistent positive price effect. According to his results from the sample period between 1966 and 1983, a significant increase in abnormal return occurred after announcement day (AD) and the price increase was consistent from AD to at least 10-20 trading days after the effective day (ED).

Jain (1987) studied the index effect from 1977 to 1983 for both stock inclusions in and exclusion from the S&P 500 index. He concluded that there is no support for the price pressure hypothesis for inclusion. In contrast, there are significant negative abnormal return for exclusion.

Chen, Noronha and Singal (2004) claimed that the permanent price effect from Downward Sloping Demand Curve Hypothesis (DSDC) for stock added to the S&P 500 index was due to investor awareness and a temporary price effect for deleted stocks. After stock is added to the index, analysts pay more attention to the added stocks, so the firms can easily access the capital market and, investors can easily access information. Investors expect higher return from included stocks as higher awareness, and monitoring by investors and analysts. Companies should perform more efficiently.

Cooper and Woglom (2003) studied only addition stocks, and explained that the stock price of added stock in the S&P500 index rose on announcement. It leads stock return to become more volatile, and only a fraction of the announcement gains was reversed in the subsequent weeks. The permanent price decline appears not as a result of fundamental changes, which means that news about a firm that is added to the index is not good news in the long run.

In addition, other empirical evidence also supports the price pressure hypothesis. Opong and Hamill (2014) examined the effects on share price in the FTSE 100 (UK) during compositional changes between 1984 and 1999. They found abnormal return occurred before the announcement date and significantly reversed after the effective date.

In recent years, a number of empirical studies on non-S&P market indexes have examined compositional changes, such as the Hang Seng index (Hong Kong), FTSE (UK), Nikkei (Japan), and DAX (Germany). In addition, studies have been conducted in emerging countries such as the SENSEX index (India), and the KLSI index

(Malaysia). Hang Seng index in the Hong Kong market provided significant positive (negative) abnormal return for stock additions (deletions) on the announcement date. Within 10 days after, the abnormal return subsequently reversed, which is supported by the PPH. (Shankar and Randhawa 2006). The revision of SET50 in Thailand and explored the significant positive (negative) abnormal return for inclusion (exclusion) still present in period after announcement date. The abnormal return partially reversed in period of the announcement (Teerapongpraty 2010). Some research studies are consistent with DCDC hypothesis. Liu (2000) studied the price effects from both stock inclusion in, and exclusion from, the Nikkei 500 index (Japan) and found that price did not reverse after the compositional change event. Deininger, Kaserer and Roos (2000) investigated the stock price effects of compositional changes in the DAX index (German) between 1988 and 1997. They found abnormal return to be significantly positive (negative) on stocks included in (excluded from) DAX. Both reactions seemed to be persistent, as no indication of price reversal was found in the following weeks.

Marisetty (2002) found supporting evidence of stock price effects in the SENSEX index (Bombay, India) between 1986 and 2002. Positive abnormal return was found for both additions and deletions on announcement day. One day after the announcement day, the deleted stocks had significant negative abnormal return and there was a permanent shift in the demand curve and a lower equilibrium in the stock prices.

Joshiyura and Janakiraman (2015) found significant negative price effects for deleted stocks in the NIFTY index (India) on announcement date between 1995 and 2009. In contrast, there is no evidence to support abnormal positive return resulting from the announcement of added stocks.

Other two theories related to inclusion and exclusion of stocks are Information Content Hypothesis (ICH), and Liquidity Hypothesis (LH). The information content hypothesis proposed by Jain (1987) states that the stock included (excluded) information is firm-specific information which affects the stock price. The index inclusion/exclusion information is conveyed and used by analysts to predict higher/lower future earnings and cash flow. The information of stock added to the index will be conveyed as favourably news and can push the stock prices up. Index revision announcement is regarded as good news on added stocks, and bad news on deleted stocks. Good news (bad news) about a security should suddenly the increase (decrease) the price and can be maintained permanently in an efficient market. (Scholes 1972).

Muhammad, Ibrahim, Sufar, and Rahman (2009) investigated the efficiency of the stock market during index compositional changes in the KLSI index (Kuala Lumpur, Malaysia) between 1999 and 2006. They found that the announcement of index changes conveys good news to added stocks while it conveys bad news about deleted stocks. As a result, investors react either positively or negatively in accordance with good news and bad news.

The liquidity hypothesis introduced by Amihud and Meldelson (1986), asserts that the stocks included in the index may lead to increased institutional interest. Consequently, the stocks included in an index will enjoy increased liquidity.

Increases in liquidity not only lead to higher value for stocks, but also imply that the trading volume will increase when the liquidity risk premium falls. Because of this, it is easier to sell the stock when it is convenient; this will permanently increase the stock price. In contrast, deleted stocks will have an opposite impact according to Hegde and McDermott (2003).

1.1. SET 100 Index revision process

A review process is periodically conducted of the SET100 index every 6 months by the Stock Exchange of Thailand (SET). In the June review, stock selection based on data covering the period from 1st June in the previous year to 31st May of the current year to reflect the index calculation between July and December of each year. For the December review, stock selection is based on data covering the period from 1st December of the previous year to 30th November of the current year to reflect the index calculation between January and June of the following year.

The SET Index Committee screens all listed stocks in the SET by following the specific "Selection Criteria for periodic review for the SET100 Index". The top ranked 100 listed companies in terms of highest average daily market capitalization are selected to calculate the SET100 Index.

In mid June (and mid December), the SET announces the list of 100 stocks which will be listed in the SET100 index in the second half (the first half) of each year. The announcement also includes the added and deleted stocks to the stock name list of the SET100 index, and the reserve list, which is securities ranked numbers 101 to 105.

Selection Criteria for Inclusion in the SET100 Index:

- *Length of time*: at least 6 month listed and traded on the Stock Exchange of Thailand;
- *Trading status*: not likely be the delisted stock in accordance with SET regulations, under the delisting process, not in suspended trading period or having a tendency to be suspended;
- *Market capitalization*: top 200 stocks with the largest average daily market capitalization over the past 3 months;
- *Free-float qualifications*: maintain at least 20% of the paid-up capital from the latest data in the index review period;
- *Liquidity*: the monthly turnover value must more than 50% of the total average monthly turnover value at least 9 out of the 12 months during the evaluation period.

2. Methodology

2.1. Data collection and screening

The data collected is from the database of the Stock Exchange of Thailand (SET), and Thomson Reuter data stream. Due to the limitations of secondary source data, the exact announcement dates before 2012 are not all available. Thus, the study periods of this paper will cover 5 consecutive years from 2012 to 2017. There are 10 revisions of semiannually SET100 index revisions for the selected period.

The data used in this study are the daily closing prices of new stocks included in and stocks excluded from the SET 100 index for each revision, and also the daily closing index of the SET index as the market proxy for the study period.

SET usually have a formal announcement of changes in constituents at the end of trading day on the particular day, so the next day is used as the announcement day (AD) in this study. Table 1 shows the timeframe of the study period in this research paper. The 130 days' estimation period before the announcement day (from AD-140 to AD-11) describe the firm's historical performance which is approximately equal to half year trading days. Also, the 130 days are aligned to the trading frequency of each index revision (semi-annual) by the SET. Moreover, the past event studies of the Thai stock market usually used 130 estimation days in the market model method, such as the index composition change announcement studied by Keratithamkul (2005) and dividend announcement studied by Punsiri (2001). In addition, stock split events from the New York Stock Exchange studied by Lamoureux and Poon (1987) also used 130 estimation days as the estimation period. This estimation period is used to develop the regression model of the estimated return relates to the market performance.

This study applies the event study to learn the price effect of changing in index components. The pre-announcement period is 10 days before the announcement (AD-10 to AD-1), and the post announcement period is also 10 days from the announcement (AD=0 to AD+10).

Table 1. Timeframe of the study period

Timeframe	Day (from)	Day (to)
Estimation period	AD - 140	AD - 11
Pre-announcement window	AD - 10	AD - 1
Announcement day	AD = 0	
Post-announcement window	AD =0	AD + 10

2.2. Data screening process

Like many previous empirical studies, the researchers have to screen out irrelevant news data in order to capture the effects of only index composition changes. To be a "clean" sample, the data screening process in this paper is performed by employing 4 criteria as follows:

- *Criteria 1:* Eliminate the stocks which have an announcement date that differs from Table 1, as the SET made amendments to the stock list after initializing the revision announcement date. If the changed list of stocks is subsequently amended, the pre-announcement period will be shorter than other samples;
- *Criteria 2:* Eliminate confounding events such as dividend announcement, stock split events, mergers and acquisitions, and other similar corporate events;
- *Criteria 3:* Eliminate the selected stocks which have historical trading days less than 140 days prior to announcement day, with reference to the estimation period in Table 1. To reflect the firm's specific performance of last half-year trading days (aligned with half year trading days of the SET100 stock revision period);
- *Criteria 4:* Eliminate the outlier samples that have raw daily return movement more than +/- 20% (abnormal return more than +/- 15%) during the event window: AD-10 to AD+10. To prevent other news that directly impacts the firm's benefits or disadvantages

Finally, after screening the data based on the above 4 criteria, there are 75 stocks of inclusion, and 81 stocks of exclusion from 2012-2017 included in the study.

2.2 Research hypotheses

According to the empirical evidence on abnormal return from index composition change announcements, this paper will investigate the price effects of stock included in (excluded from) the SET100 index in the Thai stock market.

Regarding to the semi-strong form of EMH, for stock inclusion in/exclusion from the index, stock prices fully reflect historical information as well as the available public information. Consequently, there should not be any impact on the price on the announcement date (Fama 1970). The hypotheses of this paper are as follows:

Stock Inclusion

- H0: There is no abnormal return resulting from the SET100 index inclusion announcement;
- H1: There is abnormal return resulting from the SET100 index inclusion announcement

Stock Exclusion

- H0: There is no abnormal return resulting from the SET100 index exclusion announcement;
- H1: There is abnormal return resulting from the SET100 index exclusion announcement

And if the result rejects H0, whether the abnormal return be observed as temporary or persistent in the 10 days after announcement day is also explored.

The Price Pressure Hypothesis (PPH) states that any abnormal return is expected to fully reverse or reflect the long-term equilibrium price. The PPH is a temporary price effect, so the cumulative average abnormal return for both inclusion and exclusion should reverse to zero. In contrast, the Downward Sloping Demand Curve (DSDC) Hypothesis states that the stock price effect is permanent until another event/information occurs. Therefore, the cumulative average abnormal return should be maintained as a positive abnormal return for stock inclusion and persist as negative abnormal return for stock exclusion.

2.3. Market model methodology

To answer the research question on price effects (abnormal return) for the stocks added in and removed from the SET100 index between 2012 and 2017, this paper applies the "Event Study Methodology" of Strong (1992) which focused on the announcement date (AD) event. The Market Model Methodology is applied to elaborate the abnormal return as used by Cooper and Woglom (2003).

The abnormal return of each stock is the difference between the actual daily return (using Equation (1)) and the estimated return (using Equation (2)) which is calculated from the market model on a specific day. In order to calculate the stock unadjusted return, the individual stock closing prices used, and then the SET closing index is

use as a proxy (market portfolio) to calculate the abnormal return (AR_{jt}) as a prediction for each stock (using Equation (3)).

$$R_{jt} = \ln \left(\frac{P_{jt}}{P_{jt-1}} \right), \quad (1)$$

where: R_{jt} is the actual return of stock j on day t ; P_{jt} is the closing price of a stock j on the day t ; P_{jt-1} is the closing price of a stock j on the previous or day $t-1$

$$E(R_{jt}) = \alpha_j + \beta_j R_{mt}, \quad (2)$$

where: $E(R_{jt})$ is the estimated return; R_{mt} is the SET index return of each specific day t during the test period; α_j and β_j these parameters are estimated by using Ordinary Least Squares (OLS) regression in the 130 days estimation period of each individual stock.

The estimation period in this paper is 130 days (AD-140 to AD-11) which is approximately equal to the half year trading days which aligns to the semiannually revision period of SET100 index. The abnormal return in Equation (3) is calculated for the event window which includes the pre-announcement event (AD-10 to AD-1), the announcement date (AD = 0) and also the post-announcement date (AD=0 to AD+10).

$$AR_{jt} = R_{jt} - E(R_{jt}), \quad (3)$$

where: AR_{jt} is abnormal return to a particular security j in a given day t .

To examine the price effect behavior of impacted securities through event time, the average abnormal return for event day t , AAR_t needs to be calculated by using Equation 4.

$$AAR_t = \frac{1}{N} \sum_{j=1}^N AR_{jt}, \quad (4)$$

where: N is the number of sample stocks

For the significance test, this research paper applies the study of Brown and Warner (1980) to estimate cross-sectional variance. The t-statistic to test the hypotheses based on the assumption that it is cross-sectional, independent and identical, and normally distributed can be calculated by Equation (5).

$$t - \text{statistic} = \frac{AAR_t}{\sigma_N}, \quad (5)$$

where: σ_N is the aggregate of estimated standard deviation of all securities in Equation (6).

$$\sigma_N = \frac{\sqrt{\sum_{j=1}^N \sigma_{j,est}^2}}{N}, \quad (6)$$

where: $\sigma_{j,est}^2$ is the standard deviation of the difference and is calculated on the basis of differences in return from day -140 through -11 in Equation (7).

$$\sigma_{j,est}^2 = \frac{1}{128} \sum_{t=-140}^{-11} \left(AR_{jt} - \left(\sum_{t=-140}^{-11} \frac{AR_j}{130} \right) \right)^2, \quad (7)$$

The cumulative average abnormal return over the window is computed by summing the stock's abnormal return over the window and denoting it $CAAR_{(t_1,t_2)}$ in Equation (8).

$$CAAR_{(t_1,t_2)} = \sum_{t=t_1}^{t=t_2} AAR_t, \quad (8)$$

where: $CAAR_{(t_1,t_2)}$ is the cumulative average abnormal return on time t_1 to t_2 .

The significance test for the cumulative average abnormal return based on the assumption that it is cross-sectional, independent and identically and normally distributed can be calculated by using Equation (9).

$$t - statistic = \frac{CAAR_t}{\sigma_N \sqrt{d}}, \quad (9)$$

where: d is the number of cumulative days from time t_1 to t_2 .

3. Results of the study

3.1 Data description and characteristics

To answer the research question as to whether there is an abnormal return from the SET100 index inclusion/exclusion announcement, market model methodology is applied to calculate the abnormal return. The abnormal return of each sample has to be computed by using Equation 3. The average abnormal return (AAR) in Equation 4 is then divided into 2 sets (one set for inclusion stocks, the other set for exclusion stocks), to examine the price effects behavior through the event time of pre announcement, announcement, and post announcement.

Table 2 shows the descriptive data of actual return and abnormal return for inclusion and exclusion from AD-10 to AD+10. For the inclusion case, the actual return is the highest on the announcement day, and be both negative and positive on pre and post announcement. The abnormal return is highest of 0.89% on the announcement day. The abnormal return is positive from three days before the announcement until the announcement day, and be both positive and negative for post announcement period.

Regarding to the exclusion of component index, the actual return and abnormal return are the most negative at -0.79% and -0.75% respectively on one day after the announcement date. The actual return is negative continuously from one day before the announcement until five days after the announcement, and be negative mostly during the post announcement period. The abnormal return is also negative from one day before the announcement day until two days after the announcement day. During post announcement of day 3 to day 10, the abnormal return is both negative and positive.

Table 2. Daily Average Data: Actual Return, and Abnormal Return for both Stock Inclusion and Exclusion from AD-10 to AD+10

Day	INCLUSION			EXCLUSION		
	Stocks	Average actual return	Average abnormal return	Stocks	Average actual return	Average abnormal return
-10	75	0.07%	-0.39%	81	0.34%	0.08%
-9	75	0.03%	0.09%	81	0.16%	0.26%
-8	75	-0.50%	-0.44%	81	-0.70%	-0.66%
-7	75	0.54%	0.39%	81	0.69%	0.77%
-6	75	0.22%	0.26%	81	-0.15%	0.07%
-5	75	-1.34%	-0.34%	81	-0.54%	0.15%
-4	75	-0.55%	-0.04%	81	-0.05%	0.46%
-3	75	-0.94%	0.11%	81	-1.14%	-0.24%
-2	75	0.79%	0.60%	81	0.08%	0.20%
-1	75	-0.43%	0.01%	81	-0.57%	-0.17%
0	75	0.90%	0.89%	81	-0.02%	-0.13%

Day	INCLUSION			EXCLUSION		
	Stocks	Average actual return	Average abnormal return	Stocks	Average actual return	Average abnormal return
1	75	0.14%	-0.11%	81	-0.79%	-0.75%
2	75	0.08%	0.01%	81	-0.28%	-0.18%
3	75	-0.46%	-0.16%	81	-0.28%	0.10%
4	75	-0.92%	-0.28%	81	-0.90%	-0.23%
5	75	-0.39%	-0.78%	81	-0.08%	-0.26%
6	75	0.25%	-0.59%	81	0.75%	0.21%
7	75	0.66%	0.62%	81	-0.27%	-0.24%
8	75	-0.29%	-0.48%	81	-0.04%	-0.04%
9	75	-0.53%	0.34%	81	-0.51%	0.31%
10	75	0.03%	0.31%	81	0.02%	0.38%

Figure 1 shows the trend of the daily average actual return for stock inclusion and exclusion from AD-10 to AD+10. During the pre-announcement period (AD-10 to AD-1), the actual return for both inclusion and exclusion are likely to have the same trend. On the announcement day until AD+2, the actual return is in the opposite direction. The inclusion stocks have positive actual return from AD 0 to AD+3 while the exclusion stocks are the opposite.

Figure 2 shows the abnormal return from two cases. The abnormal return of inclusion and exclusion cases are also obviously opposite from AD -1 until AD +2

Figure 1. Daily Average Actual Return for Stock Inclusion and Exclusion

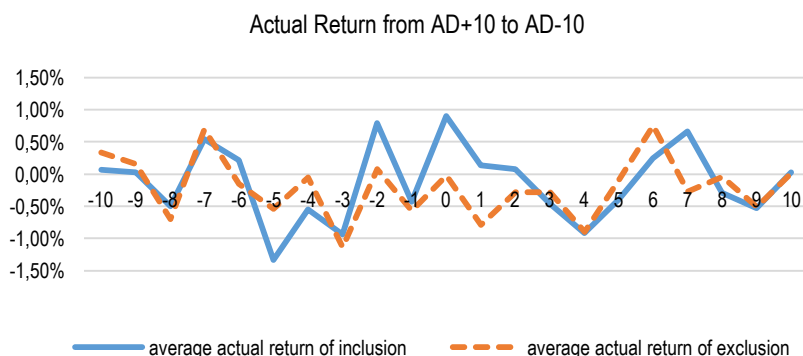
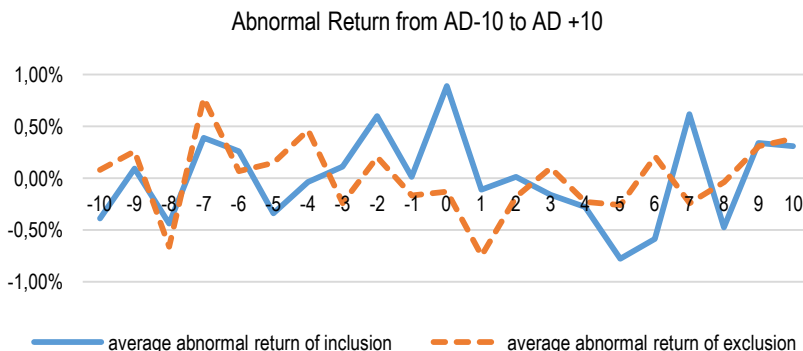


Figure 2. Daily Abnormal Return for Stock Inclusion and Exclusion



3.2. Abnormal Return of Pre and Post Announcement Period

Table 3 shows the daily average abnormal return “AAR” around the announcement date (from AD-10 to AD+10) for the case of stock inclusion and exclusion. The “N” column represents the number of stocks of inclusion and

exclusion. The t-statistic is executed to determine whether the average abnormal return is significantly different from zero at the 90 and 95% confidence level, represented by *, **, respectively.

Table 3. Daily Average Abnormal Return for Stock Inclusion and Exclusion

Event Day	INCLUSION			EXCLUSION		
	N	AAR	t-statistic	N	AAR	t-statistic
AD = -10	75	-0.39%	-1.037	81	0.08%	0.248
-9	75	0.09%	0.267	81	0.26%	1.123
-8	75	-0.44%	-1.475	81	-0.66%	-1.645
-7	75	0.39%	1.058	81	0.77%	1.636
-6	75	0.26%	1.156	81	0.07%	0.122
-5	75	-0.34%	-0.881	81	0.15%	0.363
-4	75	-0.04%	-0.150	81	0.46%	1.910*
-3	75	0.11%	0.276	81	-0.24%	-0.947
-2	75	0.60%	2.466**	81	0.20%	0.462
-1	75	0.01%	0.024	81	-0.17%	-0.542
AD = 0	75	0.89%	2.149**	81	-0.13%	-0.312
+1	75	-0.11%	-0.302	81	-0.75%	-1.830*
+2	75	0.01%	0.037	81	-0.18%	-0.520
+3	75	-0.16%	-0.712	81	0.10%	0.281
+4	75	-0.28%	-1.042	81	-0.23%	-0.474
+5	75	-0.78%	-2.018**	81	-0.26%	-1.417
+6	75	-0.59%	-1.708*	81	0.21%	0.955
+7	75	0.62%	1.270	81	-0.24%	-1.630
+8	75	-0.48%	-1.339	81	-0.04%	-0.226
+9	75	0.34%	0.779	81	0.31%	1.389
AD = +10	75	0.31%	0.670	81	0.38%	1.951*

Note: Average abnormal return is calculated as total abnormal return of inclusion/exclusion stocks divided by sample size; * significance at 90% confidence level; ** significance at 95% confidence level.

Pre Announcement Period (AD-10 to AD-1)

Average abnormal return of included stocks provide the positive average abnormal return continuously on each of three days before the announcement especially on two days before the announcement date (AD-2) with 0.60% at 95% confidence level significantly higher than zero. AAR on AD-10 to AD-4 are both positive and negative.

Excluded stocks provide the insignificant negative AAR on AD-8, AD-3, and AD-1. AAR on day 4 before the announcement is significantly positive at 90 percent level of confidence. AD-10, AD-9, AD-7, AD-6, AD-5 and AD-2 provide the insignificant positive AAR.

On Announcement Date (AD = 0)

For the inclusion stocks, AAR is significantly positive on the announcement day at 95 percent level of confidence. Investors can earn daily return on this day by 0.89%. AAR of the inclusion case is the highest on the announcement day comparing to the other days.

On the other hand, for the exclusion stocks, the average abnormal return on the announcement date (AD=0) show insignificantly different from zero at -0.13% with a t-statistic of -0.312. The average abnormal return of excluded stocks on the announcement day are less negative than pre-announcement period of AD-8, AD-3, and AD-1.

Post Announcement Period (AD=0 to AD+10)

For the inclusion case, the average abnormal return is in positive and negative sign during 10 days of post announcement. AAR is at -0.78% significantly different from zero at 95 confidence level on AD+5, and is at -0.59% significantly different from zero at 90% level of confidence on AD+6. We can see the reverse in AAR from significantly higher than zero on the announcement date to become negative sign after the announcement.

On the other hand, for the excluded stocks, the average abnormal return on one day after the announcement is -0.75% significantly different from zero at 90% confidence level with a t-statistic of -1.830. The exclusion of index component does not show the significant different from zero of AAR on the announcement date but instead on one day after the announcement. This shows that the investors do not adjust their portfolio by excluding the stocks immediately on the announcement date. AAR is both negative and positive with insignificantly different from zero during post announcement period.

Both stock inclusion and exclusion samples show average abnormal return that is significantly different from zero during the announcement which aligns with the expected direction. The inclusion samples show significantly positive abnormal return, as the announcement is treated as good news by investors, which leads to demand shock and upward shifts of the demand curve, resulting in stock price increase. On the other hand, the significantly negative abnormal return for exclusion stocks resulting from investor conveys the announcement as bad news information, consequently the decreasing in stock price. The results of significantly abnormal return mean H_0 is rejected. There is positive abnormal return from the SET100 index inclusion on the announcement date and there is negative abnormal return from the SET100 index exclusion announcement on a day after the announcement.

3.3. Long Window Statistics of Cumulative Abnormal Return

As the announcement on index revision provides significantly abnormal return on the announcement date (AD=0) for the inclusion and on one day after the announcement for exclusion, so the null hypotheses (H_0) have been rejected. Further study in this paper aim to observe whether the price change is temporary or persistent during 10 days after the announcement. The cumulative average abnormal return (CAAR) during the post-announcement period is calculated by using Equation 8.

The announcement day (AD 0) in the study is the next day that the formal announcement is released. As the news release is taken place at the end of the trading day on the particular day. AD 0 in this study is the day that investors already perceive the news and take the action, so the long window period in this paper cover the AD 0 until AD+10. In the post-announcement window, the cumulative average abnormal return (CAAR) from AD 0 to AD+10 should become zero if it supports the price pressure hypothesis, and the CAAR from AD 0 to AD+10 should have positive (negative) abnormal return for inclusion (exclusion) stocks if it supports the downward sloping demand curve hypothesis, the information content hypothesis and the liquidity hypothesis.

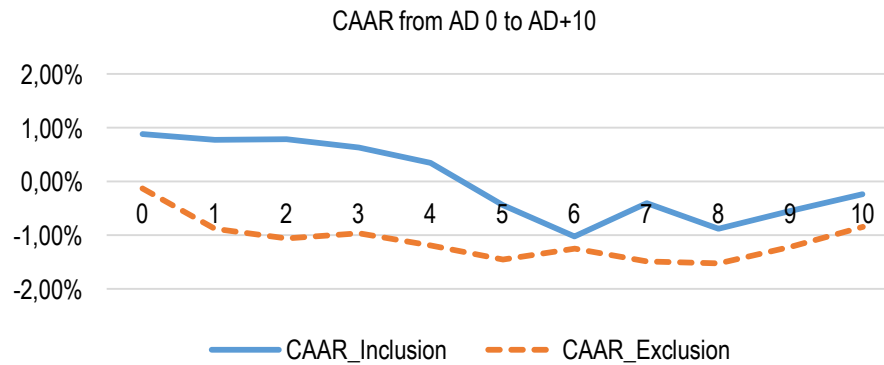
Table 4 shows the daily average abnormal return (AAR) and the cumulative average abnormal return (CAAR) for both inclusion and exclusion stocks in the post-announcement window (AD 0 to AD+10). Figure 4 represents the trend of the cumulative average abnormal return in the post-announcement window (AD 0 to AD+10) for stock inclusion and exclusion, respectively.

Table 4. Long Window Statistics data in the Post-Announcement

Event Day	INCLUSION			EXCLUSION		
	AAR	CAAR	t-statistic	AAR	CAAR	t-statistic
AD = 0	0.89%	0.89%	2.149**	-0.13%	-0.13%	-0.312
+1	-0.11%	0.78%	2.275**	-0.75%	-0.88%	-2.685***
+2	0.01%	0.79%	2.117**	-0.18%	-1.06%	-2.466**
+3	-0.16%	0.63%	1.681*	0.10%	-0.96%	-1.479
+4	-0.28%	0.35%	0.701	-0.23%	-1.19%	-2.065**
+5	-0.78%	-0.43%	-0.636	-0.26%	-1.45%	-2.437**
+6	-0.59%	-1.02%	-1.425	0.21%	-1.24%	-2.013**
+7	0.62%	-0.40%	-0.618	-0.24%	-1.48%	-2.344**
+8	-0.48%	-0.88%	-1.197	-0.04%	-1.52%	-2.275**
+9	0.34%	-0.54%	-0.745	0.31%	-1.21%	-1.762*
AD = +10	0.31%	-0.23%	-0.285	0.38%	-0.84%	-1.133

Note: * significance at 90% confidence level; ** significance at 95% confidence level; *** significance at 99% confidence level; AAR: average abnormal return is calculated as total abnormal return of inclusion/exclusion stock divided by the sample size; CAAR: cumulative average abnormal return from given post announcement period.

Figure 4 Cumulative Average Abnormal Return (CAAR) for Stock Inclusion / Exclusion from AD=0 to AD=+10



Stock Inclusion

CAAR are significantly positive and different from zero at 95% confidence level on AD 0, AD +1, AD +2 with 0.89%, 0.78%, and 0.79% respectively. The CAAR is at 0.63% significantly different from zero at 90% confidence level on AD+3. CAAR on AD+4 is at 0.35% insignificantly different from zero. Then from AD+5 until AD +10, CAAR are negative. The results of long window of inclusion case tend to support and explain price pressure hypothesis. PPH assumes that the stock price temporarily shifts the demand curve; thus the positive abnormal return should reverse to equilibrium.

Even though the significantly positive cumulative abnormal return for Inclusion can be treated as good news to investors, it does not support the information content hypothesis (ICH) as the permanent price decline identifies that the price effect does not result from fundamental changes. News of a firm being added to the index is no longer good news in the long run (Cooper and Woglom 2003).

Stock Exclusion

Regarding to the stock exclusion, CAAR is significantly negative on AD +1 and AD +2 at 99% and 95% level of confidence respectively. CAAR is at -0.88% on one day after the announcement and -1.06% two days after the announcement. CAAR remain negative until AD +10, and are significantly different from zero at 95% confidence level on AD +4, AD +5, AD +6, AD +7, AD+8, and at 90% confidence level on AD+9.

The results can be explained and supported by the downward sloping demand curve hypothesis. DSDC assumes that the stock price will move to a new equilibrium level and stay at that level permanently. The cumulative abnormal return on AD+1 show a negative return and persist at a negative level until the last day of the post-announcement period. As the stocks are not perfectly substituted, institutional investors and index funds rebalance their portfolio by decreasing shares in excluded stocks. The lower demand from institutional investors and index funds causes the demand curve of excluded stocks to shift leftward. As a result, the lower level of demand leads to a permanently lower stock price during post announcement period.

Moreover, stock exclusion can lead to a decrease in institutional investors and index fund interests which consequently reduces liquidity. The liquidity hypothesis (LH) states that the lower the stock liquidity, the higher the liquidity risk premium. Thus the stocks excluded from the index are not as easy to sell as before, and the lower value of stocks will persist permanently.

Conclusion

Many previous event studies investigated the effect of index composition change announcements in developed countries and found significantly positive abnormal return for stock inclusion in the index and also negative abnormal return for stock exclusion from the index.

This research study aims to fulfill the research objective to determine the stock price effect after inclusion/exclusion announcement from the SET 100 Index during 2012 to 2017. To answer the research question,

this paper investigates the daily average abnormal return from index change announcement in the Thai stock market as to whether the results are consistent with the price pressure hypothesis, the downward sloping demand hypothesis, the information content hypothesis and the liquidity hypothesis. In addition, this paper determines whether the results are consistent with other stock markets.

The SET100 index revision announcement drives the market's reaction. This research results show significant positive abnormal return of 0.89% (significant at 95% confidence level) for stock inclusion to the SET100 Index between 2012 and 2017. From the pre-announcement period, average abnormal return is positive on three days before the announcement, especially on two days before the announcement with significantly positive abnormal return of 0.60%. This may be caused by the expectation and forecasting of the included stocks by the index funds or institutional investors of stocks to be included in the SET100. They tend to rebalance their portfolio before the announcement date. Exclusion stocks provide significant negative average abnormal return at -0.75% (significant at 95% confidence level) on one day after the announcement. The investors don't adjust their portfolio immediately on the announcement date of the excluded stocks.

By looking at the long statistics window for post announcement period of 10 days, this study supports the price pressure hypothesis (PPH) in the case of stock inclusion while the downward sloping demand curve hypothesis (DSDC), information content hypothesis (ICH) and liquidity hypothesis (LH) apply in the case of stock exclusion. The cumulative abnormal return for stock inclusion in the SET100 index from 2012 to 2017 is significantly positive and different from zero from the announcement day to three days after the announcement but reverse to be negative from day five to day ten after the announcement. These findings are consistent with the Hong Kong (Hang Seng) stock market and some empirical studies in the U.S. market (S&P500 index) that support the price pressure hypothesis for inclusion. The good news of stock inclusion temporarily increases the demand and liquidity of stocks.

In contrast, the stock exclusion from the SET100 supports the downward sloping demand curve hypothesis. The negative cumulative abnormal return after the exclusion announcement is persistent at a negative level until the end of the post-announcement window. This finding is consistent with non-S&P 500 indexes such as the Nikkei index in Japan and the DAX index in Germany. Because the exclusion of stocks is perceived as bad news for investors and it is less interesting to index funds or institutional investors as the decrease in demand can lead to stock price decrease permanently.

The results of abnormal return from index composition change announcements in the Thai Stock index (SET100 index) are consistent with much previous international evidence as well as previous Thai evidence (SET50 index). Based on the specific ground rules of the selection criteria for inclusion in the SET100 Index disclosed by the Stock Exchange of Thailand, institutional investors and analysts, who have information advantages over individual investors, can use the firm's public information to analyze stock performance in advance of the Stock Exchange of Thailand's announcement.

By analyzing the bulk of data, speculators and institutional investors can predict the list of stocks to be added or removed from the index and can also use historical information to predict the announcement date. Individual investors and institutional investors can obtain benefits from this study by predicting the trend of stock prices from the index revision change announcement event and by rebalancing their portfolio. Excess return can be achieved by buying the forecasted inclusion stocks and selling them after the index composition change announcement. In contrast, significant losses can be eliminated if speculators sell the forecasted exclusion stocks before the index composition change announcement.

This research paper investigated the price effect of index composition change announcements from 2012 to 2017 in the Stock Exchange of Thailand (SET100 index). The result from this paper cannot be used as a standard for other periods of study or other markets, as the different data and market might lead to different results.

Further study about price effects resulting from stock inclusion/exclusion announcement can be expanded to a longer study period in order to determine the price effects in the long-run, or after stocks are included in the revised index. In addition, the index composition changes can also be studied in other ways, such as trading volume or liquidity effect. These studies could provide benefits to investors in the future.

References

- [1] Amihud, Y., and Mendelson, H. 1986. Asset pricing and the bid-ask spread. *Journal of financial Economics*, 17(2): 223-249. DOI: [https://doi.org/10.1016/0304-405X\(86\)90065-6](https://doi.org/10.1016/0304-405X(86)90065-6)
- [2] Chen, H., Noronha, G., and Singal, V. 2004. The price response to S&P 500 index additions and deletions: Evidence of asymmetry and a new explanation. *The Journal of Finance*, 59(4): 1901-1929. DOI: <https://dx.doi.org/10.2139/ssrn.427001>
- [3] Cooper, D., and Woglom, G. 2002. *The S&P 500 effect: Not such good news in the long run*. FEDS Working Paper No. 2002-48, Washington, D.C. Divisions of Research & Statistics and Monetary Affairs, Federal Reserve Board, 26 pp.
- [4] Deininger, C., Kaserer, C., and Roos, S. 2000. *Stock price effects associated with index replacements in Germany*, EFMA 2001 Lugano Meetings, 27 pp.
- [5] Fama, E. 1970. Efficient Capital Markets: A Review of Theory and Empirical Work. *Journal of Finance*, 25(2): 383-417. DOI: 10.2307/2325486
- [6] Harris, L.E., and Gurel, E. 1986. Price and Volume Effects Associated with Changes in the S&P 500 List: New Evidence for the Existence of Price Pressures. *Journal of Finance*, 41(4): 815-29. DOI: 10.2307/2328230
- [7] Hegde, S., and McDermott, J. 2003. The Liquidity Effect of Revisions to the S&P 500 Index: an Empirical Analysis. *Journal of Financial Markets*, 6 (3): 413-459. DOI: [https://doi.org/10.1016/S1386-4181\(02\)00046-0](https://doi.org/10.1016/S1386-4181(02)00046-0)
- [8] Jain, P.C. 1987. The effect on stock price of inclusion in or exclusion from the S&P 500. *Financial Analysts Journal*, 43(1): 58-65. Available at: <http://www.jstor.org/stable/4479002>
- [9] Joshipura, M., and Janakiraman, S. 2015. Price and volume effects associated with scheduled changes in constituents of index: study of NIFTY index in India. *Afro-Asian Journal of Finance and Accounting*, 5(1): 21-36. DOI: <https://doi.org/10.1504/AAJFA.2015.067824>
- [10] Keratithamkul, C. 2005. *The Effect on Stock Price of Inclusion or Exclusion from the SET 50 Index*. Master of Science Program in Finance (International Program), Faculty of Commerce and Accountancy, Thammasat University, Bangkok, Thailand, may 2005
- [1] Lamoureux, C., and Poon, P. 1987. The Market Reaction to Stock Splits. *The Journal of Finance*, 42(5): 1347-1370. DOI: 10.2307/2328531
- [2] Liu, S. 2000. Changes in the Nikkei 500: New evidence for downward sloping demand curves for stocks. *International Review of Finance*, 1(4): 245-267. DOI: <https://dx.doi.org/10.2139/ssrn.258300>
- [3] Marisetty, V. 2002. *The Dynamics around SENSEX Reconstitutions*. Working Paper of Monash University, Available at: <http://vedpuriswar.org/articles/The%20price%20dynamics%20around%20Sensex%20reconstitution.pdf>
- [4] Muhammad, J., Ibrahim, I., Sufar, S.B., and Rahman, N.M.A. 2009. The efficiency of stock market based on the inclusion-exclusion exercise of the Kuala Lumpur Syariah Index (KLSI). *IUP Journal of Applied Finance*, 15(5): 33-44.
- [5] Opong, K.K., Hamill, P.A. 2014. *Spot Market Effects Surrounding Compositional Changes to the FTSE 100: Transitory or Permanent?* Queen's University Belfast. Working Paper. Available at: https://www.researchgate.net/publication/228896900_Spot_market_effects_surrounding_compositional_changes_to_the_FTSE_100_Transitory_or_permanent
- [6] Punsiri, K. 2001. *Stock Price Reaction to Dividend Announcement: Case Study during Financial Crisis in Thai Stock Market*. Independent Study Paper, Master in Finance, Thammasat University.

- [7] Scholes, M. 1972. The Market for Securities: Substitution Versusu Price Pressure and the Effects of Information on Share Prices. *The Journal of Business*, 45(2): 179-211. Available at: <http://www.jstor.org/stable/2352030>
- [8] Shankar, S., and Randhawa, D. 2006. *The effects of Index changes in the Hong Kong and Singapore stock markets*. Working paper of Saw center for financial studies: 1-21 pp.
- [9] Shleifer, A. 1986. Do demand curves for stocks slope down? *The Journal of Finance*, 41(3): 579-590. Available at: <https://scholar.harvard.edu/files/shleifer/files/demandcurves.pdf>
- [10] Teerapongpratya, T. 2010. *The Effects of Index Changes in Thai Stock Market*. Master Degree Independent, Thammasat University.

The Impact of the Global Crisis on Entrepreneurial Activity

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Abstract:

We examine the impact of the 2008-2009 Global Crisis on entrepreneurial activity. We use the Global Entrepreneurship Monitor (*i.e.* GEM) dataset. We look into how the crisis affected new or established business ownership rate, improvement-driven opportunity entrepreneurial activity, informal investors rate, nascent entrepreneurship rate, and necessity-driven entrepreneurial activity. We also examine how early-stage entrepreneurial activity for male and female entrepreneurs are affected by the macro-economy. Our results show that informal investors rate (*i.e.* percentage of 18-64 population who have personally provided funds for a new business, started by someone else, in the past three years) went up significantly after the crisis. On the other hand, we do not find any significant change in new or established business ownership rate, improvement-driven opportunity entrepreneurial activity, nascent entrepreneurship rate, and necessity-driven entrepreneurial activity. Likewise, we do not find any significant change in early-stage entrepreneurial activity for male or female entrepreneurs after the crisis. Our results reject the "Prosperity Pull" hypothesis and only partially supports the "Recession Push" hypothesis.

Keywords entrepreneurship; small business; prosperity pull; recession push

JEL Classification: L26

Introduction

In this study, we examine the impact of the 2008-2009 Global Crisis on entrepreneurial activity. We look into how this crisis has affected new or established business ownership rate, improvement-driven opportunity entrepreneurial activity, informal investors rate, nascent entrepreneurship rate, and necessity-driven entrepreneurial activity. We also examine how early-stage entrepreneurial activity for male and female entrepreneurs are affected by the macro-economy.

Previous research supports two hypotheses on the relation between recessions and entrepreneurship. These two hypotheses are counteracting. The "Recession Push" hypothesis leads to a counter-cyclical effect and the "Prosperity Pull" hypothesis leads to a pro-cyclical effect.

The first hypothesis, the "Recession Push" hypothesis, states that increased employment opportunities in "salaried" employment during economic expansions can lead to a decrease in entrepreneurial activity because people prefer to work in wage employment and thus refrain from starting risky businesses. Several studies support this hypothesis. Congregado *et al.* (2012) discuss the "Recession Push" and the "Prosperity Pull" hypotheses as well as numerous studies supporting these concepts. Evans and Leighton (1989) and Constant and Zimmermann (2004) contend that during recessions, unemployed laid-off workers or the unemployed are pushed into self-employment because of weak labor market opportunities. Moore and Mueller (2002) explain that some workers may be 'pushed' into self-employment as a response to inadequate opportunities in the paid sector. Fairlie (2013) also supports the "Recession Push" hypothesis in the context of the 2008-2009 "Great Recession".

The second hypothesis, the "Prosperity Pull" hypothesis, on the other hand, assumes that greater access to wage employment during economic expansions can lead to an increase in entrepreneurship. This is because, during these times, the risks are lower for the entrepreneur. If the business fails, the entrepreneur can easily find a paid job. Also, Kim and Cho (2009) and Parker (2009) argue that, during these times, new business opportunities

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will increase because market demand will be higher and venture capital will be more easily available. Cagetti and De Nardi (2006), Holtz-Eakin, *et al.* (1994), and Blanchflower and Oswald (1998) and argue that constraints on borrowing would retard entrepreneurial activity, which is more prevalent in downturns.

In this current study, we make two contributions to the literature. First, our study is more comprehensive in terms of the data sample. Instead of examining a country or a region, we examine 29 countries. Therefore, we are hoping to present more generalized results when compared to the previous studies. Second, our study is also more comprehensive in terms of the entrepreneurial activity variables that are examined. In this study, we examine nine variables on entrepreneurial activity. We look into how the crisis affected new or established business ownership rate, improvement-driven opportunity entrepreneurial activity, informal investors rate, nascent entrepreneurship rate, and necessity-driven entrepreneurial activity. We also examine how early-stage entrepreneurial activity for male and female entrepreneurs are affected by the macro-economy. Therefore, we argue that our study is more detailed than the previous studies.

The paper proceeds as follows: Section 1 goes over the previous literature; Section 2 explains the hypotheses; Section 3 explains the data; Section 4 shows the empirical results; Section 5 concludes.

1. Literature review

As mentioned above, while several studies support the “Recession Push” hypothesis, several others support the “Prosperity Pull” hypothesis. There is no consensus on how business cycles affect entrepreneurship.

Evans and Leighton (1989) and Constant and Zimmermann (2004) contend that during recessions, unemployed laid-off workers or the unemployed are pushed into self-employment because of weak labor market opportunities. Therefore, these two studies support the “Recession Push” hypothesis. According to Evans and Leighton (1989), “fluctuations in business conditions and tax rates have affected the self-employment rate”. Self-employment is pro-cyclical, although not strongly so. The authors argue that increases in effective federal income during the late 1970s increased self-employment rates while decreases during the Reagan years decreased self-employment rates. Constant and Zimmermann (2004) study transitions between the states of employment, unemployment and self-employment. They provide a link between these transitions and the business cycle, as measured by the GNP growth rates. They suggest that “the conditional probabilities of entry into self-employment are more than twice as high from the status of unemployment as from the status of employment. Self-employment is also an important channel back to regular employment”. According to the authors, “business cycle effects strongly impact the employment transition matrix”.

Moore and Mueller (2002) also partially supports the “Recession Push” hypothesis. The authors explain that some workers may be ‘pushed’ into self-employment as a response to inadequate opportunities in the paid sector. Examining transitions from paid work to self-employment using the Labor Market Activity Survey, they test the “Recession Push” hypothesis. They find that “(i) longer spells of joblessness favor self-employment, (ii) workers who collect unemployment benefits between jobs are less likely to become self-employed than are workers who did not, (iii) workers who left their previous, paid jobs involuntarily - *i.e.*, due to layoff - were more likely to become self-employed than those who left voluntarily, but less likely than workers who specified personal reasons for leaving, and (iv) self-employment decisions are independent of the health of the labor market as measured by the unemployment rate”.

Fairlie (2013) also supports the “Recession Push” hypothesis. The author examines how the “Great Recession” affected business formation. According to Fairlie (2013), “On the one hand, recessions decrease potential business income and wealth, but on the other hand they restrict opportunities in the wage/salary sector leaving the net effect on entrepreneurship ambiguous”. His regression estimates indicate that local labor market conditions are a major determinant of entrepreneurship. He finds that higher local unemployment rates increase the probability that individuals start businesses. He also finds that home ownership and local home values have positive effects on business creation. The author concludes that “the positive influences of slack labor markets outweigh the negative influences resulting in higher levels of business creation”.

While these studies support the “Recession Push” hypothesis, several other papers support the “Prosperity Pull” hypothesis. Shane (2011) states that the Great Recession had a negative impact on US entrepreneurship.

According to Shane (2011), at the end of the recession, the United States had fewer businesses and self-employed people than it had before the downturn began. The author states that “while some measures indicate that a big part of this decline came from the increased closure of existing businesses, the largest effect came from a decline in new business formation, particularly for businesses with employees, the more economically substantial type of business”.

Another study that supports the “Prosperity Pull” hypothesis is Koellinger and Thurik (2012). Using a cross-country panel of 22 OECD countries for the period 1972-2007, the authors show that entrepreneurship Granger-causes the cycles of the world economy. They also show that the entrepreneurial cycle is positively affected by the national unemployment cycle. They contend that an upswing in the unemployment cycle leads to a subsequent upswing in the entrepreneurship cycle.

Brünjes and Diez (2013) partially supports the “Prosperity Pull” hypothesis. They examine the effect of growing non-farm wage employment on entrepreneurship in rural Vietnam. They distinguish between opportunity and necessity entrepreneurs. Their results show that better access to non-farm wage employment increases the likelihood of becoming an opportunity entrepreneur but has no effect on necessity entrepreneurship. They argue that the growing non-farm economy is likely to accelerate the emergence of opportunity entrepreneurship in rural areas. According to the authors, “necessity entrepreneurs are suffering from a lack of individual and household assets which pushes them into entrepreneurship regardless of non-farm job opportunities in the surrounding area”. The authors support the “Prosperity Pull” hypothesis for opportunity-driven entrepreneurship but not for necessity-driven entrepreneurship.

Rampini (2004) also supports the “Prosperity Pull” hypothesis. The author created a real business cycle model, and in this model, the risk associated with entrepreneurial activity implies that the amount of such activity should be pro-cyclical. Rampini (2004) concludes that entrepreneurship is pro-cyclical, even if agents have access to financial intermediaries.

A literature survey by Parker (2009) discusses evidence from the US that new firm formation is pro-cyclical. He also points to the effect of falling wages in recessions, which may lower the opportunity costs for starting a business and encourage marginal types of entrepreneurship. At the same time, low-quality businesses may be removed in recessions, exerting a countervailing force on the total number of business owners.

Figuroa-Armijos, Dabson and Johnson (2012) partially supports the “Prosperity Pull” hypothesis. The authors state that “economic recessions increase costs, risk, stress, uncertainty, and business failures while decreasing the availability of employment. Individuals who seek to become self-employed in recessionary times, whether out of need or for opportunity reasons, face difficult and unique circumstances”. They examine the effects that living in rural America and changes in the economy have on the probability of individuals engaging in necessity or opportunity entrepreneurial activities both before the recession (2005–2007) and during the recession (2008–2010). According to the authors, “the recession marked a shift in the motivation of individuals in rural America to become self-employed. There is a clear decline in opportunity entrepreneurship and an increase in necessity entrepreneurship. In all rural and mixed-rural counties, college education positively predicts opportunity entrepreneurship, whereas individuals with incomes below \$50,000 or working in a part-time job are more likely to engage in entrepreneurship driven by need”.

Yu, Orazem, and Jolly (2014) discuss the two competing views of the role of business cycles on self-employment. They discuss the research supporting the two views plus the research that shows no correlation between self-employment and unemployment rate. They show that, graduates entering the labor market during adverse economic conditions lowers the probability of starting a business for eleven years after graduation. According to the authors, individuals were less likely to self-finance their ventures, consistent with evidence that graduating in a recession persistently lowers labor market earnings over a long time frame. They support the “Prosperity Pull” hypothesis.

Blanchflower (2000) reports a negative relationship between the self-employment rate and the unemployment rate in most OECD countries. The author could find “no evidence that increases in the self-employment rate increased the real growth rate of the economy; in fact, there was even evidence of the opposite”.

We are hoping to contribute to this discussion by examining the impact of the 2008-2009 Global Crisis on entrepreneurial activities in 29 countries. We aim to see whether there is a significant change in the entrepreneurial activities in these countries after the Global Crisis. If we find a positive change in entrepreneurial activities, then we will argue that we have evidence that supports the “Recession Push” hypothesis. On the other hand, if we find a negative change in entrepreneurial activities, then we will argue that we have evidence that supports the “Prosperity Pull” hypothesis.

2. Hypotheses

As explained in the previous sections, the two hypotheses that we will test are the “Recession Push” and the “Prosperity Pull” hypotheses. First, we will test for the “Recession Push” hypothesis:

Hypothesis 1: Entrepreneurial activities go up due to the 2008-2009 Global Crisis

This hypothesis is actually the “Recession Push” hypothesis because we would expect the activity to go up after the crisis hits. In order to test for this hypothesis, we compare the entrepreneurial activity before the crisis to the entrepreneurial activity a few years after the crisis. If we find that the entrepreneurial activities actually have gone up after the 2008-2009 Global Crisis, we will conclude that our evidence supports the “Recession Push” hypothesis. We will also test for the “Prosperity Pull” hypothesis as stated below:

Hypothesis 2: Entrepreneurial activities go down due to the 2008-2009 Global Crisis

This hypothesis is actually the “Prosperity Pull” hypothesis because we would expect the activity to go down after the crisis hits (*i.e.* pro-cyclical). In order to test for this hypothesis, we compare the entrepreneurial activity before the crisis to the entrepreneurial activity a few years after the crisis. If we find that the entrepreneurial activities actually have come down after the 2008-2009 Global Crisis, we will conclude that our evidence supports the “Prosperity Pull” hypothesis.

3. Data

In this study, in order to access the entrepreneurial activity data, we use the “Global Entrepreneurship Monitor” (*i.e.* GEM) dataset. For our sample period, we choose the 2008-2011 period (*i.e.* which is the three-year period that started with the crisis). We eliminated the countries that do not have data each year over our sample period. Therefore, in our final sample, we have 29 countries. These countries are: Argentina, Belgium, Bosnia and Herzegovina, Brazil, Chile, Colombia, Croatia, Denmark, Finland, France, Germany, Greece, Hungary, Iran, Jamaica, Japan, South Korea, Latvia, Netherlands, Norway, Peru, Romania, Russia, Slovenia, South Africa, Spain, United Kingdom, United States, Uruguay.

We use the nine variables related to entrepreneurial activity on GEM. These variables, their notations, and their definitions (as explained by GEM) are shown below:

Established Business Ownership Rate

Estbbuyy - Percentage of 18-64 population who are currently owner-manager of an established business, *i.e.*, owning and managing a running business that has paid salaries, wages, or any other payments to the owners for more than 42 months.

Improvement-Driven Opportunity Entrepreneurial Activity: Relative Prevalence:

Teayyido - Percentage of those involved in TEA who (i) claim to be driven by opportunity as opposed to finding no other option for work; and (ii) who indicate the main driver for being involved in this opportunity is being independent or increasing their income, rather than just maintaining their income.

Informal Investors Rate:

Busangyy - Percentage of 18-64 population who have personally provided funds for a new business, started by someone else, in the past three years.

Nascent Entrepreneurship Rate:

Suboanny - Percentage of 18-64 population who are currently a nascent entrepreneur, *i.e.*, actively involved in setting up a business they will own or co-own; this business has not paid salaries, wages, or any other payments to the owners for more than three months.

Necessity-Driven Entrepreneurial Activity: Relative Prevalence

Teanec_p - Percentage of those involved in TEA who are involved in entrepreneurship because they had no other option for work

New Business Ownership Rate

Babybuuy - Percentage of 18-64 population who are currently a owner-manager of a new business, *i.e.*, owning and managing a running business that has paid salaries, wages, or any other payments to the owners for more than three months, but not more than 42 months.

Total early-stage Entrepreneurial Activity (TEA)

Teayy - Percentage of 18-64 population who are either a nascent entrepreneur or owner-manager of a new business (as defined above).

Total early-stage Entrepreneurial Activity for Male Working Age Population:

Teayymal - Percentage of male 18-64 population who are either a nascent entrepreneur or owner-manager of a new business (as defined above).

Total early-stage Entrepreneurial Activity for Female Working Age Population

Teayyfem - Percentage of female 18-64 population who are either a nascent entrepreneur or owner-manager of a new business (as defined above).

Table 1 shows the summary statistics for our nine variables. We see that 7.17% of 18-64 population are currently owner-manager of an established business. We also see that 47.87% of early stage entrepreneurs:

- claim to be driven by opportunity as opposed to finding no other option for work;
- indicate the main driver for being involved in this opportunity is being independent or increasing their income, rather than just maintaining their income.

The table also shows that 4.18% of 18-64 population have personally provided funds for a new business, started by someone else, in the past three years.

Table 1. Summary statistics

Variable	Mean	Median	Stdev	Min	Max
Established Business Ownership Rate	7.17	6.75	3.60	1.10	16.30
Improvement-Driven Opp. Entr. Activity	47.87	47.00	12.49	10.00	74.00
Informal Investors Rate	4.18	3.40	2.98	0.70	18.00
Nascent Entr. Rate	5.43	4.10	4.01	1.50	22.40
Necessity-Driven Entr. Activity	25.69	26.00	11.66	4.00	61.00
New Business Ownership Rate	4.06	3.35	2.57	0.90	12.60
TOTAL Early-Stage Entr. Activity	9.30	7.30	5.70	2.90	27.20
TOTAL Early-Stage Entr. Activity for Male	11.53	10.10	6.27	4.00	30.30
TOTAL Early-Stage Entr. Activity for Female	7.01	4.50	5.39	1.50	25.70

The table shows that 5.43% of 18-64 population are currently a nascent entrepreneur. 25.69% of population are involved in entrepreneurship because they had no other option for work. 4.06% of population are currently an owner-manager of a new business.

We also see that 9.30% of 18-64 population are either a nascent entrepreneur or owner-manager of a new business. Among males, this rate is 11.53% (*i.e.* 11.53% of male 18-64 population are either a nascent entrepreneur or owner-manager of a new business), and among females, this rate is 7.01% (*i.e.* 7.01% of female 18-64 population are either a nascent entrepreneur or owner-manager of a new business).

In the next section, in order to see how the Global Crisis affected these variables, we do empirical tests to compare 2008 (*i.e.* when the crisis started) to 2011 (*i.e.* three years after the crisis started). We use the Mann-Whitney-Wilcoxon test for our comparisons.

4. Results

Table 2 shows the trend in each variable over time. Figures 1 to 9 show the trend in each variable graphically.

Table 2. Summary statistics for each year

Year	Variable	Mean	Median	Stdev	Min	Max
2008	Established Business Ownership Rate	7.15	7.20	3.80	1.10	14.60
	Improvement-Driven Opp. Entr. Activity	50.45	49.00	12.37	25.00	72.00
	Informal Investors Rate	3.60	3.20	2.25	0.70	10.50
	Nascent Entr. Rate	5.31	4.10	3.82	1.70	19.70
	Necessity-Driven Entr. Activity	23.93	24.00	11.83	5.00	47.00
	New Business Ownership Rate	4.07	3.20	2.59	0.90	11.70
	TOTAL Early-Stage Entr. Activity	9.18	7.60	5.59	2.90	25.60
	TOTAL Early-Stage Entr. Activity for Male	11.43	10.10	6.11	4.00	30.30
TOTAL Early-Stage Entr. Activity for Female	6.95	5.00	5.36	1.70	23.60	
2009	Established Business Ownership Rate	7.30	6.50	3.84	1.40	16.30
	Improvement-Driven Opp. Entr. Activity	47.69	45.00	12.27	20.00	74.00
	Informal Investors Rate	3.39	2.75	2.35	0.90	10.60
	Nascent Entr. Rate	5.17	3.50	3.93	1.60	16.10
	Necessity-Driven Entr. Activity	26.10	28.00	11.20	7.00	47.00
	New Business Ownership Rate	3.97	3.20	2.54	1.30	10.60
	TOTAL Early-Stage Entr. Activity	8.94	7.00	5.75	3.30	22.70
	TOTAL Early-Stage Entr. Activity for Male	11.15	8.50	6.32	4.50	26.20
TOTAL Early-Stage Entr. Activity for Female	6.71	4.50	5.42	1.50	19.90	
2010	Established Business Ownership Rate	7.26	6.90	3.66	2.10	15.30
	Improvement-Driven Opp. Entr. Activity	47.28	48.00	9.46	30.00	74.00
	Informal Investors Rate	4.85	3.40	3.82	0.90	18.00
	Nascent Entr. Rate	4.91	4.10	4.07	1.50	22.40
	Necessity-Driven Entr. Activity	27.21	28.00	10.62	8.00	46.00
	New Business Ownership Rate	4.03	3.40	2.82	1.10	12.60
	TOTAL Early-Stage Entr. Activity	8.77	7.10	5.72	3.30	27.20
	TOTAL Early-Stage Entr. Activity for Male	10.76	9.60	6.04	4.00	28.90
TOTAL Early-Stage Entr. Activity for Female	6.67	4.20	5.67	1.50	25.70	
2011	Established Business Ownership Rate	6.96	6.60	3.27	2.00	15.80
	Improvement-Driven Opp. Entr. Activity	46.07	45.00	15.40	10.00	72.00
	Informal Investors Rate	4.89	4.00	3.06	1.20	16.10
	Nascent Entr. Rate	6.31	4.70	4.25	1.90	17.90
	Necessity-Driven Entr. Activity	25.52	25.00	13.20	4.00	61.00
	New Business Ownership Rate	4.16	3.70	2.44	1.60	11.00
	TOTAL Early-Stage Entr. Activity	10.31	8.00	5.89	3.70	23.70
	TOTAL Early-Stage Entr. Activity for Male	12.78	10.40	6.75	4.60	26.90
TOTAL Early-Stage Entr. Activity for Female	7.71	5.20	5.33	2.70	21.00	

As Figure 1 shows, the “Established business ownership rate” went up in 2009, but later it fell down. Figure 2 shows that “Improvement-driven opportunity entrepreneurial activity” went down throughout the whole period. Figure 3 shows the trend in “Informal investors rate”. We are seeing a jump in this measure from 2009 to 2010.

Figure 1. Established Business Ownership Rate over Time

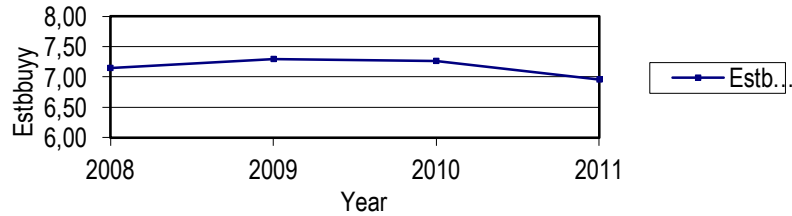


Figure 2. Improvement-Driven Opp. Entr. Activity over Time

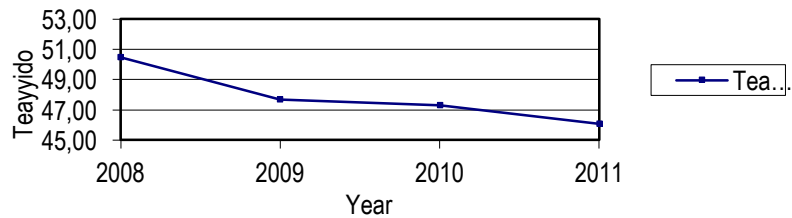


Figure 3. Informal Investors Rate over Time

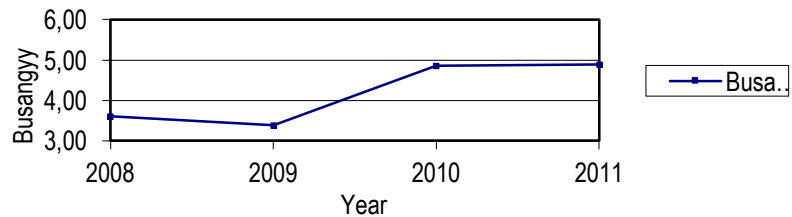


Figure 4 shows a jump in “Nascent entrepreneurship rate” after 2010. Figure 5 shows that “Necessity-driven entrepreneurial activity” went up until 2010 but it later fell down. Figure 6 looks at the trend in “New business ownership rate”. The figure shows that this measure was flat throughout the period.

Figure 4. Nascent Entr. Rate over Time

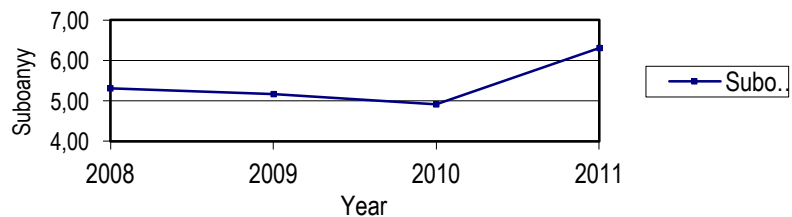


Figure 5. Necessity-Driven Entr. Activity over Time

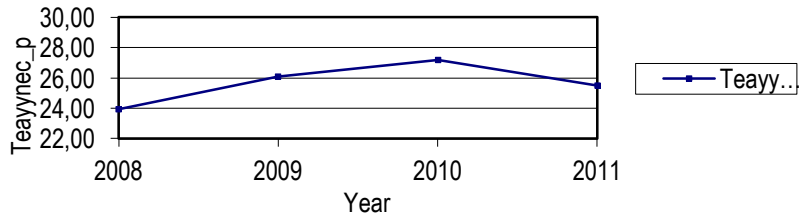
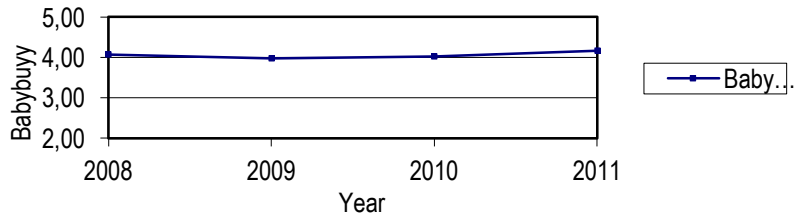


Figure 6. New Business Ownership Rate over Time



Figures 7, 8, and 9 look at the trends in “Total Early-Stage Entrepreneurial Activity”, “Total Early-Stage Entrepreneurial Activity for Male”, and “Total Early-Stage Entrepreneurial Activity for Female”. The three graphs are similar in that all three measures first fell down from 2008 to 2010, and then went up between 2010 and 2011.

Figure 7. Total Early-Stage Entr. Activity over Time

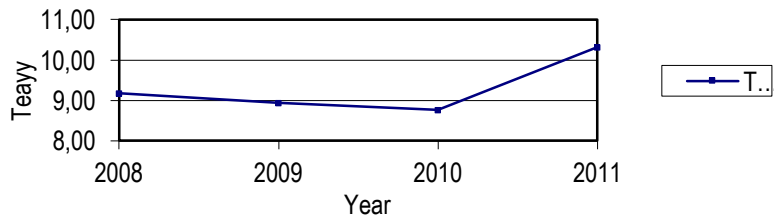


Figure 8. Total Early-Stage Entr. Activity for Male over Time

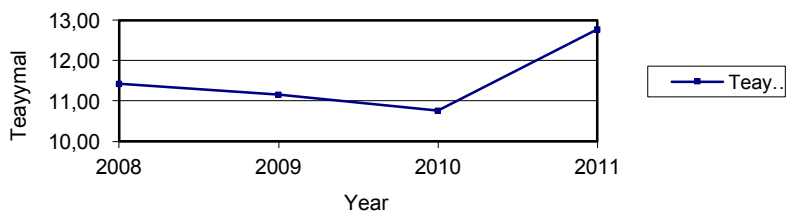


Figure 9. Total Early-Stage Entr. Activity for Female over Time

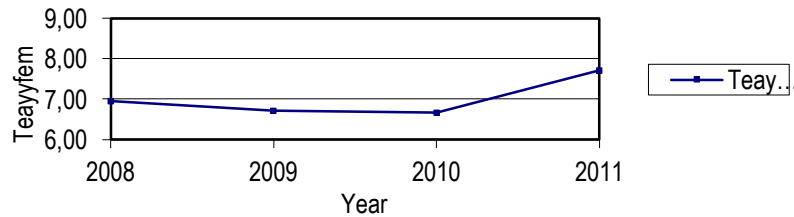


Table 3 shows the results of our non-parametric tests that compare 2008 to 2011. We are seeing that two measures, namely “Established Business Ownership Rate” and “Improvement-Driven Opp. Entr. Activity” fell down from 2008 to 2011 but the difference is insignificant for both measures.

The table also shows that all of the other variables went up from 2008 to 2011, although only “Informal investors rate” went up significantly. The other six variables, which are “Nascent Entr. Rate”, “Necessity-Driven Entr. Activity”, “New Business Ownership Rate”, “Total Early-Stage Entr. Activity”, “Total Early-Stage Entr. Activity for Male”, and “Total Early-Stage Entr. Activity for Female” all went up from 2008 to 2011, but the increase in each case is statistically insignificant.

We conclude that the 2008-2009 Global crisis did not have a significant impact on most measures of entrepreneurial activity. Our results show that only one measure was significantly affected. We find that “Informal investors rate” (*i.e.* percentage of 18-64 population who have personally provided funds for a new business, started by someone else, in the past three years) went up significantly after the crisis.

Table 3. The Impact of the Global Crisis on Entr. Activity

Variable	2008		2011		Mann-W.	Signifi.
	Mean	Med.	Mean	Med.	p-value	
Established Business Ownership Rate	7.15	7.20	6.96	6.60	0.3927	down, insig.
Improvement-Driven Opp. Entr. Activity	50.45	49.00	46.07	45.00	0.1232	down, insig.
Informal Investors Rate	3.60	3.20	4.89	4.00	0.0320	up, sig.
Nascent Entr. Rate	5.31	4.10	6.31	4.70	0.1773	up, insig.
Necessity-Driven Entr. Activity	23.93	24.00	25.52	25.00	0.3956	up, insig.
New Business Ownership Rate	4.07	3.20	4.16	3.70	0.3749	up, insig.
TOTAL Early-Stage Entr. Activity	9.18	7.60	10.31	8.00	0.2543	up, insig.
TOTAL Early-Stage Entr. Activity for Male	11.43	10.10	12.78	10.40	0.2772	up, insig.
TOTAL Early-Stage Entr. Activity for Female	6.95	5.00	7.71	5.20	0.2160	up, insig.

Conclusion

In this study, we examine the impact of the 2008-2009 Global Crisis on entrepreneurial activity. We test for two hypotheses: The first hypothesis, the “Recession Push” hypothesis, states that recessions push people into entrepreneurship (due to lack of salaried jobs). Several studies support this hypothesis. The second hypothesis, the “Prosperity Pull” hypothesis, on the other hand, states that the risks are lower for entrepreneurs in good times (*i.e.* the availability of more opportunities, the availability of funding, the possibility of higher profits, and the possibility of the entrepreneur returning back to a salaried position if the business fails), therefore there should be more entrepreneurial activity during these times. Several other studies like Shane (2011) and Parker (2009) supports this second hypothesis.

Interestingly, the two hypothesis explain the relation between recessions and entrepreneurial activity in opposite ways. While the “Recession Push” hypothesis is countercyclical (*i.e.* there is a negative relation between the macroeconomic conditions and entrepreneurial activity), the “Prosperity Pull” hypothesis is pro-cyclical (*i.e.* there is a positive relation between the macroeconomic conditions and entrepreneurial activity).

In this study, we join this discussion by exploring the impact of the 2008 Great Recession on entrepreneurial activity around the world. For this purpose, we use the Global Entrepreneurship Monitor (*i.e.* GEM) dataset. We look into how the crisis affected new or established business ownership rate, improvement-driven opportunity entrepreneurial activity, informal investors rate, nascent entrepreneurship rate, and necessity-driven entrepreneurial activity. We also examine how early-stage entrepreneurial activity for male and female entrepreneurs are affected by the macro-economy.

Our results show that informal investors rate (*i.e.* percentage of 18-64 population who have personally provided funds for a new business, started by someone else, in the past three years) went up significantly after the crisis. On the other hand, we do not find any significant change in new or established business ownership rate, improvement-driven opportunity entrepreneurial activity, nascent entrepreneurship rate, and necessity-driven entrepreneurial activity. Likewise, we do not find any significant change in early-stage entrepreneurial activity for male or female entrepreneurs after the crisis. Our results reject the “Prosperity Pull” hypothesis and only partially supports the “Recession Push” hypothesis.

References

- [1] Blanchflower, D.G. 2000. Self-employment in OECD countries, *Labour Economics*, 7(5): 471-505.
- [2] Blanchflower, D.G., Andrew, J.O. 1998. *Entrepreneurship and the youth labour market problem: a report for the OECD.* Report to OECD, Paris. Available at: <https://pdfs.semanticscholar.org/9211/f45b63ce5794f49b518f3ef8e59e12333e20.pdf>
- [3] Brünjes, J., and Diez, J.R. 2013. Recession push’ and ‘prosperity pull’ entrepreneurship in a rural developing context. *Entrepreneurship & Regional Development*, 25(3-4): 251-271.
- [4] Cagetti, M., and De Nardi, M. 2006. Entrepreneurship, frictions, and wealth. *Journal of Political Economy*, 114(5): 835-870.
- [5] Congregado, E., Golpe, A.A., and Parker, S.C. 2012. The dynamics of entrepreneurship: Hysteresis, business cycles and government policy. *Empirical Economics*, 43(3): 1239-1261.
- [6] Constant, A.F., and Zimmermann, K.F. 2004. *Self-employment dynamics across the business cycle: migrants versus natives.* Discussion Paper No. 1386, 54 pp.
- [7] Evans, D.S., and Leighton, L.S. 1989. The determinants of changes in US self-employment, 1968–1987. *Small Business Economics*, 1(2): 111-119.
- [8] Fairlie, R.W. 2013. Entrepreneurship, economic conditions, and the great recession. *Journal of Economics & Management Strategy*, 22(2): 207-231.
- [9] Figueroa-Armijos, M., Dabson, B., and Johnson, T.G. 2012. Rural Entrepreneurship in a Time of Recession, *Entrepreneurship Research Journal*, 2 (1): 1-29. DOI: 10.2202/2157-5665.1044
- [10] GiSeung, K., and Cho, J. 2009. Entry dynamics of self-employment in South Korea. *Entrepreneurship and Regional Development*, 21(3): 303-323.
- [11] Holtz-Eakin, Douglas, David Joulfaian, and Harvey S. Rosen, 1994. Sticking it out: Entrepreneurial survival and liquidity constraints. *Journal of Political Economy*, 102(1): 53-75.
- [12] Koellinger, P.D., and Thurik, A.R. 2012. Entrepreneurship and the business cycle. *Review of Economics and Statistics*, 94(4): 1143-1156.
- [13] Moore, C.S., and Mueller, R.E. 2002. The transition from paid to self-employment in Canada: The importance of push factors. *Applied Economics*, 34(6): 791-801.

- [14] Parker, S.C. 2009. *The Economics of Entrepreneurship*. Cambridge University Press, ISBN -10: 0521728355, 570 pp. Available at: http://www.econ.mpg.de/files/2005/egpsummerinst05/papers/sparker-what_we_know_and_what_we_dont.pdf
- [15] Rampini, A.A. 2004. Entrepreneurial activity, risk, and the business cycle. *Journal of Monetary Economics*, 51(3): 555-573.
- [16] Shane, S. 2011. The great recession's effect on entrepreneurship. *Economic Commentary*, 4.
- [17] Yu, Li, Orazem, P.F., and Jolly, R.W. 2014. Entrepreneurship over the business cycle. *Economics Letters*, 122(2):105-110.

Generic Model of Regional Performance Allowance

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Abstract:

The issue of remuneration remains as a hot issue in some nations such as Korea, Japan and America, with their own model complexity. Undeniably, the amount of remuneration or allowance of individuals with varied titles and positions causes social jealousy of others time and again. Eventually, this jealousy leads to internal problems, which result in less maximum organization achievements. This is the case in the City of XYZ (West Java Province, Indonesia), in which we found the same phenomenon although the performance-based allowance concept has been legalized in the form of laws and legislations. To overcome this problem, we attempted to design a more dynamic, flexible concept while complying with the applicable laws and legislations. The methods used in this research were quantitative methods. These methods were used to analyze the empirical data to be mapped into a formula, which will be used to determine future needs. As a result of the research, we offered three recommended models in the provision of allowance, so any government in Indonesia may adopt the appropriate models while staying under the corridor of the applicable laws and legislations. We also equipped every model with technical consequences that must be faced, thus in the end, the performance of every individual can improve the organization's achievement without causing prolonged conflicts.

Keyword: performance; allowance; generic model; remuneration

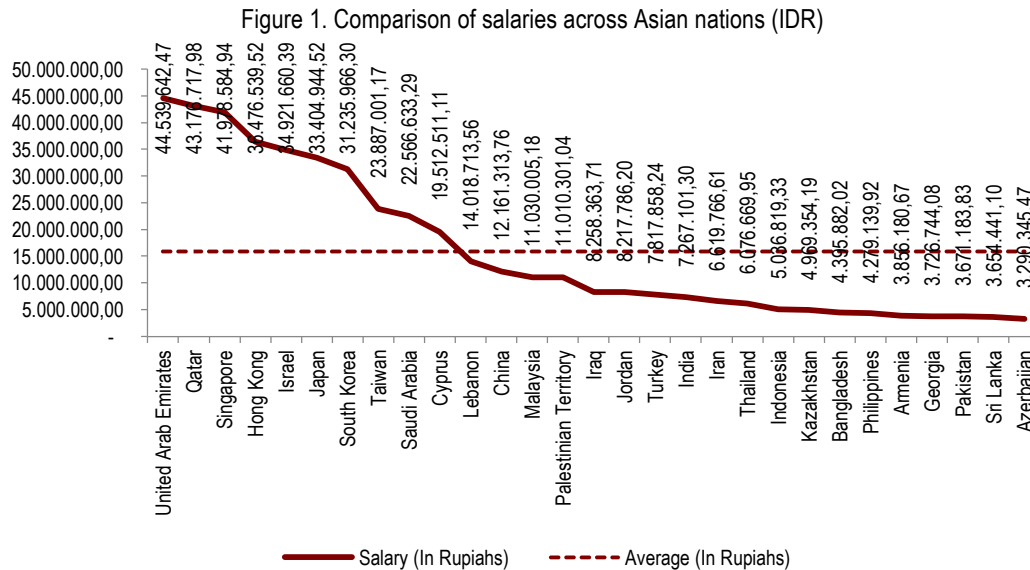
JEL Classification: N95, P25

Introduction. Background

Performance allowance remains as a hot issue among civil servants in Indonesia. This is due to the increasing complexity of allowance components, which requires civil servants to show a better performance. To avoid any misperception of the assessment of the allowance, the regulation of the Minister of Empowerment and the State Apparatus (Keputusan Menteri Pendayagunaan Aparatur Negara dan Reformasi Birokrasi) number 63 of 2011 concerning Guideline of the Arrangement of Civil Servant Allowance System has been issued.

This regulation governs the provisions of the amount of performance allowance to be given to civil servants based on the following factors: level of achievement of institution bureaucratic reform implementation; job value and class; job price index; balancing factor; provincial performance allowance index.

Its derivative laws and regulations explain the fifth point. In essence, the provision of allowance to civil servants in the form of compensation must be based on the performance of the individuals in question. Compensation is anything received by employees as a reward for their work. Compensation also constitutes one of the most effective ways for employees to increase their work performance, motivation and satisfaction. A good compensation system will be able to satisfy employees and allow the organization to obtain, employ and retain employees. Figure 1 illustrates that the incomes of civil servants in Indonesia are still under the average of other Asian nations.



There are some employees who think that the compensation system applied is pretty complicated, which leads to conflicts between employees due to the different amount of compensation. This is normal as the performance-based allowance system applied still new in Indonesia despite the circulation issued by the Government in 2011. This conflict will impact largely on the organization, starting from the non-conducive working environment through the unachieved targets. Slowly but surely, this conflict will spread across nearly all regions of Indonesia. The Ministry of Administrative and Bureaucratic Reform has seen this sign. As explained by the Deputy Assistant of Human Resources Welfare of the Ministry of Administrative and Bureaucratic Reform Salam Sijabat that the civil servant salary system applicable today is not appropriate as the base pay of civil servants is way too small compared to the allowance they receive. In fact, base pay determines the amount of pension money they will receive. In light of the aforementioned, the Government intends to change the portion of base pay of civil servants.

To prevent this from spreading more widely, we tried to provide some solutions in the form of alternative generic models of regional performance allowance by conducting a case study on the Government of XYZ City, which is located in the Province of West Java, Indonesia. These models must be able to accommodate the need for proportional allowance system while complying with the applicable laws and regulations.

1. Literature review

Remunerasi is a loanword from English remunerate. According to Oxford American Dictionary, it means to pay (someone) for services rendered or work done. While in Kamus Besar Bahasa Indonesia, it is defined as the appropriatement of present/reward. Remuneration has a meaning of "something" received by employees as a reward for their contribution toward the organization in which they work. Remuneration has a wider meaning than salary as it covers all forms of rewards, either in the form of money or goods, which is given directly or indirectly, and has a regular or irregular nature. Direct rewards consist of salary/fee, positional pay, special allowance, bonus having association or no association with work performance or organizational performance, intensive as achievement award, and various kinds of aids that are given on a regular basis. Indirect rewards consist of facilities, health, pension fund, salary during leave, disaster compensation, and so forth (Mohamad S. 2004). Remuneration is a term that is frequently linked with employment, especially in the labor salary system. But with time, this term is often used contextually, which creates different meanings. However, in the governmental bureaucracy and in general, the term remuneration is always related to labor salary system based on work values, with the purpose of creating a better, cleaner management system. Currently, there are a fairly large number of organizations evaluating that remuneration is a cost component that should be minimized in amount.

Remuneration is considered as a process as explained by Poels (2003) “*Remuneration is the process which takes place after functions have been ranked and through which a salary structure will be established*”. Hence, in relation to the context of bureaucratic reform, remuneration is defined as the restructuring of salary system. Šilingienė, Stukaitė, Radvila (2015, 848-854) says that remuneration is the payment of money and/or goods for the achievement and/or award, either when in an employment relationship or after the end of an employment relationship based on a structured, open, fair, proper system. Meanwhile, in terms of forms or variations of remuneration, remuneration can be in the form of salary or fee, honorarium, allowances (fixed, special, welfare, attendance, position, expensiveness, transportation, housing, family, feast day, birth, sickness, demise, and so forth), overtime fee, daily money, travel money, lodging money, health warranty/insurance, educational warranty/insurance, incentives, bonuses, commissions, severance scholarship, and/or pension. For instance, let us take the case in Korea, in which the monthly income structure is as follows:

Salary = Base pay + Allowances (30 kinds) (1)

Base pay is the base compensation paid according to pay schedule & services years with average amount of base pay of 65% and allowance of 35%. The 12 different salary schedules include: general, legal, technical services; law enforcement, research, development; police, firefighters; teachers, professors; military service; and labor. Besides, they also have 30 different allowances, namely family allowance, special locality allowance, special task allowance, overtime allowance, bonus, etc. There are other types of allowances in the form of additional compensation paid according to working & living conditions, including:

- *bonus* (3 types): preferential allowance, attendance allowance, performance bonus;
- *family support* (4 types): family allowance, children school support allowance, childcare leave allowance, house allowance;
- *special allowance* (15 types): special area, hazard work, special job duty;
- *overtime work, etc.* (4 types): allowances for overtime work, night shift, holiday duty, management work, etc.

In addition, Korea still has some allowances in the form of: general benefits: benefits for dependents; retirement insurance; unemployment insurance; medical insurance; disability benefits; pay for not worked: sick leave, holidays, vacation, military leave, etc; employee services: tuition reimbursement, wellness programs, etc.

Hence, the elements of income in South Korea vary and have covered all aspects. No wonder that in the future the government officials in Korea are only focused on working as excellent work will allow them to gain all benefits of the income model maximally. Likewise, to Korea, Japan also applies their concept of remuneration by taking into account different factors in a fairly detailed way. The remuneration for the public employees in Japan must meet the society’s prerequisites. The National Personnel Authority (NPA), that is similar to the ministry of manpower in Indonesia, makes a recommendation of remuneration, which principally is intended to adjust the level of remuneration of the national public employees with that of private sector (Principle of following Private Sector). The remuneration of national public employees is basically in line with the type of their tasks or responsibilities. There are 17 salary schedules divided based on the type of employees’ jobs (Administrative Service, Public Security Service, Medical Service, etc); one of these types is applied to every national public employee. Every salary schedule has some values, which are divided based on the level of difficulty and responsibility (Officer, Unit Head, Divisional Director, etc.) In the national public employee remuneration system, the level of salary and pay rise must be determined based on the actual performance and capacity as well as the discipline (bonus must also be paid according to their performance).

The remuneration model in Japan is as follows:

Remuneration of National Public Employees: Salary + Allowances (Bonuses) (2)

Salary Equivalent to base pay in the private enterprises). Meanwhile, the allowances received have the following variation: family allowance, housing allowance, commuter allowance, family, unattended, transfer allowance, area allowance (paid to employees working in the area where wage levels in the private sector are high), managerial allowance (paid to employees in managerial positions), headquarters duty adjustment allowances,

hardship duty allowances, overtime allowance, etc. Besides, the components of bonuses include end of term allowance, and diligence allowance.

NPA that functions as the compensation amount controller ensures that the remuneration of the national public employees is appropriate with the social condition. A recommendation was issued as the balancer of the amount of remuneration of national public employees and the level of remuneration of private company employees (principle of following private sector). NPA seeks to appropriately exercise its responsibility for the decision regarding the remuneration and working condition of other public employees by giving recommendation to the Cabinet concerning the fundamental issue in accordance with its function in the laws and regulations to stipulate or annihilate any regulations related to remuneration.

The monthly salary model in Japan is as follows:

$$\text{Salary} = \text{Base pay (82\% -83\%)} + \text{Allowance (17\%-18\%)} \quad (3)$$

where: the portion of the component base pay at around 82% - 83%; the portion of the component allowance at around 17% - 18%.

3. Proposed methods

The methods employed in this research were quantitative methods. These methods were used to analyze the empirical data to be mapped into a formula so the future needs could be determined.

The planned work execution stages are as follows: Preparation Stage; Survey, Data Collection and Data Processing Stage; Analysis and Design Stage; Forum Group Discussion (FGD) Stage; Report Preparation Stage.

4. Results and discussion

4.1. Formulation of the Amount of Employee Income Supplement (TPP)

According to the Regulation of the Minister of Administrative and Bureaucratic Reform No. 63 of 2011, the calculation of the amount of Employee Income Supplement is based on the following components:

- Job Class;Value Limit;
- Average Job Value;
- Job Price Index;
- Balancing Factor;
- Index of Provincial Performance Allowance.

4.1.1. Determination of Job Class

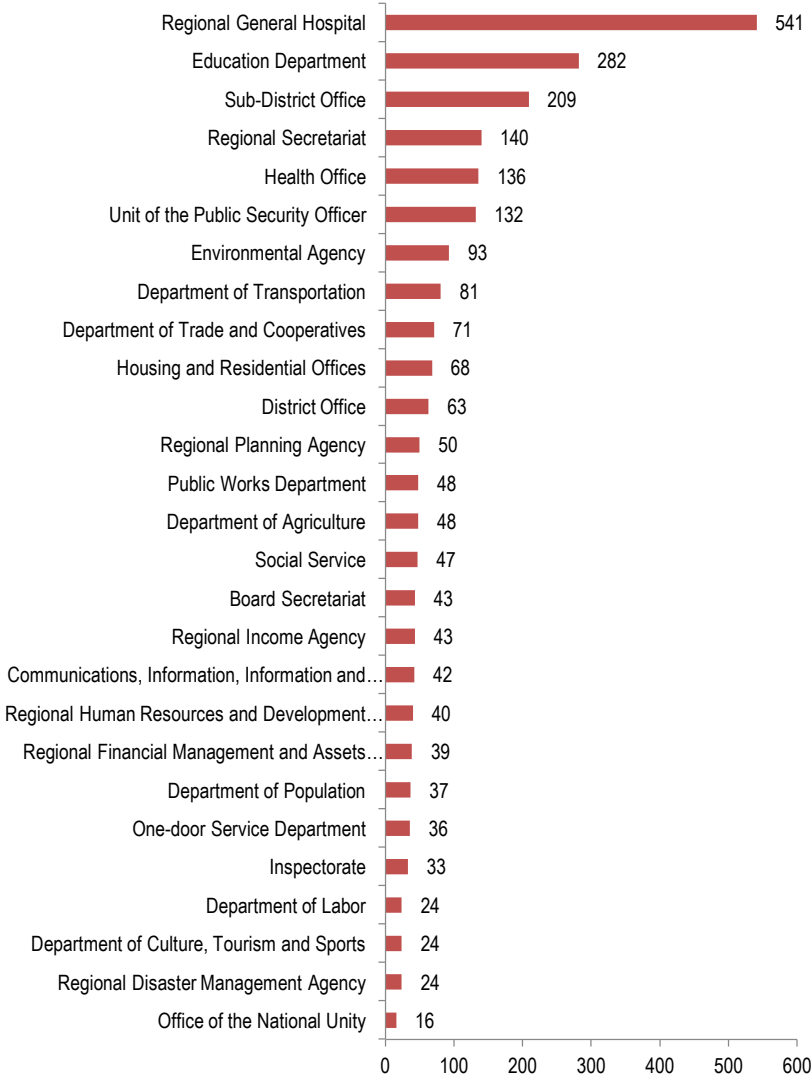
Referring to the Regulation of the Minister of Administrative and Bureaucratic Reform No. 63 of 2011 and Regulation of Head No. 24 of 2015 concerning the Division of Job Class, there are around 17 job classes. These job classes can be applied if the government agencies have conducted Job Analysis, Work Load Analysis and Job Evaluation. The job classes in Xyz were determined based on the results of job evaluation carried out by the Regional Employment Agency in 2015 and equalization with the Regulation of Head of State Employment Agency (BKN) No. 24 of 2015 concerning Position and Job Class the Highest Position, Administrative Position, and Supervisory Position in the Environment of State Employment Agency. However, the evaluation results of the existing positions must be re-reviewed given that there were some changes in the Organizational Structures and Working Procedures (SOTK) with the issuance of Government Regulation Number 18 of 2016 concerning Regional Agencies. According to the results of job evaluation and equalization, the job classes in the Government of Xyz City are as presented in Table 6.

According to the Human Resources data we obtained by the end of April 2017, we found out that there was a decrease in the number of employees from the preliminary data we received in January 2017. Thus, the number of employees as of April 2017 was 4,641. This data served as the base for the Formulation of Employee Income Supplement (TPP). According to the results of the data processing, the distribution of employees is as presented in Table 1, which describes the data of Human Resources without any Teaching Particular Functional Position (JFT) and Medical Particular Functional Position. The total number of human resources was 2,412, the average of which were at class 6. The offices/departments absorbing the highest number of human resources were Regional

Public Hospital (RSUD) with a total number of employees of 541 and Department of Education (DISDIK) with a total number of employees of 282.

Figure 2 shows the recap of the number of Job Classes. It is shown that class 6 has the largest number of employees, numbering 707, followed by class 5 with a total number of employees of 452 and class 7 with a total number of employees of 325.

Figure 2. Number of human resources without teaching JFT and medical JFT



The number of employees will be different if we include the data of Teaching JFT and Medical JFT. The total number of employees of the Government of Xyz City becomes 4,641. The average class turned into class 8. If these data are used, the budget burden for TPP will be even higher given that the average class is pretty high. Class 6 turns into the class with the highest number of human resources, numbering 707, followed by class 5 with a total number of human resources of 452 and class 7 with a total number of human resources of 325. According to the data, the largest contributor of human resources was teaching JFT with a total of 1,991 people and Regional Public Hospital Department with a total of 541 people.

Afterwards, we attempted to map the class data we have obtained according to the jobs and category. Hence, the data as shown in Figure 3 were obtained. As shown in Figure 3, Mayor ranked as the highest class,

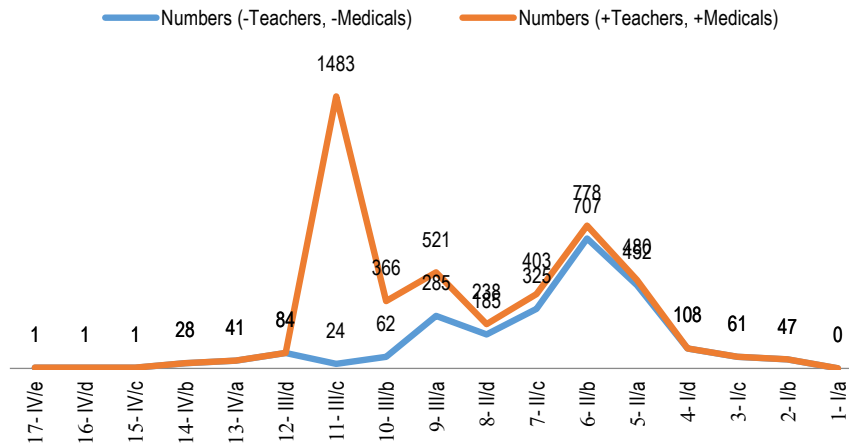
followed by Grade 17 (Vice Mayor) and Grade 16 (Regional Secretary as well as the administrations under it). According to the data of Job Classes as explained earlier, the lowest class was Class 2 with an average job value at around 250. We used the data to calculate the Job Price Index, the formula of which is UMRP divided by the mean of the lowest job. Hence, the Jo Price Index Xyz City was Rp 9,854.

Figure 3. Number of Human Resources Excluding Teaching JFT and Medical JFT



With the above calculation data, we could determine the Performance Allowance, Balancing Factor and the final results of Performance Allowance. The data in Figure 4 show that Job Class, Value Limit are the decision of Regulation of Minister of Administrative and Bureaucratic Reform Number 63 of 2011, so is given by system. As for the job average value, the data of Job Evaluation we received in April 2017 did not include it. Thus, according to Regulation of Minister of Administrative and Bureaucratic Reform No. 63 of 2011 we calculated the median of each Job Value Limit having been determined. The result was the Median of Job Value Limits.

Figure 4. Mapping of categories, echelons and positions in the job class



4.1.2. Job Price Index

According to the Regulation of Minister of Administrative and Bureaucratic Reform No. 63 of 2011, Job Price Index is obtained by dividing the Provincial Minimum Wage (UMRP) with the Lowest Job Average Value. The amount of UMRP of Xyz City for 2017 according to the Province of West Java is Rp. 2,463,461.00 (Decision of Governor Number 561/Kep.1191-Bangsos/2016). According to this, the Job Price Index is as follows:

$$\text{Job Price Index} = \frac{\text{UMRP of Cimahi City}}{\text{Lowest Position Average Value}} \quad (4)$$

$$\text{Job Price Index} = \frac{2,463,461}{250} = 9,854 \quad (5)$$

The Value Rise from the Average value below it was obtained by recursively reducing the Average Value of a job with that of the job below it, and so forth. Then, the Job Price Index as previously explained was obtained by dividing the UMRP value with the Lowest Job Average Value (250)

$$\text{Job Price Index} = \frac{2,463,461}{250} = 9,854 \quad (6)$$

The amount was obtained from the following formula:

$$\text{Allowance} = (\text{Job Average Value}) \times (\text{Job Price Index}) \quad (7)$$

Thus, the amount of allowance may vary depending on the different Job Average Values.

4.1.3. Balancing Factor

Balancing factor is the value used as the base for equalizing the amount between jobs, especially lower classes, in order to prevent overly large gap between the TPP accepted by lower classes and that accepted by higher classes. After dividing the highest Allowance Value with the lowest Allowance Value, the value of balancing factor of Xyz City is obtained as follows:

$$\text{Total Balancing Factor} = \frac{33,281,358}{2,463,461} = 13.51 \quad (8)$$

The value of total balancing factor is used as a multiplying factor of Allowance. For higher jobs, multiplying factor is not needed (multiply it with 1). On the other hand, lower classes need the multiplying factor to make the amount of allowance more even. Therefore, when we see the distribution of Total Balancing Factor value, it gets higher as it moves downwards. This balancing factor is expected to be a magnifying multiplying factor in the provision of allowance for lower classes. This is as shown in column 9, where the multiplying factor serves as a significant factor for the receipt of TPP of each class, especially the lower one.

4.1.4. Provincial Performance Allowance Index (ITDKP)

Since the purpose of the provision of TPP for civil servants is basically to measure the extent to which the civil servants are able to achieve good performance of their duties and functions, the amount of TPP is linked with the bureaucratic reform performance index declared by the Government. The better the bureaucratic reform conducted by the Government, the higher the TPP received by the employees. Therefore, the amount of TPP to be received by employees will depend on the Provincial Performance Allowance Index (ITDKP) factor, which constitutes the success of the Bureaucratic Reform of every Government.

Given the lack of data of Xyz City's ITDKP in the Ministry of Administrative and Bureaucratic Reform and the State Employment Agency, we calculated the TPP using the ITDKP data of the Province of West Java. The actual data we obtained show that the Regional/Provincial Minimum Wage (UMRP/P) was Rp. 2,463,462. The Provincial Performance Allowance Index (ITDKP) of 2011 of 0.678 became the final multiplying factor for the amount of TPP to be received. The amount of allowance of every class will be multiplied with 0.678. Thus, it is certain that the higher the ITDKP of the Province of West Java, the higher the amount of TPP is.

4.2. The Amount of TPP for Each Job Class

The distribution of Balancing Factor is usually determined by the policy makers by taking into account different factors. In this case, we attempted to distribute the Balancing Factor value as shown in Table 1. This distribution was carried out in order to prevent an excessively wide gap between Job Classes. Thus, the total Balancing Factor value distribution must equal to 13.51. The formulation of the final performance allowance constitutes the multiplying factor of allowance calculated with the balancing factor. Then, the Allowance is multiplied with ITDKP, making it the final value.

$$\text{Performance Allowance} = \text{job_value} \times \text{job_price_index} \quad (8)$$

$$\text{Earned Allowance} = \text{Performance_Allowance} \times \text{ITDKP} \quad (9)$$

Balancing Factor is used to proportionally divide up the earned allowance with variable amount for every allowance.

Table 1. Formulation of TPP of Xyz City of 2017

No	Job Class	Job Average Value	Job Price Index	Xyz Performance Allowance	Balancing Factor	Xyz Performance Allowance (IDR)	ITDKP of West Java (IDR) (0.6780)
3	15	3,378	9,854	33,281,358	1	33,281,358.11	22,564,761
4	14	2,953	9,854	29,093,474	1	29,093,474.41	19,725,376
5	13	2,553	9,854	25,151,937	1	25,151,936.81	17,053,013
6	12	2,228	9,854	21,949,438	1	21,949,437.51	14,881,719
7	11	1,978	9,854	19,485,977	1	19,485,976.51	13,211,492
8	10	1,728	9,854	17,022,516	1	17,022,515.51	11,541,266
9	9	1,478	9,854	14,559,055	1	14,559,054.51	9,871,039
10	8	1,228	9,854	12,095,594	1	12,095,593.51	8,200,812
11	7	978	9,854	9,632,133	1	9,632,132.51	6,530,586
12	6	753	9,854	7,415,018	0.9	6,673,515.85	4,524,644
13	5	553	9,854	5,444,249	0.9	4,899,823.93	3,322,081
14	4	413	9,854	4,064,711	0.9	3,658,239.59	2,480,286
15	3	338	9,854	3,325,672	0.9	2,993,105.12	2,029,325
16	2	250	9,854	2,463,461	0.91	2,241,749.51	1,519,906
					13.51		

4.3. Alternatives to Employee Income Supplement (TPP)

4.3.1. Alternative 1, a Simulation with Teaching JFT and Medical JFT

The number of Human Resources, including the Teaching JFT and Medical JFT, is presented in Table 2. The most dominating classes were Class 11 (47.05%), Class 9 (12.35%) and Class 6 (8.45%). These classes dominance

leads to higher cost for TPP. Thus, the budget for Employee Income Supplement (TPP) for 12 months, including the JFTs), is around Rp. 499,741,881,002.92.

Table 2. Earned TPP of Each Class, Number and Proportion (including JFTs)

JOB CLASS	TOTAL HR	TPP	TOTAL HR * TPP	12 MONTHS (IDR)	PROPORTION
15	1	22,564,761	22,564,761	270,777,130	0.05%
14	28	19,725,376	552,310,518	6,627,726,218	1.33%
13	41	17,053,013	699,173,539	8,390,082,473	1.68%
12	84	14,881,719	1,250,064,365	15,000,772,381	3.00%
11	1,483	13,211,492	19,592,642,745	235,111,712,945	47.05%
10	366	11,541,266	4,224,103,179	50,689,238,145	10.14%
9	5,21	9,871,039	5,142,811,297	61,713,735,564	12.35%
8	238	8,200,812	1,951,793,351	23,421,520,214	4.69%
7	403	6,530,586	2,631,826,094	31,581,913,131	6.32%
6	778	4,524,644	3,520,172,834	42,242,074,009	8.45%
5	480	3,322,081	1,594,598,699	19,135,184,393	3.83%
4	108	2,480,286	267,870,935	3,214,451,224	0.64%
3	61	2,029,325	123,788,841	1,485,466,096	0.30%
2	47	1,519,906	71,435,590	857,227,079	0.17%
1	0	-	-	-	0.00%
TOTAL	4,641	137,456,305	41,645,156,750	499,741,881,002.92	100.00%

Then, if the proportion is distributed based on the Regional Government Agencies (SKPD) involved, the Regional Government Agencies subjected to greater TPP burden is Teaching JFT, with a total of 59.93%, followed by Regional Public Hospital (RSUD) at around 8.86% and Medical JFT at around 3.64% (see Table 3).

Table 3. Earned TPP of every Regional Government Agency by Number and Proportion (Including JFT)

Regional Work Unit	TOTAL HR	TOTAL TPP/MONTH (IDR)	TOTAL TPP/YEAR (IDR)	PROPORTION
Mayor	1	-	-	0.00%
Vice Mayor	1	-	-	0.00%
Regional Secretariate	140	970,632,121	11,647,585,458	2.33%
Council Secretariate	43	281,703,752	3,380,445,021	0.68%
Inspectorate	33	332,176,328	3,986,115,937	0.80%
Regional Financial Management and Assets Agency	39	286,859,741	3,442,316,893	0.69%
Regional Planning Agency	50	417,536,597	5,010,439,161	1.00%
Regional Income Agency	43	281,907,519	3,382,890,232	0.68%
Regional HR and Development Agency	40	281,536,729	3,378,440,749	0.68%
District	63	456,371,034	5,476,452,414	1.10%
Sub-District	209	1,213,352,785	14,560,233,424	2.91%
Regional Disaster Management Agency	24	148,837,229	1,786,046,748	0.36%
Office of the National Unity	16	109,920,950	1,319,051,403	0.26%
Regional General Hospital	541	3,690,988,574	44,291,862,893	8.86%
Education Department	282	1,250,947,915	15,011,374,979	3.00%
Health Office	136	845,325,044	10,143,900,530	2.03%
Public Works Department	48	328,483,457	3,941,801,486	0.79%
Housing and Residential Offices	68	406,838,796	4,882,065,548	0.98%
Unit of the Public Security Officer	132	601,254,837	7,215,058,047	1.44%
Social Service	47	367,575,110	4,410,901,317	0.88%
Department of Trade and Cooperatives	71	421,381,458	5,056,577,500	1.01%
Department of Transportation	81	427,786,777	5,133,441,326	1.03%

Regional Work Unit	TOTAL HR	TOTAL TPP/MONTH (IDR)	TOTAL TPP/YEAR (IDR)	PROPORTION
Department of Population	37	284,224,124	3,410,689,483	0.68%
Department of Labor	24	192,458,536	2,309,502,433	0.46%
Department of Agriculture	48	310,939,397	3,731,272,769	0.75%
Department of Culture, Tourism and Sports	24	199,546,978	2,394,563,731	0.48%
One-door Service Department	36	291,245,756	3,494,949,073	0.70%
Environmental Agency	93	451,063,054	5,412,756,654	1.08%
Communications, Information, Information and Library Department	42	322,288,587	3,867,463,042	0.77%
Teaching JFT	1991	24,957,878,113	299,494,537,358	59.93%
Medical JFT	238	1,514,095,450	18,169,145,395	3.64%
TOTAL	4641	41,645,156,750	499,741,881,002.92	100.00%

As for the average of Job class, as shown in Table 4, the Job Class in Alternative 2 is dominated by class 8. This is way higher than Alternative 1, where the class average is only in Class 6.

Table 4. Job Class Average (Including JFT)

JOB CLASS (JC)	TOTAL HR (THR)	JC * THR
17	1	17
16	1	16
15	1	15
14	28	392
13	41	533
12	84	1,008
11	1,483	16,313
10	366	3,660
9	521	4,689
8	238	1,904
7	403	2,821
6	778	4,668
5	480	2,400
4	108	432
3	61	183
2	47	94
1	0	0
TOTAL	4,641	39,145

Note: Average job class is class 8.43

The class average of 8 indicates that the Job class is dominated by Class 8. This is quite high since the number of human resources is also high. The high average of job class signifies that the TPP multiplying burden on the Regional Budget (APBD) is high, even tends to be significant. The burden is presented in Table 5. With the proposed TPP value of Rp. 499,741,881,003, the burden on the Regional Budget is around 39.73%, which is twice of that in alternative 1. Although in the forecast of income for the years 2018 to 2020 shows yearly decrease of TPP, the decrease is not significant. Table 5 shows that the burden on the Regional Budget until 2020 is around 31.57%. This figure is still considered as very high.

Table 5. Forcasted TPP burden on the Regional Budget (Including JFT)

BUDGET AND FORECAST	EXISTING	FORECAST (IDR)		
	2017	2018	2019	2020
TOTAL INCOME OF 2017	1,257,930,694,049	1,356,988,091,197	1,465,547,138,493	1,582,790,909,572
PROPOSED TOTAL TPP	499,741,881,003	499,741,881,003	499,741,881,003	499,741,881,003
BURDEN ON INCOME	39.73%	36.83%	34.10%	31.57%

4.3.2. Alternative 2, a Simulation if Teaching JFT and Medical JFT have Flat Allowance Amount

Alternative 2 is made by considering Alternative 1 while taking into account the allowance for the JFT holders. The calculation is the same as that of Alternative 1, but there is an addition of cost specific to JFT, which is an allowance with fixed amount at around Rp. 300,000 per month.

Table 6. The Number of Teaching JFT and Medical JFT and the Determination of Allowance Amount

POSITIONS	NUMBER
TEACHING JFT	1,991
MEDICAL JFT	238
TOTAL	2,229
ALLOWANCE AMOUNT	300,000
TOTAL/ Year (IDR)	8,024,400,000

This consideration is based on the fact that JFT has received a fairly considerable amount of allowance from different institutions. Thus, the allowance of Rp. 300,000 only serves as an addition. This amount is multiplied with the number of JFT, which is 2,229, so the total burden of allowance for JFT is around Rp. 8,024,400,000 per year (see Table 6).

Table 7. Forcasted TPP Burden on the Regional Budget (Flat JFT Allowance Amount)

BUDGET AND FORECAST	EXISTING	FORECAST (IDR)		
	2017	2018	2019	2020
TOTAL INCOME OF 2017	1,257,930,694,049	1,356,988,091,197	1,465,547,138,493	1,582,790,909,572
PROPOSED TOTAL TPP	190,102,598,250	190,102,598,250	190,102,598,250	190,102,598,250
BURDEN ON INCOME	15.11%	14.01%	12.97%	12.01%

Thus the total proposed TPP is the proposed amount in Alternative 1 at Rp. 182,078,198,250 added with the total Allowance for JFT at Rp. 8,024,400,000, totaling Rp. 190,102,598,250. This burden makes up 15.11% of the Regional Budget, and this percentage will keep decreasing until 2020 into 12.01% (see Table 7).

4.3.3. Alternativ 3, Proportion of Calculation Based on the Analysis of Factor Evaluation System (FES) Applied to the Value of TPP for 2016 (Non JFT)

The last approach that can be applied in a faster manner is the Factor Evaluation System (FES) approach. Thus, the proportion of each Department can be obtained and used as the base for determining the class of each Head of Department. This proportion can subsequently be used for measuring the variation of amount received by each Department. This FES method assesses positions based on (Figure 5):

Figure 5. Factor Evaluation System (FES) for Structural Position



Conclusion

According to the review results, the following conclusion is drawn: This calculation excludes the Mayor and Vice Mayor since according to the FGD results, they have their own mechanism. The updated results of job class analysis in April 2017 that were used for the Government of Xyz City were considered to be fairly high, as there was no Class 1, and it skipped to Class 2. This condition caused the mean value of the lowest job class to increase. The Regional/Provincial Minimum Wage (UMRP) of Xyz City was quite high at around Rp. 2,463,461. As there was a lack of data of ITDKP value of Xyz City, the calculation of TPP amount used the Provincial Performance Allowance Index (West Java), which was 67.80. The high Job Average Value (point 1) caused the Job Price Index to be lowered as the Job Price Index was the quotient of UMRP and Job Average Value. Thus, the value of Job Price Index was Rp. 9,854. There were three alternatives, each of which has different consequence of burden on the Regional Budget (APBD), offered, namely: Alternative 1, which includes the Teaching and Medical Functional Positions, so the TPP burden on the Budget becomes higher at 39.73% if it is applied for the year 2017. The large number of Medical and Teaching JFT increases the Job Class average to Class 8; Alternative 2, which includes the amount in Alternative 1 added with a fixed amount for Medical and Teaching JFT at Rp. 300,000 per month, so the TPP burden on the Budget is 15.11% if it is applied for the year of 2017. Alternative 3 which only serves as a comparison, where the TPP value of 2016 (Rp. 90,284,900,004) is divided by the proportion obtained from the calculation excluding the Medical and Teaching JFT.

The best TPP to be applied in a short term is Alternative 3, where the available funds can be divided according to the circular calculation irrespective of each class proportion with a total of distribution of 100%. The ideal TPP to be applied in a long term apparently is Alternative 2, with an assumption that Teaching and Medical JFT have received other allowances in a higher amount. The TPP amount calculation should also include the analysis of Regional Budget received by Xyz City. For Job Class, it is better that Job Class 1 is not excluded to lower the dividing factor and increase the Price Index of Position.

References

- [1] Poels, F. 2003. *Job Evaluation and Remuneration Strategies: How to Set Up and Run an Effective System*. Biddles Ltd, Guildford and King's Lynn. ISBN-10: 0749422807, 256 pp. Available at: <https://freemindconsulting.files.wordpress.com/2009/12/job-evaluation.pdf>
- [2] Šilingienė, V., Stukaitė, D., Radvila. G. 2015. The remuneration determinants of chief executive officers: A theoretical approach. *Procedia - Social and Behavioral Sciences*, Volume 213, 848-854 pp. Available at: <https://www.sciencedirect.com/science/article/pii/S1877042815058498>
- [3] Mohamad, S. 2004. *Bunga Rampai Guru dan Pendidikan. Edisi Pertama*, PT Balai Pustaka. Jakarta
- [4] Pan Suk Kim. *Salary Reform in South Korea and Japan*. 45 pp., Available at: http://siteresources.worldbank.org/INTINDONESIA/Resources/2262711170911056314/34281091322037859095/Salary_reform_in_South_Korea_an_Japan.pdf,

*** Regulation of the Minister of Empowerment and the State Apparatus (KemenPANRB) number 34 of 2011

*** Regulation of the Minister of Empowerment and the State Apparatus(KemenPANRB) number 63 of 2011

Institutional Traps of Wages and Income Inequality

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Abstract

The experience of countries with developed economies testifies to the constructiveness of labor relations. However, the prerequisites of the behavior of actors in social and labor relations, the presence of institutional opportunism, and the increased role of the methodology for *researching* the labor inequality make a strong case for a theoretical and methodological justification for reassessing social and labor relations and reforming the institution of labor compensation based on the study of institutional traps. The article deals with the analysis of institutional traps and identification of sources of wages and income inequality and development of methodological, scientific and practical recommendations to analyze the system of indicators affecting the pricing institution in the labor market. To solve the set goals, the authors used special economic methods: comparison by using numerical and content estimates, time series analysis by singling out regular time and trend-dependent components of trends, etc. Based on the obtained data on institutional traps formed in the social and labor sphere, it was established that an increase in the resource price expressed in growth of the wage rate under the pressure of trade unions increases the employers' costs, slows down the demand for labor, and, consequently, leads to the worsening of the terms of employment, which is a theoretical result of institutional paradigm. The available non-market indicators influence the formation of institutional traps. A matrix of non-market indicators was developed on the basis of the conducted analysis.

Keywords: inequality; income, wages; institutional trap; non-market indicators; social and labor relations; labor compensation institution; trade unions; technological development

JEL Classification: A1; B15; B25; B41

Introduction

Difficulties in the formation of a developed and sustainable institution of social and labor relations, including employment and labor laws, require the consideration of the dialectics of institutional traps, as well as the relationships between employees and employers, which entail the transformation of the existing institutional corpus of hired labor inequality. Attempts to form an effective labor compensation institution as part of social and labor

relations have shown its inefficiency. The problems of deformation of the labor compensation institution are conditioned by the low earnings of hired labor, as well as the gap between the rate of statutory minimum wage (SMW), the subsistence minimum and real wages. The identified institutional traps of low earnings predetermined the phenomenon of forming the institution of poverty (due to a significant gap between the incomes of managers and employees) and the lack of incentives for the development of efficient and high-yielding jobs. Despite the fact that in Russia the formation of a new institutional foundation has been completed, the economy is still poorly diversified, limited in the possibility of providing sufficient jobs and opening new skilled labor niches. Such prerequisites can drastically affect the problem of the emergence of institutional traps and the institutional deformations in the social and labor sphere.

Searching for an exit from the situation and taking into account the scientific underdeveloped state of this issue, the authors set the main purpose of this research – to study the theoretical and methodological foundations of the hired labor income and wages inequality based on the identification of institutional traps and to analyze the system of indicators that affect social and labor relations, to eliminate palliative decisions and work out sustainable norms excluding key factors of the institutional traps. The research tasks are to determine the role of institutional traps in the formation of labor income and wages inequality; to analyze and systematize scientific approaches to the development of non-market indicators affecting the formation of institutional traps; to identify the causes of social stratification and deterioration of the workers' life quality; to develop a matrix of non-market indicators that allows for an analysis of institutional traps of income and wages inequality.

1. Literature review

The analysis of the research results obtained by the leading scholars and scholarly economic literature points to the insufficient methodological elaboration of the problem of the formation of institutional traps of labor income and wages inequality.

In view of this, special attention is paid to the research work of such Russian and foreign scientists who focused on institutional traps in the context of social and labor relations and inequality: Dolzhenko (2014), Veretennikova (2009), Makarova (2011), Manokhina (2011), Gerasimova, and Gerasimova (2014), Summers (1986), Fields (2002), Polterovich (1999), Simonin, Bogacheva *et al.* (2016).

The institutional traps in wages and income inequality connected with the influence of non-market factors were studied in the following context: the influence of trade union organizations (Bryson 2007); labor mobility (Mincer and Jovanovic 1981); labor discrimination (Krieger and Fiske 2006); the difference in the education obtained and the employees' qualification (Fields 2002); compensation policy for unattractive work (Van Parijs and Vanderborght 2017).

Particular attention was paid to the theoretical and methodological foundations of the institutionalization of social and labor relations and labor inequality by Dieton (2016), Zbyshko (2004), Karpushkina (2011), Gibalo (2002), Pshenisnova and Zinchenko (2011), Plaksya (2004) and others.

At the same time, the theoretical and methodological foundations of the institutionalization of social and labor relations and the formation of income inequality have been studied to a greater extent. However, such methodological issues as the analysis of non-market indicators affecting the formation of institutional traps and the problem of deformation of the labor compensation institution require further justification.

2. Methods

To solve the set goals, general scientific and special economic methods were used.

2.1. Special economic methods

A comparative approach was applied in this study – the use of numerical and content-related estimates made it possible to investigate qualitatively study an understudied phenomenon of institutional traps in the social and labor sphere, to compare findings with the already known processes studied earlier for the purpose of establishing common signs or differences between them. The time series analysis was also used by the authors to distinguish

regular time-dependent components, to describe the characteristic features of the series, to select a statistical model and determine the trend component.

This allowed the authors to reveal the internal essential features of the object, the connections of its elements and their interaction with each other, by highlighting properties and attributes, tracing links and relationships, and also revealing their role in the system of employees' wages and income inequality.

3. Results

The research of the labor force wages and population income inequality issues faces certain methodological problems of institutional traps being formed in social and labor sphere. Studies devoted to institutional traps lack sufficient consideration of the processes related to the presence of stable inefficient institutes, and no priority is given to the analysis of non-market indicators (e.g. the impact of trade union organizations), in particular. Therefore, it is important to explain, why inefficient standards are formed in the process of social and labor relations development and economic reforms, and to define the analysis methodology for non-market indicators that influence the labor force wages and population income inequality.

Polterovich (1999) states that an "institutional trap is inefficient stable standard (inefficient institute) of self-sustaining nature". For instance, Makarova (2011) emphasizes that institutional traps are formed within economic, political, and ideological institutes, as well as at the intersection of the mentioned institutes, being the result of their incongruence.

Simultaneously, it is increasingly recognized that the institutional trap is the situation of institutional balance and, therefore, model (situation) of formal and informal institutions interaction, when market agents have chosen a certain standard of behavior, being inefficient comparing to the other one, but equilibrium under the same external conditions (Tsvetkova 2013).

It may be admitted that average-income countries should pay specific attention to the issue of institutional traps that lead to inequality, "whereas shifted strategies of development and urbanization have adverse effect on the distribution of employment income" (Gill and Kharas 2015).

Certain scholars justify the statement that employees enter into the labor employment agreement that guarantees a certain reward regardless of the income of the employing company. The activity of employees is directly controlled by the owner or persons, employed and assigned for that purpose by the owner (Pshenisnova and Zinchenko 2011).

However, it may be ascertained that the increasing role of HR policy of the companies, allowing flexible response to social and economic demands on the part of the personnel in market development conditions, recently becomes very important. At the same time, the fact that there is no direct dependence between the company income and wages becomes widely recognized. Moreover, the employers, with no regard to institutional traps and inequality prerequisites, pay no attention to the nature of economic relations that cause retardation of the average wages from labor productivity.

It should be noted that some companies feature flexible response to the changes in wages and awards by reaching key performance indicators. This issue calls for in-depth consideration of systematic analysis of institutional traps that hinder development of intracompany strategies of employees' income growth. With this background, it is hardly deniable that the state establishes a certain institutional environment and endeavors to equalize the income of population and, on the other hand, fights against the most underlying causes of poverty.

For example, the concept for the long-term socio-economic development of the Russian Federation until 2020 states that the priority direction is "improvement of social climate in the society, reduction of poverty and decrease in population differentiation by income level. The main factors of poverty reduction and welfare improvement are high rates of economic growth, and first of all provision of efficient jobs and wages increase. However, the economic growth does not automatically lead to poverty reduction and may be followed by inequality and social instability increase" (RF Government Directive No 1662-r 2008).

Both economic growth and elimination of inequality in civil society certainly cannot be the result of immediate transformations. For example, internal policy of the company cannot be quickly transformed into developed system

of remuneration of labor at the micro level, if guided by internal mechanism of the company income redistribution only.

Yu. Ivanov (2015) upholds the position that in modern market conditions the establishment of connection between personnel costs and economic results of the company activity allows for increase in the company's profit and productivity, improves its market position, increases the amount of dividends for owners and wages and awards for managers. However, the challenges of HR policy formation, oriented at changes of labor force income potential, are mostly related to institutional traps that create a bunch of social and labor issues. The dependence between economic results and personnel costs growth is not always linear, whereas the employers are interested in reduction or at least optimization of personnel costs that influence the level of total expenses. On the contrary, the actual need in the absence of such connection lies in the justified solutions of the employers aimed at profit maximization by involving cheap labor. Bogayevskaya (2012) assumes that American companies have two factors of the first priority: reduction of production costs (mainly by utilizing cheaper labor of mediocre qualification) and ensuring the strategical development of the company by entering new markets.

At the level of employer-employee relationships the direct wages represent the wage rate or price of labor. The main part in the price of labor belongs to the direct wage, the award to be obligatorily paid by the employer to the employee according to the amount and quality of his/her labor, as per the prescribed standards, per unit of time. But increasing the price of resource (*e.g.*, growth of wage rate under the pressure of trade unions) shall lead to increase in entrepreneur's expenses, reduction of labor demand and, therefore, to impairment of employment conditions which is a theoretical result of institutional paradigm.

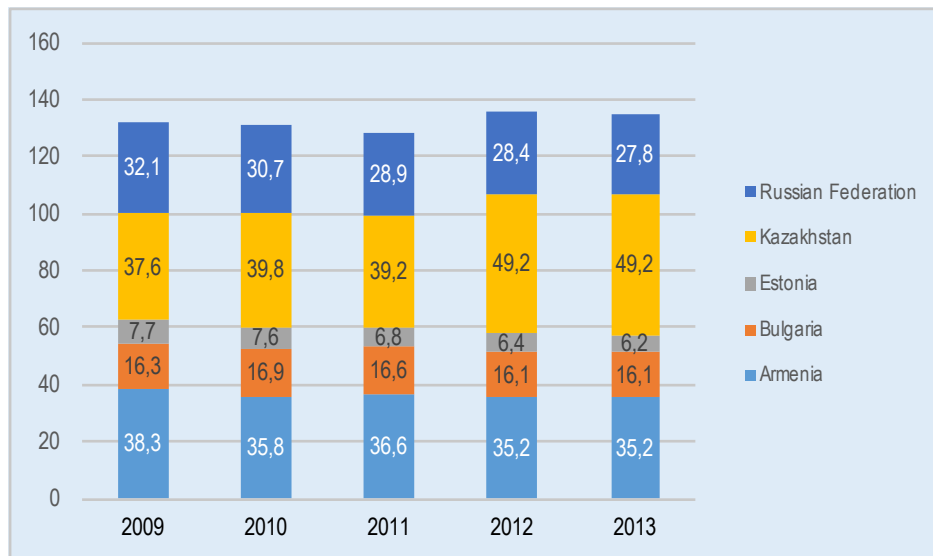
Veber (1992) noticed that "it is important for the trade unions to ensure not only the respective earnings (and other labor conditions) for its members, but employment — as opposed to entrepreneurs, who aimed at profit maximization". So, "with economic growth, actual wages and employment usually increase, and under conditions of crisis both actual wages and employment decrease. Moreover, regardless of being unreasonable, the concept that actual wage growth is caused by the employment decrease is widely used to justify the wage reduction policy and shift the responsibility for unemployment growth to trade unions" (Zolotov and Mazur 2013).

As a back balance to the selfish behavior of employers, who cut their labor costs, certain trade unions agree on wages exceeding the market level. As a result, companies that operate in the market sector with trade unions, cut their number of employees. These employees go to less payable positions in the union-free sectors. This leads to reduction in efficiency and *increase in inequality*, whereas employees having the same level of efficiency earn different wages depending on the fact whether they are trade union members or not.

It should be noted within this context that a valid collective agreement increases the wages above the equilibrium level, but, at the same time, allows the company to be independent in deciding on the number of the required personnel, leading to reduction in personnel and increase in the expected unemployment.

As the analysis shows (Figure 1), specific weight of trade union members in total number of employees within the company varies significantly. For instance, this indicator for the Russian Federation constituted 32.1% in 2009, and it fell to 27.8% by 2013. First of all, this is related to the decline in production and slump in the number of the employed population in conventional industries of the economy or winding-up of companies due to the bankruptcy. Secondly, there is a low share of students who would considerably expand the scale of trade union organizations. The highest growth in the number of trade union members is observed in Kazakhstan, with a tendency to increase from 37.6% in 2009 and up to 49.2% in 2013. Meanwhile, in Bulgaria we observe the reduction in specific weight of employees covered by the collective agreement – from 33% in 2010 to 29% in 2013. Similar indicators of collective agreement coverage in Estonia and Armenia remain practically unchanged for the period of 2010-2013.

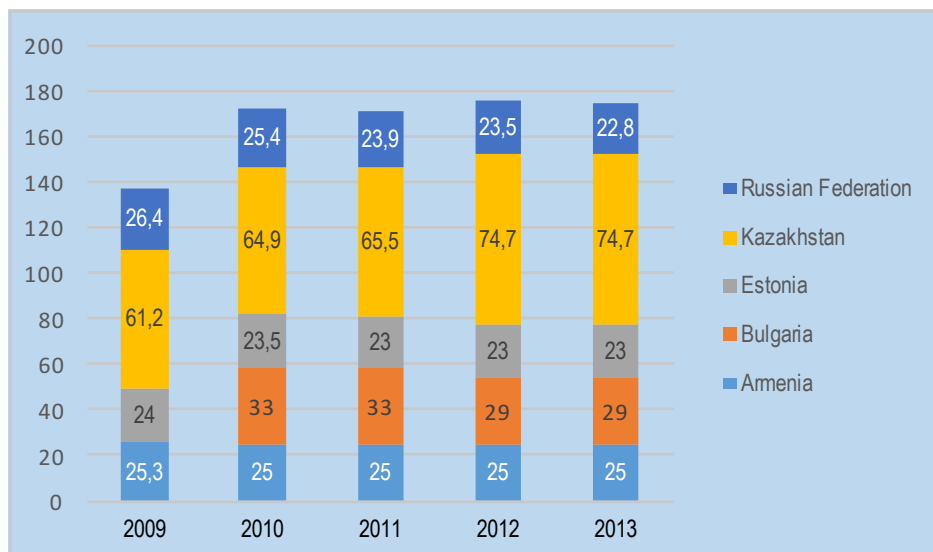
Figure 1. Trade union density ratio trends (number of trade union members, % of total number of employees)



Source: ILO 2017

Moreover, Figure 2 shows that the number of persons covered by the collective agreement for the Russian Federation is subject to significant reduction from 26.4% in 2009 to 22.8% in 2013 from total number of employees. It proves that there are fewer opportunities for negotiations; there is a tendency towards deterioration of the trade union positions and general advanced claims, etc. In Kazakhstan, the number of employees covered by the collective agreement increased from 61.2% in 2009 to 74.7% in 2013, whereas no significant changes are observed for Estonia, Bulgaria and Armenia since 2012. The mentioned above points to the fact that entrepreneurs aim at reduction in costs by freezing the collective agreements, since the level of personnel costs in the trade-union-sectors is usually higher. At the same time, with no investment, it is hardly possible to reach the required productivity, implementation of innovations, technology, and labor management.

Figure 2. Employees covered by the collective agreement, % of total number of employees, (ILO 2017)



Source: ILO 2017

Summers (1986) estimates that 10%-growth in share of employees united in trade unions leads to increase in unemployment by 1.2%. We assume that in such context the institutional mechanism of income and wages inequality shall be greatly focused on “deregulation of labor market aimed at the social security system reform, to make social benefits less generous, at reduction or cancellation of minimal wage, cancellation of employment protection and reduction of the trade union authorities”.

Trade unions fail in their social task exactly in the labor relations segment, where they could have succeeded by their nature, capabilities, and available rights. The problem is made worse by the fact that nobody fulfills functions that should have been fulfilled by trade unions. As a result, unfavorable development of situation in social and labor relations is observed: low income of employees, regular delays in wage payment and non-payments, poor conditions and insufficient level of occupational safety, etc. Abusive practice of employers, who encounter no resistance, has led to delayed restructuring of employment, lack of investment in “human capital assets”, low labor productivity (Klimova 2017).

Therefore, the deal-breaker of sale of goods – the labor force – is changes in employment terms and conditions, favorable for employees and approved in the agreements, as well as frequent strikes of labor collectives in the course of negotiations, the main requirements of which are usually increase in wages (Plaksya 2004). Consequently, when analyzing the economic activity of trade unions, it is assumed that they aim at improving the following two key factors for their members, namely wage rate and employment rate (Borisevich *et al.* 2001).

Thus, their behavior may be described through maximization of trade unions utility function based on these two indicators:

$$U = u(W, N), \tag{1}$$

where: W is the union member wage; N is the number of employed trade union members.

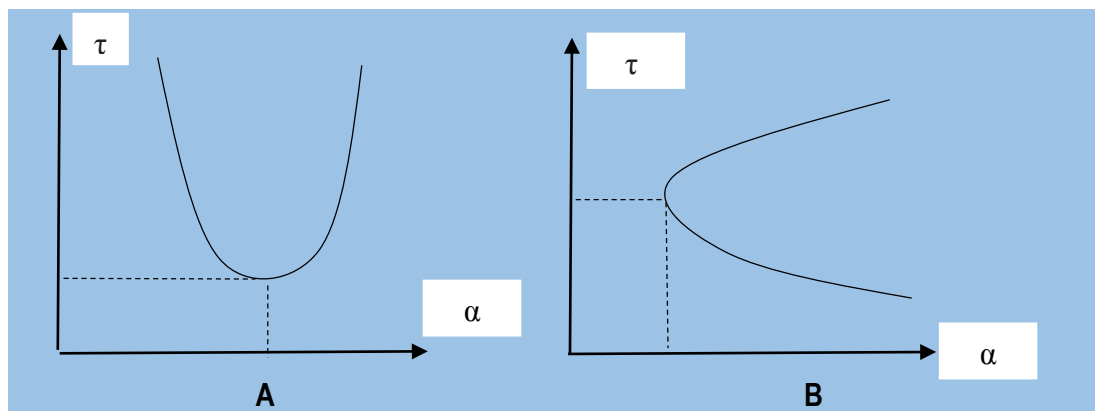
Or other option of trade union utility function can be as follows:

$$U = u(W, N, W_0), \tag{2}$$

where: W_0 is the alternative wage in union-free labor market sector.

Nevertheless, consideration must be given to the wage rate dropping in the beginning and starting to raise again later with increasing working hours, which may be explained by a rapid growth of agent's expenses with $\tau \gg \tau_{min}$. The inverse function describes the ratio of working hours and wage rates and its behavior cannot be predicted. With the wages rate increasing, desired working hours may decrease (the dominance of the income effect) or increase (the dominance of the substitution effect), as demonstrated by Figure 3 (Novikov 2010).

Figure 3. Ratio of wage rate and working hours (A), and working hours and wage rate (B).



To the contrary, some employers have been resorting to recruiting agencies more often, and shifting towards so called triangular industrial relations, while denying the personnel an opportunity to be trade union members,

conclude collective agreements, enjoy established social rights and guarantees, and be permanently employed. All the above predetermines reduction in labor costs and social guarantee potential.

Thus, M. Bailey and F. Gordon were right to underline that “the actual wage rate is specified in labor contracts lower than the average performance, since it accounts for the deduction of the social service provided by employers, who offer a fixed income and protect their employees from market risks” (Malkina *et al.* 2015).

At the same time, price-based labor demand elasticity (response to fluctuations of the price of labor) is not always identical. Thus, increased wages are ensured in the Russian economy by oil prices and not performance (Sulpovar and Bogacheva 2010).

Therefore, any economy that depends on traditional resources is poorly diversified; it is limited in employment capabilities and opening of new labor niches (Danilinko 2014).

Kapelushnikov (2015) once stated that with regard to the Russian economy, “no stable relation has ever been observed here, waves of relative labor cost-cutting used to alternate with waves of relative cost-rising...” and that “a widely known idea of labor cost dynamics outperforming labor performance dynamics is a statistical illusion appearing as a result of incorrect use of official wage figures” (Korogodin and Gaponova 2017). Thus, the poorly diversified economy and an expanding gap between labor performance and actual labor compensation rate is one of institutional traps affecting the growth of inequality among employees.

To solve these controversies, R. Fiman and L. Kats suggested broadening the pattern to explain the inequality of wages and add factors such as labor supply, demand and economic institutions. Speaking of labor supply, educational trends are key factors that affect the inequality. Technological progress leads to an increased demand of highly educated labor and increased wages; however, growing wages create additional stimuli for education, in their turn. With time, rapidly growing supply of highly educated labor may start to have an adverse effect on wages. The ratio of growth rates of demand of highly qualified labor and of supply of such labor is crucial in this race. If the supply growth slower than the demand relative wages of highly educated employees will increase (Lukyanova 2011). All the above is indicative of binary relations in the institutional trap that determined the inequality arising in the process of getting professional training as well.

To exemplify this, let us try and distinguish between two kinds of actors: the performance of actors of the first kind is q_L , and that of the second kind is q_H ; at the same time, $q_H > q_L > 0$. The assumed staff headcount is 1; a portion of high performing employees ($q = q_H$) is σ , and a portion of low performing employees ($q = q_L$) is $1 - \sigma$, respectively. Performance efficiency is not rated for the employer. Therefore, the employer can only rely on a certain observed signal, while recruiting employees and determining their wage rate. The educational background (e) can serve as this signal; it may be defined, for example, as an education obtained (a diploma) or a number of years spent for studying. Moreover, the education performs only informational function for this model, as long as it does not improve employee's performance. Employers are identical and compete at the labor market in accordance with the Bertrand model, which results in establishing the wage rate at the level of the employee's peak performance. Each individual is also assumed to get a heritage in the amount of b_i in the beginning of the time period which makes his initial holdings (Vashchelyuk 2017).

And the genotype of the institutional structure of social and labor relations undergoes principal transformation in the context of institutional traps. Therefore, the growth of earnings does not always depend on the degree, which is particularly typical of the CIS and Russia for university and college graduates and academic degree holders.

For example, Russian economy was trapped in low earnings of high school professors, which contributes to the institute of poverty and liquidation of stimuli to fill certain occupations. At the same time, the study shows an increasing and essential inequality of the hired labor vs the management in terms of income (Table 1).

This gap is most apparent in the US, where a top manager earns 120 times more on the average than an employee. These social indices are a compelling evidence of the US government been excluded from regulation of national income distribution. Even in Western Europe, where the members were most highly successful in their fight against social inequality, this gap is illustrated by tremendous measures: by 25 times in the UK; 22.5 times in France; and 22 times in Germany (Zbyshko 2004).

Table 1. Distributing overall income of high school management and academic staff in the Russian Federation

High school	Earnings [RUB]	R/P ratio [times]	A portion of nominal average monthly earnings of employees (academic staff) and earnings of the <i>i</i> -th manager [%]	A deviation of manager's income and employee's compensation [times] (+ more, – less; than in the RF)		
				UK	France	Germany
Russian State University of Tourism and Services Studies	22,918,786	58.7	1.7	-33.7	-36.2	-36.7
Russian State Social University	41,037,306	105.2	0.95	-80.2	-82.7	-83.2
Moscow State University of Education	7,257,751	18.6	5.37	+6.4	+3.9	+3.4
Moscow Institute of Physics and Technology	18,802,670	39.0	2.56	-14	-16.5	-17
Moscow State Technological University "Stankin"	5,616,789	48.2	2.07	-23.2	-25.7	-26.2
Bauman Moscow State Technical University	7,125,952	18.2	5.49	+6.8	+4.3	+3.8
Moscow Polytechnic University	4,922,178	12.6	7.93	+12.4	+9.9	+9.4

Source: FSSS 2015b; calculated by the authors

Veretennikova (2009) applies the theory of institutional traps with regard to transformational processes in the higher education in Russia and states that “underfunding of universities (the budget covers only the labor cost) against an extensive growth of demand for higher education has led to the derogation of academic stimuli of the faculty members, since the guaranteed financial remuneration does not match the necessary social level, *i.e.* only every fourth teacher (26.3%) on the average felt ‘small but steady earnings’ to be essential”. Therefore, a wide spread of material dependency has not been associated recently with the priority of ‘quality of life’ concept for the academic staff (Sulpovar 2010).

This mechanism of dissatisfaction determines the depression of social and labor relations in the high school, especially in regions. It should be mentioned that the Gallup Poll on the poverty line was held at the end of the nineties: “Individuals with their income below a certain line may be considered poor (Ovcharova 2009).

As mentioned above, formation of institutional traps is associated with a fall in employment rates and actual wages. Therefore, P. Simonin and coauthors (2016) indicated that changes in actual wages towards growth happen slower than those of nominal earnings (price of labor), *i.e.* it is characterized by its inflexibility towards increase in the labor market.

Such manifestations of adverse social and labor relations are more apparent at the time of crisis, resulting in ruble depreciation and accompanied by the accelerated inflation and decreased personal income. Price advance outranking wage growth has cut down actual personal income (Zagashvili 2016). The latter includes the labor compensation institution in the Russian Federation that has been affected not only by the collective contractual regulation factors, but also by the factors that are estimated by trade unions and researchers as being extremely low and associated with the institute of ownership right transfer for the benefit of labor remuneration, since modified payment conditions lead to labor agreement amendments (Karpushkina 2011). That is precisely why the “employers’ quire often prefers an increase in personal income of business owners, with the savings portion to be used for standard portfolio investment”, rather than for the personnel (Manokhina 2011).

The Nobel Prize Winner Sir Angus Deaton (2016) points out “globalization and new ways of doing things have led to continuing increases in prosperity in rich countries, though the rates of growth have been slower – not only than in the fast-growing poor countries, but also than they used to be in the rich countries themselves”.

Despite the rates of the population prosperity growth have been slowing down, the report on the least developed countries states “poverty reduction in these circumstances necessarily involves income transfers, social

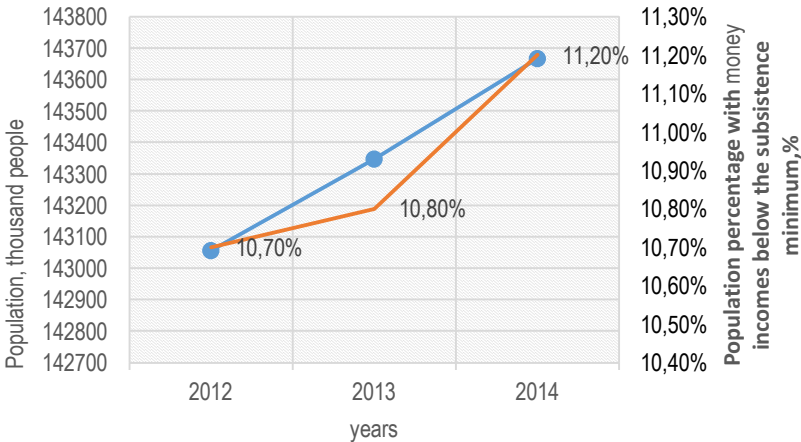
welfare systems or targeted job creation programs” (UNCTAD 2002). Special attention should be drawn to the abrupt slow-down of actual wages observed in the labor market during the 2008-2009 crisis and indicative of an ineffective institution of pricing. Average monthly actual wages increased by 2.0% globally in 2013.

Actual wages fell by 3.5% during the last crisis and by 9% during the current crisis in the Russian Federation. Thus, the shift to the negative range was deeper and lasted longer in 2015 than in 2009. For example, seasonal corrected estimates of monthly rates of actual wage growth for 1998-2016 indicate a rapid bounce of the actual wages in 2009 following a short decline, while it remained on the plateau for a long time in 2015. A strong and prolonged reduction in labor price supported higher labor demand, thus inhibiting any rise in unemployment.

Annual fluctuations of the average actual wage may be associated with increased or decreased cost of hired labor, as well as with changes in labor composition. The so-called effect of composition leads to anti-cyclic data distortion (wage growth is underestimated at the time of economic boost, same as wage fall is underestimated at the time of recession). At the times of economic boosts and recessions actual wages are corrected more fundamentally than was assumed earlier.

Actual income has still been declining in Russia; therefore, a lot of people can no longer be considered as the middle class. Again, a portion of population that is still referred to the middle-class (in terms of income) has been changing its habits gradually, while denying itself FMCGs, putting off major purchases because of lack of confidence in the future, cutting entertainment expenses, etc. This fact may be indicative of the middle class gradually losing its traditional role as the driving force of economic expansion (PWC 2015).

Figure 4. The dynamics of population change and the population percentage with money income below the subsistence minimum in 2012-2014 in the Russian Federation



Source: FSSS, 2015a

Under current conditions, in the context of real curtailment of government spending, wages in the public sector will keep labor costs under control. Modest prospects for oil and gas exports will limit the wage hikes in the fuel and energy complex and other sectors of the economy. These expectations give a chance for a reverse in the long-term trend and the beginning of a long period of labor unit cost reduction for the first time in 20 years, which will lead to an increase in the profit share in the gross income of the economy. The new factor, that is cheap labor, will be beneficial to labor-intensive industries. But the most labor-intensive sectors of the Russian economy, that is, trade, construction, and services, will also be under pressure of the stagnant demand, and cheap labor will only partially be able to smooth out the negative trends. The cheapening labor resources will tangibly support only those industries with high labor costs in which domestic demand is stimulated by a rise in the cost of imports; mostly, these are the agro-industrial complex, the consumer goods industry, electronics, electrical engineering (Kulikov *et al.* 2016).

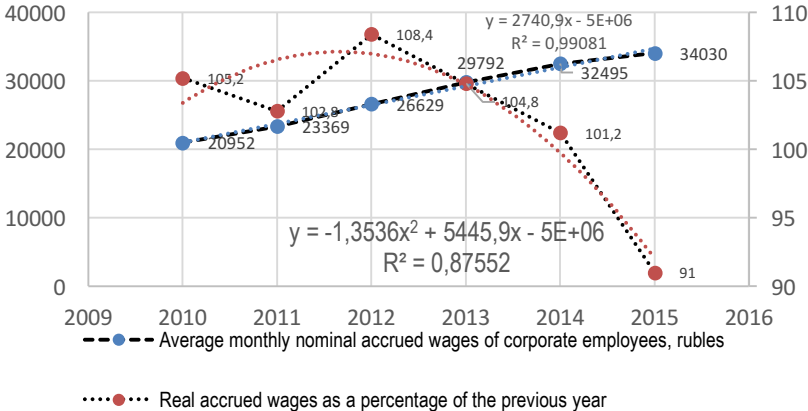
As a result, there is a stable tendency of population income inequality, which is usually presented in the form of a pyramid with a stable base of the extreme poor comprising 50% of the population, the middle class (30%), and the business leaders (20%) (Oreshina *et al.* 2017).

Over the past years, society has been confronted with poverty incidence. In Russia, almost 22.9 million people derive an income below the subsistence minimum. For the period of 2012-2014 alone, the ratio of persons earning income below the subsistence level increased from 10.7% to 11.2% (Figure 4). In 2016, the poverty rate slightly decreased, but the vulnerability remains at a higher level than before (WBG 2016).

According to the December report on human development by the Analytical Center under the Government of the Russian Federation, by 2013, extreme poverty in the Russian Federation (in the UN Millennium Declaration, the proportion of the population with incomes below 1.25 and below \$2.5 per day taking into account purchasing power parity) had been eradicated. Its average official rates also declined: the share of citizens with incomes below the subsistence minimum was halved to 10.8% from the beginning of the century to 2013, and the level of extreme poverty (the share of citizens with incomes less than half of it) was reduced to almost one-fourth, to 1.1%, by 2014. If using the methodology for assessing poverty rate adopted in the world (the share of citizens earning less than half of the median per capita money income), it increased from 17.5% in 2001 to 18.5% in 2014 (Kozyrev 2016). Paradoxically, even an able-bodied Russian can fall among the poor since the minimum wage does not allow meeting even the physiological needs of the working staff.

The foregoing allows one to identify a methodological problem: the existence of an institutional trap, that is, the realization of a gap between the minimum wage rate, the subsistence minimum, and real wages (despite the growth of the average monthly nominal wage rate, the real wages have decreased) due to ineffectiveness of the wage institution (Figure 5).

Figure 5. Dynamics of the average monthly nominal and real accrued wages in 2010-2015 in the Russian Federation



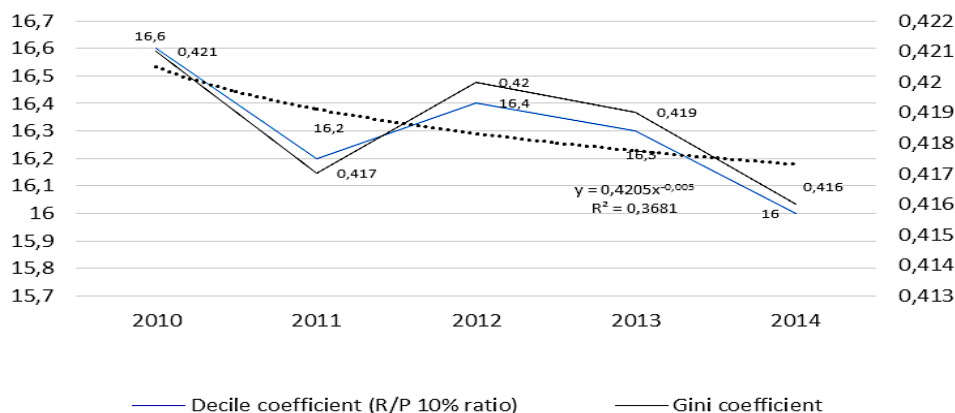
Source: FSSS, 2016

In this area of research, there is one more tendency that emphasizes the deformation of the labor remuneration institution and the development of prerequisites for inequality, that is, the deviation of income distribution among the population groups from equipartition (Figure 6). For example, Gini coefficient in the Russian Federation ranged from 0.421 in 2010 to 0.416 in 2014 (that is, there is a very slight decrease in Gini coefficient by only 0.5% compared to 2010, which points to unresolved institutional problems of inequality). Tougher macroeconomic policies and institutional changes have negligibly slowed the process of redistribution of the population's income in favor of high-income groups in recent years. Obviously, the current system of scientific recommendations should be based on the methodology of international practices and a practical application of the decile coefficient which should not exceed 8 to 10; otherwise the situation in a democratic country is fraught with social earthquakes (Kalabekov 2008 – 2017).

It can be stated that in Russia, the decile coefficient is at least twice as high as recommended standard values. At the same time, in the discourse of the current reasoning, the decile coefficient and Gini coefficient show which institutional traps form such an inequality and, therefore, lead to a need to transform the institution of social and labor relations.

The growth of regional inequality in the Russian Federation is indicated by a migration outflow of the most active and qualified part of the able-bodied population from regions with low incomes and poor social infrastructure to regions with a higher level of remuneration, opportunities for professional growth, and the availability of social services. This outflow reduces the labor potential of the decrement territory, the income level, and the purchasing power of the permanently resident population, and, as a consequence, the investment attractiveness of the territory. In other words, the process of its socio-economic degradation is launched and maintained (Gerasimova and Gerasimova 2014).

Figure 6. Dynamics of Gini coefficient in the Russian Federation in 2010-2014



Source: FSSS 2016

From the theoretical standpoint, a more profound analysis of the institutional traps of wages and income inequality is associated with the influence of non-market factors of wage differentiation: the influence of trade union organizations is factor A (Bryson 2007); mobility of labor is factor B (Mincer and Jovanovic 1981); labor discrimination is factor C (Krieger and Fiske 2006); a difference in education and qualifications is factor D (Fields 2002); a compensation policy for unattractive work is factor E (Van Parijs and Vanderborght 2017).

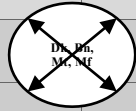
Therefore, the authors believe that non-market impacts can lead to significant changes in the institutional structure and are fairly predictable in the process of reforming the system of social and labor relations.

In this regard, the results of this study have shown a presence of institutional traps of non-market indicators affecting the wages and income inequality: Dk stands for collective employment agreements; Dn stands for regional minimum wage; Mt stands for labor supply; Mp stands for labor productivity (Table 2).

Such indicators allow one to quickly implement the methodology of using *non-market indicators*, to establish criteria for validity of the principles and axiomatics of workforce wages and income inequality, ways of conceptualization, and formation of institutional traps. The analysis is to be carried out on the basis of using the four areas located in the respective quadrants.

Table 2. Matrix of non-market indicators for analyzing the wages and income inequality (developed by the authors)

Institutional traps	
FACTOR – A (influence of institutional factor, that is, trade unions)	
Denomination of socially significant non-market indicators	
D_K – collective agreements	D_N – regional minimum wage rate
1) leading the trends in changing the rate of remuneration; 2) emergence of socio-economic agents reducing the employment rate; 3) narrowing of the gap between qualified and unqualified workers	1) participation in establishing a regional minimum wage rate; 2) is of non-binding nature focusing on the federal minimum wage rate; 3) risks of differentiating the minimum wage rate and the ratio between the subsistence minimum and the average remuneration that do not ensure sufficient reproduction of labor
M_T – labor supply	M_P – labor productivity
1) control over the supply of labor; 2) a potential for growth in the number of unoccupied population as they are not able to find a job with the wages determined by trade union; 3) preconditions for growth in labor supply to lower-income jobs that are not covered by trade union activities	1) growth in labor productivity is used only to increase profits; 2) promotion of labor productivity growth is not accompanied by real wage growth.



Area 1 (D_K – collective agreements): the impact of this indicator on the wages and income level for waged labor is associated with a reduction in the risks of delay in payment of wages and increased social security of employees. However, in practice, this means increasing labor costs for the employer, stimulating business costs, and changing the respective conditions: compensation payments, wages indexation, additional payments and incentive bonuses, uplifts, periodicity system of payments, growth of transactional costs for tripartite contracts, emergence of socio-economic agents reducing the employment rate; narrowing of the gap between qualified and unqualified workers, etc., and, as a result of lack of investment, inhibition of structural and technological modernization. The increase in the resource price expressed in the wage rate growth under the pressure of trade unions increases the costs of employers, leads to a reduction in the demand for labor, and, consequently, to deteriorating terms of employment.

Area 2 (D_N – regional minimum wage rate): this indicator can positively affect a raise to the subsistence level in the context of particular regions but not provide sufficient reproduction of labor power. At the same time, risks are brought for business in terms of prerequisites for an increase in the share of the payroll budget in the production cost.

Area 3 (M_T – labor supply): commitment to the conditions of perfect competition provides a potential for unemployment rate growth, that is, an excess of labor supply over demand, reduces the price of labor services, which should change depending on the market conditions. This does not happen in the presence of trade unions, which indicates the monopoly of trade unions on the sale of labor, and also creates additional prerequisites for a growth of labor supply to lower-income jobs that are not covered by the trade union activities. At the same time, labor subjects are not able to find a job with the wages determined by the trade union.

Area 4 (M_P – labor productivity): under the conditions of trade union activities which seek to increase wages and the number of trade union members, there is an intractable decline in the rate of remuneration. At the same time, this encourages employers to increase the personnel labor productivity so that it corresponds to a certain price of labor, while labor productivity growth is used only to increase profits and is generally not accompanied by a real wage growth

Further studies of institutional traps of wages and income inequality of working population should be conducted based on elaborating compromise solutions and specific instruments for selecting tax structures

depending on the social security function and the attitude to inequality. Gaining an insight into institutional traps in this area is of interest to leading scientists: continued application of a single tax rate contributes to further differentiation of the Russian society by income brackets (Izotova 2014); Joel Stiglitz (2001), Nobel laureate, focuses on the selection of tax structures depending on the function of social security (attitude to inequality).

A timely identification of institutional traps helps reduce inequality through taxes, a preference of progressivity, composition, and amount; hence, it largely determines equity (IBRD 2016). In contrast to the proportional tax rate, fiscal systems should be focused on the problems of leveling incomes, gradual reduction of the tax burden on low-income segments of the population, and maintenance of social justice (Sinelnikov-Murylev *et al.* 2011). Otherwise, conditions of life, welfare, material security, decent wages (Gibalo *et al.* 2002) acceptable for the majority of the population including for employees are impossible.

Conclusion

Obviously, poorly implemented institutional measures to reduce the poverty rate in the workforce can cause justified objections from both their supporters and opponents. Therefore, the inequality of money incomes does not only entail social stratification and deterioration in the quality of life but also a growth of social tension, and intensifies separatist sentiments in the society. At the same time, practice and institutional economics have proved that the main tool to form an effective system of social and labor relations is a selection of instruments and structures that would affect the development of social security and the reduction of inequality based on an effective mechanism for redistributing and eliminating institutional traps.

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References

- [1] Bogaevskaya O.V. 2012. *American Corporations: Mechanisms for Preserving Leadership in the Global Economy*. Moscow: IMEMO RAS.
- [2] Borisevich, V.I., Kandaurova, G.A., Kandaurov, N.N. *et al.* 2001. *Forecasting and Planning of the Economy*. Minsk: Interpresservis; Ecoperspectiva
- [3] Bryson, A. 2007. The Effect of Trade Unions on Wages, Reflets et perspectives. *Policy Studies Institute*, XLVI, 2 (3): 33-45. DOI:10.3917/rpve.462.0033.
- [4] Danilinko, L.N. 2014. *Rent and Raw Materials Economy of Russia and the Problems of its Transformation*. Phd Thesis In Economics, Pskov.
- [5] Deaton, A. 2016. *The Great Escape: Health, Wealth and the Origins of Inequality*. Transl. from English by A. Guskov. Moscow: Gaidar Institute Press; Liberal Mission Foundation, 21-22 pp
- [6] Dolzhenko, R.A. 2014. The Research Scheme of the Labor Relations Analysis from Position of New Institutional Economics. *Bulletin of Omsk University*, 4: 23-30.
- [7] Fields, G. 2002. *Accounting for Income Inequality and its Change: A New Method, with Applications to the Distribution of Earnings in the United States (manuscript)*. Cornell University, ILR school Available at: <http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1267&context=article>
- [8] Gerasimova, I.A, and Gerasimova, E.V. 2014. Income Inequality in Russian Federation (a Cross-Temporal and Cross-Spatial Analysis). *The World of Russia*, 2: 39-72.
- [9] Gibalo N.P., Skarzhinsky, M.I., Skarzhinskaya, E.M., Chekmarev, V.V. 2002. *Problems of the institutionalization of the Russian economy: A monograph*. Kostroma: Nekrasov State University Press, 169 pp.

- [10] Gill, I.S. and Kharas, H. 2015. *The Middle-Income Trap Turns Ten* (August 26). World Bank Policy Research Working Paper No. 7403. Available at: <https://ssrn.com/abstract=2651983>
- [11] Ivanov, Yu.V. 2015. Efficiency of the enterprise residents' activity. *Innovations in Management*, 4: 22-27.
- [12] Izotova, O.I. 2014. *Prospects of reforming the personal income tax as an instrument of the state social policy*. Candidate Thesis in Economics. Moscow, 86-87 pp.
- [13] Kalabekov, I.G. 2008-2017. *Reforms in Russia in the figures and facts*. Available at: <http://refru.ru/incomes.pdf>
- [14] Karpushkina, A.V. 2011. *Institutional environment of social and labor relations (regional aspect): a monograph*. Chelyabinsk: Publishing Center of SUSU, 43-70 pp.
- [15] Korogodin, I.T., and Gaponova, S.N. 2017. *Principles of the analysis of correlation between salary growth and labor productivity*. Available at: http://teoria-practica.ru/rus/files/arhiv_zhumala/2015/8/economics/korogodin-gaponova.pdf
- [16] Kozyrev A.A. 2016. Recommendations of the Nobel Laureate on Economy to Russia or How Can We Realize Competitive Advantages. *Managerial Consulting*, 1: 47-62.
- [17] Krieger, H.L. and Fiske, S.T. 2006. *Behavioral Realism in Employment Discrimination Law: Implicit Bias and Disparate Treatment*, 94 Cal. L. Rev. 997. Available at: <http://scholarship.law.berkeley.edu/california-lawreview/vol94/iss4/3>
- [18] Kulikov, D., Porokhova, N., Mukhina, M. 2016. *The economy of Russia: without the usual conditions for growth, but with incentives for change. Forecast of the Russian economy until 2020*. Available at: https://www.acra-ratings.ru/storage/comment/12/20160321_FRFDKr.pdf
- [19] Lukyanova, A. 2011. Wage Inequality in Russian Economic Transition (1991–2008): Stylized Facts and Explanations. *Journal of the New Economic Association*, 12: 124-148.
- [20] Makarova E.P. Institutional traps preventing the formation of socially responsible business. *Bulletin of Chelyabinsk State University*, 36(251); *Economics*, 35: 62-64.
- [21] Malkina, M.Yu., Loginova, T.P., Lyadova, E.V. 2015. *Institutional Economics*. Nizhny Novgorod: Nizhny Novgorod State University Press.
- [22] Manohina, N.V. 2011. Institutional Traps and Institutional Vacuum in the Russian Innovation Environment. *Bulletin of Saratov State Social and Economic University*, 5: 44-48.
- [23] Mincer, J., and Jovanovic, B. 1981. *Labor Mobility and Wages*. In Rosen, Sh. (Ed.) *Studies in Labor Markets*. University of Chicago Press, 21-64 pp. Available at: <http://www.nber.org/chapters/c8907>
- [24] Novikov, D.A. 2010. *Experimental research of individual labor supply strategies*. Moscow: Egves.
- [25] Oreshina, O., Povorina, E.V., Vinogradova, M.V. 2017. Adaptation of Macro-Economic Models to Solving the Problem of Countries Differentiation in Global Economy. *Integration and Clustering for Sustainable Economic Growth*. Part IV, 441-449 pp.
- [26] Ovcharova, L.N. 2009. *Theoretical and practical approaches to assessing the poverty level, profile and factors: Russian and international experience*. Institute of Social and Economic Problems of Population of the Russian Academy of Sciences. Moscow: M-Studio, 44 pp.
- [27] Plaksya, V.I. 2004. *Unemployment: theory and modern Russian practice (socio-economic aspect)*. Moscow: RAGS Press.
- [28] Polterovich, V.M. 1999. Institutional traps and economic reforms. *Economics and Mathematical Methods*, 35: 12-21. Available at: http://members.tripod.com/VM_Polterovich/ep99001.pdf

- [29] Pshenisnova, S.R., Zinchenko, N.V. 2011. *Development of the labor market in Russia: a monograph*. Krasnodar: Kuban Institute of Socioeconomics and Law. The Academy of Labor and Social Relations Press.
- [30] Simonin, P.V., Bogacheva, T.V., Alexeenko, V.B., Vetrova, E.A., Sokolova, A.P. 2016. Institutionalization of Conflict and Compromise Solutions and Social and Labor Relations in Higher Educational Institutions. *Indian Journal of Science and Technology*, 9(19). DOI: 10.17485/ijst/2016/v9i19/93906. Available at: <http://www.indjst.org/index.php/indjst/article/viewFile/93906/69784>
- [31] Sinelnikov-Murylev, S., Kadochnikov, P., Idrisov, G. 2011. *Corporate profit tax: analysis of the 2001 reform and modeling of the tax potential of the regions*. Moscow: Gaidar Institute, 10 pp.
- [32] Stiglitz, J.E. 2001. *Information and the change in the paradigm in economics* Available at: http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2001/stiglitz-lecture.pdf
- [33] Sulpovar, L.B., and Bogacheva, T.V. 2010. *Socially-oriented marketing strategy of enterprises in crisis conditions: a monograph*. Moscow: Stepanenko Publisher.
- [34] Summers L.N. 1986. Why Is the Unemployment Rate So Very High near Full Employment? *Brookings Papers on Economic Activity*, 47(2): 339-396.
- [35] Tsvetkova, G.S. 2013. Institutional traps as failures of institutional interaction. *Innovative Technologies of Management and Law*, 1-2(5): 35-39.
- [36] Van Parijs, Ph. and Vanderborght, Ya. 2017. *Basic Income. A Radical Proposal for a Free Society and Sane Economy*. Harvard University Press, ISBN-10: 0674052285, 400 pp.
- [37] Vashchelyuk, N.V. 2017. *Modeling the impact of inequality in the distribution of income on economic growth*. Moscow: M.V. Lomonosov Moscow State University Press. Available at: http://archive.econ.msu.ru/ext/lib/Category/x0d/x0c/3340/file/2_Vascelyuk.pdf
- [38] Veber, A.B. 1992. *Market, trade union, wages*. Available at: https://www.civisbook.ru/files/File/Veber_1992_1.pdf
- [39] Veretennikova N.V. 2009. Institutional traps of the Russian education system. *Bulletin of Tomsk State University. The Economy*, 1(5): 8-18.
- [40] Zagashvili, V. 2016. Diversification of the Economy in the Conditions of Sanctions. *World Economy and International Relations*, 60(6): 52-60.
- [41] Zbyshko, B.G. 2004. *Regulation of social and labor relations in Russia (international and national aspect)*. Monograph, Moscow: Social Insurance Press.
- [42] Zolotov, A.V., and Mazur, O.A. 2013. Trade Unions as an Objective Need of Extended Reproduction of the Aggregate Worker. *Bulletin of Lobachevsky State University of Nizhny Novgorod*, 5(1): 284-287.
- *** FSSS, 2015a. Demographic Yearbook of Russia. Available at: http://www.gks.ru/bgd/regl/B15_16/Main.htm
- *** FSSS. 2015b; Labor and Employment in Russia. Available at: http://www.gks.ru/bgd/regl/b15_36/Main.htm
- *** FSSS. 2016. Russian Statistical Yearbook - 2015. Available at: http://www.gks.ru/bgd/regl/b15_13/Main.htm
- *** IBRD. 2016. Poverty and shared prosperity. Taking on inequality. International Bank for Reconstruction and Development. Available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/25078/9781464809583.pdf.p.151>
- *** ILO. 2015. Global Wage Report 2014/15. Wages and income inequality. International Labour Office. Geneva, 9-18 pp. Available at: http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_324678.pdf

- *** ILO. 2017. Trade union density rate. International Labor Organization, Available at: <http://www.ilo.org/ilostat/faces>
- *** The Directive of the RF Government as of 17.11.2008 No 1662-r (as amended on 10.02.2017) "On the concept of long-term socio-economic development of the Russian Federation until 2020"
- *** UNCTAD. 2002. The Least Developed Countries Report 2002. United Nations Conference on Trade and Development. Geneva. Available at: http://unctad.org/en/Docs/lcd2002_en.pdf
- *** WBG 2016. Russia Economic Report. No. 36 | November 2016. World Bank Group 7-8 pp. Available at: <http://pubdocs.worldbank.org/en/429441478647721427/Russia-RER-36-Eng.pdf>
- *** PWC. 2015. Russia's current economic downturn: A 360° view. Available at: https://www.pwc.ru/en/publications/assets/e-crisis-survey_eng.pdf

Guanxi and the Leader-Member Exchange in the Chinese Supervisor and Subordinate Relationship

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Abstract:

The purpose of the study was to investigate the effect of Confucianism and the Organisational Ethical Climate on the Leader-Member Exchange using *Guanxi* as the mediation variable. This study was motivated by an interest in the phenomenon of the working relationship between Chinese supervisors/managers and Chinese employees in various companies in Indonesia. This study was conducted from September to December 2016 in Jakarta and the respondents were Chinese employees with at least one-year work experience who had Chinese supervisors/managers. This study used Partial Least Square-Structural Equation Model (PLS-SEM) techniques. The results of this study showed that Confucianism and the Organisational Ethical Climate positively and significantly influenced *Guanxi*, and *Guanxi* positively and significantly influenced the Leader-Member Exchange. Confucianism and the Organisational Ethical Climate also had a positive and significant indirect effect on the Leader-Member Exchange.

Keywords Chinese ethnic; confucianism; organisational ethical climate; *Guanxi*; Leader-Member Exchange (LMX).

JEL Classification: M12

Introduction

People with similar perceptual styles are drawn to each other, understand each other better, work more efficiently together, and are more satisfied with working together than those who have different views or perceptions of the world. Thus, it is no wonder that a world with culturally diverse teams may be problematic. Even though people are often drawn to people who are similar to them, like in individuals with similar values, or similarities in age, race, gender and nationality (Salk and Brennan 2000, Tiina 2015), the communication styles may still be different or complementary. For example, more talkative people may prefer more a quiet partner (Tiina 2015).

The Chinese's good business skills often become a source of conflict in some countries, especially in Southeast Asia (Thee 2006). This occurs because of a lack of understanding about the different cultural contexts of each nation. In an organisation, a problem that occurs frequently is changes in the context of a team and the orientation of team members in a new place (Salk and Brannen 2000). However, the Chinese people have many different ways to face this cultural context problem. Chinese people are taught to control themselves, where they must understand that they themselves as individuals are not important, but their role as individuals in a group are more important. This is especially true within the family (O'Keefe and O'Keefe 1997).

With a background of trade experiences, to avoid natural disasters and political instability, Chinese people have migrated to various countries as immigrants, also referred to as *huaqiao*. Many of the *huaqiao* chose Southeast Asia as their new quarters, and succeeded in dominating the domestic businesses, although originally being underappreciated. Table 1 shows the success of Chinese ethnics in dominating businesses in Southeast Asian countries.

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From Table 1, it can be seen that more than 50 percent of the country's capital is owned by the Chinese people. Among the many countries in the world that are inhabited by the Chinese people, Indonesia has a Chinese population that was already rooted in the country prior to the increase of Chinese immigration. Indonesian Chinese people who have ancestors from China are also called the Chinese-Indonesian ethnicity. Chinese-Indonesian ancestors immigrated in waves hundreds of years ago through trading activities. After Indonesia gained independence, Chinese people who had already gained Indonesian citizenship were listed as one of the tribes in Indonesia's national scope, in accordance with Law No. 12 of 2006 Chapter 2 about the Citizenship of the Republic of Indonesia. It cannot be denied that in the Jakarta city history, Chinese people have settled for hundreds of years in the city. There is a place is now called Chinatown and currently accommodates the thousands of Chinese people who came to Jakarta in the part two centuries.

Table 1. Indications of Huaqiao's economic power

Country	Population (million)	Huaqiao's Percentage	Huaqiao's Percentage in private capital, corporate, & domestic
Indonesia	201	3,5	70
Malaysia	20	29	60
Philippine	73	2	55
Singapore	3,5	77	70
Thailand	60	10	75

Source: Backman 2000, 193

A phenomenon of this study is that one of the Chinese people's habits that are often used in business is developing a business network that contains people who have certain relations (e.g. family member, close friends) because of their mutual trust in one another. Through the business network, these Chinese people are helping each other in getting profit. This is an important element in building a business network that is not commonly used in western culture. This phenomenon is called people *guanxi*.

Guanxi is a unique phenomenon in the business activities of a Chinese society. Although *guanxi* is also used by many people outside the Chinese ethnicity, it is generally kept separate from the business world. The West's business model largely suppresses and eliminates business practices that are based on specific relationships, such as *guanxi*. However, Chinese society in various places is still using *guanxi* for their business activities with profitable results (Setyawan 2005). The phenomenon of "*guanxi*" can be defined as the personal ties that connect a person with another closely.

Personal relationships and trust relationships were the basis for the overseas Chinese business network. *Guanxi* is a connection concept of using personal relationships to collaborate with other individuals directly. This relationship is built by the existence of kinship, tribe, and the use of the same languages among fellow Chinese people. This is seen as an important characteristic of Chinese society (Purwanto 2014).

Use of the family name as a unifying form is a basic form of *guanxi* that was common among Chinese traders. Chinese people who have the same family name usual form a business network and the interaction of *guanxi* can occur. Generally, the Chinese people have a strong sense of brotherhood.

The family name could strengthen the unity and open up opportunities for cooperation among individuals or groups. Thus, it is not surprising that the majority of Chinese people only entrust their business to their own people or their own family. Regardless of this, *guanxi* can be accepted by Non-Chinese people. *Guanxi* was proven within the Chinese society and could help make China superior in the global economy. It was proven by many Chinese people that *guanxi* was a key to the success of their business. In addition, *guanxi* was successfully in building a strong and wide business network globally.

The research of Lin (2011) showed the perspective of respondents in Taiwan and Mainland China who had at least one-year of work experience. Lin (2011) examined the influence of Confucianism and the organisational ethical climate and found that the Chinese people of Taiwan, who preserves more Confucian culture than the Chinese of Mainland China, tended to put much emphasis on *guanxi*, especially with respect to *mianzi*. Lin (2011)

suggested the amplification of the research scope in other Asian countries. Thus, this study was conducted in Indonesia.

Guanxi is one of the most important elements in the Chinese business network. The advantages and disadvantages of applying *guanxi* in the business world is being debated frequently. But, in fact, the Chinese society who has implemented *guanxi* in various countries, especially in Southeast Asia, shows a high level of success and prosperity. However, there are some people who regard *guanxi* as an act of exclusivism too. For example, the advantage of *guanxi* only spread to those who are in the same business network. There are many indigenous people who think that *guanxi* spreads the advantage only to those who are from the Chinese ethnicity too. This is why the understanding of *guanxi* in Chinese business networks need to be considered and studied to obtain further insight into how it actually works.

In companies, Chinese people often use *guanxi* to determine the next leader. There are very few Chinese people who cannot be open minded and accept the assimilation. Although it is more personal than the other ethnic groups, *guanxi* is important for the Chinese in the business world. On the contrary, relationships in the Western culture are built on business objectives first, then improving the relationship network. Chinese people believe that a relationship network is the first step in forming a business trust. Therefore, they are more oriented to building the long-term business trust. This study noticed that the Chinese employees who have Chinese supervisor/managers are utilizing *guanxi* in their relationship. Nie and Lamsa (2015) showed similarities and differences between *Guanxi* and the Western LMX (Leader-Member Exchange) theory. Ahmed *et al.* (2014) examined and found that *Guanxi* positively predicts LMX relations.

Based on the above background, this study was conducted to examine the following:

- the effect of Confucianism on *guanxi*;
- the effect of the organisational ethical climate on *guanxi*;
- the effect of *guanxi* on the Leader-Member Exchange.

1. Literature review

1.1. Confucianism

According to Lam *et al.* (1994, Liao and Sohmen 2001, Weber 1964, Wang 2012), Confucianism as the cultural cornerstone of all Chinese communities worldwide, is fundamentally hostile to entrepreneurship, mainly because Confucianism traditionally disparages merchants, and stresses rote learning and learning for careers in government bureaucracies. Confucianism is also described as long-term orientation, which refers to “the acceptance of the legitimacy of hierarchy and the valuing of perseverance and thrift, all without undue emphasis on tradition and social obligations that could impede business initiative” (Franke *et al.* 1991, Lin 2011). Influenced by Confucianism, people in East Asian societies are used to a hierarchical ranking of authority in the family, as well as in educational and sociopolitical institutions (Ho 1996, Wang 2012).

1.2. Organisational ethical climate

Sinclair (1993 Lin 2011) thought that the organisational ethical climate in firms is one of the most important factors that influences ethical behaviors of employees. Thus, if one can understand the relationships between the business ethical climate and ethical behaviors, one will know how to manage them. Direct managers are important in the organisational study due to the linkage role they play. Serving as linkages between the top managers they report to and the subordinates that they supervise, employees look to these managers as a role model (Lam *et al.* 2010, Yang 2014).

1.3. *Guanxi*

Guanxi is the concept that is often mentioned in inter-organisational cooperation and it can be viewed as a kind of friendship, which continues to exchange help (Pye 1992, Lin 2011). There is a consensus among researchers who have discussed different types of *guanxi* that *guanxi* is based on blood ties (family or in-laws) and is inherently different from *guanxi* based on non kin ties. The most important distinction between kin and non kin *guanxi* is that favors to family members do not need to be repaid, whereas favors from nonfamily members must be (Bond 1999,

Bedford 2011, Tsang 1997, Lin 2011) further pointed out that *guanxi* is an important resource for competitive advantages. In fact, the establishment of *guanxi* is a point worthy of note for both Western and Eastern business managers. The basic concept is to view the *guanxi* network as a positive method of management, where running a business involves an idea similar to “partnership” and “network” through the establishment and maintenance of *guanxi* networks.

Guanxi is a relationship that refers to an individual's informal personal relationship with another individual who brings hope and obligation to facilitate the exchange (Davies *et al.* 1995, Leung *et al.* 2005). In the Chinese context, special emphasis was placed on the exploitation of the *guanxi* network, which may offer the opportunity to access the information that is reliable and accurate, quickly and efficiently (Park and Luo 2001, Millington *et al.* 2006). *Guanxi* in business relationships is a commitment to do the best for one another with the social norms of reciprocity and social obligations. That is, if you get help based on human obligations, you are obliged to pay them back in the future (Octari and Purwanto 2017).

Guanxi is a system of personal relationships that bring long-term social obligations and has an important role in the relationships within and between Chinese organisations (Park and Luo 2001, Millington *et al.* 2006). In China, many people will help their relatives or friends to be seen as an important person of the government. For example, one may say “My uncle has made this and that. You can help if you want” (Millington *et al.* 2006). Zolkiewski and Feng (2012) found that *guanxi* acts as an initiator, while the trust relationship determines how successful the relationship will be. With good *guanxi*, it will increase the mutual trust between individuals (Octari and Purwanto 2017).

Guanxi emphasises personal relationships, which is quite different to the Western culture. *Guanxi* is one of the most important issues related to the Chinese people nowadays (Lee and Dawes 2005, Zolkiewski and Feng 2012). *Guanxi* is an intricate and pervasive relational network consisting of mutual obligations, assurances, and understandings (Park and Luo 2001, Zhang and Zhang 2006). *Guanxi* is regarded as an important way of binding people to live in a harmonious relationship together, while those who do not share these bonds are considered as outsiders.

1.4. Leader-Member Exchange

The LMX theory is based on the principle that each leader–follower relationship within a work group is unique and varying in quality (Anand *et al.* 2011, Nie and Lamsa 2015). Low LMX relationships are characterised by economic exchange based mainly on formal and tangible assets, such as employment contracts and payment (Blau 1964, Dulebohn *et al.* 2011, Nie and Lamsa 2015). People in high-quality relationships will get far more than those in low relationships, not only in terms of economic exchange, but also in terms of social exchange. More specifically, values, such as mutual trust, obligation, respect, loyalty, and reciprocity, will become the dominant features in the relationship (Liden and Maslyn 1998, Nie and Lamsa 2015). LMX describes how leaders develop different exchange relationships over time with their various subordinates as they influence each other (Farouk 2002, Ishak and Alam 2009).

LMX research shows that subordinates that report a high-quality LMX not only assume greater job responsibilities, but also state that they contribute to other units (Liden and Graen 1980, Ishak and Alam 2009). Liden and Maslyn (1998, Ishak and Alam 2009) found a four-dimensional LMX model comprising of contribution, loyalty, affect, and professional respect. Based on the LMX theory, when high-quality relationships exist between the subordinates and superiors, subordinates will be awarded greater resources and freedom in making decisions (Pelz and Andrews 1966, Cotgrove and Box 1970, June and Kheng 2014). Wang *et al.* (2005), Jyoti and Bhau (2015) reviewed several studies on LMX and found that those studies have focused on the social exchange quality. This phenomenon helps to establish qualitative leader–follower relationships known as LMX (Gerstner and Day 1997, Jyoti and Bhau 2015).

High quality LMX indicates there is a high level of information exchange, interaction, trust, respect, support, mutual influence, and rewards, while low-quality LMX points to a low level of interaction, trust, formal relations, one-directional influence (manager to employee), limited support, and few rewards (Bauer and Green 1996, Chernyak-Hai and Tziner 2014). A central tenet of the LMX theory is its focus on the working relationship

between a leader and the various members of a work unit or organisation. The LMX theory considers leaders and workers as active actors in a developing process of a transaction (Hollander 1980, Portoghese *et al.* 2011). LMX should always be measured from both leader and member perspectives (Scandura and Schriesheim 1994, Portoghese *et al.* 2011).

The LMX theory is rooted in two main theories: the role theory (Graen 1976, Dienesch and Liden 1986, Graen and Scandura 1987, Sparrowe and Liden 1997, Nie and Lamsa 2015) and the social exchange theory (Wayne and Green 1993, Erdogan *et al.* 2002, Nie and Lamsa 2015). In the LMX theory, there are three elements: the leader, the follower, and the exchange relationship (Graen and Uhl-Bien 1991, Nie and Lamsa 2015). Although leaders are dominant in determining the quality of LMX relationships, followers also exert a remarkable influence on the relationship. Through various effective activities during working time, participants are supposed to meet certain objectives, fulfilling expectations, and creating reciprocal relationships (Nie and Lamsa 2015).

1.5. Confucianism and *Guanxi*

It is possible to trace some of the ancient Chinese philosophy of Confucianism, as *guanxi* has a very evident heritage associated with the principles of Confucianism (Lytras and de Pablos 2008, Huang *et al.* 2013). *Guanxi* is one of the most important elements of Confucianism, highlighting the significance of groups for individuals. Traditional and contemporary Chinese people are wellknown for their strong reliance on interpersonal relations as the basis for defining their social status (Yang 1993, Nie and Lamsa 2015).

The concept of *Guanxi* is rooted in Confucianism because it links two people who are of unequal stature in such a manner that the weaker of the two in the relationship can request or ask for favors, without having to reciprocate in an equal manner (Alston 1989). The ethics of Confucianism also teach individuals to provide respect to patriarchs and elders and thus, the same level of respect is also provided to an authority of all kinds (Alston 1989). Evidently, *Guanxi* is highly influenced by this tenet of Confucianism.

H1: Confucianism positively and significantly influences Guanxi.

1.6. Organisational Ethical Climate and *Guanxi*

Tsui and Farh (1997), Lin (2011) were of the opinion that *guanxi* indicates the objectively common background or common experience between individuals. It also implies a differential treatment in interpersonal interactions. Among members in a group with different intensities and depths in interaction, *guanxi* bases and the centrality of interactive networks should have a positive relation. Victor and Cullen (1988), Lin (2011) were, thus, of the opinion that, although there exists a major climate type in an organisation, it is impossible to have only a single type. If a firm has rules on ethical climate, the rules and operating procedures are norms that should be emphasised. In firms with the last two ethical climates, employees tend to de-emphasise and weaken their *guanxi*.

H2: The Organisational Ethical Climate positively and significantly influences Guanxi.

1.7. *Guanxi* and Leader-Member Exchange

Guanxi highlights the importance of the particular relationship between two parties (Chen and Chen 2004, Chen and Tjosvold 2007, Huang and Wang 2011, Nie and Lamsa 2015), such as the leader–member relationship between a manager and a subordinate, and shares many things in common with the LMX theory. LMX and *guanxi* are fundamentally embedded in the interpersonal relationships of two individuals (Dansereau *et al.* 1975, Hui *et al.* 1999, Fan 2002, Nie and Lamsa 2015), such as leader–member relationships. When the LMX theory was first introduced, one of the main reasons why it was so innovative was that it describes how effective leadership relationships develop between dyadic ‘partners’ in and between organisations (Graen and Uhl-Bien 1995, Nie and Lamsa 2015). Many studies on LMX are still working on this level.

Employees tend to respond favourably to managers who are willing to offer them inspiration and support (Judge and Piccolo 2004, Nie and Lamsa 2015). In response, employees will exert themselves to perform the roles assigned to them and they, in turn, will try to form a high LMX with their managers (Maslyn and Uhl-Bien 2001, Dulebohn *et al.* 2011, Nie and Lamsa 2015). A high-quality relationship, including the dimensions of trust, obligation,

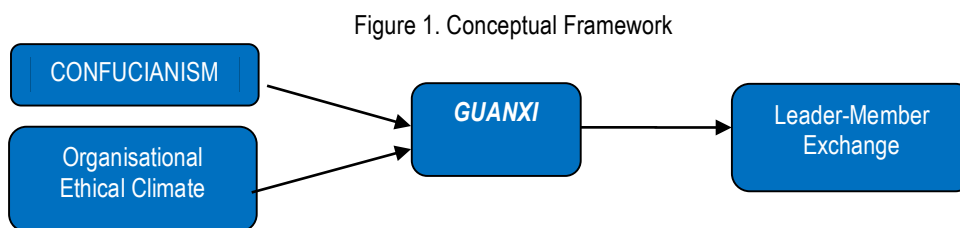
and respect, is valued in both the LMX theory and *guanxi*. Managers must follow the basic principles of ethical and moral conduct at all times and in all places.

When the behaviour, words, and deeds of managers at all organisational levels are in line with common organisational values and norms, managers are perceived as honest and as credible models by their Chinese employees. This further promotes the development of high-quality leader–member relationships (Cogliser *et al.* 2009, Nie and Lamsa 2015). The LMX theory is similar to *guanxi* in that both approaches stress that leader–member relationships develop gradually through interactions following the principle of reciprocity. In fact, work relationships are characterised by continuous and mutual interconnections between the parties (Ferris *et al.* 2009, Nie and Lamsa 2015). Emphasizing both a long-term relationship (*guanxi*) and competence (LMX) is important and represents an endorsement of a third culture derived from the two constituent cultures (Leung and White 2004).

Nie and Lamsa (2015) also showed differences between LMX and *Guanxi*. *Guanxi* in the Chinese context refers to personal ties or relationship based on human feelings, affection, and a sense of mutual obligation. So, the relationship is formed by the degree of emotional attachment and the willingness to take care of each other. This is in contrast to the Western LMX approach. The LMX relationship can only legitimately become an equity-matching relationship, where contribution and competence, not feelings, serve as the key components. Ahmed *et al.* (2014) examined and found that *Guanxi* positively predicted LMX relations.

H3: *Guanxi* positively and significantly influences the Leader-Member Exchange.

1.8. Conceptual Framework



2. Methodology

2.1. Sample and data collection

Table 2. Profile of respondents

Category		Company			Frequency	Percentage
		X	Y	Z		
Gender	Male	9	13	17	39	37,5%
	Female	17	27	21	65	62,5%
Age	≤25	7	11	14	32	30,77%
	26-35	17	23	16	56	53,84%
	36-45	1	6	5	12	11,54%
	≥46	1	0	3	4	3,85%
Education	High School	0	1	0	1	0,96%
	Diploma	0	4	0	4	3,85%
	Bachelor	22	33	35	90	86,54%
	Master	4	2	3	9	8,65%
	PhD	0	0	0	0	0%
Work Experience in years	<1	0	0	0	0	0%
	1-5	18	21	17	56	53,85%
	6-10	5	13	13	31	29,81%
	11-15	3	4	3	10	9,61%
	16-20	0	2	3	5	4,81%
	>20	0	0	2	2	1,92%

This empirical study examined the influences of Confucianism and the Organisational Ethical Climate on *Leader-Member Exchange* (LMX), with *guanxi* as the mediating factor. Data was collected from questionnaires of Chinese employees who have Chinese Supervisors/Managers with at least one-year of work experience in Jakarta. It is difficult to know the real numbers of the population, thus, the study used the Non-Probability Convenience Sampling technique, where the researcher determined their own process of sampling by selecting nearby people only, or by meeting the members of population that were willing to participate. The size of the sample was about 5 times the number of manifest variables (indicator) from the entire latent variables (Solimun 2002, Jauw and Purwanto 2017). The number of the whole indicator in this research was 20. Thus, the minimum sample size of the study is 100. This research was conducted from September to December 2016.

There were 150 questionnaires that were distributed to the respondents in three different companies (X Company: 30 respondents, Y Company: 60 respondents, Z Company: 60 respondents). Only 124 questionnaires were returned (X Company: 29 respondents, Y Company: 52 respondents, Z Company: 43 respondents). 26 questionnaires were not returned due to the busyness of the respondents. There were 20 returned questionnaires that could not be used because the respondents did not fill it out completely (X Company: 3 respondents, Y Company: 12 respondents, Z Company: 5 respondents). Thus, the total number of questionnaires that were used in this study was 104 questionnaires (X Company: 26 respondents, Y Company: 40 respondents, Z Company: 38 respondents). Table 2 shows the profile of the respondents for the three different companies in Jakarta.

2.1. Data analysis

This study used the Partial Least Squares-Structural Equation Modeling (PLS-SEM) technique. Structural Equation Modeling (SEM) is a second generation method to analyze the multivariate data that is often used because it could test and support the linear and additive causal models theoretically (Kwong and Wong 2013). Partial Least Squares (PLS) is a modelling software that approaches Structural Equation Modeling (SEM) with the assumptions of data distribution (Wong 2013). Meanwhile, according to Wiyono (2011), PLS is one of the SEM techniques that are capable of analyzing the latent variables, indicators, and measurement of the error directly.

Critical *t-value* is used as a cut off, where a *t-value* > critical value of t_{table} indicates a significant relationship between the hypotheses. Critical value of t_{table} for a two-tailed test are 1.65 (significance level = 10%), 1.96 (significance level = 5%), and 2.58 (significance level = 1%) (Hair *et al.* 2011, Purwanto 2016, Jauw and Purwanto 2017). This study used a critical value of t_{table} 1.96 or a 95% significance level as a cutoff.

2.2. Measurement scales

The endogenous variable in this study was *Guanxi* and the Leader-Member Exchange (LMX). *Guanxi* in this study was divided into three dimensions: *mianzi*, affect, and reciprocal favor. The questionnaire of *guanxi* was designed based on Lee and Dawes's (2005, Lin 2011) questionnaire, with a 5-point Likert-type scale to obtain information on how employees care about *mianzi*, how employees enhance affect with business partners, and how employees regard their business partners (Lee and Dawes 2005, Lin 2011). The statements of the questionnaire were as follows: "The more respect we receive from others, the more *mianzi* we have"; "My business partners will sometimes give me gifts or souvenirs (not expensive)"; and "I genuinely regard my business partners as good friends."

The measurement scale of the Leader-Member Exchange was adapted from Liden and Maslyn (1998, June and Kheng 2014). The LMX questionnaire comprised of nine 5-point Likert-type scale items, as follows: "My supervisor/manager defends my work actions to a superior, even without complete knowledge of the issue in question"; "My supervisor/manager is a lot of fun to work with"; "My supervisor/manager would defend me to others in the organisation if I made an honest mistake"; "I am willing to apply extra efforts, beyond those normally required, to further the interests of my work group"; "I have enough confidence in my supervisor/manager that I would defend and justify his/her decision if he/she were not present to do so"; "My supervisor(s) encourages me to share knowledge"; "I admire my supervisor/manager's professional skills"; "My supervisor/manager is the kind of person one would like to have as a friend" and "I like my supervisor/manager very much as a person."

The exogenous variable in this study is Confucianism and the Organisational Ethical Climate. The Confucianism measurement scale was adapted from the Dynamic Confucianism scale (Hofstede 1980, Lin 2011).

The Confucianism questionnaire comprised of four 5-point Likert-type scale items, such as the following: “I am always careful not to do anything inappropriate”; “I never forget my goals even in the face of adversity”; “I avoid offending others” and “I respect elders.” This study used a modification of the Ethical Climate Questionnaire (ECQ) by Victor and Cullen (1988, Lin 2011) in measuring the organisational ethical climate. Seven 5-point Likert-type scale items were used, as follows: “The good of all the individuals in the firm should be the main priority”; “Efforts should be made to maximise the benefit of others”; “Individuals should do whatever is necessary to further firm interests, regardless of the consequences”; “Individuals should protect their own interests above all else”; “Firm employees should decide for themselves what is right and wrong” and “Firm employees should follow their own personal and moral beliefs.”

3. Result and discussion

3.1. Result

This study is based on three tests: the validity test, reliability test, and inner model test. The validity test looks at the results of the outer loadings and Average Variance Extracted (AVE). The reliability test looks at the results of the Composite Reliability and Cronbach's Alpha (Table 3). The Inner Model test looks at the results of the T-statistic (Table 4).

The aim of validity testing is to measure the validity of the questionnaire used. Table 3 shows that all variables fulfilled the validity test, where outer loadings and Average Variance Extracted of variables was higher than 0.50. Reliability is the degree to which a test consistently measures what it is meant to measure. According to Sekaran (2006, Jauw and Purwanto 2017), Cronbach's alpha value in the range of 0.70 is acceptable, while a value above 0.80 is considered good. Table 3 shows that all variables fulfilled the reliability test, where the value of the Composite Reliability and Cronbach's Alpha from each variable was higher than 0.70.

Table 3. Outer Loadings

Items	Outer Loadings	Convergent validity	Cronbach's Alpha	Composite Reliability
<i>Guanxi</i>		AVE= 0.701	0.789	0.875
GX1	0.821			
GX2	0.835			
GX3	0.855			
Leader-Member Exchange		AVE= 0.551	0.898	0.917
LMX1	0.706			
LMX2	0.817			
LMX3	0.702			
LMX4	0.722			
LMX5	0.723			
LMX6	0.717			
LMX7	0.766			
LMX8	0.766			
LMX9	0.754			
Confucianism		AVE= 0.605	0.781	0.859
CVS1	0.709			
CVS2	0.822			
CVS3	0.852			
CVS4	0.718			
Organisational Ethical Climate		AVE= 0.547	0.847	0.878
OEC1	0.704			
OEC2	0.715			
OEC3	0.723			
OEC4	0.777			
OEC5	0.741			
OEC6	0.773			

Hypothesis 1 concerns the impact of Confucianism on *Guanxi* and it is supported by the results in Table 4, showing that Confucianism has a significantly positive influence on *Guanxi* ($t = 4.316 > 1.96$; $p = 0.000 < 0.01$). Hypothesis 2 concerns the impact of the Organisational Ethical Climate on *Guanxi* and it is supported by the results in Table 4, showing that the Organisational Ethical Climate has a significantly positive influence on *Guanxi* ($t = 4.186 > 1.96$; $p = 0.000 < 0.01$). Hypothesis 3 concerns the impact of *Guanxi* on the Leader-Member Exchange and it is supported by the results in Table 4, showing that *Guanxi* has a significantly positive influence on the Leader-Member Exchange ($t = 6.302 > 1.96$; $p = 0.000 < 0.01$).

Table 4. T-Statistics

Hypotheses		<i>t</i> Values	<i>p</i> Values
Confucianism → <i>Guanxi</i>	<i>H1</i>	4.316	0.000
Organisational Ethical Climate → <i>Guanxi</i>	<i>H2</i>	4.186	0.000
<i>Guanxi</i> → Leader-Member Exchange	<i>H3</i>	6.302	0.000

3.2. Discussion

In this study, it was found that Confucianism had a significant effect on *guanxi*, where it taught us that humans should help each other as we cannot live alone. With this rooted advice, *guanxi* becomes a mindset of concept or habit for the Chinese community in order to continue cooperation. In accordance with previous studies, this study found that Confucianism has a significant as well as positive effect on *guanxi* (Alston 1989). Lin (2011) proved that Confucian principles strongly influence *guanxi*, where the ethics in Confucianism teaches humans to pay respect to parents as well as their ancestors.

According to Cheng (2011), *Guanxi* is a Chinese extract that becomes the foundation for relations, whether they are family, friends or an unknown, as well as the dependency between interacting people. According to Ahmed *et al.* (2014), business managers should partake in mutual trust and reciprocal behavior to enhance the value of *guanxi*. In the process of mutual adjustment, they should also turn their management thinking of personal logic into artistic management activities through reciprocally long-term exchanges of benefits. The basic concept is to view the *guanxi* network as a positive method of management for operating the business where it involves similar ideas of “network” and “partnership” by establishing and maintaining the *guanxi* network. On the other hand, the phenomenon of using networks of *guanxi* in Confucian society or any other areas as a means of competition is not confined and will not disappear as the management systems change in the business environment (Lin 2011).

According to Lin (2011), the company must have a long-term vision as well as establish a long-term partnership of trust and reciprocity with their business partners, where niches for surviving can be created in the highly competitive environment. However, a partnership is not established and developed immediately. There will be no ambiguity for the business development in the use of the *guanxi* system.

The study also discovered that the organisational ethical climate has a significant and positive effect on *guanxi*. *Guanxi* is classified into three types: instrumental ties, expressive ties, and mixed tie (Lin 2011). Instrumental ties refer to a relationship that is temporary and unstable as a result of equity norms and is based on contributions, such as the transaction between team members or partners. Expressive ties refer to a stable and permanent relationship on the basis of egalitarian norms, such as family members and relatives. Lastly, mixed tie *guanxi* is a mix of instrumental ties and expressive ties, such as fellows or friends. This means that mixed tie *guanxi* is operated by reciprocity of favors, such as mutual favors.

Interpersonal *guanxi* is a type of mutual reciprocity, where *mianzi* and favors are emphasised. Furthermore, it was found that the phenomenon of reciprocity and *mianzi* by Chinese companies are closely related to Confucian value and culture. It explains the reasons why *mianzi* and reciprocity are mainly important to the Chinese family business. This emphasises the importance of authority, morality, and benevolence (Lin 2011).

The existence of the organisational ethics climate is necessary because *guanxi* usually tends to prefer one ethnic group over other. On the other hand, the function of *guanxi* could still continue as it should without discrimination. In accordance with a previous study conducted by Victor and Cullen (1987), the results of this study showed that there is a significant and positive effect of the organisational ethical climate on *guanxi*. Furthermore,

Lin (2011) stated that there is a significant influence of the organisational ethical climate on *guanxi*. The organisational ethical climate refers to both perception, as well as acceptance, of people against the procedures and practices of the company. As a result of the ethics culture of the company, behaviours of individuals may change in order to achieve good performance.

This study found that *guanxi* has a positive and significant effect on the leader-member exchange. Another study by Cogliser *et al.* (2009) also discovered that *guanxi* has a significant and positive effect on the leader-member exchange. In the Chinese community, the best way to build an effective and sustainable relationship between the leader and local employees is dependent on the similarities of the two approaches. Basic principles of ethical and moral conduct must be followed by Chinese managers in all places and at all times. Managers are perceived as honest and credible models by their Chinese employees when the manager's behavior, deeds, and words at all organisational levels are in line with common organisational values and norms. As a result, it can promote the development of high quality leader-member exchange relationships (Nie and Lamsa 2015).

In *guanxi*, the emotional attachment between the manager and employees is regarded as morally and socially appropriate. Therefore, it is crucial for the manager to be willing and able to show personal care towards the employees. On the other hand, the communication style of the manager is a key factor to maintain face. Public image of the managers and employees in their mutual relationship is a very important moral norm in *guanxi* (Tsang 1998). This requires the manager and employees to be sensitive in order to understand the role of shame in the maintenance of a good image (Zhong 2007). If either the manager or employee loses face, there will be deterioration in the quality of the leader-member relationship (Nie and Lamsa 2015).

The role of communication style is neither taken seriously nor articulated very clearly in this theory, although effective information as well as communication between the employees and manager is stressed in the LMX theory. However, the need to consider the moral and social context of the communication behavior is not mentioned at all (Chen and Tjosvold 2007, Nie and Lamsa 2015). Furthermore, the role of emotions is not deeply conceptualised and embedded in the theory, although the LMX theory involves both the elements of transformational, as well as transactional, emotions (Ladkin 2010, Nie and Lamsa 2015).

As a result of *guanxi*, cooperation is based on mutual trust in the reciprocal relationship between Chinese subordinates and Chinese superiors. In cases of high *guanxi*, a relationship known as symbiotic mutualism develops. For example, the Chinese subordinates will give a positive response and make use of their abilities to perform their duties effectively. In addition, they will not hesitate to promote their manager or supervisor if they are a credible and fair person, and provide the right direction and support to their subordinates.

In accordance with a previous study done by Judge and Piccolo (2004), the results of this study showed that *guanxi* has a significant and positive affect to the leader-member exchange (LMX). The theory of LMX and *guanxi* highlights the importance of the relationship quality between the managers and subordinates. Ferris *et al.* (2009) stated that *guanxi* has a significant influence on the theory of LMX where reciprocal interactions can gradually have developed into a relationship between leaders and subordinates.

Conclusion and limitations

This study serves as an aid for non-Chinese managers in Southeast Asia and also helps to reflect on how to integrate the best known relational LMX theory into the Chinese context. *Guanxi* is a very important thing in a relationship between the Chinese supervisors/managers and Chinese employees. The Chinese supervisors/managers should keep *guanxi* with their employees, because a good relationship can be long-lasting, where the position of supervisors/managers is influenced by the support from their employees. On the contrary, not only is *guanxi* beneficial for the supervisors/managers, it is also a very important for Chinese employees in relationships with their Chinese supervisors/managers, because the employees' working situations are also influenced by the relationships with their supervisors/managers.

On the other hand, it is one of the most important factors for the relationship between the business ethical climate and family leadership. The ethics that are adopted by members of the company, especially among the same ethnicity, must be maintained, because it would affect the company's reputation. Therefore, the organisational

ethical climate needs to be applied by making the company's rules and procedures, which must be followed by all the members of the company, in accordance with the legal standards and without seeing the differences of ethnicity.

This research has some limitations. First of all, the respondents of this study were employees with at least one-year of working experience from companies located only in Jakarta. However, due to the limitations of manpower and time constraint, this study adopted a convenient sampling plan. Furthermore, other possible directions that could establish the concept of *guanxi* are suggested to be added as a comprehensive concept for the *guanxi* framework.

References

- [1] Ahmed, I., Ismail, W K.W., and Amin, S.M. 2014. Guanxi network and leader member exchange: The impetus for employee creative involvement. *Asia-Pacific Journal of Business Administration*, 6(1): 64 – 77. DOI: <http://dx.doi.org/10.1108/APJBA-05-2013-0048>
- [2] Alston, J.P. 1989. Wa, Guanxi, and Inhwa: Managerial Principles in Japan, China, and Korea. *Business Horizons*, 4(2): 26–31. DOI: [https://doi.org/10.1016/S0007-6813\(89\)80007-2](https://doi.org/10.1016/S0007-6813(89)80007-2)
- [3] Anand, S., Hu, J., Liden, R.C., and Vidyarathi, P.R. 2011. *Leader–member exchange: Recent research findings and prospects for the future*, in “The Sage Handbook of Leadership”, Editors: A. Bryman, D. Collinson, K. Grint, B. Jackson, M. Uhl-Bien, Los Angeles: SAGE, 311–325 pp.
- [4] Bauer, T.N., and Green, S.G. 1996. The development of leader-member exchange: A longitudinal test. *Academy of Management Journal*, 39(6): 1538-1567. DOI: <https://doi.org/10.2307/257068>
- [5] Bedford, O., and Hwang, S. L. 2011. Flower drinking and masculinity in Taiwan. *Journal of Sex Research*, 48(1): 82–92. DOI: <https://doi.org/10.1080/00224490903230046>
- [6] Blau, P.M. 1964. *Exchange and power in social life*. New York: Wiley, ISBN-10: 1412823153, ISBN-13 9781412823159, 94–99 pp.
- [7] Bond, M. 1999. *Beyond the Chinese Face: Insights from Psychology*. Hong Kong: Oxford University Press, ISBN-10: 0195851161, 140 pp.
- [8] Chen, N., and Tjosvold, D. 2007. *Guanxi* and Leader Member Relationships between American Managers and Chinese Employees: Open-minded Dialogue as Mediator. *Asia Pacific Journal of Management*, 24(2): 171-189. DOI: <https://doi.org/10.1007/s10490-006-9029-9>
- [9] Chen, X.P., and Chen, C.C. 2004. On the intricacies of the Chinese Guanxi: A process model of Guanxi development. *Asia Pacific Journal of Management*, 21(3): 305–324.
- [10] Cheng, C.H. 2011. A study of critical factors of the job involvement for hotel employees – taking hotels in Taiwan as an example. *International Journal of Hospitality Management*, 30(4): 990-996. DOI: 10.1016/j.ijhm.2011.03.001
- [11] Chernyak-Hai, L., and Tziner, A. 2014. Relationships between counterproductive work behavior, perceived justice and climate, occupational status, and leader-member exchange. *Journal of Work and Organizational Psychology*, 30(1): 1-12.
- [12] Cogliser, C.C., Schriesheim, C.A., Scandura, T.A., and Gardner, W.L. 2009. Balance in leader and follower perceptions of leader–member exchange: Relationships with performance and work attitudes. *Leadership Quarterly*, 20(3): 452–465. DOI: <https://doi.org/10.1016/j.leaqua.2009.03.010>
- [13] Cotgrove, S., and Box, S. 2013. *Science, Industry, and Society: Studies in the Sociology of Science*, Routledge ISBN: 1135028869, 9781135028862, 224 pp.
- [14] Dansereau, F, Jr, Graen, G., and Haga, W.J. 1975. A vertical dyad linkage approach to leadership within formal organisations: A longitudinal investigation of the role making process. *Organisational Behaviour and Human Performance*, 13(1): 46–78. DOI: [https://doi.org/10.1016/0030-5073\(75\)90005-7](https://doi.org/10.1016/0030-5073(75)90005-7)

- [15] Davies, H., Leung, T., Luk, S. and Wong, Y.H. 1995. The Benefits of Guanxi: The Value of Relationships in Developing the Chinese Market. *Industrial Marketing Management*, 24(3): 207-214. DOI: [https://doi.org/10.1016/0019-8501\(94\)00079-C](https://doi.org/10.1016/0019-8501(94)00079-C)
- [16] Dienesch, R.M., and Liden, R. 1986. Leader–member exchange model of leadership: A critique and further development. *The Academy of Management Review*, 11(3): 618–664.
- [17] Dulebohn, J.H., Bommer, W.H., Liden, R.C., Brouer, R., and Ferris, G.R. 2011. A meta-analysis of the antecedents and consequences of leader–member exchange: Integrating the past with an eye toward the future. *Journal of Management*, 38(6): 1715-1759. DOI: <https://doi.org/10.1177/0149206311415280>
- [18] Erdogan, B., Kraimer, M., and Liden, R.C. 2002. *Person–organisation fit and work attitudes: The moderating role of leader–member exchange*. Academy of Management Proceedings, 65–114 pp.
- [19] Fan, Y. 2002. Guanxi's consequences: Personal gains at social cost. *Journal of Business Ethics*, 38(4): 371–380.
- [20] Farouk, A.M. 2002. *Elements of justice and organizational commitment: The impact of leader-member exchange*. Unpublished MBA thesis, Penang: University Science Malaysia.
- [21] Ferris, G.R., Liden, R.C., Munyon, T.P., Summers, J.K., Basik, K.J., and Buckley, M R. 2009. Relationships at work: Toward a multidimensional conceptualisation of dyadic work relationships. *Journal of Management*, 35(6): 1379–1403. DOI: <https://doi.org/10.1177/0149206309344741>
- [22] Franke, H.F., Hofstede, G. and Bond, M.H. 1991. Cultural Roots of Economic Performance: A Research Note. *Strategic Management Journal*, 12(S1): 165–173. DOI: 10.1002/smj.4250120912
- [23] Gerstner, C R. and Day, D.V. 1997. Meta-analysis review of leader member exchange theory: Correlates and construct issues. *Journal of Applied Psychology*, 82(6): 827-844.
- [24] Graen, G. 1976. *Role-making processes within complex organizations*, in M. D. Dunnette (Ed.), "Handbook of industrial and organizational psychology", Chicago, IL: Rand McNally, 1201–1245 pp.
- [25] Graen, G., and Scandura, T. 1987. *Toward a psychology of dyadic organizing*. in L. Cummings and B. Staw (Eds.), "Research in organisational behaviour" Vol. 9, 175–208 pp. Greenwich, CT: JAI Press.
- [26] Graen, G., and Uhl-Bien, M. 1991. The transformation of work group professionals into self-managing and partially self-designing contributors: Toward a theory of leadership-making. *Journal of Management Systems*, 3(3): 33–48.
- [27] Graen, G., and Uhl-Bien, M. 1995. Relationship-based approach to leadership: Development of leader–member exchange (LMX) theory of leadership over 25 years: applying a multi-level multidomain perspective. *Leadership Quarterly*, 6(2): 219–247. DOI: [https://doi.org/10.1016/1048-9843\(95\)90036-5](https://doi.org/10.1016/1048-9843(95)90036-5)
- [28] Hair, J.F., Ringle, C.M., and Sarstedt, M. 2011. PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2): 139–151. DOI: 10.2753/MTP1069-6679190202
- [29] Ho, D.Y.F. 1996. *Filial piety and its psychological consequences*, in M.H. Bond (Ed.), "The handbook of Chinese psychology", Hong Kong: Oxford University Press, 155-165 pp.
- [30] Hofstede, G. 1980. Motivation, Leadership, and Organization: Theories Apply Abroad? *Organization Dynamics*, 16(4): 4-21. DOI: [https://doi.org/10.1016/0090-2616\(80\)90013-3](https://doi.org/10.1016/0090-2616(80)90013-3)
- [31] Hollander, E.P. 1980. *Leadership and Social Exchange Processes*, in K.J. Gergen, M.S. Greenberg, and R.H. Willis (eds), "Social Exchange: Advances in Theory and Research", New York: Plenum Press, 103–18 pp.
- [32] Huang, K.P., Chung, T.T., Tung, J., and Lo, S.C. 2013. Guanxi Embeddedness and Trust Building in Chinese Business Markets: A Confucianism Perspective. *Journal of Applied Sciences*, 13(3): 333-340.

- [33] Huang, K.P., and Wang, K.Y. 2011. How guanxi relates to social capital? A psychological perspective. *Journal of Social Science*, 7(2): 120–126.
- [34] Hui, C., Law, K.S., and Chen, Z. 1999. A structural equation model of the effects of negative affectivity, leader–member exchange, and perceived job mobility on in-role and extra-role performance: A Chinese case. *Organisational Behaviour and Human Decision Processes*, 77(1): 3–21. DOI: <https://doi.org/10.1006/obhd.1998.2812>
- [35] Ishak, N.A. and Alam, S.S. 2009. Leader-Member Exchange and Organizational Citizenship Behavior: the Mediating Impact of Self-Esteem. *International Journal of Business and Management*, 4(3): 52-61. DOI: <http://sci-hub.tw/10.5539/ijbm.v4n3p52>
- [36] Jaww, A.L.J. and Purwanto, E. 2017. Moderation Effects of Cultural Dimensions on the Relationship between E-Service Quality and Satisfaction with Online Purchase. *Quality-Access to Success*, 18(157): 55-60.
- [37] Judge, T.A., and Piccolo, R.F. 2004. Transformational and transactional leadership: A meta-analytic test of their relative validity. *Journal of Applied Psychology*, 89(5): 755–768.
- [38] June, S., and Kheng, Y.K. 2014. Innovative Work Behavior (IWB) in the Knowledge Intensive Business Services (KIBS) Sector in Malaysia: The Effect of Leader-Member Exchange (LMX) and Social Capital (SC). *Asian Social Science*, 10(2): 172-182.
- [39] Jyoti, J., and Bhau, S. 2015. *Impact of Transformational Leadership on Job Performance: Mediating Role of Leader-Member Exchange and Relational Identification*. Sage Open. DOI: <https://doi.org/10.1177/2158244015612518>
- [40] Ladkin, D. 2010. *Rethinking leadership. A new look at old questions*. Edward Elgar, Cheltenham, UK. ISBN: 9781847209351, Available at: <https://books.google.ro/books?id=vPy8sojc4JIC&printsec=frontcover&dq=Rethinking+leadership.+A+new+look+at+old+questions+2010&hl=ro&sa=X&ved=0ahUKEwj9zfSNiYXZAhUBbVAKHepvCyMQ6AEIjAA#v=onepage&q=Rethinking%20leadership.%20A%20new%20look%20at%20old%20questions%202010&f=false>
- [41] Lam, D., Paltiel, J.T., and Shannon, J.H. 1994. The Confucian entrepreneur? Chinese culture, industrial organization, and intellectual property piracy in Taiwan. *Asian Affairs: An American Review*, 20(4): 205-217. DOI: <https://doi.org/10.1080/00927678.1994.9933674>
- [42] Lam, S.K., Kraus, F., and Ahearne, M. 2010. The Diffusion of Market Orientation Throughout the Organization: A Social Learning Theory Perspective. *Journal of Marketing*, 74(5): 61-79. DOI: <https://doi.org/10.1509/jmkq.74.5.61>
- [43] Lee, D.Y. and Dawes, P.L. 2005. Guanxi, Trust, and Long-Term Orientation in Chinese Business Markets. *Journal of International Marketing*, 13(2): 28–56.
- [44] Leung, K. and White, S. 2006. *Exploring Dark Corners: An Agenda for Organizational Behavior Research in Alliance Contexts*. In O. Shenkar and J.J. Reuer (Eds.), “Handbook of Strategic Alliances”, Thousand Oaks, California: SAGE Publications Inc, 199-218 pp.
- [45] Leung, T.K.P, Lai, K.H., Chan, R.Y.K., and Wong, Y.H. 2005. The Roles of Xinyong and Guanxi in Chinese Relationship Marketing. *European Journal of Marketing*, 39(5/6): 528-559. DOI: <https://doi.org/10.1108/03090560510590700>
- [46] Liao, D., and Sohmen, P. 2001. The development of modern entrepreneurship in China. *Stanford Journal of East Asian Affairs*, 1: 27-33.
- [47] Liden, R.C., and Graen, G. 1980. Generalizability of the vertical dyad linkage model of leadership. *Academy of Management Journal*, 23(3): 451-465.

- [48] Liden, R.C., and Maslyn, J.M. 1998. Multidimensionality of leader-member exchange: An empirical assessment through scale development. *Journal of Management*, 24(1): 43-73. DOI: [https://doi.org/10.1016/S0149-2063\(99\)80053-1](https://doi.org/10.1016/S0149-2063(99)80053-1)
- [49] Lin, L.H. 2011. Cultural and Organizational Antecedents of Guanxi: The Chinese Cases. *Journal of Business Ethics*, 99(3): 441-451.
- [50] Lytras, M.D. and de Pablos, P.O. 2008. *Guanxi and Information Technology Companies in China: Understanding Social Connections Structures*. Springer, New York.
- [51] Maslyn, J.M., and Uhl-Bien, M. 2001. Leader-member exchange and its dimensions: Effects of self-effort and other's effort on relationship quality. *Journal of Applied Psychology*, 86(4): 697-708. DOI: [10.1037/0021-9010.86.4.697](https://doi.org/10.1037/0021-9010.86.4.697)
- [52] Millington, A., Eberhardt, M. and Wilkinson, B. 2006. Guanxi and Supplier Search Mechanisms in China. *Human Relations*, 59(4): 505-531. DOI: <https://doi.org/10.1177/0018726706065372>
- [53] Nie, D. and Lamsa, A.M. 2015. The Leader-Member Exchange Theory in the Chinese Context and the Ethical Challenge of Guanxi. *Journal of Business Ethics*, 128(4): 851-861. DOI: 10.1007/s10551-013-1983-9
- [54] Octari, V. and Purwanto, E. 2017. The Role of Guanxi and Xinyong on the Relationship between Supplier and Retailer among Chinese Entrepreneurs in Bekasi City, Indonesia. *International Journal of Information, Business and Management*, 9(1): 22-36.
- [55] O'Keefe, H. and O'Keefe, W.M. 1997. Chinese Behavioural Differences: Understanding the Gaps. *International Journal of Social Economics*, 24(1/2/3): 190-196. DOI: <https://doi.org/10.1108/03068299710161205>
- [56] Park, S.H. and Luo, Y. 2001. Guanxi and Organizational Dynamics: Organizational Networking in China Firms. *Strategic Management Journal*, 22(5): 455-477. DOI: 10.1002/smj.167
- [57] Pelz, D.C., and Andrews, F.M. 1966. Autonomy, coordination, and stimulation in relation to scientific achievement. *Behavioral Science*, 11(2): 89-97. DOI: 10.1002/bs.3830110202
- [58] Portoghese, I., Galletta, M., Battistelli, A. 2011. The Effects of Work-Family Conflict and Community Embeddedness on Employee Satisfaction: The Role of Leader-Member Exchange. *International Journal of Business and Management*, 6(4): 39-48.
- [59] Purwanto, E. 2014. The Influence of Patrimonialism, Guanxi and Xinyong on Partnership Relationship in Chinese SMEs in Jakarta, Indonesia. *International Journal of Innovation and Applied Studies*, 6(2): 248-256.
- [60] Purwanto, E. 2016. The Effect of Cosmopolitanism on Perceived Foreign Product Quality and Purchase Intentions: Indonesia Case. *Quality-Access to Success*, 17(155): 94-98.
- [61] Pye, L.W. 1992. *Chinese Negotiating Style*, Quorum Books, New York, 119 pp.
- [62] Salk, J.E. and Brannen, M.Y. 2000. National Culture, Networks, and Individual Influence in a Multinational Management Team. *Academy of Management Journal*, 43(2): 191-202.
- [63] Scandura, T.A. and Schriesheim, C.A. 1994. Leader-member exchange and supervisor career mentoring as complementary constructs in leadership research. *Academy of Management Journal*, 37(6): 1588-1602.
- [64] Sekaran, U. 2006. *Metode Riset Bisnis*. Salemba Empat, Jakarta, 30-31 pp.
- [65] Setyawan, S. 2005. *Konteks Budaya Etnis Tionghoa dalam Manajemen Sumber Daya Manusia*, Benefit, 9(2): 164-170.
- [66] Sinclair, A. 1993. Approach to Organizational Cultural and Ethical. *Journal of Business Ethics*, 12(1): 63-73. DOI: 10.1007/BF01845788

- [67] Solimun, M.S. 2002. *Structural Equation Modeling, Lisrel dan Amos*. Malang: Fakultas MIPA, Universitas Brawijaya, 11-13 pp.
- [68] Sparrowe, R., and Liden, R.C. 1997. Process and structure in leader-member exchange. *Academy of Management Journal*, 22(2): 522-552.
- [69] Tiina, H. 2015. *Managing Multicultural Teams: Dealing with Conflicts Rising from Different Expectations and Perspectives*. Department of International Business, Master's Thesis, University of OULU.
- [70] Tsang, W.K. 1997. Choice of International Technology Transfer Mode: A Vanhonacker, Wilfried, Entering China: An Unconventional Approach. *Harvard Business Review*, 75(2): 130-140.
- [71] Tsui, A.S. and Farh, J.L. 1997. Where Guanxi Matters: Relational Demography and Guanxi in the Chinese Context. *Work and Occupations*, 24(1): 56-79.
- [72] Victor, B. and Cullen, J.B. 1988. The Organizational Bases of Ethical Work Climates. *Administrative Science Quarterly*, 33(1): 101-125. DOI: 10.2307/2392857
- [73] Wang, H., Law, K.S., Hackett, R.D., Wang, D., and Chen, Z.X. 2005. Leader-member exchange as a mediator of the relationship between transformational leadership and followers' performance and organizational citizenship behaviour. *Academy of Management Journal*, 48(3): 420-432.
- [74] Wang, R. 2012. Chinese Culture and Its Potential Influence on Entrepreneurship. *International Business Research*, 5(10): 76-90.
- [75] Wayne, S.J., and Green, S.A. 1993. The effects of leader-member exchange on employee citizenship and impression management behaviour. *Human Relations*, 46(12): 1431-1440. DOI: 10.2307/2392857
- [76] Weber, M. 1968. *The religion of China: Confucianism and Taoism*. New York, NY: The Macmillan Company, 308 pp.
- [77] Wie, T.K. 2006. *The Indonesia Government's Economic Policies towards the Ethnic Chinese: Beyond Economic Nationalism?* In "Southeast Asia's Chinese Business in an Era of Globalization: Coping with the Rise of China", edited by Leo Suryadinata. Singapore: ISEAS Publications, 76-101 pp.
- [78] Wiyono, G. 2011. *3 in One Merancang Penelitian Bisnis dengan Alat Analisis SPSS 17.0 & SmartPLS 2.0*, Unit Penerbit dan Percetakan STIM YKPN, Yogyakarta.
- [79] Wong, K.K.K. 2013. Partial Least Squares Structural Equation Modeling (PLS-SEM) Techniques Using SmartPLS. *Marketing Bulletin*, 24, Technical Note 1, 1-32 pp.
- [80] Yang, C. 2014. Does Ethical Leadership Lead to Happy Workers? A Study on the Impact of Ethical Leadership, Subjective Well-Being, and Life Happiness in the Chinese Culture. *Journal of Business Ethics*, 123(3): 513-525. DOI: 10.1007/s10551-013-1852-6
- [81] Yang, K.S. 1993. *Chinese social orientation: An integrative analysis*, in L.Y. Cheng, F.M.C. Cheung, and C.N. Cheng (Eds.), "Psychotherapy for the Chinese", Hong Kong: Chinese University of Hong Kong, 19-56 pp.
- [82] Zhang, Y., and Zhang, Z. 2006. Guanxi and organizational dynamics in China: a link between individual and organizational levels. *Journal of Business Ethics*, 67(4): 375-392. DOI: 10.1007/s10551-006-9031-7
- [83] Zolkiewski, J., and Feng, J. 2012. Relationship Portfolios and Guanxi in Chinese Business Strategy. *Journal of Business and Industrial Marketing*, 27(1): 16-28. DOI: <https://doi.org/10.1108/08858621211188939>

The Identification of Disruptions in the Slovak Economy Expressed by Index of Economic Freedom

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Abstract:

Apart from focusing on economic growth, it is equally important to focus on the quality of institutional environment. Over the last two decades, The Slovak Republic was influenced by constant changes of the setting of its institutional framework. According to New Institutional Economic Theory, the country's economy achieves higher efficiency when functioning in the environment that has a better setup of institutions that subsequently generate lower transaction costs. In our paper, we focused on the level of transaction costs, expressed through qualitative index of Economic Freedom of the Fraser Institute, and linkage between this Index and Economic performance for time period 2000-2015. We concluded that there is a direct correlation between the quality of the institutional environment and economic performance of the Slovak Republic. We identified the corruption and law enforcement as disruptions of Slovak economy.

Keywords: economic freedom; fraser institute; slovak economy; institutions; transaction costs; new institutional economy

JEL Classification: O11; C1; D23

Introduction

According to Stiglitz (2006): "The problem of globalization is the fact that economic globalization has outpaced the globalization of politics and mindsets. We have become more dependent on each other, which increased the need to act together, but we do not have the institutional frameworks for doing this effectively and democratically." Representatives of Neoinstitutionalism want to leave behind fetishes of efficiency and excessive economic growth that are currently considered as the main goal of the economy. They believe that the development should be evaluated based on numerous criteria, reflecting the quality of life. Galbraith proposes to retreat from the high pace of economic growth, reduce excessive consumption and thus improve the quality of life (Lisý *et al.* 1996).

The Last twenty years of changes in the society has resulted in increasing gap between rich cities and poor villages, which are supplemented by problems like imitative welfare, gentrification, the absence of middle class,

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double demographic change - labour migration and loss of fertility. This socio-economic development is incompatible with the current focus on economic growth (Ther 2016). The aim of this paper is focus on the quality of the institutional environment in Slovak Republic. The inflexible system and inefficient institutions generate non-functional economic environment (Baláž *et. al* 2007). This system increases the transaction costs but their reduction can be achieved by a well-developed and flexible system of quality institutions.

1. Literature review

According to F. Okruhlica (2013), the measuring the quality of business (institutional) environment can be measured by indexes of competitiveness. In order to express the quality of the business environment, and the amount of transaction costs in the national economy, conforming with the new institutional economic theory; we decided to utilize the Index of Economic Freedom. In theory and practice, we recognize two kinds of economic freedom index. The Fraser Institute compiles one and the Heritage Foundation compiles the second.

As stated by the Heritage Foundation (2016) „When the Fraser Institute published the first Index of Economic Freedom in the World Report, nearly two years after the first Heritage Index, its findings were not all that different from those of the Heritage Index even though it employed a more complicated methodology that weighted the relative importance of various factors”. The authors Hanke and Walters (1997) concluded that “despite underlying differences in purpose, methodology, and philosophy, the various surveys produce rankings that have much in common.”

Ram (2014) compared the two most widely used indexes, the Fraser Institute and Heritage Foundation, on the overall assessment of the economic freedom of countries and identified numerous cases of the vast difference between the statuses of countries that have been measured by indexes. Hereby he reminds researchers, policy makers and others to be cautious when drafting their conclusions based on an evaluation of both sources. These indexes show level of correlation than other indexes, which identify institutional quality (Murphy 2016). In 2005, Karlsson noted that Fraser Index overall looks a bit better than the Heritage Index. However, even despite this index being better than its counterpart, Karlsson maintains that it is still not sufficient. For purposes of this research paper, we focused on the Index of Economic Freedom published by the Fraser Institute. The Index is being published once per year and consists of 42 indicators, which are divided into five areas (Gwartney, Lawson and Hall 2016a):

- size of government;
- legal system and property rights;
- sound money;
- freedom to trade internationally;
- regulation.

Based on path dependence of the economic performance of different countries, it can be concluded that countries that has already embarked on the path of economic growth, stagnation or decline, remain in these trajectories for a long-time. The reason behind this occurrence is the slowness of institutional changes. If one wants to change current trends of economic development, it is necessary to completely transform the structure of institutions. The willingness to enforce old laws is not enough as there is also a pressing need to adapt informal rules of various market participants (Volejníková 2005). According to Volejníková (2005), the key feature is the ability of institutions to evolve. Institutions are not static and are the product of people's experience. New forms of institutions survive or disappear depending on the power and collaboration of social groups as well as on the human intelligence. If institutions, which the society inherited from the past, has ceased to satisfy new economic conditions and needs, they must be adapted or replaced by new ones (Volejníková 2005). Object of research of the Institutional theory are the institutions - their origin, development, function of behaviour and decision making of economic entities (Volejníková 2005). Institutional economics consists of two streams:

- The original american institutionalism - from the 90s of the 19th century to the second world war;

- New institutional economics – from the 60s of the 20th century to the present. similarly like in the case of the American institutionalism, its establishment responded to the lack of an institutional framework in neoclassical system.

The basic unit of economic analysis of the Institutional theory are institutions. Generally, this term refers to social order or rules governing relationships between individuals and social groups. Institutions generally include:

- organizations of various types, such as businesses, trade unions, cooperatives, business and industry associations, state, state power authorities, schools, universities;
- traditions, customs, accepted standards of behaviour of particular social groups, stereotypical thinking, and group psychology.

Nevertheless, there are some differences, when it comes to individual views of representatives of the Institutional theory, on institutions. American economist T. B. Veblen is considered as the founder of socio-psychological approach to institutions (Volejníková 2005). Within companies, he recognized a major conflict between the institution of industry and the institution of business. He regarded industry as a manufacturing process aimed at maximizing productivity and production, while the business was understood as the activity, which is primarily focused on profit maximization (Lisý *et al.* 1996). J. R. Commons is known as the founder of the legal approach to institutions (Volejníková 2005). He perceives institutions as historically variable, sanctioned standards of social advancement, which are the product of confrontation between different interests of various economic groups. Commons underlines the legal aspect of institutions, regulations and laws concerning ownership and transactions (Lisý *et al.* 1996). According to D. C. North (the representative of New Institutional Economics), institutions are a set of formal and informal rules, which are designed with the aim to regulate human dealings in a certain direction and thus influence the behaviour of individuals, subsequently also reducing the uncertainty. Institutions can be formal (they have a legal form). On the other hand, there are also informal institutions that comprise everything. It is also called the society (Volejníková 2005 Liška *et al.* 2011). D. C. North puts more emphasis on the importance of informal institutions, such as the property rights (Holman *et al.* 2001). Institutions are the rules of the game and organizations are players. If the rules of the game allow corruption to become a profitable activity, it will be used in a large scale and without shame. Organizations are defined as groups of individuals; hierarchical structures that are formed based on certain institutions, operate within their scope or are used for enforcement of their goals, pursuing a common objective (Volejníková 2005, Liška *et al.* 2011 Holman *et al.* 2001).

According to the New institutional economic theory, the corruption is an informal institution. From an economic standpoint, Liška *et al.* (2011), regard the corruption as a non-market transaction, which is associated with the exchange of the utility. Thus, corruption is considered as being advantageous for both sides. The relationship between corruption and government spending was identified by authors Hanousek and Kočenda (2011) on the basis of empirical study: „In terms of the Public Investment Our results show that improvement in economic freedom is linked to increases in public investment while lowering of corruption is linked with increase or decrease with respect to public investment. “

Significant contribution of the New institutional economic theory is its elaboration of the Theory of transaction costs. Coase (1937) has defined a special type of costs, which are responsible for the very existence of companies. Williamson (1990) compared the essence of transaction cost to the friction that occurs in mechanical machines. This means that low transaction costs determine the higher efficiency of the economic system. Other representatives of this theory, namely D. C. North along with Wallis (1986), attempted to quantify the amount of transaction costs in the economy of the United States for the years 1870 - 1970. Authors estimated the amount of transaction costs, for example through the performance of transactional sector, such as banks, insurance companies and subsequently estimated the number of non-transactional professions (in manufacturing sector), which represent transaction costs for the company. Accountants or auditors can be used as an example of these professions.

However, authors themselves admitted that there is a significant uncertainty and difficulty when it comes to quantification of transaction costs. To overcome this shortfall, several qualitative measures have been created. The

Competitive Index (Okruhlica 2013), for instance, can be used to indirectly quantify transaction costs. For our paper, we decided to use the Index of economic freedom of Fraser Institute. We consider its sub-indexes, as measure of the quality of institutions and we perceive the overall result of this index as result of the quality of the institutional environment, which has its impact on the economic performance of the country that can be quantified by GDP. Additionally, Wang (2009) summarized different approaches to quantification of transaction costs and mentioned the possibility to use indexes. N. Wang also supplemented North's study by the quantification of non-transactional sector. Of significance was also the book by Hermand de Soto (1989) that generated a basis for the creation of the Doing Business Index that is being periodically prepared by the World Bank Group. Hermand de Soto proposed to measure administrative burden for starting a business and evaluated the impact of informal institutions on the economy. Authors of the paper conclude, that despite a wide range of quantitative methods that try to quantify transaction costs, quantification of these costs is very difficult.

2. Methodology

The source data for performing regression and correlation analyses were collected from the Fraser Institute (Gwartney, Lawson and Hall 2016b) for period of 2000-2014 and macroeconomic indicators such as GDP for period of 2001-2015 have been selected from the database of the World Bank Group (2016). For our research, we decided to use the GDP at constant market prices in 2010 (USD). Fraser index that was published in the year 2016 reflects the status of 2014. The higher value of the index and sub-indexes of economic freedom means the better level of economic freedom. Data were processed in MS Excel and the independent variables were time-shifted later also in the program MS Excel, because the state of the business environment will be reflected with at least a one-year lag. Graphical method, paired regression analysis, correlation analysis and diagnosis of models were obtained from the Dell statistics. The equation of linear regression had the following form:

$$\text{GDP_at_market_prices_const_2010_USD} = \text{constant} + \text{slope} * x \quad (1)$$

Results of quantitative analysis were interpreted using Statistical literature (Lukáčik, Lukáčiková, Szomolányi 2011). We stress that our analysis is limited by lack of some data for the variables in period of 2001-2015.

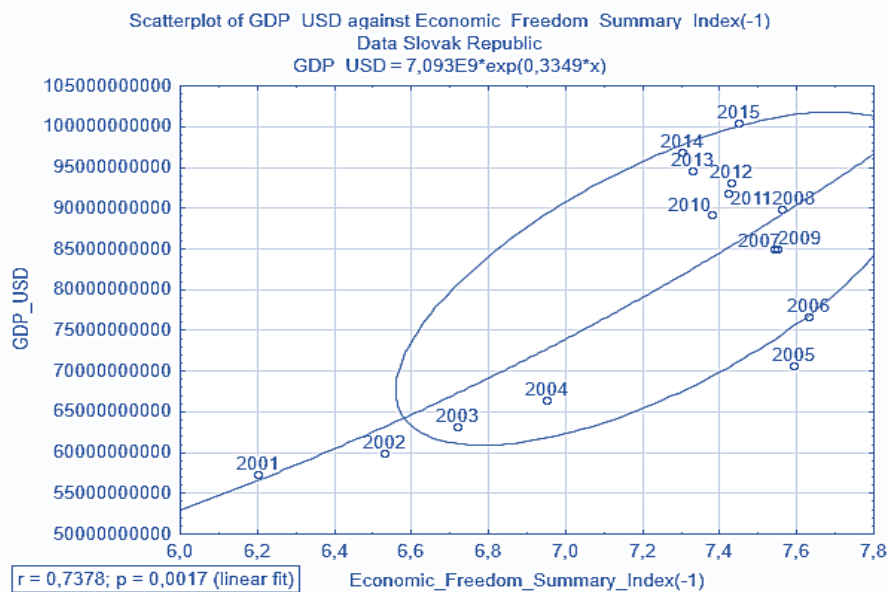
3. Empirical results and discussion

Graph 1 shows graphical processing of regression analysis between economic performance and overall results of Economic Freedom Index. Exponential curve of regression identifies a positive relationship between increasing GDP and the level of economic freedom of the Slovak Republic. Based on methods of observations, we can identify two clusters that are illustrated on the graph. Period between 2005 to 2007 and the year of 2009, were characterized by a higher level of economic freedom when compared by the long-term trend performance of the economy that was modelled. On the contrary, the years 2010-2015 presented the stagnation in the level of economic freedom of the country, but this state is paradoxically accompanied by higher economic performance of the Slovak Republic.

Over the last 16 years, the development of the Slovak Republic was influenced by massive reform efforts, however, these efforts weakened following the beginning of the millennium. For this reason, the development of the Institutional environment wasn't constant. Despite this fact, the Slovak Republic recorded a constant growth in economic output up until the crisis year of 2009.

We consider this as the confirmation of the theoretical construct-path dependence of the New institutional economics. Bearing this in mind, we would like to warn the decisive sphere, that the current growth of the Slovak economy does not necessarily mean an imperative in relation to the future, and highlight the need to simultaneously secure the enhancement of the quality of the institutional environment (measured by economic freedom in our case). For more detailed analysis, we focus on a paired regression analysis of individual areas of the Index of Economic Freedom.

Figure 1. Regression analysis of GDP and Economic Freedom Index in terms of Slovak republic



Source: Own processing based on Fraser (2016), WBG (2016).

Table 1 characterizes the size of Government in Slovak Republic. Positive correlation between variables Government Consumption, Top marginal income tax rate, Top marginal tax rate and the overall sub index of this area (Size of Government) was confirmed. Correlation coefficients between variables show moderate to strong positive dependence. Furthermore, as expected, the positive sign of regression coefficient (slope) was also confirmed. If the level of sub-index A1 Size of Government will increase by 0.1 point, we would expect the GDP of the Slovak Republic to reach 19,631,159,328 USD, if recalculated at constant prices for year 2010.

Table 1. Correlations and regression analysis of area 1 Size Government and GDP in terms of the Slovak Republic

Var. Y & Var. X	Correlations (Data Slovak Republic) Marked correlations with * are significant at $p < ,05000$ (Case wise deletion of missing data)								
	Mean	Std.Dv.	r(X,Y)	r2	t	p	N	Constant (dep: Y)	Slope (dep: Y)
GDP_USD (bn USD)	81,4	14,4							
Government_Consumption(-1) *	4,4	0,3	0,77	0,59	4,32	0,00	15	-82 039 723 894,5	36 734 692 534,5
GDP_USD (bn USD)	81,4	14,4							
Transfers_and_subsidies(-1)	4,5	0,3	0,14	0,02	0,50	0,63	15	55 420 692 098,7	5 705 762 819,1
GDP_USD (bn USD)	81,4	14,4							
Government_enterprises_and_investment(-1)	9,9	0,5	-0,15	0,02	-0,55	0,59	15	123 106 437 464,5	-4 231 500 047,3
GDP_USD	81,4	14,4							
Top_marginal_income_tax_rate(-1) *	8,5	2,4	0,80	0,65	4,86	0,00	15	39 751 338 148,2	4 913 893 564,9
GDP_USD (bn USD)	8,1	14,4							
Top_marginal_income_and_payroll_tax_rate(-1)	2,5	1,1	0,27	0,07	1,02	0,33	15	72 735 483 105,1	3 494 656 983,5
GDP_USD (bn USD)	81,4	14,4							
Top_marginal_tax_rate(-1) *	5,5	1,5	0,71	0,51	3,68	0,00	15	44 842 587 873,6	6 679 216 303,2
GDP_USD (bn USD)	81,4	14,4							
A1_Size_of_Government(-1) *	5,9	1,0	0,71	0,50	3,61	0,00	15	18 563 571 777,0	10 675 875 509,3

Source: Own processing based on Fraser (2016), WBG (2016).

Table 2 shows the relationships and links between economic performance and the quality of legal framework. The actual statistical significance between each paired of regressions and correlations indicate that the level of these indicators correlate with the development of the economic performance of the country. This fact is interpreted as the evidence that the area of law enforcement in Slovak Republic represents a major institutional failure.

Table 2. Correlations and regression analysis of area 2 Legal System & Property Rights and GDP in terms of Slovakia

Var. Y & Var. X	Correlations (Data Slovak Republic) Marked correlations with * are significant at $p < ,05000$ (Case wise deletion of missing data)								
	Mean	Std. Dv.	r(X,Y)	r2	t	p	N	Constant (dep: Y)	Slope (dep: Y)
GDP_USD (bn USD)	81,4	14,4							
Judicial_independence(-1) *	3,6	0,9	-0,68	0,46	-3,34	0,01	15	120 327 859 168,0	-10 924 507 898,0
GDP_USD (bn USD)	81,4	14,4							
Impartial_courts(-1) *	3,2	1,0	-0,82	0,67	-5,17	0,00	15	120 652 705 229,3	-12 268 802 850,9
GDP_USD (bn USD)	81,4	14,4							
Protection_of_property_rights(-1)	5,3	0,8	0,34	0,11	1,28	0,22	15	49 989 572 240,8	5 958 620 408,2
GDP_USD (bn USD)	81,4	14,4							
Military_interference_in_rule_of_law_and_politics(-1)	10,0	0,0							
GDP_USD (bn USD)	81,4	14,4							
Integrity_of_the_legal_system(-1)	6,7	0,0	0,37	0,13	1,41	0,18	15	-407 743 865 648 285,0	61 173 579 280 861,5
GDP_USD (bn USD)	81,4	14,4							
A2_Legal_System_&_Property_Rights (-1)	6,0	0,4	-0,20	0,04	-0,75	0,47	15	127 663 429 050,3	-7 761 059 559,3

Source: Own processing based on Fraser (2016), WBG (2016).

Monetary and inflation environment is analysed in Table 3. The high correlation coefficients between the indicators and performance of the economy pointed to a long-term stability of monetary environment of the Slovak Republic and we consider this fact as a strong competitive advantage of the Slovak economy. According to the authors, the Slovak economy greatly benefits from membership in the European monetary system, namely from the adoption of the single currency EURO.

Table 3. Correlations and regression analysis of area Sound Money and GDP in terms of the Slovak Republic

Var. Y & Var. X	Correlations (Data Slovak Republic) Marked correlations with * are significant at $p < ,05000$ (Case wise deletion of missing data)								
	Mean	Std.Dv.	r(X,Y)	r2	t	p	N	Constant (dep: Y)	Slope (dep: Y)
GDP_USD (bn USD)	81,4	14,4							
Money_growth(-1)	8,9	1,0	0,35	0,12	1,33	0,21	15	38 240 209 504,9	4 833 842 075,6
GDP_USD (bn USD)	81,4	14,4							
Standard_deviation_of_inflation(-1) *	9,4	0,2	0,81	0,66	4,98	0,00	15	-457 952 031 475,4	57 430 951 778,6
GDP_USD (bn USD)	81,4	14,4							
Inflation_most_recent_year(-1) *	9,1	0,7	0,77	0,59	4,32	0,00	15	-73 055 663 600,8	16 948 841 205,2
GDP_USD (bn USD)	81,4	14,4							
Freedom_to_own_foreign_currency_bank_accounts(-1) *	8,7	2,3	0,85	0,72	5,81	0,00	15	34 965 961 348,6	5 352 654 882,6
GDP_USD (bn USD)	81,4	14,4							
A3_Sound_Money(-1) *	9,0	0,8	0,92	0,85	8,60	0,00	15	-67 808 784 600,8	16 533 805 689,6

Source: Own processing based on Fraser (2016), WBG (2016).

Sub index area A4 (Freedom to Trade Internationally) of the Index of Economic Freedom has shown as statistically insignificant after application of our quantitative methods. For capacity reasons, we have omitted this area. We believe that this statistical insignificance stems from the structure of the area. The Slovak Republic has been under the influence of the demand from foreign markets for a long-term is a highly-open economy. According to Kubičková, Benešová and Breveníková (2016): „Despite the key role of automobile, engineering and the electrical engineering industries, the position of services has been strengthening. At the same time, we can mention that the economic power of industry supports the development of the service sector in particular through intermediary consumption. The tertiary sector represents the largest sector of the national economy, as evidenced by its share on the national economy. The share of the service sector on the creation of value added is at present 62.73 %.“

In 2015, the openness of the Slovak Economy, measured as the proportion of the sum of imports and exports to the GDP (Kašťáková and Ružeková 2012), reached 185.2%, according to the data from the database of the World Bank Group (2016).

Table 4. Correlations analysis and regression of area 5 Regulation and GDP in terms of the Slovak Republic

Var. Y & Var. X	Correlations (Data Slovak Republic) Marked correlations with * are significant at $p < ,05000$ (Case wise deletion of missing data)								
	Mean	Std.Dv.	r(X,Y)	r2	t	p	N	Constant (dep: Y)	Slope (dep: Y)
GDP_USD (bn USD)	81,4	14,4							
Ownership_of_banks (-1) *	9,5	1,4	0,60	0,35	2,67	0,02	15	20 973 257 434,0	6 333 816 038,2
GDP_USD (bn USD)	81,4	14,4							
Private_sector_credit(- 1)	7,7	1,0	0,30	0,09	1,11	0,29	15	48 534 680 478,0	4 243 510 109,5
GDP_USD (bn USD)	81,4	14,4							
Interest_rate_controls/ negative_real_interest rates(-1) *	9,7	0,5	-0,64	0,42	-3,04	0,01	15	279 045 773 509,9	-20 310 630 463,6
GDP_USD (bn USD)	81,4	14,4							
Credit_market_ regulations(-1)	9,0	0,6	0,47	0,23	1,94	0,07	15	-27 073 854 578,8	12 047 250 400,1
GDP_USD (bn USD)	81,4	14,4							
Hiring_regulations_an d_minimum_wage(-1)	6,9	1,3	0,36	0,13	1,38	0,19	15	54 625 240 187,1	3 846 727 544,6
GDP_USD (bn USD)	81,4	14,4							
Hiring_and_firing_regu lations(-1)	4,6	1,1	-0,19	0,03	-0,68	0,51	15	92 050 173 914,5	-2 339 755 411,7
GDP_USD (bn USD)	81,4	14,4							
Centralized_collective bargaining(-1)	7,4	0,6	-0,40	0,16	-1,58	0,14	15	151 722 574 197,1	-9 495 931 250,7
GDP_USD (bn USD)	81,4	14,4							
Hours_ Regulations(-1) *	7,6	1,1	0,64	0,41	3,00	0,01	15	18 395 834 689,8	8 307 065 378,5
GDP_USD (bn USD)	81,4	14,4							
Conscription(-1) *	7,6	3,1	0,95	0,90	10,82	0,00	15	47 957 618 605,6	4 394 476 104,2
GDP_USD (bn USD)	81,4	14,4							
Labor_market_ regulations(-1) *	7,0	1,0	0,69	0,48	3,47	0,00	15	13 896 683 616,5	9 658 359 901,8
GDP_USD (bn USD)	81,4	14,4							
Administrative_ requirements(-1)	3,1	1,4	-0,39	0,15	-1,51	0,15	15	93 326 397 156,5	-3 888 980 065,7

Var. Y & Var. X	Correlations (Data Slovak Republic) Marked correlations with * are significant at $p < ,05000$ (Case wise deletion of missing data)								
	Mean	Std.Dv.	r(X,Y)	r ²	t	p	N	Constant (dep: Y)	Slope (dep: Y)
GDP_USD (bn USD)	81,4	14,4							
Bureaucracy_costs(-1) *	4,2	1,9	-0,84	0,70	-5,55	0,00	15	108 407 903 250,4	-6 395 226 899,7
GDP_USD (bn USD)	81,4	14,4							
Starting_a_business(-1) *	8,3	2,0	0,83	0,69	5,35	0,00	15	31 877 216 092,8	5 956 220 923,1
GDP_USD (bn USD)	81,4	14,4							
Extra_payments_bribes_favoritism(-1) *	5,1	1,2	-0,73	0,53	-3,86	0,00	15	125 712 157 143,1	-8 741 867 488,7
GDP_USD (bn USD)	81,4	14,4							
Business_regulations(-1)	5,6	0,4	-0,03	0,00	-0,10	0,92	15	86 809 715 570,4	-982 627 021,9
GDP_USD (bn USD)	81,4	14,4							
A5_Regulation(-1) *	7,2	0,6	0,53	0,28	2,27	0,04	15	-8 891 439 826,3	12 571 931 005,9

Source: Own processing based on Fraser (2016), WBG (2016).

In the area 5 Regulation (Table 5), there are three indicators that are particularly interesting for our empirical analysis: Starting a business, Extra payments bribes favouritism and Bureaucracy costs. Starting a business has reached moderate to strong positive correlation between variables. The other two indicators confirmed our conclusion from Area 2 – enforcement of Law. The analysis of these variables reveals a strong competitive disadvantage of the Slovak Republic.

Conclusion

New institutional economic theory, especially its area of transaction costs, reflects the state of the institutional environment. Quality of institutional environment is directly determined by the network of effectively operating institutions, that means in a low level of transaction costs. As demonstrated by many studies, the measuring of transaction costs is very difficult to accomplish. One of possibilities to overcome this issue is to use indexes. Therefore, the Index of Economic Freedom by the Fraser Institute was utilized for purposes of this research paper. The authors of this index predicted direct positive correlation between economic freedom and economic performance of countries. Our paper analysed institutional environment in the Slovak Republic through the relationship between economic performance and economic freedom by Fraser Institute based on updated data for 2014 from the Annual Report 2016. As a result, we revealed strengths and weaknesses of the Slovak economy in the long run. The monetary environment of the Slovak Republic is of valuable strength for the economy. Areas of law enforcement, corruption and bureaucracy, on the other hand, are among the most striking economic failures. These areas are typical carriers of transaction costs.

The major contribution of this paper, is evidence that there is a direct relationship between the index and the economic performance of countries. This result is also a confirmation of initial assumptions of the authors.

We see the potential for further scientific research namely when it comes to the continuation of quantification of the amount of transaction costs in the national economy. For decision-makers, we recommended to significantly improve the quality of the institutional environment, namely when corruption and law enforcement are concerned.

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References

- [1] Baláž, V., Klavánková-Oravská, T., and Zajac, Š. 2007. *Inštitúcie a ekonomická transformácia*. Bratislava: Veda vydavateľstvo Slovenskej akadémie vied, ISBN: 8022409605, 133 pp
- [2] Coase, R.H. 1937. *The Nature of the Firm*. *Economica*. 4 (16): 386–405. Available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1468-0335.1937.tb00002.x/pdf> (accessed November 11, 2015)

- [3] De Soto, H. 1989. *The Other Path*. New York: Harper & Row. In WANG, N. (2009). *Measuring Transaction Costs: An Incomplete Survey*. Ronald Coase Institute Working Papers No. 2. Available at: <https://www.coase.org/workingpapers/wp-2.pdf> (accessed June 21, 2016)
- [4] Gwartney, J., Lawson, R., Hall, J. 2016a. *Economic Freedom of the World: 2016 Annual Report*. Vancouver, B.C.: Fraser Institute. Retrieved September 10, 2016, from Available at: <https://www.fraserinstitute.org/sites/default/files/economic-freedom-of-the-world-2016-exec-summary.pdf> (accessed September 10, 2016)
- [5] Gwartney, J., Lawson, R., and Hall, J. 2016b. *2016 Economic Freedom Dataset*, published in *Economic Freedom of the World: 2016 Annual*. Available at: http://www.freetheworld.com/datasets_efw.html (accessed September 10, 2016)
- [6] Hanke, S., and Walters, S. 1997. *Economic Freedom, Prosperity, and Equality: A Survey*. *Cato Journal*, 17(2): 134.
- [7] Hanousek, J., Kočenda, E. 2011. Vazba korupce a hospodářské svobody na veřejné finance a investice nových členů EU. *Politická ekonomie*. 59(3): 310-328 Available at: <http://www.vse.cz/polek/download.php?jnl=polek&pdf=793.pdf> (accessed May 15, 2016)
- [8] Holman, R. et al. 2001. *Dějiny ekonomického myšlení*. Praha: C. H. Beck., 541 pp.
- [9] Karlsson, S. 2005. *Economic Freedom Indexes: Fraser vs. Heritage*. Available at: <https://mises.org/blog/economic-freedom-indexes-fraser-vs-heritage> (accessed September 19, 2016)
- [10] Kašťáková, E., and Ružeková, V. 2012. *Operácie v zahraničnom obchode: teória a prax*. Bratislava: Vydavateľstvo EKONÓM, ISBN: 978-80-225-3496-3, 295 pp.
- [11] Kubičková, V., Benešová, D., and Breveníková, D. 2016. Relationships between Innovations and Productivity in the Services in the Slovak Economy. *Journal of Technology Management & Innovation*. 11(2): 46 - 55.
- [12] Liška, V., Sluková, K., and Voljeníková, J. 2011. *Institucionální ekonomie*. Příbram: Professional Publishing, ISBN : 978-80-7431-051-5, 235 pp.
- [13] Lisý, J. et al. 1998. *Dejiny ekonomických teórií*. Bratislava: ELITA, 88 pp.
- [14] Lukáčik, M., Lukáčiková, A., and Szomolányi, K. 2011. *Ekonometrické modelovanie v programoch EViews a Gretl*. Bratislava: Ekonóm. ISBN: 9788022533201, 330 pp.
- [15] Murphy, R. 2016. A Comment on Measuring Economic Freedom: A Comparison of Two Major Sources. *The Journal of Private Enterprise*, 31(3): 69-91. Publisher: The Association of Private Enterprise Education.
- [16] Okruhlica, F. 2013. *Výška transakčných nákladov ako meradlo kvality podnikateľského prostredia v Slovenskej republike a Českej republike*. In Majtán, Š. et al. 2013. *Aktuálne problémy podnikovej sféry*. Bratislava: Ekonóm, 2013.
- [17] Ram, R. 2014. Measuring economic freedom: a comparison of two major sources. *Applied Economics Letters*, 21(12): 852-856. Publisher: Taylor & Francis (Routledge). Available at: <http://search.proquest.com/openview/7432ce866db2f3ccf30e296894fceb6a/1?pqorigsite=gscholar&cbl=39984> (September 19, 2016)
- [18] Stiglitz, J. 2006. *Making Globalization Work*. Available at: <https://www.project-syndicate.org/commentary/making-globalization-work> (September 19, 2016)
- [19] Ther, P. 2016. *Nový pořádek na starém kontinentě*. Praha: Libri, ISBN: 978-80-7277-541-5, 360 pp.
- [20] Volejníková, J. 2005. *Moderní kompendium ekonomických teórií*. Praha: Profess Consulting, 150 pp.
- [21] Wang, N. 2009. *Measuring Transaction Costs: An Incomplete Survey*. Ronald Coase Institute Working Papers No. 2. Available at: <https://www.coase.org/workingpapers/wp-2.pdf> (June 21, 2016)

[22] Williamson, O.E. 1990. *Die ökonomischen Institutionen des Kapitalismus*. Tübingen: Mohr Siebeck, ISBN 978-3-16-345433-0, 382 pp.

*** World Bank Group. 2016. World Development Indicators. Available at: <http://data.worldbank.org> (September 19, 2016)

*** Heritage Foundation. 2016. *20th Anniversary*. Available at: <http://www.heritage.org/index/book/20thannchapter> (September 10, 2016)

Mechanism for Implementation of Public Investment Policy in Industrial Construction

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Abstract:

The relevance of the study stems from the need to improve the effectiveness of public investment policies pursuing strategic goals of sustainable development of construction organizations in conditions of insufficient own funds. The study develops conceptual provisions and methods to increase the potential of public investment policy mechanisms. The research is based on the theory of project management, methods of logical analysis, expert and rating assessments, grouping and comparison; the authors applied the methods of classification, structural description, as well as system and optimization methods extending the application of the subject-functional approach aiming at the development of a set of measures used to select the key areas for resources investment. The authors developed a structural model for the implementation of public investment policy in industrial construction. The article proposes methodology and criteria for selecting indicators used to assess the investment attractiveness of industrial construction facilities. The materials of the article are of scientific and practical value and can be used to develop the methodological basis for the implementation of investment policy at all levels of construction industry management.

Keywords: investment; investment policy; industrial construction; state regulation; Russia; factor analysis

JEL Classification: B41; D04; L74; L78

Introduction

The development of society as a whole and of individual economic entities is achieved through increasing reproduction of material values which ensures the growth of national wealth and, accordingly, income. One of the main means of ensuring this growth is investment which includes investing temporarily free cash and other assets in businesses, as well as a set of practical actions for implementing investments (Jelnova 2013).

In general terms, investment activity is connected with the practical (financial, organizational, productive, economic, etc.) activities of the state, legal entities and individuals aiming at the accumulation of financial resources in the form of investments and their effective use during the reproduction of production and non-production means (Ministry of Economic Development of the Russian Federation 2005).

In a market economy, investing activities are entrepreneurial ones and are carried out by business entities in the investment market which consists of relatively independent segments, including the real investment market,

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the market of investment facilities, the market of innovative investments (Minakova and Anikanov 2013). This implies certain specifics of management methods, forms, methods of analysis and evaluation of investment efficiency.

Investments in reproduction of fixed assets (funds) are made as capital investments and primarily relate to industrial construction projects. This, to a large extent, requires external regulation from state construction authorities so that investment policies are implemented with the minimum losses of time and resources.

One of the most relevant areas of Russia's modern investment policy is the creation of competitive industries and facilitation of modern technologies development. At present moment Russia is experiencing some objective difficulties for large-scale net capital accumulation, that is why investment policy should be mainly directed at the structural reorganization of the investment procedure and the creation of conditions for maximum efficiency of the reproductive, technological, sectoral and institutional structures, as well as age composition of fixed capital, which justifies the need for state regulation of investing activities in industrial construction.

It should be noted that state regulation of investment is carried out in the following forms (Russian Federation Federal State Statistics 2017):

- direct participation of the state in investing activities;
- indirect participation of the state in investing activities which manifests itself through the creation of favorable conditions for the investment development.

Direct participation of the state in investing activities implies the development, approval and financing of investment projects implemented by the Russian Federation, including the ones done jointly with other countries, as well as international projects financed from the federal budget and the budget of the federal subjects of the Russian Federation.

According to the study results on the investment attractiveness of European countries conducted by EY (Ernst and Young Global Limited) using the database of EY European Investment Monitor (EIM), in 2016 Russia ranked 7th in the list of top 20 European countries regarding the international investors activity and the number of jobs created. At the same time, compared to the record growth in direct investment in Russia in 2015 (61%), their amount in 2016 was relatively small and accounted for only 2%. As for the jobs created, their number in direct investment projects also increased during the year by 6%, reaching 15,064 (EY. Building a better working world).

Countries of Western Europe are traditionally the main investors in the Russian economy. In 2016, ninety-eight European investment projects were implemented in Russia. Along with Germany, France remains an active investor, being the second largest. The number of French investment projects in Russia was stable and estimated 20 in 2015 and 2016. At the same time, the investing activities of Italian companies dropped almost twofold – from 12 to seven projects. Among the top three leading European investors in Russia, Italy gave way to Austria. In 2016, Austrian companies invested in nine Russian projects.

Main data on foreign direct investment in the economies of different countries could be obtained from the periodical statistical reports of the “Balance of Payments Statistics” series of the International Monetary Fund (IMF), the annual reports of the “World Investment Report” series of the United Nations Conference on Trade and Development (UNCTAD), and annual economic reports of national statistical institutes.

International companies actively invested in projects related to the production of machinery and equipment (27 projects), chemical products (23 projects) and electrical equipment (15 projects); however, there are hardly any projects in forestry and textile production.

Forty-nine investment projects are implemented in Central Russia. Most of the investment projects in Moscow and the Moscow region are connected with the food industry (10 projects) and car assembly (6 projects). The highest number of investment projects in Moscow and the Moscow region are carried out by Germany (7 projects) and the United States (9 projects).

The main branch of the Russian economy with the largest number of foreign direct investment projects is still the oil and gas industry. At the same time, over the past year the number of new projects in this field remained stable – 171.

According to the methodology of the International Monetary Fund which annually estimates the volume of foreign direct investment, investments can be defined as foreign direct ones if they imply the acquisition by a foreign investor of at least 10% of the share in the authorized capital of a company located on the territory of the state that receives the investment and allow the investor (or his representative) to exert a strategic influence on the investees, including partial or complete control over them. However, in some countries the share of 10% in the authorized capital of an investee is considered insufficient to establish effective control over the management or to guarantee a long-term interest of the investor. Consulting firm A.T. Kearney publishes an annual rating of 25 states attractive to investors. The Kearney Foreign Direct Investment Confidence Index is based on the findings of a survey of top 300 global corporations and represents the results of a long-term analysis of the impact global political and economic changes have on the inflow of foreign direct investment (ATKearney).

Unfortunately, Russia, which in 2013 took the 11th position in the ranking, since 2014 is no longer in the TOP 25. At the same time, Russia is ranked 40th regarding business conditions in Doing Business-2017 rating, whereas in 2012 the country took the 124th position, and in 2016 it was 51st (Humanitarian Technology: Analytical Portal).

From the second half of 2016, the investment in the assets of Russian companies has increased. Global funds working with Russian assets closed the year of 2016 with a fivefold increase in investment, demonstrating weekly growth in the beginning of 2017. According to Bloomberg agency, in 2016 the investment in Russian shares amounted to USD 1.14 bln compared to 208 mln in 2015. However, this does not mean that strategic foreign capital will be attracted to Russia, or this will lead to the creation of promising industrial productions. Resident companies are not seeking to minimize capital investment risks by buying up shares and securities, providing loans, loans and loans (Ban 2016).

1. Literature review

The mechanism for the development and implementation of investment policy is prescribed in the regulatory and legislative framework of the Russian Federation. The Federal Law "On Investment Activities in the Russian Federation in the Form of Capital Investments" defines the legal and economic foundations of investment activities carried out in the form of capital investments in the territory of the Russian Federation, as well as guarantees for equal protection of the rights, interests and property of investment entities conducted in the form of capital investments, regardless of the form of ownership (Ministry of Economic Development of the Russian Federation 2005).

Papers devoted to these issues consider the essence of the concepts "investment" "investment policy" from various angles, but they always take into account the interests of both the investor and the customer, both the "donor" and the "recipient" of investment resources that carry out mutually beneficial actions with the purpose of investing temporarily free property assets in business to create positive socio-economic impact.

Most scholars focus on the macroeconomic determinants of the investment in various sectors of the economy (Serrasqueiro 2017, Richards 2013, Tomo and Landi 2017). This study provides a detailed consideration of how to create an effective organizational and economic mechanism for attracting investments in industrial construction.

In his well-known book "The Behavior Gap: Simple Ways to Stop Doing Dumb Things with Money", Carl Richards notes that in essence, investing is always a choice, which both the investor and the recipient face. Making a decision on investing entails taking responsibility for the right choice of investment and its outcome. Otherwise, both sides are doomed to the same mistakes (Serrasqueiro 2017).

The World Investment Report 2016 - Investor Nationality: Policy Challenges Key Messages and Overview prepared by the UNCTAD states that high risk and ambition often lead people to speculative investing behavior; they want to get rich in the shortest time possible, which is why investment requires regulatory methods and control (Ban 2016).

Having analyzed the data of two subsamples of the 1,557 small and medium-sized enterprises with high investment attractiveness (HINV) and 1,454 small investment enterprises (LINV) and using the GMM (General Method of Moments) for dynamic assessment, Andrea Tomo and Giovanni Landi established positive (production

development, increasing income) and negative (financial crisis, the firm size) factors affecting the investment process, and proved the positive correlation between cash flow and investment (Tomo and Landi 2017).

Seeing eye to eye with the authors (Dahlgren and Leung 2015, Kaufmann 2005, Esetova *et al.* 2015, Halawa *et al.* 2013, Linton and Vonortas 2015), we believe that, from a practical point of view, the investment policy of the state, first of all, should pursue the creation of a favorable investment climate in the country that can attract and ensure rational distribution of investments by economy sectors.

A review of international studies was carried out using a systemic approach using the resources of the Thomson Reuters ISI website. The authors also share the opinion of Russian scientists T.V. Butovova, I.P. Doroshina, E.I. Moskvitina, and A.Yu. Fedotovskiy that in the current conditions of the state development, the most important tasks associated with investment policy are: modernization of material and technical production industries; facilitating investing activities of economic entities; creating conditions for improving the favorable investment climate and reducing investment risks (Moskvitina *et al.* 2015, Fedotovskiy 2009).

Taking into account the significant contribution the abovementioned authors made into the development of the theoretical foundations of investment policy, it should be noted that certain aspects of using the investment potential in industrial construction still require further study. Insufficient research on this issue, its relevance and increasing practical significance determined the choice of the topic and the goal of the research.

2. Materials and methods

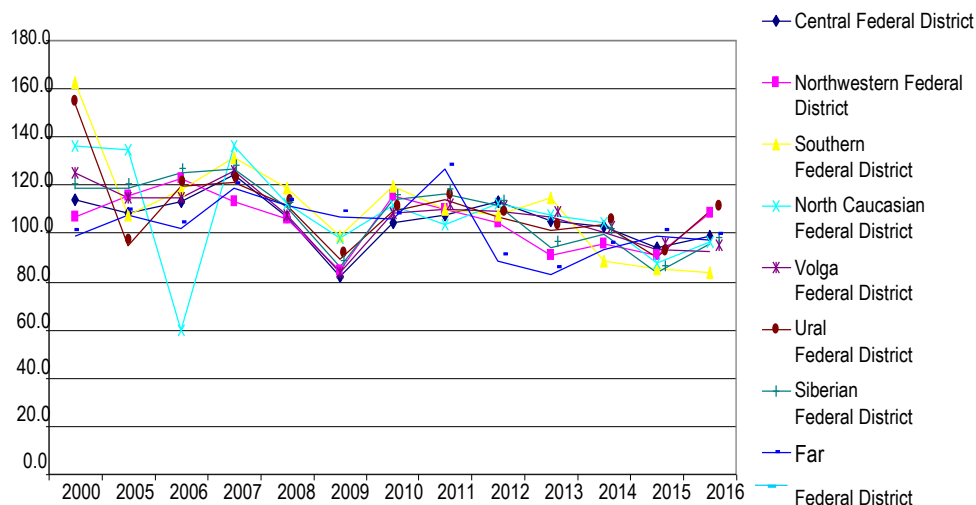
Regarding the complexity of the issues related to the development and implementation of public investment policy in industrial construction, we found it viable to choose scientific methods of the theory of cognition (epistemology) and the theory of project management. System and optimization methods of research expand the potential of the subject-functional approach, and allowed developing a set of practical measures that ensure the effectiveness of the public investment policy in industrial construction.

A specific feature of Russia's current public investment policy is the transition from allocating budget funds between sectors and regions to selective partial financing of specific investment projects on a competitive basis. According to official statistics, 14,639.8 billion rubles of investments in fixed assets, or 99.1% to the level of 2015, were spent in 2016 on the development of the economy and social services of the Russian Federation by organizations of all ownership forms (including small businesses) (Russian Federation Federal State Statistics Service 2016a, 181). The share of investments in fixed assets in GDP in 2016 estimated 20.4% (in 2005 – 17.4%, in 2010 – 20.6%, in 2015 – 19.6%).

In 2016 more than 60% of all investments in the fixed capital of the Russian Federation accrued to the Central, Ural and Volga federal districts (25.9%, 18.7% and 16.6% of all investments, respectively, Figura 1).

Half of the total volume of investment in fixed capital in 2016 accounts for the territory of 11 subjects of the Russian Federation, including Moscow (11.6%), Yamalo-Nenets (7.5%) and the Khanty-Mansi Autonomous Okrugs (5.5%), the Republic of Tatarstan (4.4%), the Moscow Region (4.3%), St. Petersburg (4.0%), Krasnodar and Krasnoyarsk Territories (2.9% each), the Republic of Bashkortostan (2.5%), Sverdlovsk (2.4%) and Rostov Oblast (2.0%) (Russian Federation Federal State Statistics Service 2016a, 181). The Republic of Sakha (Yakutia), the Sakhalin Oblast, the Nenets, the Yamalo-Nenets and the Khanty-Mansiysk Autonomous Okrugs were leaders of investment in fixed capital per capita in 2016. The largest investment activity was registered in the republics of Crimea, Sakha (Yakutia), Kamchatka Territory, Vologda, Arkhangelsk regions (except the Nenets Autonomous Okrug), Sevastopol (1.3-1.7 times more than in 2015) (Russian Federation Federal State Statistics Service 2016a, 181). The volume of investments in fixed capital decreased by 25-35% compared to the previous year in the Republics of Kalmykia and Mari El, Krasnodar Territory, the Penza Region; by 35-40% – in the Republic of Tyva, Magadan Region, Chukotka Autonomous Okrug (Russian Federation Federal State Statistics Service 2016a, 181).

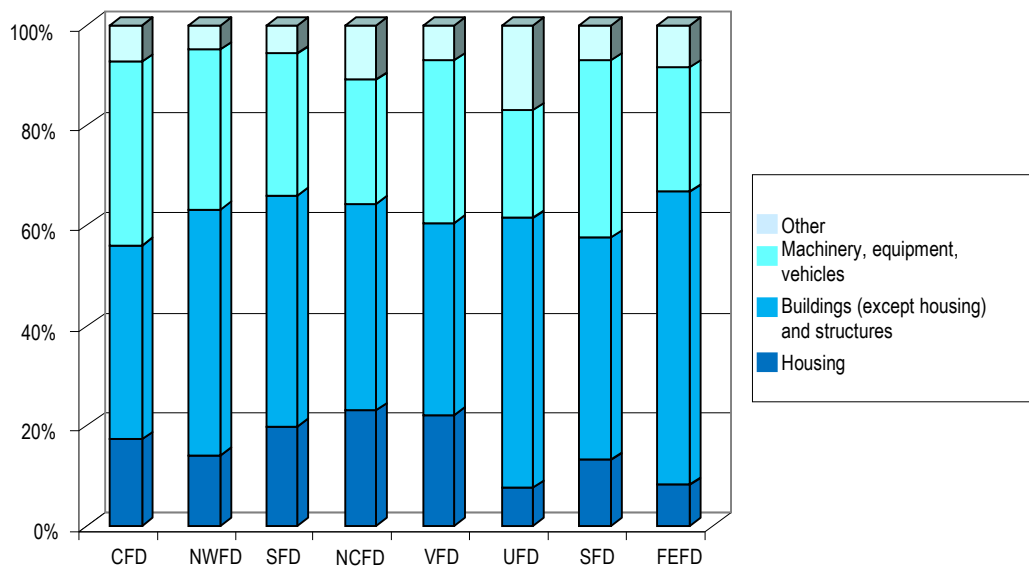
Figure 1. Dynamics of Investment in Fixed Capital by Federal Subjects of the Russian Federation (in current prices, mln rub)



Source: Russian Federation Federal State Statistics Service, Bulletin “Main indicators of investment and construction activities in the Russian Federation in 2016” 2016.

As we can see in Figure 2, in 2016, investments in construction of industrial buildings and structures accounted for the largest share in the investment in all federal districts of the Russian Federation: in the Far Eastern Federal District (58.6%), the Ural Federal District (53.9%), the Northwestern Federal District (49.2%), and in the Southern Federal District (46.1%). Along with this, it can be noted that in the Central Federal District, a large share of investment accounted for fixed assets in use – machinery, equipment, vehicles (36.6%), and in the North Caucasian Federal District – in housing construction (23.1%).

Figure 2. The Structure of Investment in Fixed Capital by Types of Fixed Assets in the Federal Districts of Russia in 2016 (in % of total investment in fixed capital)



Source: Russian Federation Federal State Statistics Service, Bulletin “Main indicators of investment and construction activities in the Russian Federation in 2016”, 2016.

Most of the investments in fixed capital (51.9%) in 2016 accrued to the construction of industrial buildings and structures (Table 1), with a stable increase from 2000 to 2015 and a slowdown in growth in 2016 compared to 2015 (94.7%) (Table 2).

Table 1. Structure of Investments in Fixed Capital (without small business enterprises)

INDICATORS	2016r.		% of total		
	Bln rub	% of total	2005	2010	2015
TOTAL	10,993.7	100	100.0	100.0	100.0
Including: housing	578.4	5.3	12.0	12.2	6.2
Buildings (except housing) and structures	5,708.0	51.9	40.4	43.3	49.9
Machinery, equipment, vehicles	3,599.9	32.7	41.1	37.9	33.8
Other	1,107.4	10.1	6.5	6.6	10.1

Source: Russian Federation Federal State Statistics Service, Bulletin "Main indicators of investment and construction activities in the Russian Federation in 2016", 2016.

Table 2. Dynamics of Investments in Fixed Capital (without small business enterprises) bln rub

Indicators	2000	2005	2010	2013	2014	2015	2016
2. TOTAL	1,165.2	3,611.1	9,152.1	13,450.2	13,902.6	14,555.9	10,993.7
Including: housing	132.0	434.2	1,111.7	1,681.5	2,014.4	2,188.8	578.4
Buildings (except housing) and structures	502.2	1,460.2	3,962.8	5,582.7	5,665.3	6,027.8	5,708.0
Machinery, equipment, vehicles	426.6	1,484.0	3,472.7	5,212.8	5,052.0	5,051.5	3,599.9
Other	104.4	232.7	604.9	973.2	11,709.9	1,287.8	1,107.4

Source: Russian Federation Federal State Statistics Service, Bulletin "Main indicators of investment and construction activities in the Russian Federation in 2016", 2016.

In 2016, most dealings accounted for vehicles, complexes and production lines, individual production equipment and computers. New Russian-made machinery and equipment in 2016 were purchased by 84% companies (88% in 2010, and 91% in 2015), foreign production – 32% of enterprises (35% in 2010, 37% in 2015); 18% of companies bought Russian-made equipment on the secondary market, for foreign production this figure estimated 5% (22% and 7% in 2010, respectively, in 2015 – 20% and 5%) (Wren and Taylor 1999).

The largest share of the federal budget funds in 2016 was allocated to the regions of the Central Federal District (24.1% of all investments coming from the federal budget), the North-Western Federal District (18.9%) and the Southern Federal District (17.6%) (Russian Federation Federal State Statistics Service 2016a, 182). More than 30% of the federal budget was spent on five federal subjects of the Russian Federation: Moscow (10.0%), Krasnodar Territory (7.9%), Rostov (5.4%), Murmansk and Novgorod regions (3.8% for each) (Russian Federation Federal State Statistics Service 2016, 182).

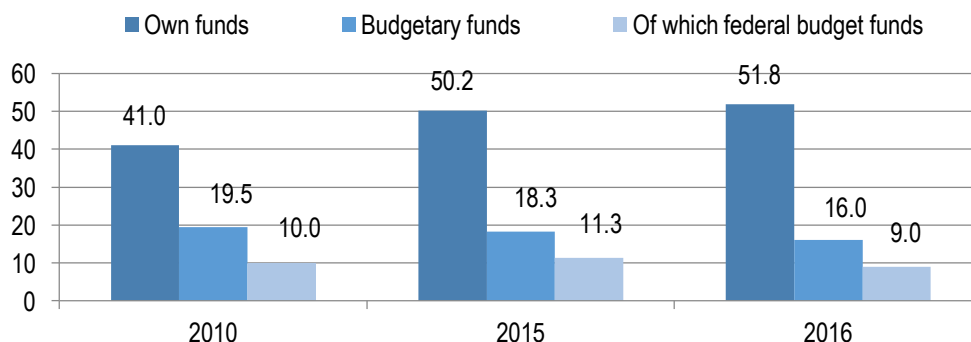
In 2016, the largest share of budget funds in the total volume of investments in fixed capital accounted for the Republics of Ingushetia (91.8%), North Ossetia (Alania) (74.9%), Dagestan (60.3%) and Sevastopol (67.9%). The share of budget funds did not exceed 5% for the following four federal subjects of the Russian Federation: Komi Republic, the Nenets, Yamalo-Nenets and Khanty-Mansiysk Autonomous Okrugs (Russian Federation Federal State Statistics Service 2016a, 182).

Investments came from both the subject's own and budgetary funds, including those of the federal budget; their dynamics and structure are presented in Figure 3 (Russian Federation Federal State Statistics Service 2016c). Funds from the federal budget were used to implement the Federal Targeted Investment Program aimed at developing social services and utilities, as well as the infrastructure of the Russian Federation. The federal target programs were the main instrument for reaching these goals.

In 2016, the most actively growing industries were the agricultural sector and food industry, which can be explained both by the system of state support measures to the industries and by the import substitution. In addition to that, in 2016, there was an increase in the number of investment projects for the engineering

facilities construction, which is associated with the implementation of special programs to support certain industries, such as shipbuilding, automotive, agricultural machinery, etc.

Figure 3. Dynamics of federal subjects' own and budgetary funds invested in fixed capital



Source: Russian Federation Federal State Statistics Service, Investments in fixed capital in the Russian Federation in 2016

At the same time, there are some objective factors that hinder investing activities in the Russian Federation, in most cases these involve: a lack of internal financial resources; instability of the economic situation in the country; high inflation rate; high lending rates (Table 3). The findings of an experts' survey show that a set of measures aimed at the development of industrial construction is impeded by insufficient financial support; the poorly coordinated administrative procedures that hinder investing activities; inefficient management of state and municipal programs for the development of the construction sector and investment programs for industrial construction; poor maintenance of engineering, transport and social infrastructure.

Table 3. Factors Hindering the Investment Activity of Enterprises (% of the total number of companies)

FACTORS	2016	2015
Insufficient demand for products	27	28
Lack of own funds	61	61
Investment risks	50	60
High inflation rate in the country	60	65
High commercial loan interest	56	56
A complicated procedure for obtaining loans for investment projects	46	42
Existing taxation scheme for investing activities	33	not researched
Price fluctuations in the world energy market	39	36
Unstable economic situation in the country	61	66
Economic situation in the world market	41	44
Inefficient legal framework regulating investment activities	27	22
The country's exchange rate policy settings	48	50

Source: Russian Federation Federal State Statistics Service, Bulletin "Investment activity in Russia: conditions, factors, trends - 2016", 2016.

According to the forecasts of the Ministry of Economic Development of the Russian Federation, in 2017 investment in fixed capital will become positive again, and the average increase in investments in 2017 - 2019 is expected to be 2.7% per year.

However, this will be accompanied by a significant reduction in the costs of the public sector, primarily concerning the federal authorities. Experts predict that the share of investments made by non-financial organizations at their own expense in 2017 - 2019 will exceed 50% (Decree of the Government of the Russian Federation No. 13 of January 09, 2014). Investment projects will become more sensitive to profitability and the payback period of real production. Thus, the market for industrial construction and engineering is to face the

demand for small and inexpensive facilities intended for long-term use (Meylanov and Esetova 2015). The role of the state regarding the protection of the rights of the investment activity subjects should increase significantly. This will make all interested parties more confident that they will not lose their invested capital because of the crisis situation in the country. It is necessary to create equal competitive conditions for all investors that will not depend on the forms of ownership, as well as simplify the procedure of documents approval required when developing investment programs and projects.

Decree of the Government of the Russian Federation of October 30, 2014 No. 1119 "About selection of the subjects of the Russian Federation having the right to the state support in form of subsidies for cost recovery to creation of infrastructure of industrial parks and science and technology parks" identified types of state support from the federal budget to finance activities to create an industrial park for connecting a private industrial park with the engineering infrastructure, to connect the facilities to the power supply network, to provide infrastructure construction, engineering works within the boundaries of the land plot (Federal Law No. 39-FZ of February 25, 1999). A positive feature is that the developer (legal entity or individual entrepreneur) possesses all the rights to the land plot and other real estate required for the implementation of the project that belongs to an industrial park (Russian Federation Federal State Statistics Service 2016b).

Considering all the above, to be efficient, the investment policy in industrial construction should involve a set of measures, including: improving the legislative framework regulating investment relations in construction; integrating state support programs and facilitating the creation of industrial parks, construction of infrastructure facilities, engineering works within the boundaries of the land allocated for development.

3. Results

At present moment, investing activities primarily imply exchange and take the form of purchase and sale of investment resources in the markets of investment goods (Towler and Sinnott 2013).

Investment in industrial construction is always carried out in conditions of uncertainty, the degree of which can vary significantly depending on the technological and structural complexity of the constructed object, the terms of construction, and the volume of investment. Therefore, in practice decisions are often made on an intuitive logical basis, whereas they must be supported by the methods of the project management theory (Esetova *et al.* 2015, Bagautdinova *et al.* 2012), according to which, the heart of investment activity is comprised by iterative actions: accumulation increase – costs – capital asset growth – income. So, seen a process, the investment includes the following stages: accumulating savings – investing resources – generating income. Here, investors are interested in obtaining guaranteed income and capital gains, so the income characteristics determine all the parameters of investment, that is, resources investment.

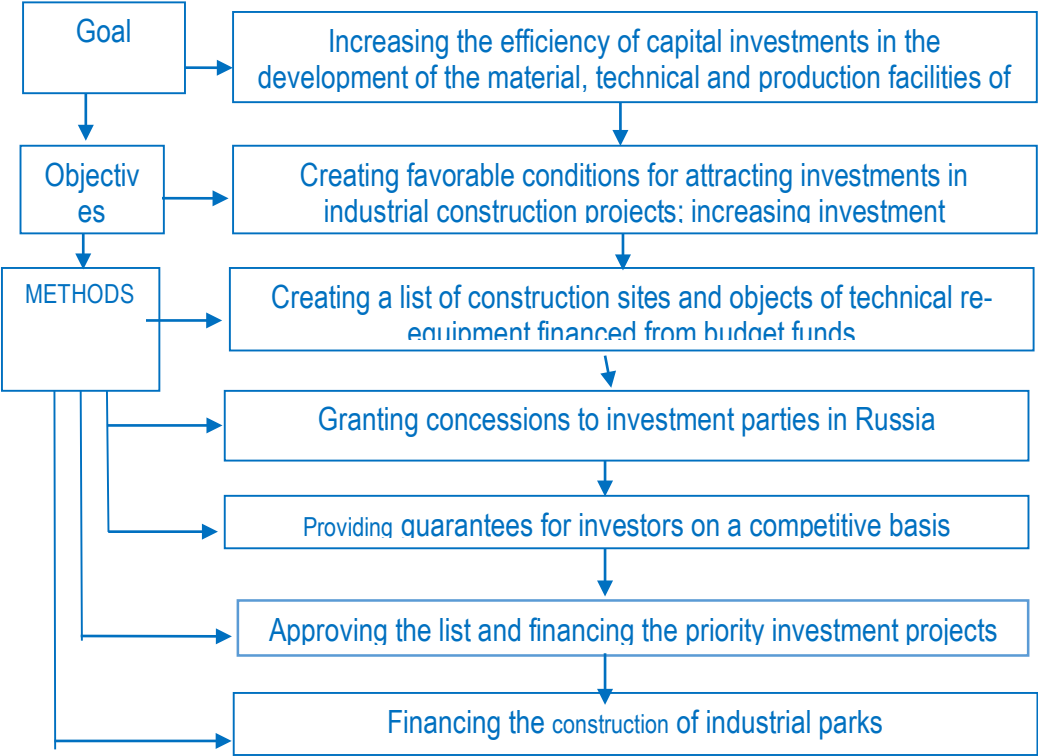
When solving investment problems of a specific enterprise (industry), one should consider its specifics that would determine the choice of methods, forms and tools of the investment policy procedure at the levels of the state, industry and an enterprise.

Investment policy of the state represents a set of interrelated goals and activities to ensure the required volume and structure of the investment in the country's economy, its sectors and branches. It is aimed at increasing the investment activity of reproduction agents: the population, entrepreneurs, and the state (CIS - Legislation 2014). The main objectives of the investment policy of the state are: attracting investment resources from various sources, including foreign investment; restructuring certain sectors of economy; stimulating the development of public and private partnership; encouraging the creation of non-state structures to accumulate the population's financial resources for investment purposes; creating legal conditions and guarantees for investors and other participants in the investment process; developing forms of indirect financing of investment projects; improving the system of privileges and preferences in investing activities; creating conditions for the development of venture investment. In this regard, the mechanism of public investment policy should ensure that the views of all, directly or indirectly, interested parties are taken into account and, at the same time, it should create conditions for adopting coordinated measures to enhance investment in industrial construction, in line with the objectives and directions of this type of activity (Meylanov and Esetova 2016).

The legal regulation of investment processes is the exclusive prerogative of the state. It seems crucial to provide financial support for investment projects which should enable the transition of the construction complex to an innovative development path by increasing the demand for the facilities created by domestic production.

That is why the mechanism of the public investment policy should go beyond abstract regulation of investment processes, since it should create conditions for the implementation of investment projects in specific sectors of the economy, including industrial construction, the conceptual foundations of which are presented in Figure 4.

Figure 4. Conceptual Basis for Developing the Mechanism of Public Investment Policy in Industrial Construction



Source: Niyazmetov, A.K. State capital investments: challenges and solutions. Finance, 9 2014.

Organizational and economic management of financial support of high-risk investment projects should ensure smooth “binding” of the economic interests of the investment parties at all stages of the development and implementation of industrial construction projects, including financing, credit provision, contracting, construction, and commissioning.

Developers apply either the strategy of direct financial support of projects, or the indirect one, through guarantee commitment contracts. The strategy of direct financial support of projects implies financing projects by a specially established organization on a return basis that ensures the increase in the capital invested in the project that is suitable for the investor. The strategy of using guarantee commitment contracts is a fundamentally new way of economic incentives for projects through contractual obligations that ensure the return of most funds spent on the construction of fixed assets (buildings, engineering facilities) in case of failure of the project (under certain conditions) (Kaufmann 2005).

The portfolio of investment projects should be diversified, that is, include priority projects that differ in cost, timing, profitability and risk level (Halawa *et al.* 2013). The priority projects include: the ones aiming at: increasing the cost effectiveness and reliability of heat and electricity supply for industrial, housing and municipal facilities; increasing the degree and scale of industrial and household waste recycling and using more

secondary resources in the economic turnover; reducing the level of man-caused impact on the environment; and projects financing of which is carried out via public-private partnership.

At the initial stage of the creation and implementation of the system of financial support, it is necessary to accumulate the financial capital sufficient to launch the projects. Funds for the projects implementation are allocated on terms of recoverability and their growth under the first support strategy of guarantee obligations or under the second strategy of financial support which implies financing of no more than 70-80% of the volume of investment required for implementing projects; the same ratio is applied, if there's such a need, when returning funds to the plant developers under guarantee commitment contracts. Along with this, there is compulsory insurance of financial risks adopted in the system of financial support. Guarantee investment support should promote the feasibility of at least 70-80% of the investment portfolio projects. The distribution of financial risk arising during the projects implementation is carried out in accordance with the previously established (approved) relations between the owner of the capital, the main functional body of the financial support system and the developers of the projects. The income incurred through the implementation of projects is distributed between the parties of the financial support system in accordance with the distribution of financial risk and taking into account the amount of financial resources spent, the overall efficiency of projects (their profitability), and the number of projects.

The effectiveness of the development and operation of the industrial construction sector, along with state support, necessitates a significant number of intra-industry management and technical measures which include: improving the production structure, a large increase in the scale and pace of development and introduction of new high-performance solutions.

4. Discussion

The priority goal of the current investment policy of the Russian Federation is the development of forms and methods of long-term domestic investment (Meylanov and Esetova 2015). That is why it was necessary to find additional tools which would allow accumulating investment resources in industrial construction (Meylanov and Esetova 2015). The public investment policy primarily aims to create the conditions favorable for attracting and increasing the efficiency of the investment resources used in the development of industrial construction.

The investment policy should include: determining the investment volumes and their structure appropriate for each period of time (sectoral, reproductive, technological, territorial, ownership forms); establishing priority investment projects; improving the efficiency of investments. Public investment policy in industrial construction represents a system of views, ideas, objectives, measures, and directions so that it is possible to create conditions favorable for investment and that take into account current internal and external threats for this in the situation of instability of the organizational and economic environment of the investment project. When making a decision on the use of funds, the investor should evaluate many factors that determine the effectiveness of future investments. The investor has to consider various possible combinations of different factors and their values, and next to evaluate the combined effect and the results of interaction of these factors, that is, to assess the investment attractiveness of the socio-economic environment and to make a decision on investing on this basis.

The investment attractiveness of the socio-economic system is the main mechanism for raising investments in industrial construction projects. Assessment of the investment attractiveness of these projects is a key aspect during the evaluation and selection of possible investment options. It should provide a quantitative and qualitative description of the degree of compensation of invested funds by revenues from the sale of the facility; profitability and return on investment.

Managerial decisions on investment are made after the evaluation and comparison of the volume of anticipated investments and future profits (Russian Federation Federal State Statistics Service 2017); that is why one should quantify the investment attractiveness. Moreover, to decide on investment, one should consider the indicator characterizing the investment attractiveness which should have economic rationale behind and be comparable with the price of the investor's capital. The system of evaluating the investment attractiveness of industrial construction facilities presented in Table 4 can help investors make a reliable and grounded choice of the facility for investment, to control the effectiveness of investments and to adjust the implementation of investment projects and programs in the event of an unfavorable situation.

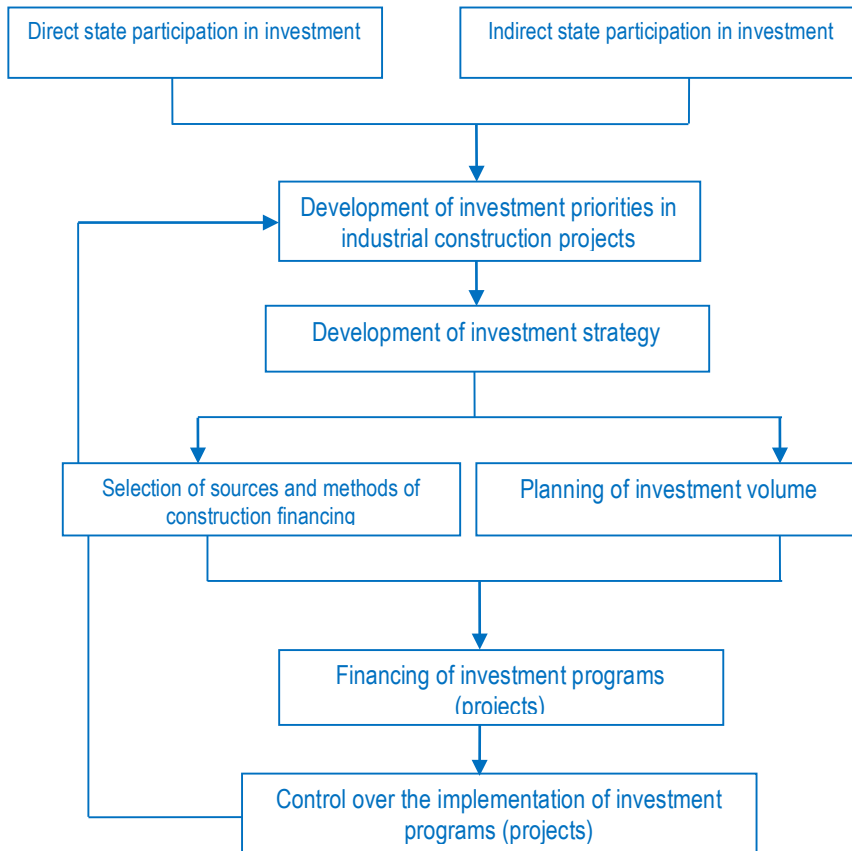
Table 4. System of investment attractiveness indicators of industrial construction facilities

No.	Indicator groups	Indicator description
1.	Absolute	Dynamics of production volume, change in the market share
2.	Technical and economic	Renewal and retirement rates, physical and functional depreciation of fixed assets
3.	Financial	Profit; funds turnover
4.	Investment	Return on assets
5.	External environment	Level of competition and state support
6.	Organizational	Stability of integration ties with suppliers, consumers and partners
7.	Innovative	The ability of an enterprise to implement and develop innovations
8.	Customer	How well the activity of the enterprise fits in the changing market structure
9.	Dividend	The size and dynamics of dividend payments

Source: Russian Federation Federal State Statistics Service, Statistical digest "Russia in Numbers 2017", 2017.

Therefore, the method of selecting the indicator of investment attractiveness of industrial construction facilities should meet certain requirements: the indicator of investment attractiveness should take into account all the factors of the external environment that are significant for the investor; it should reflect the expected return on invested funds, and be comparable with the price of the investor's capital, as well as to provide information on the payback of the project. With the above mentioned in mind, we believe that the public investment policy in industrial construction should imply readiness and ability to create mechanisms for coordinating, implementing and protecting the economic interests of the parties in investment and construction activities that ensure the production of effective competitive products. A block diagram of the implementation of public investment policy is presented in Figure 5.

Figure 5. Mechanism for Implementation of the Public Investment Policy



Source: Cervantes and Meissner (2014)

The selection of investment programs (projects) should be based on socio-economic priorities, forecasts, investment policy objectives since they are crucial for major structural changes that pursue the creation of innovative technological environment (Cervantes and Meissner 2014), the novelty and interrelations of investment projects which is essential for large-scale implementation of scientific and technical advances in the construction of industrial facilities.

We believe that when selecting priority investment projects in industrial construction, one should use the following main criteria (Meylanov and Esetova 2015): compliance of investment projects with priority scientific and technological areas and a list of critical technologies; the great impact of the solved problem on the modernization of the production facilities of the economy; the fundamental novelty of scientific and technical results and the use of revolutionary technologies having a significant impact on structural relationships in the technological structure of the economy and increasing production efficiency; the large scope of application of the investment projects outcomes; the need to coordinate interbranch relations of technologically related industries and industries; the possibility to solve the problem.

To ensure this, the mechanism for the implementation of public investment policy should be based on the following general methodological principles (Table 5):

Table 5. Principles enabling the mechanism of public investment policy

No.	NAME	CONTENT
1	Comprehensiveness or systemic nature	▪ creating a system ensuring the protection of the investment project and its resources against risks and force majeure circumstances;
2	Timeliness	▪ identifying destructive factors, taking measures to prevent their impact and damage to the investment project at the early stages of investment;
3	Continuity	▪ permanent protection of investors' interests in a risk environment;
4	Legality	▪ compliance of measures taken to implement investment projects to existing legislation;
5	Efficient planning	▪ public investment policy works according to the single plan that is stated in a comprehensive program and specific plans for individual investment projects;
6	Coordination	▪ coordination of efforts of all interested parties to ensure the effectiveness of investment projects.

Source: Meylanov, I.M., Esetova, A.M. Main directions of increasing the investment attractiveness of industrial construction. Herald of the Dagestan State Technical University, 38, 2015.

The development of an investment strategy as a set of measures complying with each other regarding the resources, terms and executives will ensure effective solution of the most important scientific and technical tasks in the priority areas of industrial development (Desai and Pradham 2005, Smith and Hallward-Driemeier 2005).

Conclusion

The authors proposed the methodological bases for implementing the mechanism of the public investment policy in industrial construction, as well as revealed and summarized the current challenges related to this. In addition to that, the article classified the general methodological functioning principles of the investment policy mechanism which take into account the interaction of all its structural elements.

The authors formulated a set of practical measures aimed at satisfying the economic need for capital investments to modernize the manufacturing capabilities of the national economy, for the construction of high-tech industrial facilities, and determining the volume, structure and direction of investment in the construction industry.

When choosing methods for assessing the investment attractiveness of projects, it is necessary to consider the interests of both investors and contractors. Taking this into consideration, the authors claim that investors of the project are primarily interested in the economic efficiency of investments, while the contractor of the project – in economic efficiency of the construction.

The article presents a system of indicators of investment attractiveness that can supplement the indicators traditionally used in investment analysis (project payback, rate of return, real value of the facility, internal and

external rate of return, profitability of the project). The authors also put forward the requirements to the criteria for selecting priority investment projects implemented in industrial construction.

References

- [1] Bagautdinova, N., Gafurov, I., Kalenskaya, N., and Novenkova, A. 2012. The Regional Development Strategy Based on Territorial Marketing (The Case of Russia). *World Applied Sciences Journal*, 18 (Special Issue of Economics): 179–184. DOI: 10.5829/idosi.wasj.2012.18.120030
- [2] Ban, K. 2016. World Investment Report 2016 - Investor Nationality: Policy Challenges. Available at: <http://www.worldinvestmentreport.org/wir2016/>
- [3] Cervantes, M., Meissner, D. 2014. Commercialising Public Research under the Open Innovation Model: New Trends. *Foresight-Russia*, 8(3): 70–81.
- [4] Dahlgren, E., Leung, T. 2015. An optimal multiple stopping approach to infrastructure investment decisions. *Journal of Economic Dynamics and Control*, 53: 251–267.
- [5] Desai, R.M., and Pradham, S. 2005. Governing the Investment Climate. *Development Outreach*, 7(1): 13–16.
- [6] Esetova, A.M., Pavliuchenko, E.I., Ismailova, Ch. T., Levitsky, T.Y. 2015. System Restructuring as a Factor of Increasing Management Efficiency in Construction. *Indian Journal of Science and Technology*, 8(s10): 247–255. DOI: 10.17485/ijst/2015/v8iS10/IPL0810
- [7] Fedotovskiy, A.Yu. 2009. Developing a method to assess the economic efficiency of innovative project management in the construction industry. *Problems of Modern Economics*, 1: 5.
- [8] Halawa, W., Abdelalim, A., Elrashed, I. 2013. Financial evaluation program for construction projects at the pre-investment phase in developing countries: A case study. *International Journal of Project Management*, 31(6): 912–923.
- [9] Jelnova, C.V. 2013. Analysis of the practice of decision-making in the field of investment policy. *Contemporary Economic Issues*, 4. DOI: [10.24194/41302](https://doi.org/10.24194/41302). Available at: <http://economic-journal.net/index.php/CEI/article/view/83/70>
- [10] Kaufmann, D. 2005. Click Refresh Button: Investment Climate Reconsidered. *Development Outreach*, 7(1): 16–19.
- [11] Linton, J., Vonortas, N. 2015. From Research Project to Research Portfolio: Meeting Scale and Complexity. *Foresight-Russia*, 9(2): 38–43. DOI: 10.17323/1995-459x.2015.2.38.43
- [12] Meylanov, I.M., Esetova, A.M. 2015. Main directions of increasing the investment attractiveness of industrial construction. *Herald of the Dagestan State Technical University*, 38(3): 192–202. DOI: <http://dx.doi.org/10.21822/2073-6185-2015-38-3-192-202>
- [13] Meylanov, I.M., Esetova, A.M. 2016. Development of forms of state support for industrial construction projects. *Herald of the Dagestan State Technical University*, 42(3): 223–233. DOI: <http://dx.doi.org/10.21822/2073-6185-2016-42-3-220-230>
- [14] Minakova, I.V., and Anikanov, P.V. 2013. Modelling of area of possible results of the innovative investment project. *Contemporary Economic Issues*, 1. DOI: [10.24194/11321](https://doi.org/10.24194/11321). Available at: <http://economic-journal.net/index.php/CEI/article/view/34/22>
- [15] Moskvitina, E.I., Doroshina, I.P., Butova, T.V. 2015. Need for modernization of state regulation of investment activity in Russia in conditions of global competition. *Theoretical and Applied Aspects of Modern Science*, 6: 113–115.
- [16] Niyazmetov, A.K. 2014. State capital investments: challenges and solutions. *Finance*, 9. Available at: <http://www.finexg.ru/>

- [17] Richards, C. 2013. *The Behavior Gap: Simple Ways to Stop Doing Dumb Things with Money*. Moscow: Mann, Ivanov and Ferber. Available at: http://www.litres.ru/pages/biblio_book/?art=6564870
- [18] Serrasqueiro, Z. 2017. Investment determinants: high-investment versus low-investment Portuguese SMEs. *Investment Analysts Journal*, 46(1): 1–16. DOI: 10.1080/10293523.2016.1246148
- [19] Smith, W.P., and Hallward-Driemeier, M.C. 2005. A Better Investment Climate for Everyone. *Development Outreach*, 7(1): 2–7.
- [20] Tomo, A., Landi, G. 2017. Behavioral Issues for Sustainable Investment Decision-Making: A Literature Review. *International Journal of Business and Management*, 12(1): 1–10. DOI: 10.5539/ijbm.v12n1p1. Available at: https://www.researchgate.net/publication/312419710_Behavioral_Issues_for_Sustainable_Investment_Decision-Making_A_Literature_Review
- [21] Towler, G., Sinnott, R. 2013. Economic Evaluation of Projects. *Chemical Engineering Design*, 2: 389–429.
- [22] Wren, C., Taylor, J. 1999. Industrial restructuring and regional policy. *Oxford Economic Papers*, 51(3): 487–516.
- *** AT Kearney. Kearney Foreign Direct Investment Confidence Index. Available at: <https://www.atkearney.com/>
- *** CIS – Legislation. 2014. Order of the Government of the Russian Federation of October 30, 2014 No. 1119. About selection of the subjects of the Russian Federation having the right to the state support in form of subsidies for cost recovery to creation, upgrade and (or) reconstruction of infrastructure facilities of industrial parks, industrial science and technology parks and science and technology parks in the sphere of high technologies. Available at: <http://cis-legislation.com/document.fwx?rgn=70884>
- *** Decree of the Government of the Russian Federation No. 13 of January 09, 2014. Rules for the implementation of capital investments in state property of the Russian Federation at the expense of the federal budget.
- *** EY. Building a better working world. Available at: <http://www.ey.com>
- *** Federal Law No. 39-FZ of February 25, 1999. On investment activity in the Russian Federation in the form of capital investments. Available at: http://russiaindiabusiness.com/ob_investicionnoy_deyatelnosti_v_rossiyskoy_federacii_eng.pdf
- *** Humanitarian Technology: Analytical Portal. Doing Business-2017. Available at: <http://qtmarket.ru/>
- *** Ministry of Economic Development of the Russian Federation. 2005. Federal Law No. 115-FZ of July 21, 2005 “On concession agreements”. Available at: http://economy.gov.ru/wps/wcm/connect/6e537346-40ff-44f7-9f85-2bebf3725bc6/FEDERAL_LAW_NO_115-FZ_OF_JULY_21_2005.pdf?MOD=AJPERES&CACHEID=6e537346-40ff-44f7-9f85-2bebf3725bc6
- *** Russian Federation Federal State Statistics Service. 2016a. Bulletin “Investment activity in Russia: Conditions, factors, trends - 2016”. Available at: http://www.gks.ru/bgd/regl/b16_112/Main.htm
- *** Russian Federation Federal State Statistics Service. 2016b. Bulletin “Social and economic situation in Russia, 2016”. Available at: http://www.gks.ru/free_doc/-2016
- *** Russian Federation Federal State Statistics Service. 2016c. Investments in fixed capital in the Russian Federation in 2016. Available at: http://www.gks.ru/free_doc/doc_2016
- *** Russian Federation Federal State Statistics Service. 2017. Statistical digest “Russia in Numbers 2017”. Available at: http://www.gks.ru/free_doc/doc_2015/rusfig/rus

The Growth Accounting for Industry and Services of Slovakia, Slovenia and Czechia

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Abstract:

The world economies are still recovering from the effects of the last great crisis. All international markets are recovering very slowly and the countries return their performance to their pre-crisis level. Research on country productivity and economic growth has been one of the most popular topic in economics for decades. Globalization has changed the overall view of whether and how economic growth could be achieved. The aim of this article was to examine the economic growth of three CEE countries (Czechia, Slovakia, Slovenia). We used the method of growth accounting: a dual approach that allowed us to track the contribution of individual inputs to production creation and economic growth. We wanted to prove that if one factor had at least a 5% greater share of overall growth than other factors for the whole economy, then this factor would be the main one for the individual sectors of the economy as well. Verification was carried out in two periods, for each country: the pre-crisis (1994-2007) and the crisis and the post-crisis period (2008-2016). We note that in each period there was only one country whose main factor of economic growth was identical in both sectors (industry and services) and for the economy as a whole. In the first period it was Slovakia and it was a capital factor. In the second period it was Czechia, and it was a TFP.

Keywords: capital; CEE; economic growth; growth accounting; Solow residuals; TFP

JEL Classification: F43; H30

Introduction

After the second wave of the economic crisis, the economies began to gradually recover from the consequences of a rapid but very intense crisis. Those countries that were accustomed to the economic growth they achieved in the pre-crisis period tried to reach the level of performance before 2008 as soon as possible. However, the crisis has highlighted a number of facts that need to be taken into account when designing an economic policy. Thanks to the implementation of modern technologies, the speed of process execution has increased. The economy must respond promptly also in areas where it is very difficult. This speed puts pressure on governments to devote more attention to the essence of their economic growth they want to achieve. It leads to the fact that the economy needs to know its position in global value chains, it must recognize the interconnections between sectors and industries at international, but above all, national level. Only under this condition will the government be able to set up an effective structure of the economy.

Our goal was to investigate whether or not the main factors involved in the outflow are changing when comparing the overall economy and individual sectors. We used the methods of growth accounting: dual approach. We wanted to prove that if one factor had at least a 5% greater share of overall growth than other factors for the whole economy, then this factor would be the main one for the individual sectors of the economy as well. We followed developments in the three CEE countries (Czech Republic, Slovakia, Slovenia) in the period 1994-2016, which we divided into the pre-crisis period (1994-2007) and the crisis and post-crisis period (2008-2016). In the first part we have compiled a brief overview of the literature from the field of our problems. In the second part we briefly describe the used methodology and the data we used. In the third part we observed the influence of individual factors on the total production of the countries. In the fourth part we observed the share of individual factors in the production of the industry and services sectors. In the 5th part we summarized the achieved results.

1. Literature review and research background

Research on economic growth and country productivity has been one of the most popular topic in economics for decades. Many researchers analysed empirically the patterns of economic growth in the world. A major wave of the literature was inspired by the seminal works of Abramovitz (1956, 1986), Baumol (1986), Barro (1991, 2001), Mankiw *et al.* (1992), Krugman (1994), Jones (1997), Quah (1997), Senhadji (1999) or Kumar and Russell (2002), Henderson and Zelenyuk (2006), Romer (2012), Romero (2012), Zelenyuk (2014), Everaert and Heylen and Schoonackers (2015) or Mihóková, Harčariková and Martinková (2016) or Walheer (2016) to mention a few. The authors used different methods of analysis and quantification in their research. The growth accounting framework is one of the methods used. The pioneers of this method were Abramovitz (1956) and Solow (1957). The original idea was later elaborated and supplemented by (1964) on primal and dual approach. Further adjustments brought Hulten (1990, 2009), or Musso (2006). In this analyses we use a standard Cobb-Douglas production function approach (as in Podpiera, Raeli and Stepanyan 2017, Dimelis and Papaioannou 2013, Musso 2006, Novak 2003). We mainly follow the explanation provided by Hsieh (2002), Hloušek (2007) or Hulten (2009).

The aim of the article was to find out whether the economic growth is achieved in the same way in selected countries (which are under the common name CEE). At the same time, we want to find out whether the economic growth has been extensive or intensive. We also want to prove that if one factor had at least a 5% greater share of overall growth than other factors for the whole economy, then this factor would be the main one for the individual sectors of the economy as well. We selected three CEE countries (OECD term for 12 countries from Central and Eastern Europe). The development of the countries we chose was similar in many areas - both in economic and socio-political areas. The Czech Republic and the Slovak Republic are countries of the former commonwealth - Czechoslovakia. Currently they are part of V4 countries. Slovenia is similar to the Czech Republic and Slovakia, not only by its size but also by the historical and social environment in which it was formed. In 2004, all three joined the EU and are also part of other groupings (OECD, NATO). Slovakia and Slovenia are part of the EMU.

We can also talk about their similarity and proximity from an economic point of view. From the point of view of the unemployment rate, Slovenia and Czech Republic are closer than Slovakia. The average unemployment rate over the last 24 years was 8% (Slovenia) and 6.5% (Czechia). Regarding this Slovakia is specific its unemployment is 14.2% over the same period. Slovakia's and Slovenia's inflation has an average of 4.6% over the last 24 years, in the Czech Republic it is 1% less. Foreign direct investment is also one of the factors for future economic growth. As Gontkovičová, Tkáčová and Kralik (2016) mentioned the region of CEE is the fourth most attractive region in the world for investors. Authors Bijsterbosch and Kolasa (2009) found that foreign investment has been an important factor in productivity growth of CEECs. There is a very visible impact of the crisis in this area. While in the pre-crisis era, Slovakia was a leader in the volume of FDI, after the crisis the situation changed. As Gontkovičová, Tkáčová and Kralik (2016) concluded, among the countries of the V4, the highest attractiveness for foreign investors is reported by the Czech Republic whose strength is the macroeconomic environment, and weakness is represented mainly by the bureaucratic delays. On the other hand, the least attractive country seems to be the Slovak Republic. (Europe 2015) Slovenia is slowly approaching its pre-crisis levels. However, as Hlaváček and Bal-Domanská (2016) mentioned, growth of foreign direct investment positively demonstrates itself in increasing the level of the gross domestic product.

As we mentioned, current rapid development forces the country to find effective solutions. It therefore focuses on the productivity of the economy and, in particular, of its components. It does not just focus on the input itself. As Hájek and Mihola (2009) state, an important source of economic growth is, besides labor and capital, the aggregate productivity of these factors. Growth of aggregate factor productivity is the result of qualitative changes, also referred to as intense growth factors. A similar view in their work was presented by Papaioannou and Dimelis, (2016), Jongen (2004), Bosworth and Collins (2003), or Novak and Bojnec (2005), who expanded their exploration of another dimension in the form of human capital as another factor in the production of the economy. In this way they gained the dimension of the modern valuation of inputs into the production process.

In our research and testing, we have retained our original function, not spreading it about human capital. Our objective was to monitor the development of the share of factors from sector to sector.

2. Methodology

Suppose we use the basic form of the Cobb-Douglas production function. Aggregate output (Y) consists of consumption goods (C) and investment goods (I). These goods are produced from labour services (L) and capital (K). (Musso 2006) Productivity is usually represented as a Hicks-neutral augmentation (A) of aggregate inputs:

$$Y_t(C_t, I_t) = A_t F(L_t K_t) \quad (1)$$

The first step is derivation of the equation. The next one in this derivation is to express the production function in growth rate form.

$$\frac{\hat{Y}_t}{Y_t} = \frac{\partial Y}{\partial K} \frac{K_t}{Y_t} \frac{\hat{K}_t}{K_t} + \frac{\partial Y}{\partial L} \frac{L_t}{Y_t} \frac{\hat{L}_t}{L_t} + \frac{\hat{A}_t}{A_t} \quad (2)$$

Hat is denoting time derivatives. The corresponding ratios are rates of change. This form of calculation means that the rate of output growth equals the growth rate of capital and labour weighted by their output elasticities plus the growth rate of the Hicksian shift parameter. These elasticities represent factor-income shares s_{K_t} ; s_{L_t} when

inputs are paid the value of their marginal products $\frac{\partial Y}{\partial K} = \frac{r}{p}$; $\frac{\partial Y}{\partial L} = \frac{w}{p}$ Then:

$$TFP = \frac{\hat{Y}_t}{Y_t} - s_{K_t} \frac{\hat{K}_t}{K_t} - s_{L_t} \frac{\hat{L}_t}{L_t} = \frac{\hat{A}_t}{A_t} \quad (3)$$

TFP defines the „residual“ as the growth rate of output is not explained by the share-weighted growth rates of the inputs. (Hulten 2009). We want to examine the changes in the input prices so we use the dual approach provided by Hsieh (2002) or Hlousek (2007). We start with:

$$Y = rK + wL \quad (4)$$

After the differentiation of (1) and dividing by Y we have

$$Y' = r'K + rK' + w'L + wL' \quad (4a)$$

$$\frac{Y'}{Y} = r' \frac{K}{Y} + \frac{r}{Y} K' + w' \frac{L}{Y} + \frac{w}{Y} L' \quad (4b)$$

$$\frac{Y'}{Y} = r' \frac{K}{Y} \left(\frac{r'}{r} + \frac{K'}{K} \right) + w' \frac{L}{Y} \left(\frac{w'}{w} + \frac{L'}{L} \right) \quad (4c)$$

We use the substitution and it brings us:

$$Y' = s_K (\hat{r} + \hat{K}) + s_L (\hat{w} + \hat{L}) \quad (5)$$

where: the identities s_K and s_L represent the factor-income share and the sum of factor-shares is equal to unit ($s_K + s_L = 1$); variables " \hat{r} ; \hat{w} ; \hat{K} ; \hat{L} " represents growth rates. (Hlousek 2007)

3. Data

All the necessary data for the calculation were available from one source: OECD. We used the data on an annual basis, sample period was from 1993 to 2016. The data we used to monitor the sectors was used in accordance with ISIC rev. 4th.

In particular, the real interest rate used to measure the rental price of capital is represented by the 3-month nominal interbank offered rate deflated by CPI inflation. The real wage is calculated as the ratio of the nominal wage rate to the consumer price index. The aggregate output is represented by GDP. The labour share was calculated as a ratio of total labour costs and gross value added.

Table 1. Capital and Labour Shares

Country	Czechia			Slovakia			Slovenia		
Sector	Economy	Industry	Services	Economy	Industry	Services	Economy	Industry	Services
Labour share in % (1994-2007)	45.17	45.17	41.39	43.00	43.8	42.58	58.11	62.42	58.54
Capital share in % (1994-2007)	54.83	54.83	58.61	57.00	56.2	57.42	41.89	37.58	41.46
Labour share in % (2008-2016)	44.31	44.31	45.3	40.91	40.69	44.28	58.3	58.8	59.57
Capital share in % (2008-2016)	55.69	55.69	54.7	59.09	59.31	57.72	41.7	41.2	40.44

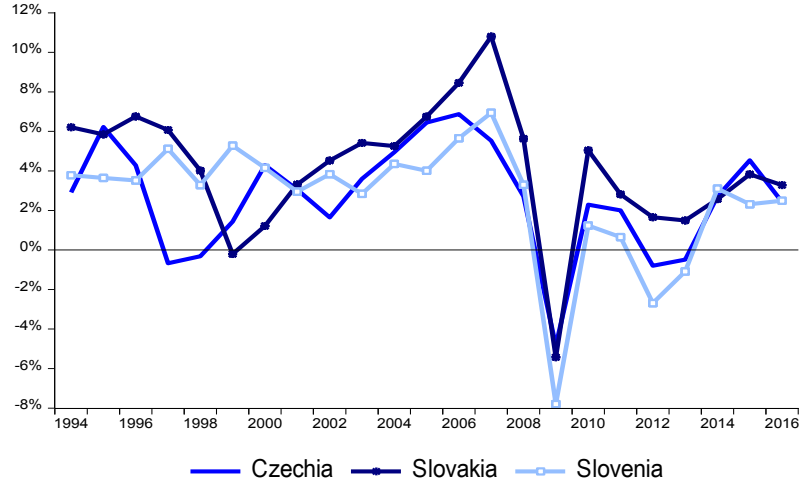
Source: own calculations

Slovenia has the highest labour-income share regardless of the period. (Table 1) We associate this with the fact that almost two thirds of the working population is employed in services. (CIA 1, 2016) The Czech or Slovakian values are smaller than those of the United States (62%), G20 (61%), Japan (57%). Surprisingly, there is a significant difference between countries. It could be assumed that the share of individual factors will be very similar, as the labour force structure in agriculture, industry and services is very similar. However, the results do not confirm this.

4. Development of economic growth in individual countries

Selected countries developed similarly in terms of economic growth, especially in the period 2000 – 2014 (Figure 1). During this period, these countries have achieved economic growth, coupled with the opportunities they have gained thanks to accession to the EU (2000-2008), the subsequent economic downturn, but also the recovery of their economies (2009-2014). While Slovenia maintained a relatively stable level of economic growth (3-7%) in the pre-crisis period, the Czech Republic and Slovakia tried a short period of economic downturn (in the second half of the 1990s) as well as rapid economic growth (especially Slovakia in 2007, when the value of economic growth was 10.4%). In the post-crisis period, Slovakia was better able to cope with the situation, and from 2010 has only economic growth. The other two countries are trying to stabilize their performance less successfully so far. Our goal is to find out the character of the economic growth achieved in each country.

Figure 1. Economic Growth (%) - Czechia, Slovakia, Slovenia in Period 1993 - 2016



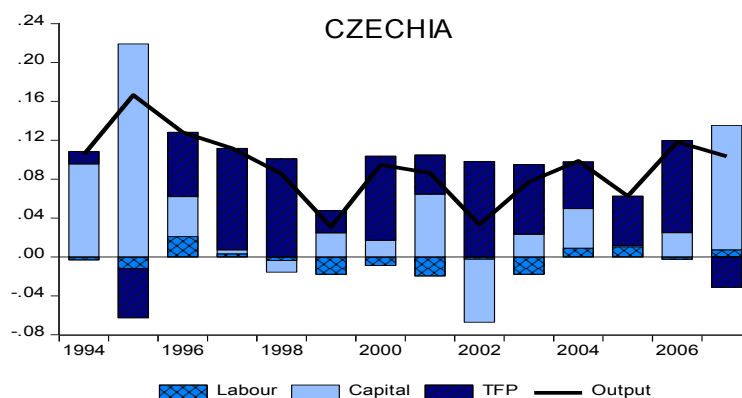
Source: own calculations, data OECD

4.1. Pre-Crisis Period (1994-2007)

The common feature of all three countries is that the labour force's share in economic growth is essentially negligible in the pre-crisis, but as will be shown further in the crisis and post-crisis period.

At this stage, innovations and technological changes of the market are the predominant elements in the creation of economic growth only in the case of Czechia. As the results of the calculation showed, at the average annual growth rate of real GDP by 9.2% (CZ), TFP changed at 5.1% and capital only at 4.4%. (Table 2) GDP growth was up to 73% due to changes in TFP and 31.5% was due to changes in capital. The increase in the volume of capital is also the result of a relatively large drop in capital prices. The fall in prices was helped by structural reforms in the economy, the privatization of state property as well as positive economic developments in international markets with strategic raw materials. Our results are confirmed by the results of Hájek and Mihola (2009), who have come to similar conclusions in the same survey period. (Figure 2)

Figure 2. Czechia - Input Shares on Output, 1994-2007



Source: own calculations

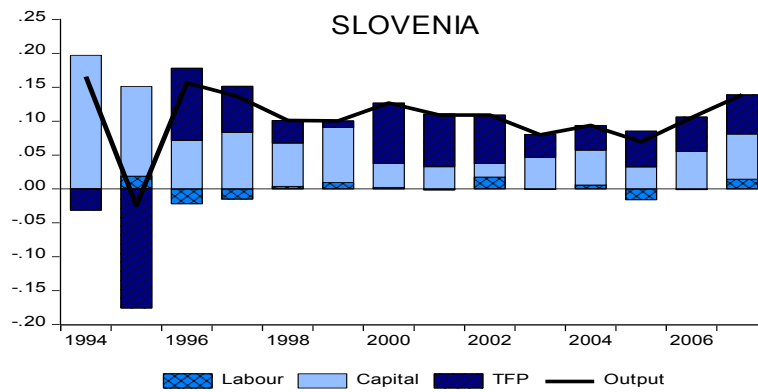
Table 2. Average Changes and Shares, 1994-2007

	Czechia	Slovakia	Slovenia
average share on GDP (1994-2007)			
Labour	(-0.0602)	(-0.0005)	(-0.0026)
Capital	0.3158	0.527	0.6433
TFP	0.732	0.4735	0.4578
average change (1994 - 2007)			
Labour	(-0.0026)	0.0013	0.0012
Real Wage	0.045	0.0501	0.0615
Capital	0.0435	0.0597	0.0694
Rental price of Capital	(-0.3431)	(-0.2300)	(-0.0634)
TFP	0.0511	0.0435	0.0343

Source: own calculations

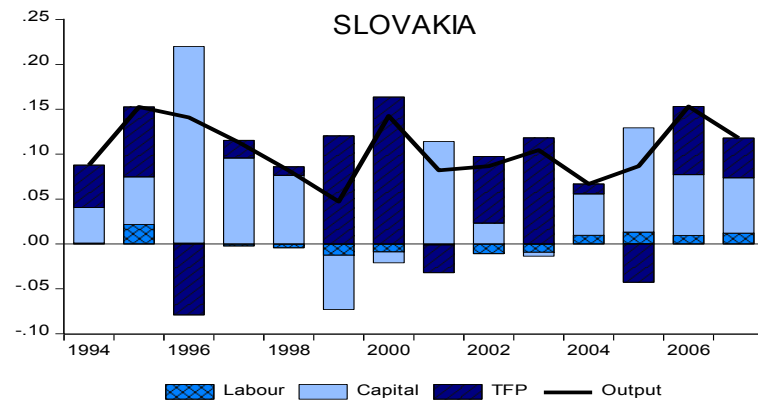
Different situation is in Slovenia and Slovakia. For both countries, capital is the dominant engine of economic growth (Figure 3, 4). Average annual real GDP growth is around 10% in both countries, with capital shifts by 6% (SR) and 7% (SI). In both countries, we note that economic growth was particularly extensive when in 53% (SR), respectively in 64% (SI) was due to changes in capital. Significant capital inflows have been achieved by both countries, notably through the structural reforms implemented at the turn of the millennium countries in the tax area, the banking sector and foreign-trade policy. The subsequent inflow of FDI allowed them to achieve economic development and growth. (OECD - Slovenia 2009).

Figure 3 Slovenia - Input Shares on Output, 1994-2007



Source: own calculations

Figure 4 Slovakia - Input Shares on Output, 1994-2007



Source: own calculations

We are of the opinion that in all three countries the structural reforms, especially in the field of taxation and social system, which were implemented during their transformation into market economies, were positively demonstrated. At the same time, however, the economies have chosen different directions in understanding the internal structure. Either built the internal structure by using R & D to implement innovation (CZ), or the structure of the economy is built on the manufacturing and construction sphere (SR, SI). It results that the analysis of the country's internal structure is needed to better understand the different contexts associated with the efficiency of the economy.

4.2. Crisis and post-crisis period (2008-2016)

The crisis and the post-crisis period brought significant changes. At the time of the crisis, it was mainly a slowdown in growth and a subsequent short period of economic downturn in all countries. As a result of world market problems, capital prices have fallen sharply. However, due to market failures, this fall in prices has not yet led to an increase in the volume of capital. This has happened only gradually in the last two years.

Czechia and Slovakia were not hit by the crisis as much as Slovenia. In Czechia, however, the share of TFP has declined significantly in economic growth. (Figure 5) While in the pre-crisis period the TFP was up to 73%, it currently stands at 54%. At an average annual rate of real GDP growth of 1.89%, TFP was able to grow at just 1.4%. (Table 3) As stated in the OECD report (OECD-Czechia16 2016) since the crisis there has been a clear shortfall in productivity that has impeded strong growth. While part of the shortfall has a cyclical component, to a significant extent the decrease of the productivity growth rate appears to be of a structural nature. Czechia is aware that in order to sustain further improvements in living conditions, the Czech Republic will need to move up the value

chain and improve the skills of its workforce to pay higher wages. This will require deeper investment in the development of domestically-driven productivity growth.

Figure 5. Czechia - Input Shares on Output, 2008-2016

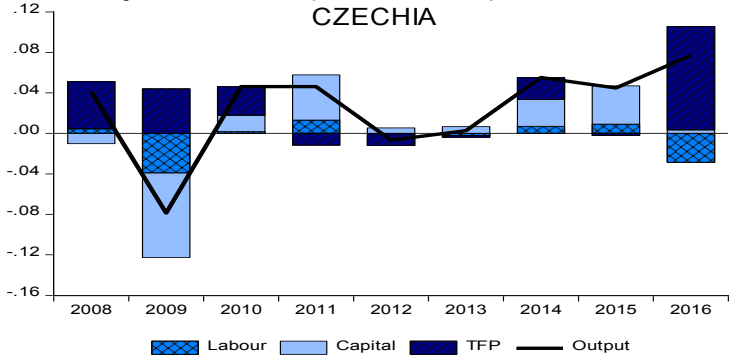


Figure 6. Slovenia – Input Shares on Output, 2008-2016

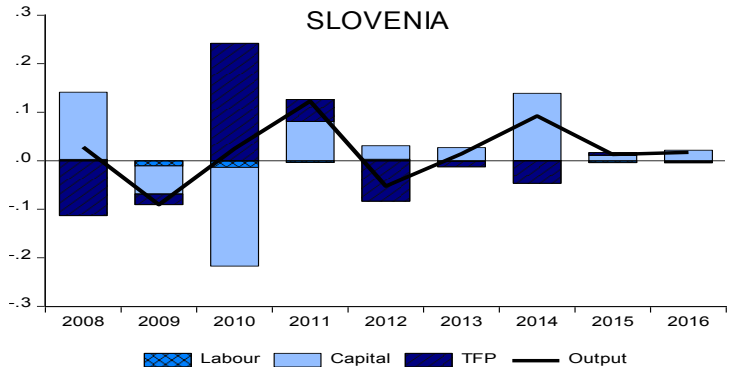


Figure 7. Slovakia - Input Shares on Output, 1994-2007

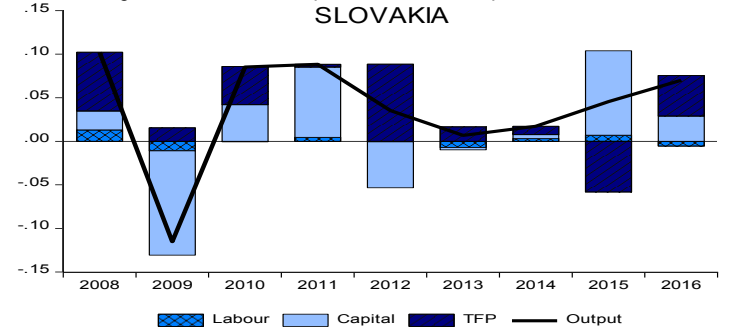


Table 3. Average Changes and Shares, 2008-2016

	Czechia	Slovakia	Slovenia
average share on GDP (2008 -2016)			
Labour	0.1188	(-0.0610)	0.0174
Capital	0.2998	0.3957	(-0.0813)
TFP	0.5439	0.6653	1.0639
average change (2008 - 2016)			
Labour	(-0.0007)	0.0003	(-0.0008)
Real Wage	0.0149	0.0164	0.0224
Capital	0.0055	0.0111	(-0.0125)
Rental price of Capital	(-0.7177)	(-0.3593)	(-0.2497)
TFP	0.0142	0.0259	0.0367

Source: own calculations

Increased involvement of labour in overall changes in economic growth is a significant change compared to the pre-crisis period. The revival of the economies also resulted in a gradual decline in unemployment, with a slight increase in real wages due to positive expectations for the future. Slovenia was most affected by the crisis (Figure 6) As stated in the OECD report (OECD-Slovenia15 2015), the 2008 crisis has exposed important weaknesses and imbalances. In the run up to the crisis, easy and cheap wholesale credit raised by banks abroad, overly optimistic growth expectations and mispriced risk taking led to an unsustainable investment boom in construction and much of the corporate sector. In addition, the optimism facilitated highly leveraged management buyouts. The resulting high indebtedness made corporates and banks vulnerable to changes in market conditions. At present, however, Slovenia has returned to structural reforms, prepared and put into practice programs for reducing long-term unemployment in the country, and in 2016, thanks to the measures taken, achieved economic growth at 4.1%, which advises it to the fastest growing EU countries. However, the problem remains that since the beginning of the recovery, investment has been weaker than expected. Public investment is expected to recover with faster EU structural funds disbursement. Business investment should also pick up further on the back of external and domestic demand, favourable financing conditions and emerging capacity constraints, although remaining low as a share of GDP. (OECD-Slovenia17 2017) Problems with capital were also underwritten by the fact that TFP had a major share in economic growth, and capital was anti-growth in that period. On the other hand, Slovenia currently introduces employment support programs. They signed up to the fact that the share of work is gradually increasing. Slovenia is returning very slowly to its condition before the crisis.

According to the results, it appears that Slovakia was least affected by the crisis among the countries surveyed. Rapid sparring from the crisis could have several reasons:

- even in 2008, when the crisis took full effect, the country was still using the high-performance wave of 2007 (economic growth at 10.4%). As the crisis has stopped the overheating of the economy, it has allowed production to return to the level of a potential product, and then the negative development of international and domestic markets has caused a decline in domestic demand and also an economic downturn;
- in 2008, the country was intensively preparing for accession to the EMU, which meant a restrictive fiscal and monetary policy implemented by the government. Maintaining public spending at an approximately stable level, high economic performance (9%), low inflation (4%), and a stable unemployment rate have led to a good starting point for the economy during the crisis period;
- in 2009, the country entered the EMU, which avoided the exchange rate impact of the crisis on the economy. At the same time, it adopted the ECB's monetary policy, which helped to stabilize the economy more quickly.

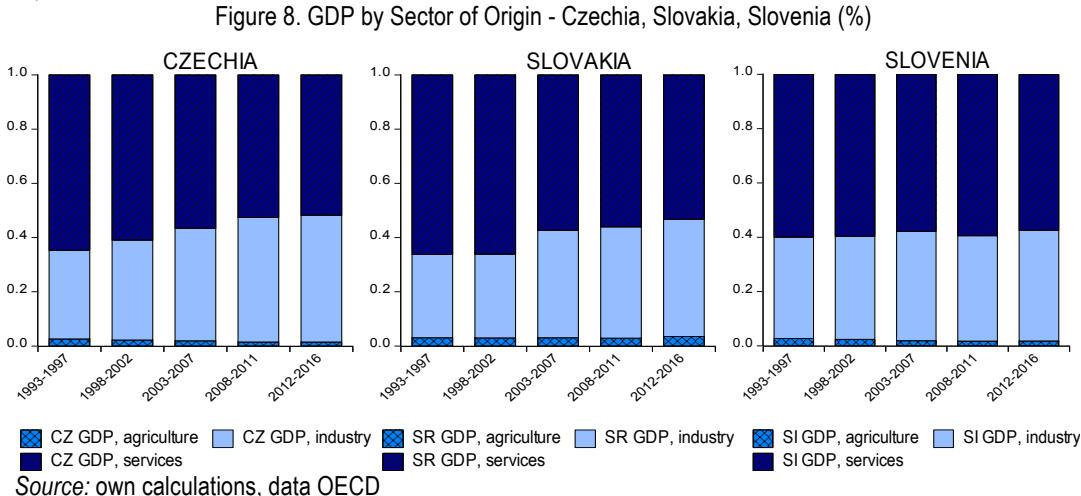
Consequently, the economy was able to return to a state of economic growth, together with the renewing economy of Germany, to which trade is strongly linked. This growth has continued until the present. (Figure 7) In view of our results, with average annual growth of real GDP by 3.7%, Slovakia recorded a growth of 2.59% in TFP and the growth of capital was only at 1.11%. (Table 3) These values also reflected the change in the character of the main maker of economic growth. While capital had a major share in economic growth in the pre-crisis period, TFP prevailed in the post-crisis period. The country actually benefited from FDI, which brought innovations before

the outbreak of the crisis as well as new projects. As stated in the OECD report (OECD-Slovakia17 2017), the country, in order to maintain its positive development, must face reforms in the healthcare, education and social field. Again, we come to the conclusion that the problem of the sustainability of any further economic growth and development is the adjustment of the internal structure of the economy.

Based on these conclusions, we have decided to examine in more detail the distribution of the economic power of individual sectors of selected economies. We focused on industry and services as sectors that make up the largest part of total production. We monitored whether and how inputs are involved in each sector's output. At the same time, we have been monitoring whether the share of individual inputs is the same as for the overall system. We were interested in whether the decisive factor in the first period for Czechia will be for both sectors - the TFP, for Slovakia capital and also for Slovenia. For the second period, only one variable was tracked for all countries and all sectors - TFP.

5. Development of individual factors and production in industry and services

The contribution of selected sectors to GDP growth has changed significantly only at the beginning of the period. In all three countries, the gradually decreasing proportion of services and the growing share of industry are visible. (Figure 8)



The growth of the share of industry was also driven by the growth of the number of enterprises, especially in the construction sector, where the increase reached 10-30%, especially in the period 2003-2007. (OECD - Entr, 2017) According to Eurostat, the number of SMEs is gradually increasing in services, but rather small businesses and micro-enterprises. On the other hand, medium-sized enterprises are being promoted in industry. The share of agriculture is interesting. While this share declined in the Czech Republic and Slovenia, this share remained at the same level in the Slovak Republic (about 3%). For the other two countries, the share of agriculture is 2%. Other shares are very similar in countries. Services are involved at 57-59%, and the industry's share is 37-40%.

5.1. Industry - Pre-Crisis Period (1994-2007)

Industry is the second largest sector in the share of GDP in the economy. Our assumption was that, in the industrial area, there would be a fairly balanced share of TFP and capital on production and growth.

Figure 9. Czechia - Industry - Input Shares on Output, 1994-2007

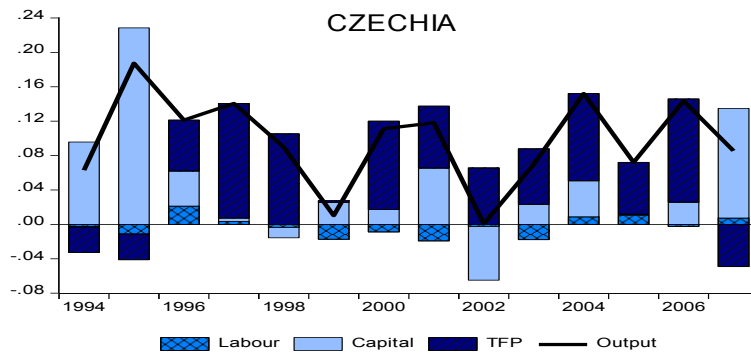


Figure 10. Slovenia - Industry - Input Shares on Output, 1994-2007

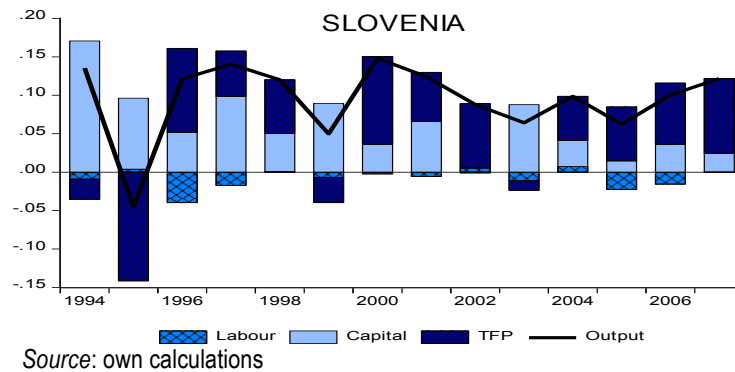


Figure 11. Slovakia - Industry - Input Shares on Output, 1994-2007

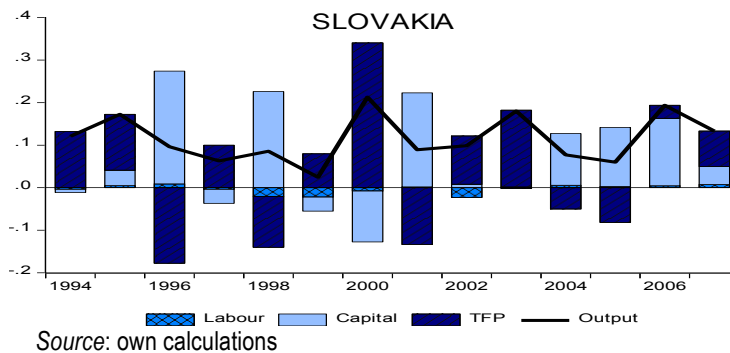


Table 4. Industry - Average Changes and Shares, 1994-2007

	Czechia	Slovakia	Slovenia
average share on GDP (1994-2007)			
Labour	(-0.0148)	(-0.0845)	(-0.0963)
Capital	0.4982	0.7638	0.4161
TFP	0.5166	0.3207	0.6802
average change (1994 - 2007)			
Labour	(-0.0025)	(-0.0034)	(-0.0080)
Real Wage	0.045	0.0585	0.0801
Capital	0.0444	0.0733	0.0607
Rental price of Capital	(-0.3431)	(-0.2331)	(-0.0458)
TFP	0.0555	0.045	0.0422

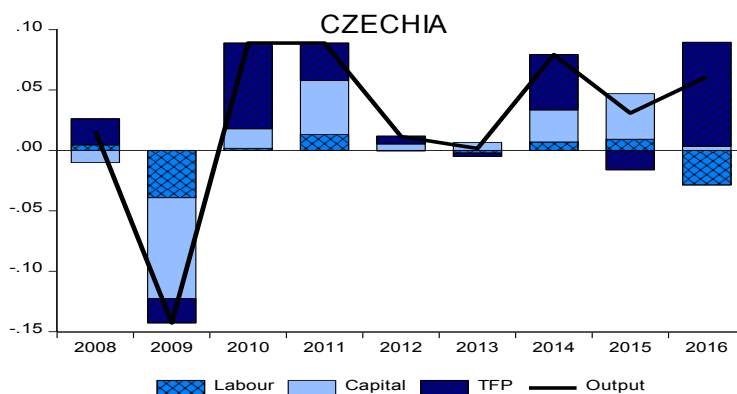
Source: own calculations

As the results showed, the assumption was fulfilled only in the case of Czechia. Slovakia and Slovenia went another way. (Figure 9, 10, 11). After splitting Czechoslovakia, Slovakia needed to build industry. Privatization has brought a market reality. State-owned enterprises that have previously secured employment have either been privatized or extinct. The privatized businesses have released large numbers of people, increasing the unemployment rate, and consequently many businesses have ceased their activities. In order to maintain employment at least in strategic enterprises, the government has decided to sell these businesses to multinational companies (for example, VSŽ Košice, a steelmaking business that was sold to US Steel in 2000). As a result, foreign capital was gradually coming to the economy, allowing for the rescue of businesses and the building of more modern facilities that met European standards. At the same time, structural reforms have allowed for a fall in capital prices and a gradual increase in real wages. Similarly, the other two countries have gone through similar fate. From the point of view of our results, we note that our assumption of the main input is confirmed here in the case of the Czech Republic and Slovakia. (Table 4) TFP was the most important for industry in Slovenia, but for the economy it was capital. The assumption has not been confirmed here.

5.2. Industry - Crisis and post-crisis period (2008-2016)

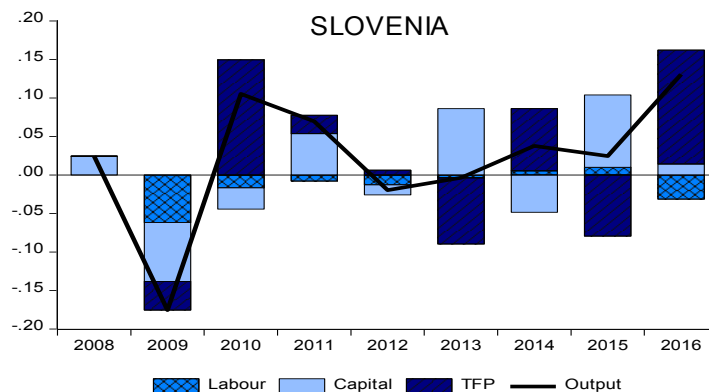
In the crisis, the situation has changed mainly in the field of labour. In all three countries, the number of hours worked decreased, but the labour shares of economic growth increased significantly compared to the previous period.

Figure 12. Czechia - Industry - Input Shares on Output, 2008-2016



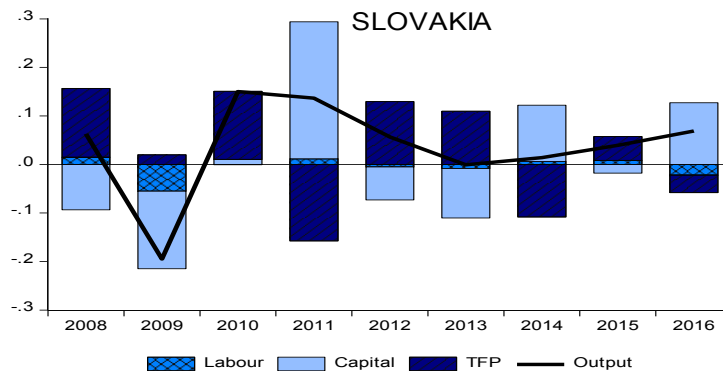
Source: own calculations

Figure 13. Slovenia - Industry - Input Shares on Output, 2008-2016



Source: own calculations

Figure 14. Slovakia - Industry - Input Shares on Output, 2008-2016



Source: own calculations

Table 5. Industry - Average Changes and Shares, 2008-2016

	Czechia	Slovakia	Slovenia
average share on GDP (2008 -2016)			
Labour	0.0764	0.0582	(-0.095)
Capital	0.3406	0.2376	0.6978
TFP	0.583	0.7042	0.3972
average change (2008 - 2016)			
Labour	(-0.0039)	(-0.0056)	(-0.0132)
Real Wage	0.015	0.0179	0.0256
Capital	0.0053	0.0106	0.0119
Rental price of Capital	(-0.1618)	(-0.3583)	(-0.2406)
TFP	0.0248	0.0320	0.0229

Source: own calculations

A significant change was brought about by the crisis in Slovakia, (Figure 14) which started to benefit from reforms and investments already made, and the increase in production was mainly due to changes in the TFP. In Czechia, the situation has not changed significantly, but the share of capital has declined. However, the change took place in Slovenia, where the situation required a massive increase in capital and, at the same time, the outflow of FDI. All three countries have to face structural changes in the industrial sector in the future.

As stated in the OECD report (OECD – Slovakia17 2017), Slovakia has a rapidly growing economy and is expected to continue this trend for several years, but its industry is predominantly based on the automotive industry that is easily influenced by external factors. Besides, the population of Slovakia belongs to the fastest aging population among the OECD countries. Consistent with the fact that in Slovakia over the past few years almost 6% of the population emigrated, at least half of whom were people with a minimum of secondary education, the problem is whether there will be enough qualified labour. And even with increasing automation in industry.

Industry has been boosted by a rebound in the automotive sector, which has benefited from both demands from abroad and domestic orders in Czechia. (Figure 13) Exports grew solidly in 2015, helped by stronger demand from trading partners. As the OECD notes (OECD – Czechia16, 2016), after reforming the tax system, the Czech Republic must undertake further structural reforms (especially in the social sphere, the pension system, ...) and complete the restructuring of state-owned enterprises in order to be competitive.

Slovenia is also facing a similar problem (Figure 14). As the OECD report shows (OECD – Slovenia17 2017), since the beginning of recovery investment in industry has been weaker than expected. Public investment is expected to recover with faster EU structural funds disbursement. Business investment should also pick up further on the back of external and domestic demand, favourable financing conditions and emerging capacity constraints, although remaining low as a share of GDP. The problem, however, is that skilled workers are not available on the market. The recovery has led to tighter labour market conditions, as employment has risen, while fewer people are in the labour market. Unemployment has fallen below OECD's estimate for structural unemployment, which has

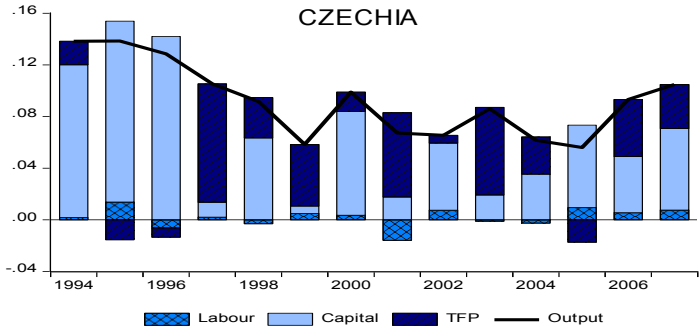
increased since the late 2010s as the shares of low-skilled and older workers in unemployment has increased. Accordingly, wage growth has picked up and was around 2% year-on-year in early 2017, as private-sector wages (particularly in market services) started again growing faster than in the public sector, where wages in 2016 were boosted by the lifting of the crisis-related wage freeze. Shortages are emerging, particularly in the manufacturing sector, across a range of vocational occupations and for ICT specialists.

As our results showed, our assumption of the same main factor was confirmed again only in the case of the Czech Republic and Slovakia. (Table 5) Here TFP was the main factor. In the case of Slovenia, the impact of capital was decisive for industry, but TFP was the most important for the overall economy.

5.3. Services - Pre-Crisis Period (1994-2007)

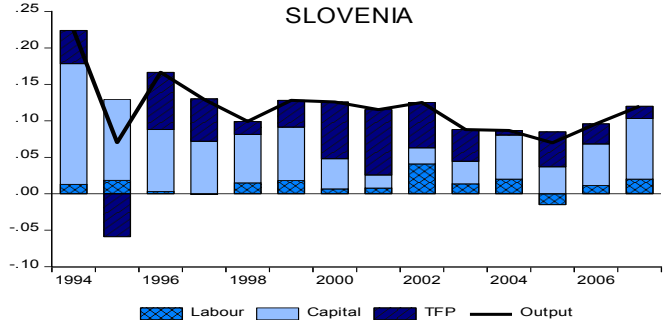
Services are the strongest segment in terms of their share of GDP. Its share is close to 60% in all three countries. Our assumption was that the human capital and the TFP would significantly contribute to the product of this segment. However, the opposite was true

Figure 15. Czechia - Services - Input Shares on Output, 1994-2007



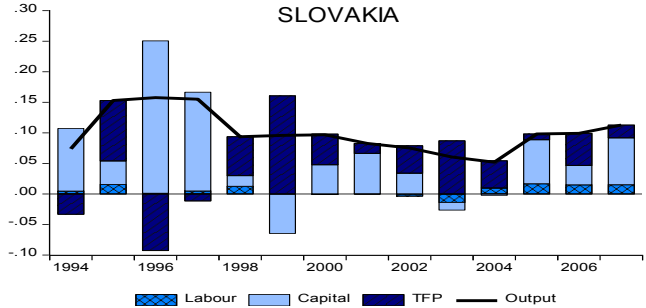
Source: own calculations

Figure 16. Slovenia - Services - Input Shares on Output, 1994-2007



Source: own calculations

Figure 17. Slovakia - Services - Input Shares on Output, 1994-2007



Source: own calculations

Table 6. Services - Average Changes and Shares, 1994-2007

	Czechia	Slovakia	Slovenia
average share on GDP (1994-2007)			
Labour	0.0211	0.0485	0.1092
Capital	0.6254	0.5011	0.5822
TFP	0.3535	0.4504	0.3086
average change (1994 - 2007)			
Labour	0.002	0.0054	0.0123
Real Wage	0.0448	0.0490	0.0526
Capital	0.0612	0.0585	0.066
Rental price of Capital	(-0.3805)	(-0.2177)	(-0.0649)
TFP	0.0293	0.0365	0.0392

Source: own calculations

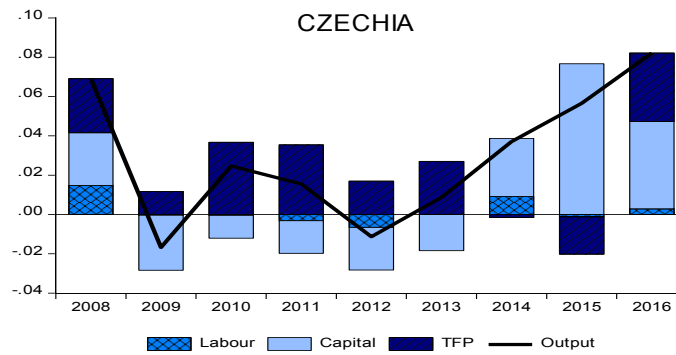
Capital is the main source of growth in all three countries. (Figure 15, 16, 17) The smallest difference in TFP shares and capital shares is recorded for Slovakia. On the contrary, the capital is most significant in the case of Czechia. Based on the findings it is evident that the most significant share of capital is reflected mainly in the 90s. We associate it with the fact that all three countries had to go through the transition to a market economy first. Since the service sector was not built in the way that the market demanded it before the transformation, large investments were needed. We are inclined to the opinion of Vidovic (2002) that under the former system countries did not pay much attention to the development of services, in line with the ideological perception of that time that services were not vital to growth and development. As a result some services were either rarely provided on the market or simply non-existent. Many modern services that play an important role in market economies (such as financial, real estate,...) were simply not needed under socialism. (Vidovic 2002) The process of transformation has resulted in extensive privatization and deregulation of the service sector. Those services that were previously provided by large industrial enterprises as part of employee care (such as child care) have now become the subject of many small or medium-sized businesses. The inflow of FDI was also beneficial. As stated by the OECD (OECD 2000) at that time, the share of services in the FDI stock was higher than that in manufacturing in countries such as Czechia and Slovenia. For the Czech Republic, it was primarily in the areas of real estate (also in Slovenia), the telecommunication and the financial sector. In Slovakia and Slovenia, transport and telecommunications absorb a significant proportion of FDI services. This development was reflected in a 9-11% increase in service sector production and a 6% change in capital in all countries. (Table 6) At the same time, capital accounted for 50% (SR) to 60% (CZ, SI) share in the sector product creation. A positive aspect of this sector was also the development of input prices. The cost of capital declined and labor prices grew at the same time. Growth in employment as well as the share of labour on the total product (from 2% - CZ to 10% - SI) was positively affected by this growth.

Our original claim was reaffirmed in two countries. This time, however, we are talking about Slovakia and Slovenia. The impact of capital prevailed in services as well as in the case of the whole economy in both countries. However, the assumption was not confirmed for the Czech Republic, where services were also most dependent on capital development, but the whole economy depended on changes in the TFP.

5.4. Services - Crisis and post-crisis period (2008-2016)

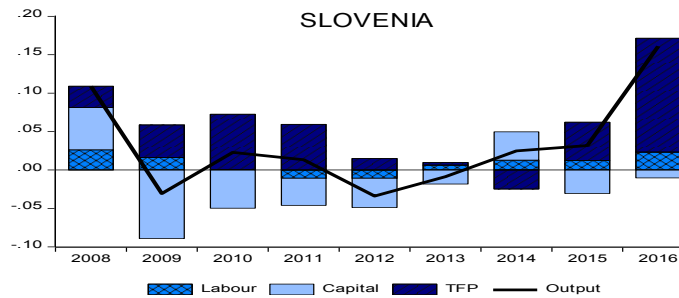
The crisis has also changed the service sector. The share of this sector has declined by 10% on total output in the Czech Republic and Slovakia. In Slovenia, this drop was only very small (2%). (Figure 18, 19, 20)

Figure 18. Czechia - Services - Input Shares on Output, 2008-2016



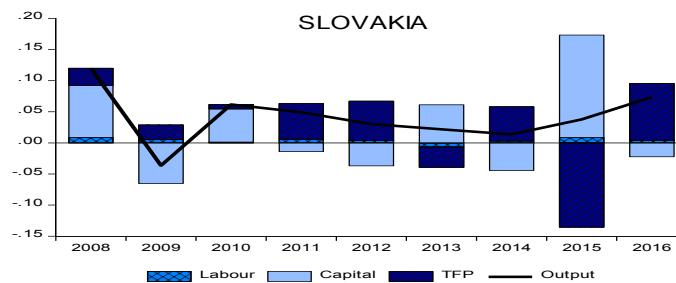
Source: own calculations

Figure 19. Slovenia - Services - Input Shares on Output, 2008-2016



Source: own calculations

Figure 20. Slovakia - Services - Input Shares on Output, 2008-2016



Source: own calculations

As stated in the OECD report (OECD 2017), productivity (TFP) increases in the service sector. It is true that the average level of productivity is higher in manufacturing than in services, but modern services are rapidly catching up. From the perspective of our countries, the claim for an increase in the impact of the TFP is confirmed in the case of the Czech Republic and Slovenia. In the case of Slovakia, growth will continue to rise through the increase in capital.

Our assumption has again been met by two countries, but other than in the pre-crisis period. This time it is Czechia and Slovenia. In both cases, the TFP is the main factor. (Table 7)

Table 7. Services - Average Changes and Shares, 2008-2016

	Czechia	Slovakia	Slovenia
average share on GDP (2008 -2016)			
Labour	0.096	0.046	(-0.0478)
Capital	0.335	0.6084	0.3456
TFP	0.5691	0.3456	0.7913
average change (2008 - 2016)			
Labour	0.0017	0.0039	0.0085
Real Wage	0.0117	0.0177	0.0194
Capital	0.0090	0.0199	(-0.0199)
Rental price of Capital	(-0.1544)	(-0.3819)	(-0.2497)
TFP	0.0188	0.0174	0.0437

Source: own calculations

Slovakia has had a development in the services sector mainly dependent on capital, but the whole economy relied on changes in the TFP.

Conclusion

Based on the comparison of both periods, we can say that the crisis has significantly affected development in selected countries. On the other hand, the crisis has changed the share of individual inputs, contributing to the creation of economic growth in each country. A common feature of all three countries is the relatively small share of labour on the growth of economic growth. The impact of labour is in fact negligible in all countries in the pre-crisis period - both in terms of hours worked and in terms of wages. However, capital prices declined throughout the period. Prices have changed much faster than the volume of capital has changed. The development of the real capital did not reflect the development of market prices.

Our assumption of the same major factor for the whole economy as well as the sectors has been only partially fulfilled. There was complete agreement - the whole economy + both sectors - only in two cases: for Slovakia in the pre-crisis period and for Czechia in the crisis and post crisis period. In all other cases, the whole economy + 1 sector is the only match. There has never been a case that the main factor has been labour.

However, we can not fully explain the reasons that led to such results. We believe that in order to better understand the overall situation of these economies and their economic growth, it is necessary to further analyse the concrete contribution of individual sectors to economic growth. We believe that the sectoral analysis can find the necessary answers and at the same time it is possible to estimate the effective adjustment of the internal structure of economies. This can lead to a more effective use of fiscal and monetary policy instruments as well as a better functioning of global value chains. Therefore, this will be the subject of our further research.

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References

- [1] Abramovitz, M. 1986. Catching Up, Forging Ahead, and Falling Behind. *Journal of Economic History*, 46(2): 385-406.
- [2] Abramovitz, M. 1956. *Resource and Output Trends in the United States Since 1870*. National Bureau of Economic Research. Available at: <http://www.nber.org/chapters/c5650.pdf>
- [3] Barro, R.J. 1991. Economic Growth in a Cross Section of Countries. *Quarterly Journal of Economics*, 106(425): 407-443.
- [4] Barro, R.J. 2001. Human Capital and Growth. *American Economic Review*, 91(2): 12-17.
- [5] Baumol, J.W. 1986. Productivity Growth, Convergence, and Welfare: What the Long-Run Data Show. *The American Economic Review*, 76(5): 1072-1085.

- [6] Bijsterbosch, M. and Kolasa, M. 2009. FDI and Productivity Convergence in Central and Eastern Europe an Industry-Level Investigation. *ECB Working Paper, No. 992/2009*. Available at: <https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp992.pdf?00de9072ca8e9ad61c8c532687e01164>
- [7] Bosworth, B., and Collins, S.M. 2003. The Empirics of Growth: An Update. <https://www.brookings.edu/wp-content/uploads/2016/06/20030307-1.pdf>
- [8] Dimelis, S.P. and Papaioannou, S.K. 2016. Entry Regulation, Public Ownership and TFP Growth: Industry-Level Evidence from South European Countries. *The Manchester School*, 84: 749–770.
- [9] Everaert, G., Heylen, F., and Schoonackers, R. 2015. Fiscal policy and TFP in the OECD: Measuring direct and indirect effects, *Empirical Economics*, 49: 605 - 615. DOI: <https://doi.org/10.1007/s00181-014-0872-0>
- [10] Gontkovičová, B., Tkáčová, A., and Kralik, A. 2016. Assessment of FDI Attractiveness of V4 Countries. *International Journal of Interdisciplinarity in Theory and Practice*, 10: 54-60.
- [11] Hájek, M., Mihola, J. 2009. Analýza vlivu souhrnné produktivity faktorů na ekonomický růst České Republiky. *Politická ekonomie*, 2009 (6): 740-753
- [12] Hlaváček, P., and Bal-Domanská, B. 2016. Impact of Foreign Direct Investment on Economic Growth in Central and Eastern European Countries. *Inzinerine Ekonomika-Engineering Economics*, 27(3): 294-303
- [13] Henderson, D.J. and Zelenyuk, V. 2007. Testing for (Efficiency) Catching-up. *Southern Economic Journal*, 73(4): 1003-1019.
- [14] Hloušek, M. 2007. Dual approach to growth accounting -application for the Czech Republic, *Mathematical Methods in Economics 2007*: 185-190
- [15] Hsieh, C.T. 2002. What Explains the Industrial Revolution in East Asia? Evidence from the Factor Markets. *American Economic Review*, 92(3): 502-526.
- [16] Hulten C.R. 1990. The measurement of capital. In Berndt E.R. and Triplett J.E. (eds) *Fifty Years of Economic Measurement, Studies in Income and Wealth*, 54:119-58.
- [17] Hulten, C.R. 2009. Growth Accounting. *Handbook of the Economics of Innovation*. National Bureau of Economic Research, Working Paper 15341, Available at: <http://www.nber.org/papers/w15341.pdf>
- [18] Jones, C. 1997. On the Evolution of World Income Distribution. *The Journal of Economic Perspectives*, 11(3): 19-36.
- [19] Jongen, E.L.W. 2004. *An analysis of past and future GDP growth in Slovenia*. Institute for Economic Research. Working Paper No. 25. Available at: <http://www.ier.si/files/Working%20paper-25.pdf>
- [20] Jorgenson, D.W., and Griliches, Z. 1967. The explanation of productivity change. *Review of Economic Studies*, 34(3): 249-83.
- [21] Krugman, P. 1994. The Myth of Asia's Miracle. *Foreign Affairs*, 73(6): 62-78.
- [22] Kumar, S., and Russell, R. 2002. Technological Change, Technological Catch-up, and Capital Deepening: Relative Contributions to Growth and Convergence. *American Economic Review*, 92(3): 527-548.
- [23] Mankiw, N.G., Romer, D., and Weil, D.N. 1992. A contribution to the empirics of economic growth. *The Quarterly Journal of Economics*, 107(2): 407 – 437 Available at: https://eml.berkeley.edu/~dromer/papers/MRW_QJE1992.pdf
- [24] Mihóková, L., Harčariková, M., and Martinková, S. 2016. *Changes in fiscal system of European member countries in the context of fiscal consolidation process (part 1)*. Organizational and economic mechanisms of development of the financial system, 8-17 pp.

- [25] Musso, P. 2006. Capital Obsolescence, Growth Accounting and Total Factor Productivity. *Revue de l'OFCE*, 5(97): 217-233.
- [26] Novak, M. 2003. Analysis of the Nature of Economic Growth of Slovenian Economy. *Managing Global Transitions*, 1(2): 153-167
- [27] Novak, M., and Bojnec, S. 2005. *Human Capital and Regional Economic Growth in Slovenia*, 15-31 pp. Available at: <http://www.fm-kp.si/zalozba/ISBN/961-6486-71-3/015-031.pdf>
- [28] Podpiera, J., Raeli, F., and Stepanyan, A., 2017. *A Fresh Look at Potential Output in Central, Eastern, and Southeastern European Countries*. IMF Working Paper. ISBN: 9781475578980, 37 pp.
- [29] Romer, D. 2012. *The Solow Growth Model*. *Advanced Macroeconomics*, 6-37 pp.
- [30] Romero, J. 2012. FDI and Economic Growth in Mexico: 1940 – 2011. *Investigaion Economica*, 71(282): 190. Available at: http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0185-16672012000400005
- [31] Senhadji, A. 1999. *Source of Economic Growth: An Extensive Growth Accounting Exercise*. IMF Working Paper 99/77, 41 pp. Available at: <https://www.imf.org/external/pubs/ft/wp/1999/wp9977.pdf>
- [32] Vidovic, H. 2002. *The services sectors in Central and Eastern Europe*. The Vienna Institute for international economic studies. Bank Austria Creditanstalt, Research Report No. 289, September 2002, 89 pp.
- [33] Quah, D. 1996. Twin Peaks: Growth and Convergence in Models of Distribution Dynamics. *Economic Journal*, 106(437): 1045-1055.
- [34] Walheer, B. 2016. Multi-sector nonparametri production-frontier analzsis of the economic growth and the convergence of the European countries. *Pacific Economic Review*, 21(4): 498-524
- [35] Zelenyuk, V. 2014. Testing Significance of Contributions in Growth Accounting, with Application to Testing ICT Impact on Labor Productivity of Developed Countries. *International Journal of Business and Economics*, 13(2): 115-126.
- *** CIA 1, Slovenia. Available at: <https://www.cia.gov/library/publications/the-world-factbook/geos/si.html#field>
- *** Europe 2015. EY's attractiveness survey. Europe 2015. Comeback time.
- *** OECD 2000. *The services economy. STI Science Technology Industry*. Business and Industry Policy Forum Series. Paris.
- *** OECD 2017, *Services Trade Policies and the Global Economy*, OECD Publishing, Paris. Available at: <http://dx.doi.org/10.1787/9789264275232-en>
- *** OECD – Czechia16, 2016. Available at: <https://www.oecd.org/eco/surveys/Czech-Republic-2016-overview.pdf>
- *** OECD – Slovakia17, 2017. Available at: http://www.keepeek.com/Digital-Asset-Management/oecd/economics/oecd-economic-surveys-slovak-republic-2017_eco_surveys-svk-2017-en#.WbRb_dJJYdU#page12
- *** OECD – Slovenia 2009. *OECD Economic Surveys: Slovenia 2009*. OECD Publishing. ISBN-10: 9264030786
- *** OECD – Slovenia15, 2015. Available at: <http://www.oecd.org/eco/surveys/Slovenia-2015-overview.pdf>
- *** OECD – Slovenia17, 2017. Available at: <http://www.oecd.org/eco/surveys/Slovenia-2017-OECD-economic-survey-overview.pdf>
- *** OECD - Entr, 2017. *SDBS Structural Business Statistics (ISIC Rev. 4)*. 2017. Available at: http://stats.oecd.org/Index.aspx?DataSetCode=SSIS_BSC_ISIC4#

Improvement of Management Accounting in the Context of Uncertainty and Risks in the Food Retailing Sector in the Republic of Kazakhstan

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Abstract:

The goal of this study is to develop recommendations for management accounting improvement and introduction of mechanisms to account for risk tolerance at food retailing enterprises in the Republic of Kazakhstan. The study was carried out using the analysis of statistical data on retail development in the Republic of Kazakhstan, internal regulatory documentation and business processes of the four largest food chains in Kazakhstan. The SWOT analysis was applied to assess the external and internal environment for the retail industry operation. Methodological tools for quantitative evaluation of the risk tolerance indicator were provided within the study, based on financial information from the four largest retail chains in Kazakhstan. The results of the analysis revealed that Kazakhstan retailers were operating in the context of increasing risks caused by a decrease in real household incomes and a drop in consumer demand. Despite the obvious benefits, the "risk tolerance" concept is a relatively new area in risk management and has not yet become widely used in the companies of the non-financial sector in the Republic of Kazakhstan. Application of the methodological approaches described in this article allowed the author to establish the threshold for losses and calculate the risk distribution scale in accordance with the established tolerance range for the food retailing companies in the Republic of Kazakhstan.

Keywords: risk management; risk appetite; risk tolerance; management accounting; strategic planning; uncertainty; risk factors; food retailing

JEL Classification: E31; M11

Introduction

Global economic development of the past few years has had a negative impact on Kazakhstan due to integratedness of the economy. Currently, the economy of Kazakhstan is in a state of shock from falling oil prices, drop in export earnings and depreciation of the national currency. Worsening of the situation in 2015-2016 was due to aggravation of geopolitical crises and slowdown in the growth of the economies of the Kazakhstan's trading partners – in particular, Russia, the EU countries and China (REPORT of the National Bank of the Republic of Kazakhstan for 2016).

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Thanks to crisis response measures to stimulate the economy, undertaken by the Government of the Republic of Kazakhstan, the impact of shocks has been weakened, and it can be said that the economy recovers gradually. However, this trend is unstable and largely depends on the stability of external economic conditions.

Food retailing is one of the rapidly changing and highly competitive industries in the Republic of Kazakhstan. However, due to the negative impact of external factors, the retail market demonstrated a slowdown in growth rates in 2015-2016, and now Kazakhstan retailers operate in the context of increasing risks caused by a drop in consumer demand.

In response to current developments, many retail chains define new strategic development plans, review corporate governance codes and requirements to corporate reporting. They are determined to better and more thoroughly consider the risks, which have a direct effect on the long-term viability of the enterprise, and to provide a general improvement in the level and quality of risk management.

Competent strategic decisions in the context of increased influence of uncertainty factors and various types of risks should be made based on the data of the management accounting system. Unlike the objectives of financial accounting, which must meet the information needs of external stakeholders, management accounting creates information for the adoption of internal managerial decisions.

Financial statements compiled by Kazakhstani enterprises in accordance with national and international standards (IFRS, US GAAP) reveal a fair picture of their financial position, but information about risks is quite limited, at the best case. The current ambiguous situation requires the food retailing companies in the Republic of Kazakhstan to continuously improve their management accounting system, an integral part of which is the creation of a corporate risk management system (Fernandes, Grody, Hughes, Phillips, Toms 2013) based on the "risk tolerance" concept.

Risk tolerance, or permissible risk, is the uncertainty that an organization is ready to accept generally or more narrowly within a particular business unit, a specific risk category or a specific initiative.

The need to define risk tolerance is one of the key elements of strategic planning today. The companies that think through and formalize their risk tolerance and risk appetites have a chance to be more successful in the long term. Despite the need for a clear awareness of their risk tolerance, many Kazakhstani food retailing enterprises still fail to pay due attention to this problem. For example, according to the KPMG 2014 study, only one third of the companies surveyed defined the risk appetite in making strategic and operational decisions (KPMG in Kazakhstan and Central Asia).

At the moment, development and implementation of approaches to evaluating the "risk tolerance" parameters for a food retailing enterprise is a relatively new and progressive task. However, the solution of this problem is complicated by the lack of unified approaches and underdevelopment of the methodological basis for evaluation of risk tolerance for companies in the non-financial sector.

The goal of this study is to identify ways to improve management accounting based on the introduction of risk management using the "risk tolerance" indicator in food retailing companies in the Republic of Kazakhstan.

To achieve this goal, the following is required:

- consider the methodological basis that would allow to determine the risk tolerance indicator for food retailing enterprise;
- study risk factors and uncertainties in the operation of retail chains in the Republic of Kazakhstan at the present stage;
- develop recommendations on formalization of the methods for quantifying the risk tolerance indicator and integrating the "risk tolerance" concept into the system of management accounting at food retailing companies.

1. Methods

The company's risk tolerance is defined by a system of indicators that describe the level of risks that a company can and/or want to accept in accordance with its development strategy, while ensuring the target profitability for owners.

The "risk tolerance" parameter is calculated in several stages:

- *stage 1* includes the establishment of strategic areas for the development of the market and the analyzed company. At the same stage, the available information on the company, industry and competitors is collected and analyzed. Individual expert methods (polling, interviews) and group methods (brainstorming, business games) are used; statistical data, internal regulatory documentation, business processes are analyzed within this stage. SWOT analysis is one of the efficient methods to evaluate the external and internal environment of operation of certain industries;
- *stage 2* includes identification of the main types of risk for the food retailing industry and compilation of a risk register. It is necessary to identify and record the situations or events that may cause negative consequences for the company, as well as to identify risk management measures. The second stage results in the compilation of a risk register that contains information on the risk name, category and groups, the level of risk tolerance, risk factors, and the consequences of risk realization;
- *stage 3* includes calculation of the "risk tolerance" indicator. It is expressed by quantitative indicators that can control risk appetite from the standpoint of the acceptable or unacceptable result.

Quantitative indicators of "risk tolerance" are calculated depending on the key strategic goals of the company. The goals of development of food retailing companies are usually expressed in achieving the target financial results and compliance with established standards and other performance indicators.

Within this study, the quantitative indicator of the tolerance level was calculated on the basis of the criterion of the core profit margin. Financial indicators of the largest retail chains in the Republic of Kazakhstan (sales revenue, sales profit) were used for calculation.

2. Analysis of the food retailing market development in the Republic of Kazakhstan

In 2015-2016, the economy of Kazakhstan was exposed to negative exogenous factors, which in turn affected all key macroeconomic indicators. For example, over the past two years, the gross domestic product of the Republic of Kazakhstan in dollar terms has decreased by 39% from \$221.4 bln to \$135 bln (Statistics Committee of the Republic of Kazakhstan).

The retail industry demonstrated growth in the national currency. However, in terms of the weighted average rate of the National Bank of the Republic of Kazakhstan, the retail trade turnover decreased by 16.3% in 2015, compared to the previous year, and by 24.3% in 2016, compared to 2015 (Table 1).

Table 1. Indicators of retail trade in the Republic of Kazakhstan in 2014-2016

INDICATOR	2014	2015	2016	Change, +/-	
				2015/2014	2016/2015
Volume of retail trade, bln tenge	6,332.30	6,555.80	7,661.80	3.5%	16.9%
<i>of which food products</i>	1,820.80	1,887.00	2,735.30	3.6%	45.0%
Volume of retail trade, bln USD	35.34	29.57	22.39	-16.3%	-24.3%
<i>of which food products, bln USD</i>	10.16	8.51	7.99	-16.2%	-6.1%

Increase in the average check in the national currency is due to increase in food prices. According to official statistics of the Republic of Kazakhstan, inflation amounted to 8.5% in 2016 (December 2016 as compared to December 2015). Prices for food products increased by 9.7%, and prices for non-food products - by 9.5% (Statistics Committee of the Republic of Kazakhstan).

Against the background of the growth in prices, the income level of Kazakhstanis demonstrates negative dynamics. The average monthly nominal wage of one employee declined from \$675 in 2014 to \$416 in 2016. Real monetary incomes in the country decreased by 4.5% in 2016 compared to the level of the previous year. Changes in indicators describing the consumer purchasing power in the Republic of Kazakhstan in 2014-2016 are shown in Table 2.

Table 2. Indicators of the consumer purchasing power in Kazakhstan in 2014-2016

INDICATOR	2014	2015	2016	Change, +/-	
				2016/2015	2016/2014
Real money income index	103.4	101.4	97.2	-4.2	-6.2
Average monthly salary, \$/pers	675.0	568.0	416.0	-152	-259
Consumer price index	106.7	106.6	114.6	8	7.9

Complex economic situation and associated drop in household incomes and inflation growth adversely affected the preferences of the population: Kazakhstanis had to abandon the consumption of fruit (-4.5%), fish and seafood (-3.7% per year), as well as sweets (-3%).

The food retail in the Republic of Kazakhstan is represented mainly by small specialized and non-specialized shops with an area of less than 2,000 sq.m. Both large international chains and local retailers operate on the territory of Kazakhstan, such as: Ramstore (Ramstore Kazakhstan LLP); GREEN MART; SMALL (Skif Trade LLC); Magnum (Magnum Cash&Carry LLP); METRO (METRO Cash&Carry LLP).

The review of the current state of the food retail market in Kazakhstan made it possible to identify and structure the strengths and weaknesses of retail trade, as well as the potential threats and opportunities for the development of this type of activity (SWOT analysis).

2.1. Factors of risk and uncertainty in the retail chains operation in the Republic of Kazakhstan

Review of the current state of the food retailing market in Kazakhstan allowed to identify and structure the strengths and weaknesses of retail trade, as well as the potential threats and opportunities for the development of this type of activity (SWOT analysis).

Table 3. Strengths, weaknesses, opportunities, threats - SWOT analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> ▪ Currently, the modern formats of trade are becoming more popular among Kazakhstan's population due to a wide range of products, high product quality and high standards of service; ▪ The share of population who prefer buying high-quality global brands in one place is increasing. 	<ul style="list-style-type: none"> ▪ Price is the key purchase motivator for Kazakhstan consumers. This is why a significant part of population continues to buy food products on traditional markets; ▪ Complex economic situation resulted in a shift in consumer preferences toward cheaper product groups; ▪ Such chain formats as "hypermarket" or discount stores are undeveloped; ▪ Low population size and density in Kazakhstan; ▪ Undeveloped logistics system and infrastructure restrain the food retailing development in the regions of Kazakhstan.
Opportunities	Threats
<ul style="list-style-type: none"> ▪ Kazakhstan's market of food chains is underdeveloped and is not saturated. ▪ There is a significant potential for the development of the Cash&Carry and discounter formats. ▪ Restoration of the financial market will allow to increase the accessibility of credit resources for the population (credit cards, primarily). 	<ul style="list-style-type: none"> ▪ Decline in the growth rates of the Kazakhstan's and global economies may have a negative impact on the solvency of the population and the consumption power of citizens; ▪ High inflation; ▪ Fluctuations in world prices for commodities; ▪ Insufficient development and capitalization of the national banking system.

All risks of the food retailing companies can be divided into 2 main groups:

- 1) Industry-specific: risks that reflect the possibility of deterioration of the situation in the industry and their impact on the company's business. The main factors that could have a negative impact on the performance and financial position of the company include:
 - decline in the solvent consumer demand. The negative impact of this factor is associated with a decline in real households' incomes due to deterioration of the macroeconomic environment. The decline or slowdown in the country's economic development and destabilization of the economic situation may lead to a slowdown in growth and a decline in retail profitability indicators;

- intensification of competition in the retail market of the Republic of Kazakhstan. According to some sources, the international DIY retailers Leroy Merlin (France) and OBI (Germany) are going to enter the Kazakhstan market in 2017. Besides, there is information on the ongoing negotiations with such international retailers as Auchan (France) and IKEA (Netherlands) on their entry into the Kazakhstan market (JSC "Rating Agency of the Regional Financial Center of Almaty" (RA RFCA). Taking into account the entry of new players into the market of food retail, it is a fair assumption to say that the competition for consumers will become tougher in the near future. As retail chains develop and expand, retailers will compete in price, product mix, product quality, location, level of service and the store state;
 - change in prices for products purchased for retail sale and escalation of tariffs for third-party services.
- 2). Financial risks. The group of financial risks for the food retailing companies include:
- inflation risk. Growth of inflation of monetary income of retail chains can be depreciated if cost inflation (including the cost of products purchased for sale) grows faster than retail selling prices;
 - currency risk. It represents the danger of damage associated with the change in the tenge exchange rate against other currencies. This risk type is inherent in companies that have obligations to pay for products denominated in foreign currency,
 - liquidity risk. It is defined by the probability of losses in the short and long term due to failure to fulfill their obligations because of lack of funds.

After the main risk types have been identified, the level of tolerance can be calculated, which can be linked to the ability of the enterprise to fulfill its obligations without violating the principles of financial stability. Let's study an example of calculation of risk tolerance of several food retailing companies in the Republic of Kazakhstan. The source data for evaluation of the tolerance level of the four largest food chains of the Republic of Kazakhstan are presented in Table 4.

Table 4. Source data for evaluation of the tolerance level of the four largest food chains of Republic of Kazakhstan (NB500)

INDICATOR	Green House Best LLP	Skif Trade LLP	Metro Cash&Carry LLP	Ramstore Kazakhstan LLP
Sales revenue, mln tenge	31,360	46,250	37,360	27,210
Profit (loss) from sales, mln tenge	6,190	13,640	10,970	8,000
Expenses	25,170	32,610	26,390	19,260
Profit margin earned from sales, %	19.7%	29.5%	29.4%	29.2%

The following levels of the companies' profitability are assumed to calculate the threshold values of losses:

- the maximum allowable (high) level of risk tolerance corresponds to a profitability of 15% (R1=0.15);
- the lower limit of retail risk tolerance corresponds to 30% (R2=0.30).

Results of calculating the loss thresholds are provided in Table 5.

Table 5. Results of calculating the loss thresholds

Indication of the tolerance level limits	Green House Best LLP	Skif Trade LLP	Metro Cash&Carry LLP	Ramstore Kazakhstan LLP
Upper tolerance limit (R1=0.15)	26,656	39,313	31,756	23,129
Lower tolerance limit (R2=0.3)	21,952	32,375	26,152	19,047

In accordance with the established ranges of the tolerance level, the risks for food retailing companies can be classified as follows (Table 6).

Table 6. Scale of risk distribution in accordance with the established range of tolerance

Risk level	Range of loss sizes, mln tenge
Weak level	Less than 19,047 mln tenge
Acceptable level	19,047 mln tenge – 39,313 mln tenge
Strong level	More than 39,313 mln tenge

Weak risk level corresponds to losses, the value of which is less than the threshold value of the lower tolerance limit and remains within the permissible range. Losses within the tolerance range correspond to the acceptable level of risks. The company's management is recommended to develop measures to reduce them to a weak level. Strong risk level corresponds to losses above the threshold value of the upper tolerance limit. Such risks adversely affect the financial performance of food retailing enterprises and require immediate action on the part of management on their prevention and mitigation of the consequences of their implementation.

3. Discussion

In the current context, market leaders are increasingly making business decisions based on the calculation of risk appetite and the risk tolerance level. Companies should keep a record of their risk tolerance indicators, calculate the probability of adverse events that could occur and affect the business, and should remain within a specified acceptable level.

Numerous studies on the development of risk management confirm that the development and implementation of the "risk tolerance" concept have numerous advantages by Nadine Boghdadi (2015):

- clear definition of a corporate risk appetite and risk tolerance is directly linked to the processes of strategic planning and budgeting;
- consistent measurement and risk monitoring promotes a deeper understanding of risks and can optimize the costs of increasing the risks associated with adding value, within the organizational risk tolerance;
- informs about the definition and the potential for reducing the total cost of the organization's risk over time – it is the total cost of risk management;
- able to improve reputation. Demonstrates to shareholders, stakeholders and the general market that the organization has good corporate governance, a proactive approach to risk management, and that its key business factors have been identified with risk taken into consideration.

Despite a number of benefits provided by the "risk tolerance" concept introduction, the practice of calculating indicators of risk tolerance has not yet become widely used in Kazakhstan's food retailing enterprises. The main factors hampering efficient risk management in the food retailing companies of the Republic of Kazakhstan are:

- poor commitment of the top management;
- lack of skills required for quantification of the risks impact on the company's goals and budget;
- poor quality of risk assessment and information provided to the company's management.

The "risk appetite" concept is quite new; its emergence can be associated with the development of the organization's risk management concept. It must be noted that there are no unified standards and unified approaches to the development and application of the key risk management parameters at the moment.

Methodological issues of obtaining quantitative estimates of such indicators as "risk appetite" and "risk tolerance" are poorly elaborated. Practice shows that most companies face difficulties in evaluating the tolerance level, including due to the lack of experience in using quantitative methods in this field.

Practical application of these indicators in management accounting of the food retailing companies in the Republic of Kazakhstan is constrained by the lack of accurate and complete information that would allow to objectively evaluate the companies' risk tolerance.

Document support is an important element of the risk management function organization. At the moment, there is a serious gap in the availability of strategic documents, such as a formalized statement of "risk appetite" or "risk tolerance."

Food retailing giants are increasingly using reliable risk management methods, but they are not documented or properly formalized in most cases, and are rather implemented at senior management level. One of the main processes in the risk management system is formalization of the company's "risk tolerance" and "risk appetite". According to Karl Burch, if the company has no formal statement about its risk appetite, it may face control problems in the future (Karl Burch, *n. d.*).

Formalization of risk tolerance will allow the company to ensure the exchange of information between stakeholders and making informed managerial decisions.

The companies' risk tolerance level should not be regarded on a standalone basis, because it is a decision-making tool. Integrating the accounting of risk tolerance in the key decision-making processes and operational activities is of great importance not only for food retailing companies, but also for enterprises in other sectors of the economy.

Conclusion

Results of this study allow to make the following conclusions:

- no clear definition of "risk appetite" has so far evolved, but it is clear that uncertainty faced by individuals and legal entities in the course of their operation will always accompany the risk.
- methodology for evaluation of the risk tolerance involves the use of qualitative and quantitative methods. However, it must be noted that companies face practical difficulties in calculation, due to the lack of experience in using quantitative methods in this field;
- at the moment, Kazakhstan retailers operate in the context of high risks and uncertainty associated with a complex macroeconomic situation. The main factors of risk and uncertainty for the food retailing companies in the Republic of Kazakhstan include: a decline in the solvent consumer demand; intensification of competition in the retail market from international food chains; change in prices for purchased products and escalation in tariffs; growth of inflation and the dollar exchange rate;
- despite a number of benefits provided by the "risk tolerance" concept introduction, the practice of calculating indicators of risk tolerance has not yet become widely used in the food retailing companies in the Republic of Kazakhstan;
- the calculation of the risk appetite parameter should become a basic element of the due risk management practices in companies in the non-financial sector. It should be integrated into the development strategy and the process of planning and managing the resources at the food retailing companies.

References

- [1] Burch. C. *Risk Appetit: Ne otkusyvayte bolshe, chem mozhete progлотit*. Korporativnyy menedzhment [Risk Appetite: "Don't Bite off more than You can Chew". Corporate Management] Available at: http://www.cfin.ru/finanalysis/risk/Risk_Appetite.shtml (accessed 7th February 2016)
 - [2] Fernandes, K.J., Grody, A.D., Hughes, P.J., Phillips, O., and Toms, J.S. 2013. *Risk Accounting: An Accounting Based Approach to Measuring Enterprise Risk and Risk Appetite*, Available at: <http://ssrn.com/abstract=2165034> (accessed 7th February 2016)
- *** Komitet po statistike Respubliki Kazakhstan. Osnovnyye sotsialno-ekonomicheskiye pokazateli Respubliki Kazakhstan [Statistics Committee of the Republic of Kazakhstan. Basic socio-economic indicators of the Republic of Kazakhstan]. Available at: http://stat.gov.kz/faces/homePage/homeDinamika.pokazateli?_afzLoop=488399721983221#%40%3F_afzLoop%3D488399721983221%26_adf.ctrl-state%3Dyavy2ng2b_4 (accessed 7th February 2016)
- *** Komitet po statistike Respubliki Kazakhstan. Osnovnyye sotsialno-ekonomicheskiye pokazateli Respubliki Kazakhstan. Tseny i tarifny [Statistics Committee of the Republic of Kazakhstan. Basic socio-economic indicators of the Republic of Kazakhstan. Prices and tariffs]. Available at: http://stat.gov.kz/faces/wcnav_externalId/homeNumbersPrices?_afzLoop=508012759732583#%40%3F_afzLoop%3D508012759732583%26_adf.ctrl-state%3Dkmb6jz33l_110 (accessed 7th February 2016)

- *** KPMG v Kazakhstane i Tsentralnoy Azii. Upravleniye riskami kak osnovnoy instrument borby s neopredelennostyu. 2014 god [KPMG in Kazakhstan and Central Asia. Risk management as the key tool to fight uncertainty. 2014.] Available at: http://www.kazenergy.com/images/stories/kpmg/Research_S.Zhumashev_final.pdf (accessed 7th February 2016)
- *** NB500. Ranking 500 krupneyshikh kompaniy Kazakhstana [Ranking of 500 largest companies in Kazakhstan]. Available at: <http://nb.kz/nb-500/ranking2016> (accessed 7th February 2016)
- *** OA "Reytingovoy Agentstvo Regionalnogo Finansovogo Tsentra goroda Almaty" (RA RFTSA). Roznichnyy riteyl Kazakhstana. Perspektivy razvitiya v 2017 godu [JSC "Rating Agency of the Regional Financial Center of Almaty" (RA RFCA). Retail in Kazakhstan. Prospects for development in 2017]. Available at: <https://www.interfoodastana.kz/ru/press-tsentr/novosti/287-05-04-2017rfc> (accessed 7th February 2016)
- *** OTCHET Natsionalnogo Banka Respubliki Kazakhstan za 2016 god. Ofitsialnyy internet-resurs Natsionalnyy bank Kazakhstana [REPORT of the National Bank of the Republic of Kazakhstan for 2016. Official website of the National Bank of Kazakhstan] Available at: <http://www.nationalbank.kz/> (accessed 7th February 2016)
- *** PREPARED BY NADINE BOGHDADI, RISK CONSULTANT WILLIS RISK SERVICES. RISK APPETITE STATEMENT. *make or break?* MARCH 2015. Available at: www.willis.com. (accessed 7th February 2016)

Analytical View of Recruitment and Selection of Employees as One of the Most Important Practices of Human Resource Management. Performance of Companies that are Affected by Globalization Operating in Slovakia

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Abstract:

For the first time globalization was mentioned many years ago and has been occurring since then, but just lately its impact on the performance of companies in Slovakia has started to be more significant. It influences all spheres of business including human resources management (HRM) and its important practices. Investigating of statistical dependence between practices of human resource management and the performance of a company has become a current trend in the sphere of HRM. This contribution joins all the above mentioned aspects therefore it is possible to state that its main objective is to investigate the power of mutual relationship between one of the significant HRM practices, recruitment and selection of employees, and the performance in companies which are affected by the impact of globalisation and are run in the conditions of the Slovak Republic.

Keywords: recruitment and selection of employees (R&S); firm performance; globalization; human resources management (HRM); practices of HRM.

JEL Classification: M1; M12

Introduction

Human capital plays a central role in today's globalized world, since it serves as the competitive advantage and moreover, it increases organizational performance. The scientific papers in the field of human resource management whose authors are for example: Perkins (2003), Roehling (2005), Choo (2010), Aminu and Malik (2011), Moideenkutty (2011) *et al.* explore the effects of globalization on human resource management or authors Huselid (1995), Lui (2004), Carlson (2006), Fening and Amaria (2011), Katou and Budhwar (2010), Khatibi (2012), Palagolla (2016) who explore the relationship between human resource management practices and performance. As the current business environment is very much under the influence of globalization, economic, technical and other factors, it is thus extremely important to pay attention to these issues and examine their impact on enterprises operating in Slovakia.

Over the past decades, research into the causal links between human resource management and business performance has dominated both academic and medical debate (Purcell and Kinnie 2007, Crawshaw *et al.* 2014). The starting point of much of the work in the area of human resource management and firm performance was an article by Huselid (1995), which appeared in the highly acclaimed *Academy of Management Journal*, arguing that high performance work practices are linked with increased sales and market value per employee for the firm.

Equally the work by Pfeffer (1994, 1998) was influential in identifying so-called „best practices“ in human resources management argued to contribute towards achieving sustained competitive advantage.

1. Literature review

Storey (2007), Katou and Budhwar (2010, 4) defines human resources management as a distinctive approach to employment management which seeks to achieve competitive advantage through the strategic development of a highly committed and capable workforce using an array of cultural, structural and personnel techniques. The key implications of this definition are: that HRM is one particular approach to the management of people in organizations; that HRM has a strategic role to play in helping an organization to achieve sustained competitive advantage; that an investment in a highly – skilled and motivated workforce, through effective HRM policies and practices, is the „only best way“ to secure one“s competitive advantage. Among effective and most important practices HRM we can include strategic HRM, workforce intelligence planning, recruitment and selection, learning and development, reward strategies and systems, and performance management. This contribution has aim is being characterised more in detail by factors and different activities R&S as one more important HRM practices, which are performed within the practice. Recruitment is defined as searching for and obtaining potential job candidates in sufficient numbers and quality, so that the organization can select the most appropriate people to fulfill its job needs; and selection is the process of gathering information for the purposes of evaluating and deciding who should be employed in particular jobs (Dowling *et al.* 2008, 109).

Human resource management influences the process of globalization at the same time. Keeffe (2003), and Perkins (2003) states that globalisation deserves huge attention as it is more than just entrepreneurship across the borders of states; globalisation represents the management with the challenge to teach to work in different cultural environments. In addition, it introduces the fact that the entry of global economy brought along the knowledge that the only competitive advantage is the ability of an organisation to use its human capital as effective as it gets. With regard to this situation, one of our research tasks is to find out to what measure the activities and factors realized within recruitment and selection of employees in companies are affected by the impact of globalisation according to HR managers' perception. We can identify ourselves with the opinion of Roehling (2005), whose publication named *the future of human resource management* presents a view in which globalisation is a high priority for each type of organisation. As for the sphere of HRM it means mutual cooperation between HR managers, creating and maintaining of organisation, or company culture as well as the development of global leadership. The increase in multinational organizations is a result of advancing globalization. Human resources management in a multinational organization significantly differs from human resource management in national or local organizations since multinational organizations operating in different countries employ different types of workers of different nationalities, and human resource management in such an organization is much difficult and complex (Svetozarovová and Sojka 2016).

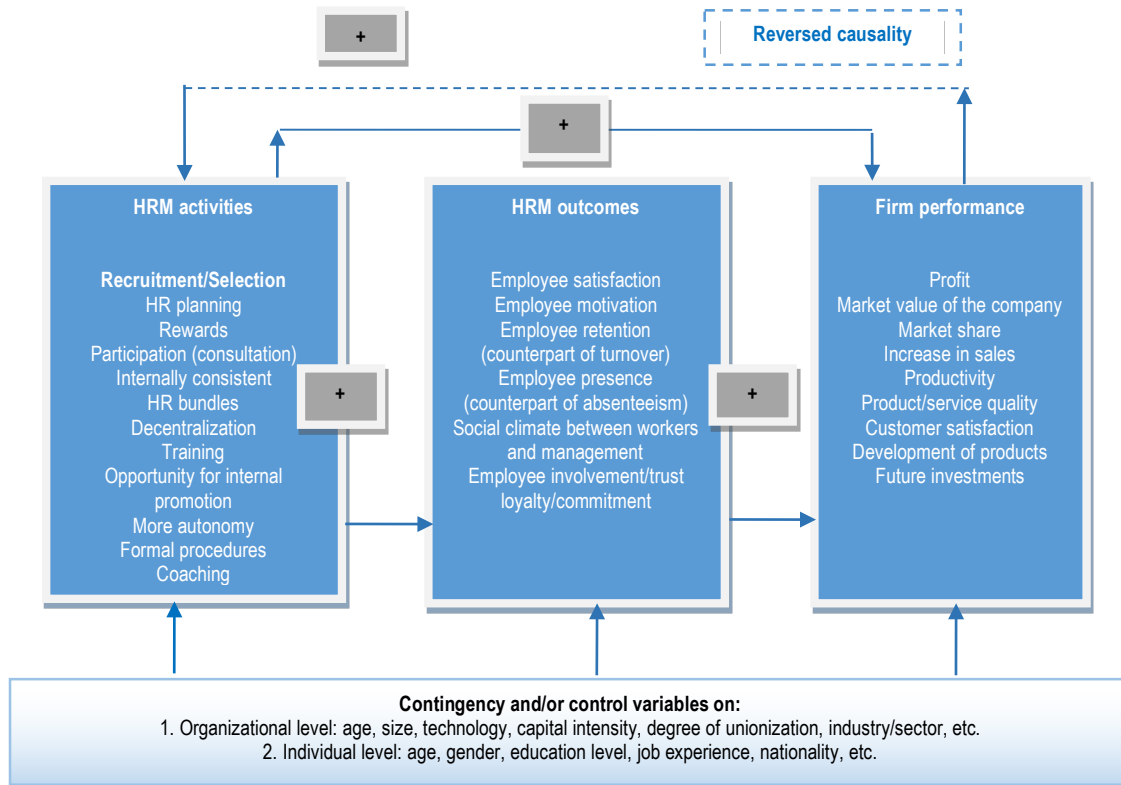
Aminu and Malik (2011) point out to the fact that there are certain problems in HR sphere which are typical for global business. The key to success is exact performance of manpower management, the selection and keeping of talented employees, their education and development, the ability to be innovative and creative, to be aware of cultural barriers, as well as legal operational framework. Other questions related to the understanding of operation problems and the work abroad, evaluation of the work performance depending on the distance and development of management, compensation packages and labour – law relations. There are other processes within the organizations such as technology and design, but it is the human factor which is the most difficult to replicate. Therefore, the most valuable strategy implementation and delivery of the organizational strategic target is accomplished the best through highly performance people (Cocuľová 2015).

1.1. The linkage between human resources management and firm performance

Paauwe and Farndale (2006), Stahl, Björkman (2006, 97) conclude that all of the models and theories described so far do little to explore the causal relationship between human resources management and firm performance; rather they make assumptions about the outcomes of certain individual human resources management practices. Some conceptual models have, however, been developed to test the causal relationships

empirically. Although it is inappropriate to go into the detailed outcomes of each of these studies here, a useful summary of findings can be found in the framework developed by Paauwe (2004), Richardson (1997) in: Stahl, Björkman (2006, 97) as shown in Figure 1.

Figure 1. Linkage between HRM activities, outcomes and firm performance



Source: Paauwe, Richardson (1997), Paauwe (2004), in: Stahl, Björkman (2006, 98)

The framework is based on an overview of more than 30 articles that have studied empirically the relationship between human resources management practices, human resources management outcomes and the subsequent effect on firm performance. The debate centres on how many boxes need to be incorporated in a model representing human resources management impact on firm performance, and what variables each of these boxes should contain. If human resources management activities indeed have an impact on human resources management outcomes and firm performance it will only occur provided worker attitude, and especially worker behaviour, is affected in a certain way.

Several authors have acknowledged that a significant relationship exists between human resource management practices and firm performance (Mabey and Ramirez 2005, Tzafrir 2006, Carlson Upton and Seaman 2006, Ferris *et al.* 2007, Katou and Budhwar 2007, Katou 2009, Marimuthu Arokiasamy and Ismail 2009, Absar *et al.* 2010, Fening and Amaria 2011) and also as a source of competitive advantage (Wright *et al.* 2005, Gong *et al.* 2009, Fening and Amaria 2011). Carlson *et al.* (2006) has looked into human resources practices in US large firms and concluded that human resources positively impact firm performance. Also Katou and Budhwar (2010) in their study of 178 manufacturing companies in Greece found that some human resource practices such as recruitment, training, safety and health were positively related to firm performance. In a study conducted in Ghana by Boohene and Asuinura (2011), Fening and Amaria (2011), was found a positive relationship between effective recruitment and selection practices, effective performance appraisal practices and their corporate performance. However, their finding did not observe corporate performance being influenced by remuneration, training and development practices. In a survey of 236 managers working at steel firms in Taiwan, Lee *et al.* (2010), Fening and

Amaria (2011) found out that the human resources management practices: training and development, teamwork, compensation/incentives, human resources planning, performance appraisal, and employment security were positively related to firm performance. Our study has been developed with a single difference as it doesn't investigate just the relationship between one of important HRM practices and the company performance, but it also finds out to what measure the recruitment and selection of employees is influenced by the process of globalisation. After determination of its measure, the statistical dependence with chosen performance measures is tested.

2. Methodology

This paper aims to examine the strength of the relationship between recruitment and selection (R&S) of employees, as one of the most important practices of Human Resources Management, and the performance of companies that are affected by globalization. The above stated target serves as one of the partial objectives of the study, its goal was to determine whether there exists a statistically significant relationship between the level of impact of globalization on individual HRM practices, as perceived by human resources (HR) managers and the rate of evolution of performance the surveyed companies. In order to investigate this goal, the paper set up to do the following:

- determine the extent to which activities and factors that are implemented as part of the recruitment and selection of employees in enterprises influenced by the effects of globalization as perceived by HR managers;
- determine the extent to which specific performance indicators develop in enterprises that are affected by globalization.

Similar research was conducted by the authors Carlson (2006), Katou and Budhwar (2010), Fening and Amaria (2011) but these authors did not focus on the impact of globalization on individual recruitment activities and selection of employees. Other studies had previously studied the relationship between HRM practices and performance of enterprises. The target group for data collection consisted of HR managers in companies affected by globalization, *i.e.* companies with foreign capital, subsidiaries of foreign companies, as well as other multinationals operating in Slovakia. The research sample consisted of 179 respondents in total. Enterprises were analyzed in more detail based on criteria such as the year when they entered the market, the primary sector in which the company operates and the total number of employees working in the company. The method used to gather data was a questionnaire; its most important part consisted of managers being asked to judge the influence of globalisation on individual activities and recruitment aspects.

The last part of the questionnaire focused on the performance of the company as impacted by globalization. A particular part of the questionnaire allowed respondents to rate their replies on an interval scale of 1-5, where they rated the degree of influence of globalization on individual R&S and the scale of the efficiency of the business as impacted by globalization. The paper uses methods of inductive statistics such as the chi-square test, correlation analysis using Spearman's correlation coefficient and Kendall's Tau coefficient.

3. Results and discussion

The following part of the paper presents the results of the research and answers the following questions:

- to what extent do the processes of globalization affect recruitment and selection of employees as one of the practices of human resource management, which is further characterized by a set of individual activities and factors?
- to what extent have the specific performance indicators (such as return on assets, return on sales, labor productivity, total stock turnover) developed in enterprises that are affected by the impacts of the globalization process?

3.1. The rate of the impact of globalization on R&S as assessed by HR managers

R&S aligning employee behaviour with business objectives are key priorities of HRM and HR planning and these are also subject to environmental influences. Recruitment and selection of employees involves reaching out to an

adequate number of potential candidates for vacant posts. Their role is to entice interest in potential candidates for the vacancies and based on the information obtained in the process of selection to explore the specifics of each applicant as a potential candidate for the job.

Razi (2006) states that global enterprises are facing fierce competition for talents in each phase. Attracting the right person for a particular job requires the employer to have built a brand that suits their identity and strategic objective (Lawler and Worley 2006, Razi 2006). The aim of the research was to learn about the views of HR managers on how the various activities and factors of R&S of HR are affected by the globalization processes, on a scale from 1 to 5, where 1 means a very strong influence of globalization and then 5 means no effect of globalization on a given practice HRM at all. Out of the activities and factors that are implemented within R&S the following were subjected to further examination: A. R&S of employees for foreign activities. B. Internal recruitment. C. External recruitment. D. Selection of appropriate methods in recruitment of employees. E. Use of new modern methods in selection of employees. F. Costs of recruitment and selection of employees.

The first activity analyzed was *R&S of employees for foreign activities*. Mobile workers are often highly motivated and bring in new skills and perspectives to the workplace. These employees, as a result of new experience abroad, bring with themselves new ideas and approaches and can be of great benefit for the enterprise in the era of globalization. Based on the research, 58 HR managers think that the process of globalization, based on their assessment, has a very strong influence on international recruitment. Subsequently, 73 HR managers think that globalization has a strong influence on the recruitment and selection of staff for international development. Total of 48 respondents view the impact as small - on the scale of 3, representing a percentage of the value of 26.81%. Sending workers abroad is at the time of globalization and high labor mobility in Europe, a small but growing trend particularly in some sectors and countries. Regarding further action which is *internal recruitment*, results are as follows: very strong influence (56 respondents), strong influence (73 respondents), little impact marked by the total 38 respondents and 12 HR managers think that globalization has very little impact on internal recruitment. The impact of globalization on *external recruitment* - the results is as follows: the largest group with the number of 75 respondents are those who marked the interval scale strong impact, accounting for 42% of the total 179 respondents. The second most numerous group consists of respondents who marked the range of 3 - weak impact of globalization (52 respondents). Another factor analysed is *selection of appropriate methods in recruitment of employees*: most HR managers marked the influence as 2 - strong influence (71 respondents). Scale 1 - very strong influence was used by the total of 52 respondents and scale 3 - little impact also by 52 respondents. *The use of modern methods in selection of employees* globalization was viewed as having a strong influence by 115 respondents. In the case of the costs of R&S of employees, the results are as follow: very strong influence (16 respondents), high impact (113 respondents), and weak impact (50 respondents).

3.2. The rate of development of performance indicators

One important consequence of the modern world, and of the ongoing globalization process, is the pressure on the performance of businesses. In recent years modern performance measurement indicators based on the theory of value management are becoming more popular. Top managers have no interest in the short term and more and more they use concepts such as long-term vision of development, business performance, and key performance indicators. In today's highly competitive environment, it is extremely important for the company to responsibly manage their performance, because performance is affected by various external influences, thus the process of globalization. As part of the research HR managers rated the degree of development of these indicators of business performance:

- return on assets (EAT/A a EBET/A);
- return on sales (EBIT/R a EAT/R);
- labour productivity;
- total stock turnover.

The main task of the respondents was to rate the development of individual performance indicators in the company in which they operate for three years as influenced by globalization. They rated the performance on a scale from 1 to 5, where 1 means very positive development, 2 - a positive development, 3 - average development,

4 - negative development and 5 - very negative development. The development of *return on asset* over the last three years in the surveyed enterprises was as follows: very positive (22 companies), positive (137 enterprises), average (20 companies). As we reported, higher rating was also given to one of the other performance indicators - *return on sales*, which shows a very positive development in 42 companies, 117 showed a positive trend and 20 companies saw an average performance. When it comes to *productivity*, we can say that most businesses – total of 165 businesses showed positive development. The final evaluation of the performance indicators was *total stock turnover* and results show, as in the case of labor productivity, it is largely a positive development (145 enterprises). Ultimately, the development of individual performance indicators surveyed enterprises was mostly positive. In order to examine the strength of the relationship between (R&S) of employees a selected number of the most important practices of Human Resources Management (HRM) and the performance of companies that are affected by globalization, the following hypothesis has been formulated:

H1: There exist a statistically significant correlation between the rate of the impact of globalization on R&S as assessed by HR managers and the rate of development of performance indicators.

Using a non-parametric test: the Chi-square test, which tests the null hypothesis and statistical correlation coefficients, we explored the existence of a significant relationship between the degree of the impact of globalization on the recruitment and selection of staff, assessed by HR managers, and the rate of evolution of performance in the investigated companies. Examining whether there is a statistically significant relationship between these variables, we reached the conclusions, which are shown in Table 1.

Table 1. Chi-square test: testing relationship between the rate of the impact of globalization on R&S as assessed by HR managers and the rate of development of performance indicators

The rate of the impact of globalization on R&S	The rate of development of performance indicators							
	Return on assets		Return on sales		Labour productivity		TOTAL stock turnover	
	Value	P-value	Value	P-value	Value	P-value	Value	P-value
A	63,686	0,000	95,672	0,000	22,883	0,000	84,429	0,000
B	66,140	0,000	110,300	0,000	44,199	0,000	88,247	0,000
C	52,266	0,000	87,490	0,000	20,200	0,000	42,395	0,000
D	85,821	0,000	98,743	0,000	29,363	0,000	54,396	0,000
E	71,801	0,000	82,369	0,000	61,601	0,000	152,510	0,000
F	102,976	0,000	38,461	0,000	22,386	0,000	84,754	0,000

Note: A. Recruitment and selection of employees for foreign activities; B. Internal recruitment; C. External recruitment; D. Selection of appropriate methods in recruitment of employees; E. Use of new modern methods in selection of employees; F. Costs of recruitment and selection of employees.

The chi-square test of the relationship between the above variables showed $p < 0.05$, so the null hypothesis is rejected. We can say that the difference between the frequencies detected in the sample and the frequency expected is too large to be merely the result of random selection, thus it is statistically significant. The correlation analysis which, as Ostertagová (2013) notes, determines the degree of correlation between the competing factors is given in Table 2.

Kendall's serial correlation coefficient measures the strength of dependence between two variables and provides a serial nonparametric test of independence, *i.e.* the significance test coefficient. If the coefficients of Kendall's tau-b, and Kendall's tau-c, which express the difference between the probability that the values of two variables are in the same order compared with the probability that the values are of the same order can be observed in all tested cases, the p-value of less than 0.05 is considered statistically significant, that is, the null hypothesis is rejected. This means that the difference between the coefficients calculated by a zero sample is too large to be the result of random selection and is therefore statistically significant and the variables are correlated. Spearman's correlation coefficient, whose values we see in the table above as monotonous, measures the strength of any of the statistical dependencies. In all tested relationships that are shown in Table 2 can be seen that the p-value is less than 0.01, so we can talk about a highly significant relationship between variables. In case of *Spearman's*

coefficient, a moderate correlation is observed in almost all tests, in addition to testing the relationship between the degree of the impact of globalization, judged by HR managers, recruitment and selection of HR for external actions and the rate of labor productivity. All other tested relationships observed mean dependence between variables. A weak correlation (0.175) is seen in the relationship between the degree of the impact of globalization on the filling of the posts from external sources and the rate of labor productivity. We can see that the correlation has a value from 0.1 to 0.3, indicating a weak dependence. In case of Spearman coefficient a large dependence (0.710) in the relationship between the degree of influence of globalization on the use of new modern methods of HR selection process and the rate of development of the total stock turnover, but also in case of the testing of other relationships is being observed. Based on the results which indicate that p-values of the chi-square test <0.05 for all tested relationships and values of correlation coefficients, mostly moderate, or heavy dependence between variables are reported, therefore the existence of a statistically significant relationship between the rate of the impact of globalization on the recruitment and selection of staff, as perceived by HR managers, and the rate of evolution of performance in the investigated companies could be affirmed.

Table 2. Values of correlation coefficients between the rate of the impact of globalization on R&S as assessed by HR managers and the rate of development of performance indicators (PI)

	Values of correlation coefficients					
	Kendall's tau-b		Kendall's tau-c		Spearman Correlation	
	Value	P-value	Value	P-value	Value	P-value
A*PI1	0,480	0,000	0,363	0,000	0,514	0,000
A*PI2	0,521	0,000	0,451	0,000	0,556	0,000
A*PI3	0,298	0,000	0,139	0,000	0,316	0,000
A*PI4	0,547	0,000	0,375	0,000	0,577	0,000
B*PI1	0,463	0,000	0,357	0,000	0,504	0,000
B*PI2	0,533	0,000	0,470	0,000	0,576	0,000
B*PI3	0,319	0,000	0,152	0,000	0,343	0,000
B*PI4	0,545	0,000	0,382	0,000	0,583	0,000
C*PI1	0,442	0,000	0,343	0,000	0,482	0,000
C*PI2	0,488	0,000	0,433	0,000	0,532	0,000
C*PI3	0,159	0,006	0,076	0,006	0,175	0,000
C*PI4	0,391	0,000	0,275	0,000	0,423	0,000
D*PI1	0,519	0,000	0,397	0,000	0,555	0,000
D*PI2	0,559	0,000	0,489	0,000	0,605	0,000
D*PI3	0,184	0,003	0,087	0,003	0,201	0,000
D*PI4	0,454	0,000	0,315	0,000	0,485	0,000
E*PI1	0,471	0,000	0,313	0,000	0,501	0,000
E*PI2	0,485	0,000	0,369	0,000	0,519	0,000
E*PI3	0,407	0,000	0,167	0,000	0,418	0,000
E*PI4	0,696	0,000	0,419	0,000	0,710	0,000
F*PI1	0,483	0,000	0,323	0,000	0,503	0,000
F*PI2	0,377	0,000	0,288	0,000	0,398	0,000
F*PI3	0,199	0,026	0,082	0,026	0,208	0,005
F*PI4	0,470	0,000	0,286	0,000	0,484	0,000

Note: A. Recruitment and selection of employees for foreign activities; B. Internal recruitment; C. External recruitment; D. Selection of appropriate methods in recruitment of employees; E. Use of new modern methods in selection of employees; F. Costs of recruitment and selection of employees; PI1. Performance indicator: Return on assets; PI2. Performance indicator: Return on sales; PI3. Performance indicator: Labour productivity; PI4. Performance indicator: Total stock turnover

Thy H1 hypothesis could be confirmed and referred to the matter of fact that globalisation highly affects the recruitment and selection of employees, which leads to more positive development of performances in investigated companies.

Conclusion

Present modern era influenced by the globalisation process connected with the foundation of multi – national corporates and their penetration to Slovak market forces specialists in this field to specify possible globalisation impacts on HRM sphere. As we have stated, work with human capital is the key task, because it operates under the thumb of globalisation as a competitive advantage. A question whether the process of globalisation, which has a significant impact on HRM sphere, increases the performance of companies, comes forth. It is obvious that many scientific studies of foreign authors investigate the relationships between

HRM practices and company performance, which is in most cases positive. It was also very important to measure this relationship in supranational companies which operate in the Slovak Republic as there hasn't been held any research which would have dealt with this issue. One out of many authors, who are engaged with this issue, states, "Regarding rapidly increasing globalisation and raising competitive pressure a question emerges: Will globalisation lead to acceptance of universal HRM practices and what consequences it would have on company performance. Answer to this question could be found in implications for HRM." (Lui *et al.* 2004). Based on results of the research which was realised we can certify that we are observing a positive correlation between the HRM practice (recruitment and selection) and the company performance. Of course, we focused on other practices of HRM as well, *i.e.* HR planning, education of HR and rewarding of employees where we can notice positive correlations, too, but not the limitations of this paper don't allow us present all acquired results. In the end, it is possible to offer some practical recommendations for companies run in conditions of the Slovak Republic and those are: to adapt continuously to new changes, caused by globalisation process, apply new methods, attitudes, techniques, challenges, to implement a certain group of globalisation factors which move the companies ahead within their lifetime. At the same time it is important to focus precisely on the process of recruitment and selection of HR, which is influenced by globalisation, because based on the results of the research, according to HR management, the more this HRM practice is influenced by globalisation process, the more efficient performance in investigated companies in Slovak territory was identified.

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References

- [1] Aminu, M., and Malik, N. 2011. The role of HR in new globalized world. *Interdisciplinary Journal of Contemporary Research of Business*, 2(11): 318-330.
- [2] Carlson, D. *et al.* 2006. The impact of human resource practices and compensation design on performance: An analysis of family - owned SMEs. *Journal of Small Business Management*, 44(4): 531-543.
- [3] Cocuľová, J. 2015. Analysis of determinants of transfer of recruitment & selection practices in multinational companies. *Polish Journal of Management Studies*, 12(2): 48-58.
- [4] Choo, S.S. *et al.* 2010. The impact of globalisation on strategic HRM: The mediating role of CEO in HR. *International Journal of Business Studies*, 18(1): 101-124.
- [5] Crawshaw, J.R. *et al.* 2014. *Human resource management. Strategic & international perspectives*. London: SAGE publications Ltd., 373 pp.
- [6] Dowling, P.J. *et al.* 2008. *International Human Resource Management*. Cengage Learning EMEA. 368 pp.

- [7] Fening, F.A., and Amaria, P. 2011. Impact of human resources management practices on small firm performance in a country in recession. *American Journal of Business Research*, 4(1): 23-54.
- [8] Fey, C.F., and Björkman, I. 2001. The effect of human resource management practices on MNC subsidiary performance in Russia. *Journal of International Business Studies*, 32(1): 59–75.
- [9] Huselid, M.A. 1995. The impact of human resource management practices on turnover, productivity and corporate financial performance. *Academy of Management Journal*, 38(3): 635–672.
- [10] Lui, S.S. *et al.* 2004. Global Convergence, Human Resources Best Practices and Firm Performance: A Paradox. *Management International Review*, 44(2): 67-86.
- [11] Katou, A.A., and Budhwar, P.S. 2010. The effects of human resource management policies on organizational performance in Greek manufacturing firms. *Thunderbird International Business Review*, 49(1): 1-35.
- [12] Khatibi, P. *et al.* 2012. The effect of HR practices on Perceived Employee Performance: A study of Iranian hospital. *Interdisciplinary Journal of Contemporary Research in Business*, 4(4): 82-99.
- [13] Ostertagová, E. 2013. *Applied Statistics*. Košice: EQUILIBRIA, 217 pp..
- [14] Moideenkutty, U. *et al.* 2011. HRM practices and organizational performance in Oman. *Personnel Review*, 40(2): 239-251.
- [15] Palagolla, N. 2016. Empirical gaps in the relationship between HRM and firm performance: future research perspectives. *International Journal of Business and Management Review*, 4(5): 96-103.
- [16] Perkins, S.J. 2003. Globalisation and IHRM: partners in comparative perspective? *Journal of European Industrial Training*, 27(8/9): 461-472.
- [17] Pfeffer, J. 1998. *The human equation: building profits by putting people first*. Boston, MA: Harvard Business School Press, ISBN-10: 0875848419, 368 pp.
- [18] Razi, N. 2006. Employing O.D. Strategies in the Globalization of HR. *Leadership & Organization Development Journal*, 24 (4): 62-68.
- [19] Roehling M.V. *et al.* 2005. The future of HR Management: research needs and directions. *Human Resources Management*, 44(2): 207-216.
- [20] Stahl, G.K., and Björkman, I. 2006. *Handbook of Research in International Human Resource Management*. USA: Edward Elgar Publishing. Available at: [http://www.untag-smd.ac.id/files/Perpustakaan_Digital_2/PERSONEL%20%20MANAGEMENT%20Handbook%20of%20Research%20in%20International%20Human%20Resource%20Management%20\(Elgar%20Orig.pdf](http://www.untag-smd.ac.id/files/Perpustakaan_Digital_2/PERSONEL%20%20MANAGEMENT%20Handbook%20of%20Research%20in%20International%20Human%20Resource%20Management%20(Elgar%20Orig.pdf)
- [21] Svetozarovová, N., and Sojka, L. 2016. An analytical view of performance evaluation in telecommunication sector. *European Journal of Science and Theology*, 12 (5): 255-263.

Regional Features of Competitive Development of Socially Important Markets

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Abstract:

The relevance of this research stems from the need to study socially important markets competitive development as a state of conditions for business development in the territory with the possibility to struggle between economic entities for the most efficient production factors use. The purpose of this article is to identify regional features of socially important markets competitive development. The method used is sociological survey. The methodology of sociological research of the assessment of the value of socially important markets competitive development by the business community is proposed based on a comprehensive estimation of the groups of indicators in the following research areas: business characteristics, assessment of competition and competitive environment, estimation of barriers for business activities. Features and factors of competitive development of regional socially important markets are represented. The determinants and conditions for the competitive development of socially significant markets at the mesolevel are proposed. It is shown that the regional peculiarities of the competitive development of socially important markets include the presence of differentiated administrative barriers to entry to markets, insufficient development of business institutions, problems in dealing with natural monopolies, and a number of others.

Keywords: regional features; competitive development; socially important markets; business community; meso level; administrative barriers.

JEL Classification: P25; R11.

Introduction

Competitive development of markets is a complex and multifaceted phenomenon, suggesting the study from different approaches and theoretical concepts. Fatkhutdinov (2007) represents competitiveness as a subject's ability to be a market leader, manage its competitive advantages, the advantages of a managed object to achieve planned goals in competition with competitors in a particular market at a given time. At the same time, competition in the industry markets is a complex of economic relations of rivalry arising between firms-producers in these markets, potential competitors, suppliers of resources to these markets, consumers of products as a result of a clash of their interests (Vishnever 2010, Heyne *et al.* 2014, 102). In this case, according to Kashkirova (2009) in many concepts the notion of "competitiveness" is practically not associated with the region, although rating scores for individual indicators are quite widespread. We consider the study of competitiveness to be impossible without a

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clear territorial link, since there is a fairly pronounced spatial differentiation in the conditions and factors of the development of this phenomenon (Danilchenko 2013).

Interesting enough are the results of the study of competitiveness obtained by foreign scientists. So, Earle, Mokomane, Heymann (2011) demonstrated in their work the competitiveness to be affected by the amount of paid leave available to the population and the unemployment rate in a certain territory.

Asanuma (2014, 202) associates competitiveness with the state of financial resources and shows that, for instance, a high level of national debt significantly reduces the competitiveness of enterprises that are located in this territory. Kiel, Ubbels, Purwanto, Heyndrickx, Betancor (2014) and a number of other scientists have explored the relationship between infrastructure investment and competitiveness.

Cao, Wang, Mu (2013) and Markova (2013) presented the relationship of competitiveness and innovation, concluding that the enterprise management system should focus on the production and sale of the final product of high quality. Tünde (2016) suggested studying the competitiveness from the position of corporate transformation. Grabara, Modrak, Dima (2014) define competitiveness as the ability to provide products and services in the same or more efficient way than competitors in the sustainable implementation of business processes.

J. Carrillo-Hermosilla, P. del Rio Gonzalez and T. Könnölä provided an overview of the relationship between sustainability and competitiveness, concluding that environmental problems require innovative approaches to improve the quality of the environment without limiting economic activity. Herewith, competitiveness is determined by the possibility of sustainable development of economic entities (Diaz-Chavez 2013).

Bestman (2015) offers to increase the competitiveness of the use of electronic platforms, suggesting to take into account factors such as the availability of equipment for information and communication technologies (ICT), the cost of installation and maintenance, cultural factors, capacity factors, network connection and others.

Adamik (2016) believes that strategic partnership, as one of the most mature forms of inter-organizational cooperation, is also an effective method of increasing competitiveness.

Particularly, scientists highlight the regional features of the development of socially important markets. Mokina (2007) notes that in the modern market economy, the regional economic system is an active subject of competitive processes. Turok (2016) considers that territorial urbanization at the mesoeconomic level and infrastructure development are the basic elements of the competitive development of regional markets, since a functional and adaptable urban complex enhances other, milder factors of competitiveness.

As Russian experience shows, state efforts aimed at developing competitiveness are not always effective, since in the region's economy there are a number of other factors significantly affecting this phenomenon. Especially socially significant markets are subject to this influence, which will be shown in more detail further. The determining influence on the development of competitive relations is provided by structural, dynamic and institutional factors (Vishnever 2010).

1. Methodology

Theoretical and methodological basis of the research are the works of Soviet, Russian and foreign scientists in the field of the theory of regional markets development and the theory of competitiveness, as well as the formation of promising areas of industrial and territorial development. Methodological approach of the study is a systematic approach that allows the most objective research of the development of competition in socially important markets. Our studies were related to socially significant markets on the regional (mesoeconomic) level.

The presented study is based on carrying out sociological research in the territory of the Orenburg region of the Russian Federation among the business community of subjects of small and medium business. Recently, sociological research has been widely used in studies of competitive development. Turok and Robinson (2011) interviewed 88 companies that employ more than 40,000 workers to study the development of competitiveness in the city of Cape Town in order to analyze the city's economy and make recommendations on how to improve it. Carvalho and Costa (2014) conducted a sociological study of 1000 Portuguese small and medium-sized enterprises and made important recommendations for the development of public policy in support of the competitiveness of small and medium-sized businesses. Thus, the results obtained are objective and accurately describe the processes taking place in the economy.

The questionnaire of this research included 19 questions enabling us to obtain a business profile, assess the state of competition and a competitive environment, and analyze the existence of barriers to doing business. 1128 representatives of the business community in all regional municipal entities were interviewed, in accordance with the structure of spatial distribution of economic subjects of small and medium-sized businesses.

Besides, when determining the representativeness of the sample, the survey was conducted in accordance with the specific features of the presence of small and medium-sized enterprises in the economy of the Orenburg region. Thus, 549 representatives of retail trade, 210 representatives of agriculture and forestry, 51 food producers, 43 transport and communications enterprises, 37 construction enterprises, 35 textile and clothing enterprises and other economic entities were interviewed. The characteristics of the sample are as follows: 55% of small and medium-sized businesses operate for more than 5 years, 33% – from 1 to 5 years, the rest less than 1 year. In 85% of the surveyed economic entities the number of employees is up to 15 people, in 9% – the number of employees is from 15 people up to 100 people, in others– more than 100 people. In 66% of the subjects studied, the average annual turnover amounted to 120 million rubles, 7% – 120-800 million rubles.

We also evaluated ratings of socially significant and priority markets of the Orenburg region on a set of indicators obtained on the basis of a survey of entrepreneurs and describing the state of the competitive environment; an integral indicator was constructed in the form of an ordered multiple choice model. It should be noted that at the core of the construction of the integrated indicator and, accordingly, the ranking of the markets for goods and services in the region, such indicators as the proportion of entrepreneurs having a high and very high level of competition, an increase in competitors over the past three years, and four or more competitors, were used. The other indicators make a significantly smaller contribution to the value of the integral indicator.

2. The main part

The need to identify socially important markets at the regional level was formulated by the Government of the Russian Federation (The standard for the development of competition in the subjects of the Russian Federation, approved by the Government of the Russian Federation dated September 5, 2015 No. 1738-r). Socially significant markets include markets that considerably affect the socio-economic development of the territory. These are such markets as follows: the market of preschool education services, the market of children's recreation and health services, the market of medical services, the cultural market, the retail market, the housing and communal services market, the market for passenger transportation services by overland transport, the communication services market, the market of social services. The list of socially significant markets in the region is determined by the Decree of the Governor of the Orenburg region as of March 10, 2016 No. 111-uk "On the introduction of the standard for the development of competition in the subjects of the Russian Federation in the territory of the Orenburg region" (2016).

Analysis of the competitive environment of entrepreneurship makes it possible to assert that competition is not developed in socially important markets, which has a negative impact on the quality of services provided. The number of competitors is estimated by respondents as follows: from 1 to 3 – 31%, more than 4 competitors in 24% of the respondents. At the same time in Russia the transition to a competitive market environment in socially important markets has not yet solved the most important task – raising the standard of living of the country's population.

Table 1. Distribution of respondents' assessments of the quality of official information on the state of the competitive environment in the markets of goods and services of the orenburg region and activities to promote competition, %

No. in sequence	Parameter name	Satisfactory	Rather satisfactory	Rather unsatisfactory	Unsatisfactory	Not sure
1	Availability level	26.09	29.36	11.55	5.09	27.91
2	Level of comprehensibility	22.42	30.90	11.99	5.90	28.78
3	Convenience of obtaining	24.20	27.78	12.79	6.44	28.79

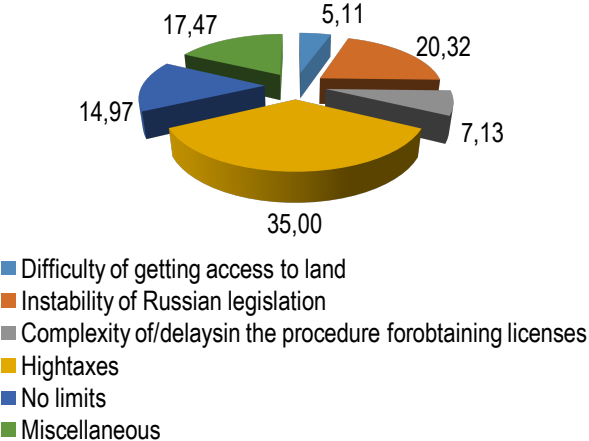
Source: Compiled by the authors on the basis of survey, available in Open Access

According to the results of the study, it was revealed that the overwhelming majority of representatives of socially important markets are oriented toward meeting the needs of the population of the region (546 units) or

those municipal entities within which they are located (416 units), which significantly limits opportunities for the development of economic entities and to a greater extent is connected with particularities of these markets.

More than 50% of respondents are satisfied in some way with the quality of official information on the state of the competitive environment in the markets and on the level of accessibility both by understandability and by the convenience of obtaining (see Table 1). Nevertheless, a significant part of economic entities (about 30%) found it difficult to answer this question, which is a negative feature. Among the most important administrative barriers for setting up business, entrepreneurs consider high taxes (35%), instability of Russian legislation (20%), complexity of the procedure for obtaining licenses (see Figure 1).

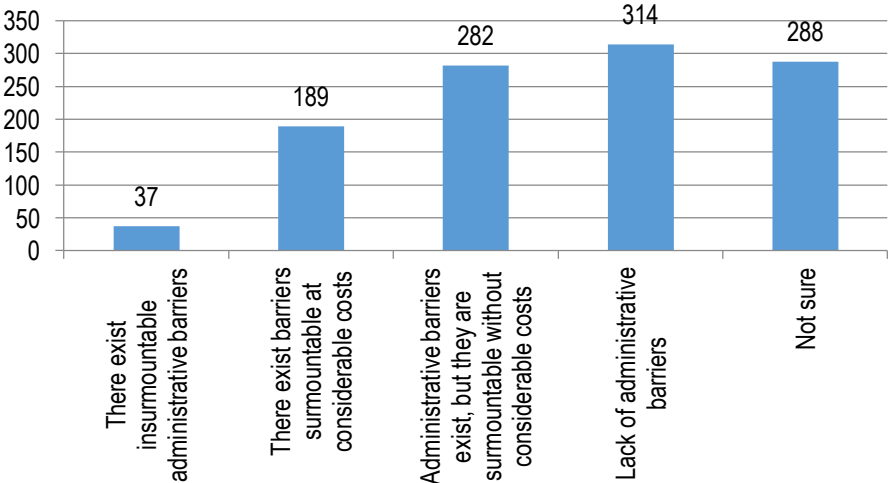
Figure 1. Distribution of respondents' assessments of which of the administrative barriers are the most significant for setting up and doing business, %



Source: Compiled by the authors on the basis of survey.

At the same time, when asked another way, most entrepreneurs answered that administrative barriers are easily overcome, or they do not exist at all (see Figure 2).

Figure 2. The distribution of respondents' assessments of how far the existing administrative barriers can be overcome when setting up and running a business, units



Source: Compiled by the authors on the basis of survey

The greatest negative impact on the competitive development of socially important markets is provided by natural monopolies' activities. According to business community, in most cases the cost of connecting to the services of the main natural monopolies is very high (see Table 2).

Table 2. Distribution of respondents' estimates of how high is the cost of connection to natural monopolies services, %

No. in sequence	Name of natural monopoly	Satisfactory / low	Rather satisfactory / rather low	Rather unsatisfactory / rather high	Unsatisfactory / high	Not sure
1	Water supply, drainage	13.82	21.03	17.97	18.16	29.02
2	Gas supply	9.84	17.99	18.59	24.55	29.03
3	Electricity supply	10.19	18.89	21.86	20.67	28.39
4	Heat supply	10.15	17.11	19.70	18.51	34.53
5	Telephone service	14.73	19.64	19.04	16.43	30.16

Source: Compiled by the authors on the basis of survey

At the same time, about 30% of the interviewed entrepreneurs found it difficult to answer the question of how high the cost of connection to the services of natural monopolies is, since in most cases obtaining this information is objectively difficult.

Simultaneously, more than 50% of the respondents are satisfied with the terms of connection to the services of natural monopolies. However, there is a dissatisfaction with the quality of the procedures for connecting to these services; more than 30% were unsatisfied.

Analyzing the results of ranking of markets in various areas in the Orenburg region, it should be noted that the leading positions in the state of the competitive environment involve: the food production market, including drinks and tobacco, the transport and communications market, the whole sale and retail trade market, including motor vehicles and motorcycles trade, their maintenance and repair, the construction market (see Table 3).

Table 3. The results of ranking of markets in the orenburg region by the value of the integral indicator characterizing the state of the competitive environment

Name of goods and services markets	Market Rank	The value of the integral indicator
Market of food products, including beverages and tobacco	1	0.96
Transport and communication market	2	0.91
Retail market (except for trade in motor vehicles and motorcycles)	3	0.88
Construction market	4	0.82
The market of motor vehicles and motorcycles, their maintenance and repair	5	0.76
Whole sale trade (except for trade in motor vehicles and motorcycles)	6	0.74
Market of production of finished metal products	7	0.69
Market of agriculture, hunting and forestry	8	0.68
Financial services market	9	0.66
Market of textile and clothing manufacture	10	0.63
Market for the production of rubber and plastic products	11	0.60
Market of operations with real estate, rent and provision of services	12	0.59
Wood processing and wood working market	13	0.56
Market of self-contained paper production; publishing and printing activities	14	0.51
Hotel and restaurant business market	15	0.47
Machinery and equipment production market	16	0.43
Mining industry market	17	0.39
Fisheries, fish farming market	18	0.35
Market of educational services	19	0.32
Health and social services market	20	0.29

Name of goods and services markets	Market Rank	The value of the integral indicator
Market of production and distribution of electricity, gas and water	21	0.28
Market for the provision of public services	22	0.21

Source: Decree of the Governor of the Orenburg region of March 10, 2016 No. 111-uk "On the introduction of the standard of development of competition in the subjects of the Russian Federation in the territory of the Orenburg region".

The last positions in the ranked list are occupied by socially important markets, such as: healthcare and social services market, as well as educational services market, *etc.* Despite the importance for the social and economic development of the region, this position of socially important markets is very low.

Conclusion

Analysis of the provisions of various theories led to the need to clarify the concept of "development of socially important markets" – this is such state of the condition for business development in the territory where it is possible to carry out a struggle between economic entities for the most effective use of factors of production of socially important services.

Though this research is not yet completed, a number of conclusions can be formulated. The determinants of development in socially important markets in the region are:

- the presence and size of administrative barriers to entry into regional socially important markets;
- regional-level of development of entrepreneurship institutions;
- availability of services of natural monopolies for economic entities of socially important markets;
- producers' orientation for the regional market and municipal entities;
- satisfaction of the population with the quality of consumed goods and services of local producers in socially important markets, *etc.*

Factors to curb the effective competitive development of socially important markets are:

- high tax rates;
- the instability of the Russian legislation;
- high cost and complexity of connection to the services of natural monopolies;
- insufficient information support for the competitive development of socially important markets;
- little awareness of entrepreneurs about the opportunities for competitive development in socially important markets, *etc.*

Therefore, as the results of our research have shown, competition policy of regional government bodies should include four main directions: development and support of competition in socially significant markets, suppression of negative actions of a monopoly, liberalization of tax legislation, raising awareness of the business community and society as a whole about opportunities of competitive development in socially important markets.

Clarification of theoretical and methodical aspects of the competitive development of socially important markets, and the presentation of a comprehensive assessment of key external and internal factors that influence the development of competition in socially important markets at the regional level provides the basis for developing a methodical approach to determining the priorities for the competitive development of socially important markets.

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References

- [1] Adamik, A. 2016. The mechanism of building competitiveness through strategic partnering. *The Journal of University of Zielona Góra*, 20(1): 292-309.

- [2] Asanuma, S. 2014. *Fiscal Sustainability & Competitiveness in Europe and Asia* by Ramkishen S. Rajan, Tan Khee Giap and Tan Kong Yam. New York: Palgrave Macmillan, ISBN: 978 1 137 40696 5, 202 pp.
- [3] Bestman, A.E. 2015. Emerging electronic platforms underpins innovations and competitiveness in firms. *Global journal for research analysis*, 4(5): 332-337.
- [4] Cao, J., Wang, L.L., Mu, X.P. 2013. The Research on Product Quality Competitiveness Based on Innovation. *Advanced Materials Research*, 744: 591-594.
- [5] Carvalho, L., and Costa, T. 2014. Small and Medium Enterprises (SMEs) and Competitiveness: An Empirical Study. *Management Studies*, 2(2): 88-95.
- [6] Danilchenko, V.A. 2013. Scientific basis of the assessment of the regional consumer market. *Contemporary Economic Issues*, 1, Available at: <http://economic-journal.net/index.php/CEI/article/view/24/12>. DOI: 10.24194/11308
- [7] Diaz-Chavez, R.A. 2013. Book Review: "Eco-Innovation. When Sustainability and Competitiveness Shake Hands", Carrillo-Hermosilla, J, del Rio Gonzalez, P., and Könnölä, T. *Journal of Environmental Assessment Policy and Management*, 15(1):1-3, Available at: <https://doi.org/10.1142/S146433321380001X>
- [8] Earle, A., Mokomane, Z., and Heymann, J. 2011. International perspectives on work-family policies: lessons from the world's most competitive economies. *The Future of Children*, 21(2): 191-210.
- [9] Fatkhutdinov, R.A. 2007. The concept of a new theory of competitiveness and competition management. *Contemporary Competition*, 1(1): 73-86.
- [10] Grabara, J., Modrak, V., and Dima, I. 2014. Sustainable Logistics and Business Competitiveness. *International Letters of Social and Humanistic Sciences*, 26: 148-156.
- [11] Heyne, P., Boettke, P.J., Prychitko, D.L. 2013. *The Economic Way of Thinking*. 13th Edition. Pearson UK., ISBN-10: 0132991292, 456 pp.
- [12] Kashkirova, I.A. 2009. *Formation of competitive relations in the consumer complex as a subsystem of the regional economy*, Thesis of doctor of econsciences. Cheboksary: USTU.
- [13] Kiel, J., Ubbels, B., Purwanto, J., Heyndrickx, Ch., Betancor, O., Socorro, P., Hernández, A., Smit, M., Pawlowska, B., Fiedler, R. 2014. *Impacts of Infrastructure Projects on Competitiveness*. Paper presented at the Transport Research Arena (TRA) 5th Conference: Transport Solutions from Research to Deployment, Paris, France.
- [14] Markova, V.D. 2013. Marketing in innovation: the classification of the tasks and tools. *Contemporary Economic Issues*, 4, Available at: <http://economic-journal.net/index.php/CEI/article/view/78/65>. DOI: 10.24194/41312.
- [15] Mokina, D.S. 2007. *Competitive advantages of regional economic systems in modern conditions*, Thesis of doctor of econsciences. Samara: SSEU.
- [16] Turok, I. 2016. *Urban land, infrastructure and competitiveness in the global South*. In: Huggins, R., Thompson, P. (Eds.). *Handbook of regions and competitiveness: contemporary theories and perspectives on economic development*. Cheltenham: Edward Elgar Publishing, 381-397 pp.
- [17] Turok, I., and Robinson, S. 2011. Mother city, mother lode? Cape Town's global competitiveness under the gun. *HSRC Review*, 9(4): 24-25.
- [18] Tünde, O.N. 2016. SME sector, a crucial area of the corporate competitiveness measurement. *Gradus*, 3(1): 446-453.
- [19] Vishnever, S.V. 2010. *Competitive relations in the structure of modern industrial markets*, Thesis of doctor of econsciences. Samara: OGTU.

- *** Decree of the Governor of the Orenburg region of March 10, 2016 No. 111-uk "On the introduction of the standard of development of competition in the subjects of the Russian Federation in the territory of the Orenburg region". Available at: www.orenburg-gov.ru/upload/iblock/604/604072f8dcf6e90ffc1396203aa3c36e.pdf (accessed January 20, 2017).
- *** The standard for the development of competition in the subjects of the Russian Federation, approved by the Government of the Russian Federation dated September 5, 2015 No. 1738-r. Available at: <http://government.ru/media/files/EPhsiaffQIT8bK1Eov94GawSO179HxFl.pdf> (accessed January 20, 2017).

Country Equity Risk Modelling Using Dynamic Capital Asset Pricing Model in Selected Central and Eastern European Countries

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Abstract:

The purpose of this paper is to empirically estimate country beta in a group of five selected CEE countries with an appropriately fitted model that accurately estimates the time-varying characteristics of beta. In methodological part we apply the multiple linear regression model and time-series autoregressive model, as well as statistical approaches for processing the secondary data. The paper finds that there is the existence of dynamic beta model within these countries that considers local as well as global economic effect. Global effects are more significant for the particular model we derived in the paper, and so this study also helps to determine the country risk with respect to the global index and global financial market variables. This paper reliably estimates country betas for the selected CEE countries. The time-varying beta is estimated using unanticipated time-series autoregressive errors embedded in the multiple linear regression models which is rarely applied in the literature.

Keywords: dynamic beta; multi-factor asset pricing; time-varying beta; country equity risk; systemic risk; asset pricing model

JEL Classification: C51; G12; G32

Introduction

It is undoubtedly true that the business world is becoming more and more global. Almost every country accommodates international and multinational companies, however there are still country lines separating sovereign nations. Language, tradition, culture, the political and social contexts, law, business ethics and doing business in general differ among various countries. Some of these factors are extremely important for doing business of international investors. And they of course need to take a look at how to analyze vulnerability of their specific investments. In our paper we analyse a set of local and global risk factors affecting the country equity risk using a specific dynamic CAPM methodology. Therefore, we use in the paper the dynamic conditional beta as an approach to estimating time varying parameters. This can help us to model the conditional covariance matrices of the exogenous and dependent variables for each time period.

The methodology is applied to the country multifactor asset pricing, so we can estimate country systemic risk based on dynamic beta estimation. In our research we focus only on unanticipated components as a result of ARIMA time series model residuals. We selected five CEE countries – Bulgaria, the Czech Republic, Hungary, Poland, Romania, and Bulgaria. We show that in the case of the selected CEE countries the global risk factors are more significant than the local ones within these EU member state countries.

1. Research background

In finance and economics, systematic risk is vulnerability to events which affect aggregate economy of a specific country, and so we usually use the term country risk. However according to Nagy (1984) there is no generally

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accepted definition on country risk. From the perspective of countries, we usually tend to use the term with the adjective political or economic. The first mentioned is associated with a country's political climate and its impacts on investment and the second is associated with a country's financial condition and ability to repay risk. Even Nagy (1984) defines country risk as the exposure to a loss in cross-border lending caused by events in a particular country which are, at least to some extent, under the control of the government but definitely not under the control of a private enterprise or individual. As discussed in Kosmidou *et al.* (2004) country risk may be prompted by a number of country specific factors or events. Indeed, three types of event can cause country risk, namely political events, economic factors, and social factors. Country risk therefore means the exposure to a loss in cross-border lending (of different types) due to events more or less under the control of the government. From the perspective of academia country risk is a topic with no so extremely high frequency of publication in the renowned academic database like the Web of Science database. In the last decade the term "country risk" has the mean annual record of about 40 publications. Most of the records in the database come from the science categories like economics (about 260), business finance (about 131), management (about 96), business (about 82), and operations research management science (31). More frequently, at least in the last decade, we find the term "systematic risk", with annual frequency over 100 records.

The fall of communism has fundamentally changed the economies of the former communist countries of Central and Eastern Europe (CEE). These CEE countries have become more visible for the global investors, who have increased interest in equity markets of these countries. In the previous two decades these markets recorded high returns as well as heavy losses in relatively unstable economic environment. Through the EU enlargement process many of the post-communist states in the CEE have become new EU member states.

From this point of view the country equity risk estimation based on a proxy to the capital market is one of the central issues in economy and finance. Country equity risk is considered from the perspective of a foreign investor investing within the selected country in a group of public listed companies represented by the national stock exchange index and its return. In our paper we analyse a set of local and global risk factors affecting the country equity risk using a specific dynamic CAPM methodology. Therefore we use in the paper the dynamic conditional beta as an approach to estimating time varying parameters. This can help us to model the conditional covariance matrices of the exogenous and dependent variables for each time period. The methodology is applied to the country multifactor asset pricing, so we can estimate country systemic risk based on dynamic beta estimation. In our research we focus only on unanticipated components as a result of ARIMA time series model residuals. We selected five CEE countries – Bulgaria, the Czech Republic, Hungary, Poland, Romania, and Bulgaria. We show that in the case of the selected CEE countries the global risk factors are more significant than the local ones within these EU member state countries.

It is without a doubt that the capital asset pricing model (CAPM) still represents a fundamental theoretical paradigm in finance literature. The model has been one of the most useful and frequently used models for equity market as an explanation of the link between risk and return. However in the early 1970s the academic community had started to search and has been still searching for enhanced asset pricing model. This standard form of the general equilibrium relationship for asset returns, also known as the Sharpe-Lintner-Mossin mean-variance equilibrium model, builds on the theoretical works of Harry Max Markowitz. Beta in the model is a risk measure that arises from the relationship between the return on an investment and the return on the market as mentioned by Skrodzka (2015) or Sembiring *et al.* (2016). One of the earliest attempts to relate the beta of an investment to fundamental variables was performed by Beaver *et al.* (1970), where the relationship between seven firm variables and the Beta of a company's stock has been used. In this fundamental Beta model a static form of the CAPM was performed, where the ordinary least squares estimation technique has been used to estimate Beta. As mentioned in Faff *et al.* (2001) searching an alternative asset pricing models which may be superior to the static CAPM.

However, one of the first attempts to relate this technique to the country risk came from Harvey, 1991. He introduced a Beta market model as a method based on the CAPM. The innovation was the time-varying Beta as a function of a number of independent economic and financial variables. Erb *et al.* 1996 used this method and concluded the returns in individual stock markets show a strong relation to the risk faced of countries under consideration. Gangemi *et al.* (2000) employed the model proposed by Harvey in analysis of the negative influence

of increasing foreign debt in Australia. Verma and Soydemir (2006) estimate the risk of selected countries in Latin America and show how the inflation in G7 countries, interest rates and specific local factors impact on Beta coefficients in these countries. Systematic risk of equity is measured by a Beta. In the theory Beta is a forward-looking risk measure.

2. Methodology

The fall of communism has fundamentally changed the economies of the former communist countries of Central and Eastern Europe (CEE). These former East Bloc countries have become more visible for the global investors, who have increased interest in equity markets of these countries as discussed in Mirdala (2013). In the previous two decades these markets recorded high returns as well as heavy losses in relatively unstable economic environment. Through the EU enlargement process many of the post-communist states in the Central and Eastern Europe have become new EU member states.

Therefore five CEE countries, specifically Bulgaria, the Czech Republic, Hungary, Poland and Romania have been selected and analysed. Specifically all of them currently are not a part of the Euro area countries. In this section we apply the technique proposed by Harvey (1991) to analyse the country risk of these selected CEE countries using time-varying fundamental Beta approach.

The selected data set contains observations on 11 variables (for details see the global and local variables' description summarized in Table 1) for a multiple entity of the four CEE countries - Czech Republic, Hungary, Poland, and Romania for 99 time periods, months. The observations in this data set begin in the January of 2010, and end in the March of 2017.

Table 1. Variables and their description

VARIABLE	DESCRIPTION
Global risk factors	
ER_EU	Monthly rate of returns calculated from average monthly values of Euronext global index – share price index (rebased). Also used as a proxy for stock market index (Eurostat)
BRENT	Average monthly oil prices - Europe Brent Spot Price FOB per Barrel (US Energy Information Administration)
IR12_EU	Average monthly data of Euro yield curves with 12 months maturity (Eurostat)
IR3M_EU	Money market interest rates - monthly data with 3 months maturity (Eurostat) Euro area - EA11-2000, EA12-2006, EA13-2007, EA15-2008, EA16-2010, EA17 (Eurostat)
HICP_EU	Harmonised consumer price index of Euro Area (Eurostat)
XR_EU	Average monthly USD/Euro exchange rates (Eurostat)
Local risk factors	
ER	Monthly rate of returns calculated from average monthly values of national stock exchange index – share price index (rebased). Also used as a proxy for stock market index (Eurostat)
IR1M	Average monthly data of Money market interest rate with 1 month maturity (Eurostat)
HICP	Harmonised consumer price index of the particular country (Eurostat)
VOL	Volume index of production - Industry production index - monthly data - (2005 = 100) acc. to NACE Rev.2 (Eurostat)
XR	Average monthly exchange rates of the national currency to Euro (Eurostat)

Sources: Eurostat, US Energy Information Administration

We employ the aforementioned fundamental Beta approach proposed by Beaver *et al.* (1970) and extensively improved in the time-varying form by Harvey (1991) as shown in equation:

$$\beta_i = \beta_0 + \sum_{j=1}^n \beta_{j,i} Y_{j,i} + e_i \quad (1)$$

Standard form of the general equilibrium relationship for asset returns was derived in several forms involving different degrees of rigor and mathematical complexity. As mentioned in Reilly and Brown (2003) the equilibrium CAPM model can be written in the form

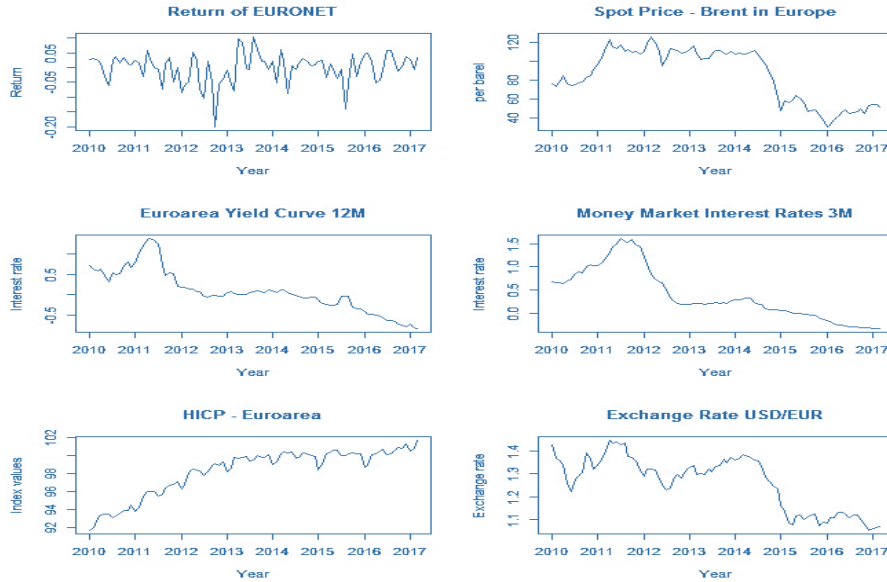
$$R_i = R_f + (R_m - R_f)\beta_i \quad (2)$$

The basic model (2) can be rearranged to the time series model where the excess return of asset ($R_{i,t} - R_{f,t}$) is explained through the excess return of market portfolio ($R_{m,t} - R_{f,t}$).

$$(R_{i,t} - R_{f,t}) = \alpha_i + \beta_{it} (R_{m,t} - R_{f,t}) + e_{i,t} \quad (3)$$

According to Gangemi *et al.* (2000) in an efficient financial market, we would only expect stock market reaction to the unanticipated component of the macroeconomic variables. We find the unanticipated components as the residuals from ARIMA models fitted to the macroeconomic data.

Figure 1. Global variables visualisation



Source: Eurostat and US Energy Information Administration

Based on our aforementioned equations and discussion we propose a time-varying model of country systematic risk as follows:

$$\beta_{i,t} = b_{0,i} + \sum_{j=1}^n b_{j,i} \gamma_{j,it} + u_{i,t} \quad (4)$$

where: all variables are defined as their unanticipated components.

Due to the fact that one is unable to directly observe beta $\beta_{(i,t)}$ in equation (4), we cannot estimate the model directly. However, we could postulate a general beta market model from equation (3). Within this framework we can now substitute equation (4) for $\beta_{(i,t)}$ into equation (3). Thus the specific time-varying beta market model of a selected country is estimated through

$$(R_{i,t} - R_{f,t}) = \alpha_i + b_{0,i} + \sum_{j=1}^n b_{j,i} \gamma_{j,it} + \vartheta_{i,t} \quad (5)$$

Now we indirectly determine the values for the parameters in equation (4) by estimation of equation (5).

3. Model fitting and diagnostic

According to the description in the model specification we should fit appropriate classical or seasonal ARIMA models to estimate expect stock market reaction to the unanticipated component of the local and global variables. However many time series in finance are non-stationary, *i.e.* statistical properties such as mean, variance, autocorrelation are not all constant over time or whose joint probability distribution does not change when shifted in time or space. Statistical tests of the null hypothesis that a time series is non-stationary versus the alternative it

is stationary are called unit root tests. We apply two different unit root tests - augmented Dickey-Fuller (ADF) test and Phillips-Perron test. In regard to very low power to discriminate between alternative hypotheses (especially when the data have jumps and structural breaks) of ADF test we use less restrictive assumptions on the errors in the form of the Phillips-Perron tests, which are generally favoured for financial data analysis.

Table 2. Estimations of time series models for global variables

VARIABLE	Time series model
BRENT	ARIMA (0,1,1) (0,0,1) [12]
IR12_EU	ARIMA (0,1,1)
IR3M_EU	ARIMA (2,1,0)
HICP_EU	ARIMA (0,1,1) (1,1,2) [12]
XR_EU	ARIMA (1,1,0)

Sources: own calculation

The next step in time series analysis is to specification of an appropriate model and its parameter estimation. We could use plots of empirical autocorrelation function (ACF) and partial autocorrelation function (PACF), which provide effective tools for identifying pure AR (p) or MA (q) models. However, for a mixed ARMA model, its theoretical ACF and PACF have infinitely many nonzero values, making it difficult to identify mixed models from the sample ACF and PACF. There are many graphical and computational methods based on information criterions, e.g. extended autocorrelation method EACF or ARMA-subsets specification. In our analysis we used a tool of the forecast package in software R – auto.arima, developed and described by Hyndman and Khandakar (2008) to estimate the appropriate sets of models. We have fixed the order of differentiation in the auto.arima tool and detected several appropriate models for each variable. Thereafter we used model diagnostic in form of the residual analysis to inspect the model adequacy. We inspect plots of the residuals over time, QQ (quantile-quantile) plots for assessing normality of residuals, and the independence of the noise terms in the model. Using this methodology for time series analysis we have fitted the most appropriate model for each of the relevant variables. The relevant models are listed in Table 2 and 3.

Table 3. Estimations of time series models for local variables

VARIABLE	Bulgaria	Czech Rep.	Hungary	Poland	Romania
IR1M	ARIMA (1,1,1)	ARIMA (1,1,0)	ARIMA (0,1,0) (1,0,0) [12]	ARIMA (1,1,0)	ARIMA (1,1,0)
HICP	ARIMA (2,1,0) (2,0,0) [12]	ARIMA (0,1,0) (0,0,1) [12]	ARIMA (1,1,0) (1,0,0) [12]	ARIMA (1,1,0) (1,0,0) [12]	ARIMA (1,1,0)
VOL	ARIMA (0,1,1) (0,0,1) [12]	ARIMA (0,1,1) (0,0,1) [12]	ARIMA (0,1,1)	ARIMA (0,1,1) (0,0,1) [12]	ARIMA (0,1,1) (0,0,1) [12]
XR	NA	ARIMA (0,1,1)	ARIMA (0,1,0)	ARIMA (0,1,1)	ARIMA (0,1,0)

Sources: own calculation

In accordance with (5) we obtain new time series explanatory variables, which are created by the market excess returns and residuals from ARIMA/SARIMA models quantified for each of the local and global variables. We use these new variables for model specification and parameters estimation of the multiple linear regressions as denoted in (5). A potential problem with multiple linear regressions is that explanatory variables may have a high degree of correlation between themselves – multicollinearity. We used variance inflation factor or VIF to detect the presence of potential multicollinearity. If it is necessary, we have dropped the least significant of the collinear variables until multicollinearity was no longer a problem. The next step in multiple linear regression analysis was diagnostic of the residuals, where the assumptions of normality, autocorrelation and heteroscedasticity have been inspected. We employed Durbin-Watson (DW) test for autocorrelation, Breusch-Pagan (PB) test for heteroscedasticity detection, and Jarque-Bera (JB) test for the normality of the residuals. The statistics are listed in Table 4. Not all results are reported, but are available on request from author.

4. Analytical results

The results depicted in Table 4 are quite similar to the results of Gangemi *et al.* (2000), and Verma and Soydemir (2006) who suggest a high influence by global risk factor (at 1 percentage level) of excess return on global stock index (ER_EU). These results may provide the evidence for a strong integration of local and global stock markets. There is a small impact of local interest rates (ER_IR1M), whereby consumer prices (ER_HICP) were significant for two countries. Exchange rate of Euro/USD (ER_XR_EU) has an impact on betas of three countries. Interest rate with maturity of 3 months is statistically significant for three of five analysed countries, so we can prove a significant impact of exchange rate on beta as can be found in Bilson *et al.* (2001).

Table 4. Selected results of the multilinear regression

Statistics	Bulgaria	Czech Rep.	Hungary	Poland	Romania
ER_EU	1.2159***	1.1167***	1.0956***	1.0014***	1.1908***
ER_BRENT	0.0794**				
ER_IR3M_EU	5.2869*	3.0796*	3.0896*		
ER_HICP_EU		-1.2592**	-1.0194*		
ER_XR_EU		-6.110***		8.1144*	11.8173*
ER_IR1M					-0.4307*
ER_HICP					
ER_VOL		0.0621*			
ER_XR					
R2	0.4728	0.7716	0.7159	0.7130	0.6185
F test	24.8100	69.2500	19,94	104.400	45.3200

Sources: own calculation

As the next step of our analysis we calculated time-varying fundamental betas for the selected countries that are depicted in Figure 2 and numerated according to their descriptive statistical values in Table 5. Values of betas in Bulgaria and Romania vary more intensively than in other analysed countries. The vulnerability of betas, measured by using the standard deviation, in three other countries is lower. However, there are also differences in mean and median values in the Czech Republic, Hungary and Poland as we can see in Table 5 based on other descriptive statistics of betas.

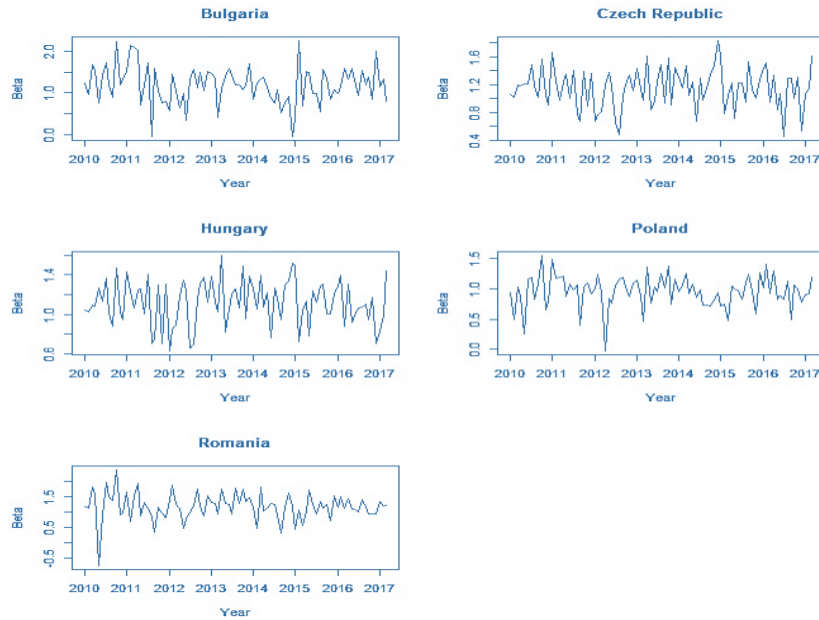
Table 5. Description statistics of beta coefficients.

	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.	St. dev.
Bulgaria	-0.05123	0.89974	1.18513	1.18679	1.48768	2.23976	0.45303
Czech Republic	0.45060	0.96880	1.18660	1.14860	1.34690	1.82770	0.28766
Hungary	0.62850	0.98670	1.12260	1.11740	1.29040	1.59140	0.22669
Poland	0.34950	0.85930	0.97400	0.97600	1.12210	1.64330	0.22006
Romania	-0.73620	0.95810	1.18230	1.19270	1.39540	2.37110	0.43332

Sources: own calculation

Examining Figure 2, there is visible a different reaction of the betas between markets. There is a dominant inverse reaction (a drop of beta) visible at the beginning of the year 2010 in case of Romania caused by increasing independent variable - Money market interest rate with 1-month maturity in the model. There is also other significant jump in case of Poland at the beginning of the year 2012 caused by inflation targeting of the monetary policy framework of the National Bank of Poland and temporary increase its key policy interest rate.

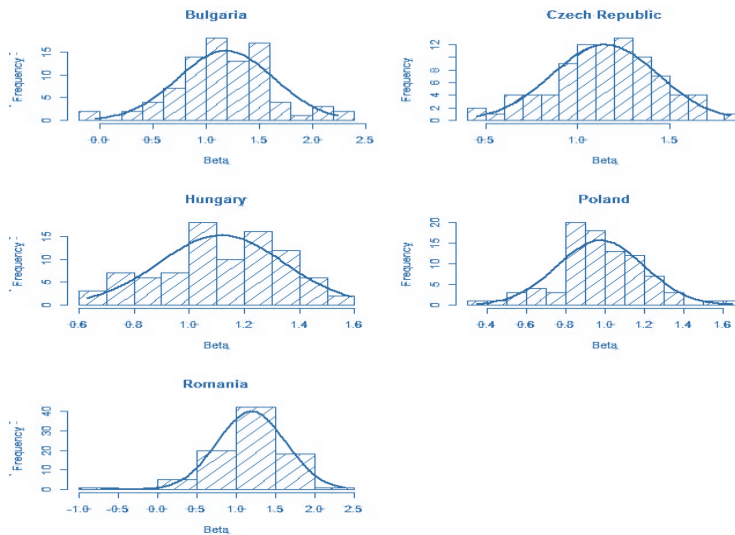
Figure 2. Beta coefficients and their development in the selected time period.



Source: own calculation

Comparing our previous research on the topic in different period of time, specifically from the January 2006 to the April 2013, we see again similar influences of the global risk factors, which are more significant for the particular models we derived. There is a strong relationship to the global index Euronext in all analysed countries. The variable representing money market interest rate with 3-months maturity was significant for three of five countries, namely for Bulgaria, the Czech Republic and Hungary. An inverse reaction to the harmonised consumer price index of Euro Area is significant for the Czech Republic and Hungary. There is also visible dependency on the variable of average monthly USD/Euro exchange rate in the Czech Republic, Poland and Romania. In the Czech Republic the relationship is inverse. Average monthly oil prices are significant only in the case of Bulgaria. Local factors were significant only in case of Czech Republic (production index) and Romania (money market interest rate with 1-month maturity).

Figure 3. Histograms of beta coefficients of the analysed countries.



Source: own calculation

Conclusion

The purpose of this paper is to empirically estimate country beta in a group of five selected CEE countries with an appropriately fitted model that accurately estimates the time-varying characteristics of beta. In methodological part we apply the multiple linear regression model and time-series autoregressive model, as well as statistical approaches for processing the secondary data. The paper finds that there is the existence of dynamic beta model within these countries that considers local as well as global economic effect. Global effects are more significant for the particular model we derived in the paper, and so this study also helps to determine the country risk with respect to the global index and global financial market variables. This paper reliably estimates country betas for the selected CEE countries. The time-varying beta is estimated using unanticipated time-series autoregressive errors embedded in the multiple linear regression models which is rarely applied in the literature. This study will help to determine the country risk with respect to the global index, global variables, and local variables.

Acknowledgement

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References

- [1] Beaver, W., Kettler, P., Scholes, M. 1970. The Association Between Market Determined and Accounting Determined Risk Measures. *The Accounting Review*, 45 (5): 654.
- [2] Bilson, C.M., Brailsford, T.J., Hooper, V.J. 2001. Selecting Macroeconomic Variables as Explanatory Factors of Emerging Stock Market Returns. *Pacific-Basin Finance Journal*, 9 (4): 401-426.
- [3] Erb, C.B., Harvey, C.R., Viskanta, T.E. 1996. Expected returns and volatility in 135 countries. *Journal of Portfolio Management*, 22 (3): 46-58, DOI: <https://doi.org/10.3905/jpm.1996.409554> Spring, Available at: https://faculty.fuqua.duke.edu/~charvey/Research/Published_Papers/P36_Expected_returns_and.pdf
- [4] Faff, R.W., Hillier, D., Wood, J. 2001. Taxation and Black's Zero-Beta Strategy Revisited. *Financial Analysts Journal*, 57 (5): 57-66.
- [5] Gangemi, M.A.M., Brooks, R.D., Faff, R.W. 2000. Modeling Australia's Country Risk: A Country Beta Approach. *Journal of Economics and Business*, 52: 259-276. Available at: <https://pdfs.semanticscholar.org/d535/ecde3be241be82b07a2e6e4f6859e961f6a6.pdf>
- [6] Harvey, C.R. 1991. The world price of covariance risk. *The Journal of Finance*, 46 (1): 111-157. DOI: 10.1111/j.1540-6261.1991.tb03747.x
- [7] Hyndman, R.J., and Khandakar, Y. 2008. Automatic time series forecasting: The forecast package for R. *Journal of Statistical Software*, 27(3): 22-32. Available at: <https://cran.r-project.org/web/packages/forecast/vignettes/JSS2008.pdf>
- [8] Kosmidou, K., Doumpos, M., Zopounidis, C. 2008. *Country Risk Evaluation. Methods and Applications*. John Wiley&Sons, New York, 127 pp.
- [9] Mirdala, R. 2013. Current Account Adjustments and Real Exchange Rates in European Transition Economies. *Journal of Applied Economic Sciences*, 8: 2(24): 210-227.
- [10] Nagy, P.J. 1988. *Country Risk: How to Assess, Quantify, and Monitor It*. Euromoney Publications, London, 110 pp.
- [11] Reilley, F.K., Brown, K.C. 2003. *Investment Analysis and Portfolio Management*. 7th ed. Mason, Ohio: South-Western, ISBN 0-324-17173-0. DOI: 10.4236/jfrm.2012.13006

- [12] Sembiring, F.M., Rahman, S., Effendi, N., Sudarsono, R. 2016. Capital Asset Pricing Model in Market Overreaction Conditions: Evidence from Indonesia Stock Exchange. *Polish Journal of Management Studies*, 14(2): 182-191.
- [13] Skrodzka, W. 2015. The Assessment of the Efficiency of Investment in the Share of the Polish IT Sector. *Polish Journal of Management Studies*, 12 (1): 186-197.
- [14] Verma, R., Soydemir, G. 2006. Modeling country risk in Latin America: A country beta approach. *Global Finance Journal*, 17 (2): 192-213.

From Bust to Boom: The Emerging Economy 2004 to 2017 and Beyond

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Abstract:

This article examines the Zimbabwean economy from 2004 to 2017 and beyond through an interpretivism paradigm. The article seeks to provide an in depth analysis of the country's economic performance during the period under review. An inductive and deductive approach informed the article. A literature review was conducted with secondary data collected from peer reviewed journal articles, central bank reports, World Bank development indicators and government documents. Relevant literature was collected using academic databases as well as search engines. The findings showed a rapid economic decline from 2004 to 2008 due to both macroeconomic challenges and political factors. The economic decline of 2004 to 2008 led to the period of moderate growth between 2009 and 2013. Many factors both internal and external have accounted for the moderate growth period. Some of these factors included fiscal, monetary as well as political. The period 2014 to 2017 and beyond is being underpinned by an economic blueprint named the Zimbabwe Agenda for Sustainable-Economic Transformation drawn in line with the African Union Agenda 2063 as well as the new economic dispensation under the new government. The findings from this article will assist policy formulation, policy implementation and further future research. This article, however, is of importance to government, the private sector and the academia.

Keywords: economic growth; bust; boom; economic development; emerging economy.

JEL Classification: E02; O11; O23; O32; O47

Introduction

The Zimbabwean economy has been hard hit by a number of challenges since her independence in 1980. These challenges were from within and without with many of them attributed to poor economic policies. Some of the major challenges that faced the country since 2004 were foreign exchange shortages, indiscipline, corruption, policy inconsistency and failure by government, government over expenditure, political instability, chaotic land reform as well as economic sanctions that were imposed on the government of Zimbabwe by the United States of America, Britain and their allies.

At independence in 1980 Zimbabwe had a total population of 7.2million, a GDP (current US\$) of US\$6.7 billion as well as a GDP per capita (current US\$) of US\$916.29 (World Bank 2015). The economic decline continued until it reached its lowest in 2008 in which a GDP of US\$4.4 billion was recorded as well as a GDP per capita of US\$345.41.

The year 2009 saw an increase in GDP from a low of US\$ 4.4 billion in 2008 to US\$8.1 billion in 2009 as well as an increase in GDP per capita of US\$ 280.00 from US\$ 326.00 in 2008 (Table 1). The increase was necessitated by the introduction of the multi-currency regime after the Zimbabwean currency was eroded by hyperinflation that had reached an annual rate of 26, 470.8% in November 2007, though different from 24, 411% reported by the World Bank's World Development Indicators (Gono 2008). According to Gono (2008), inflation remained Zimbabwe's major economic challenge with devastating effects across the whole economy. This was then declared the country's number one enemy by the monetary authorities.

The economic situation in Zimbabwe was, however, worsened by a number of other factors both internal and external in nature. Some of the factors that affected the country included; the withdrawal of financial support

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by the International Monetary Fund, the World Bank and many other international institutions; limited access to the global health fund; freezing of donor-support as well as cutoffs in credit lines. The Zimbabwean economy's performance has been inconsistent since independence in 1980. Therefore, this article seeks to examine Zimbabwe's macroeconomic fundamentals between 2004 and 2017 as well as looking into the country's future. This period is of interest as it recorded major inconsistencies in the history of the country due to a number of reasons both internal and external.

This article is further organized in the following manner: literature review (section 1); research methodology (section 2); discussion of findings (section 3) and finally conclusion (final section).

1. Literature Review

1.1. Theoretical evidence

According to Rodney (1989), development from a human society perspective is a many-sided process that can be looked at two distinctive levels. At the level of the individual, development implies increased skill and capacity, greater freedom, creativity, self-discipline, responsibility and material well-being. At the level of social groups development implies an increasing capacity to regulate both internal and external relationships. The term development is used in an exclusive economic sense – the justification being that the type of economy is itself an index of other social features (Rodney 1989). What then is economic development? Economic development, therefore, constitute the increase in joint capacity by members of the society to deal with the environment. Rodney who was an advocate for economic development argues that this capacity to deal with the environment depends on society's understanding of the laws of nature (science), as well as the extent to which they put that understanding into practice by devising tools (technology), and on the manner in which work is organized. However, in the contemporary world economic development and growth is measured by GDP.

Bodie *et al.* (2008) define GDP as the measure of the economy's total production of goods and services. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. GDP is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. de Soto (2000) cited by Bodie *et al.* (2008) argues that in the contemporary view of economic development an important requirement for economic advancement is a developed code of business laws, institutions, and regulations that allows citizens to legally own, capitalize, and trade capital assets. As a result, development of equity markets serves as catalysts for enrichment of the population, that is, countries with larger relative capitalization of equities will tend to be richer (de Soto 2000).

To Rodney (1989), there has been constant economic development within human society since the origins of man, because man has multiplied enormously his capacity to win a living from nature. The enormity of human achievements is best understood by reflecting on the early history of human society and noting the progress from crude stone tools to the use of metals. Also the changeover from hunting and gathering wild fruit to the domestication of animals and the growing of food crops is another pointer towards human's great achievements. Rodney (1989) argues that development becomes a matter of combining factors of production which notion has been challenged by authors such as Sáez *et al.* (2015) who argue that over the last few years, development has followed a very different trajectory across the world as services have taken center stage for economic development and growth. UNCTAD (2015) reports that services are now contributing substantially to GDP as well as absorbing a large proportion of youth employment and now matters substantially for gender parity. To Dihel and Goswami (2016), there is ample evidence to support the resilience of services during the 2009 global financial crisis. Loungani *et al.* (2017) argue services may thus be a game-changer, offering an opportunity to sustain global development.

1.2. Empirical evidence

A number of macroeconomic factors have been widely viewed as critical for economic growth and development. Many countries have embraced these factors and have formulated and implemented policies earmarked towards economic growth and development. However, these macroeconomic factors need to be tested empirically

especially in developing countries. Researchers have used a number of different models to test the affect of various macroeconomic factors on economic development and growth.

Jain *et al.* (2015) investigate the impact of various macro-economic variables on GDP in India. In their study secondary data was used for the period 2000-2001 and 2011-2012. They collected their data from the Economic survey of India and Reserve bank of India bulletins. In their study, GDP was expressed as a function of FDI, Net FII equity, Net FII debt, Import and Export. An econometric regression analysis was used to measure the impact. In their study, Jain *et al.* (2015) find a significant effect of FDI, Net FII equity and Import on GDP while insignificant effect of Net FII debt on GDP was found. Their findings also reveal an insignificant effect of Export on GDP while Service had a significant affect.

To Dogan (2014) cited by Maliwa and Nyambe (2015, 42), “several governments and local firms of less developed countries are not able to make costly investments, afford expenditure on research and development (R&D) or extract enough natural resources because of the high fixed cost. It is further argued that many developing countries simplified their regulations on FDI by offering serious tax reductions and subsidies to attract more FDI. Therefore, in order for FDI to positively impact economic growth, it needs to serve as a complement rather than a substitute for local firms.”

Moyo (2013) provides an analysis of the impact of FDI on GDP in Zimbabwe, post dollarization period. Moyo (2013, 323) finds that “FDI has very significant positive impact on economic growth.” He argues that Zimbabwe needs to promote FDI net inflows through policies for the country to meet its economic growth targets. He further analysed the impact of other macro-economic factors on GDP. His study found that Government Expenditure and Private Investment have significant and positive impact on GDP while Inflation and Interest Rates had negative effects on GDP. The inconclusiveness of data on the impact External Debt and Net Exports on GDP merits further research as it was not in line with the theoretical predictions (Moyo 2013).

Sichei and Kanyondo (2012, 84) “provide panel data evidence on the determinants of FDI for a sample of 45 African countries over the period 1980 to 2009. Using dynamic panel data estimation techniques, the study identifies a number of factors that affect FDI flows in Africa, including, agglomeration economies, natural resources, real GDP growth, and international investment agreements.” Their study also found the conduciveness of the Africa-wide environment in attracting FDIs since 2000 (Sichei and Kanyondo 2012, 84).

Mehmood (2012, 18) “investigates the effect of thirteen selected factors (independent variables) on GDP in Pakistan and Bangladesh economy, for the purpose of comparing both countries findings, to identify with reasons, which country is in better position and why? Economic growth measured in GDP by using time series data over the period 1976/77 to 2008/09 for the last thirty-four years. GDP represent the dependent variable and independent variables taken such as gross national expenditure, final consumption expenditure, goods exports & imports, services exports & imports, external debt stocks, gross saving, FDI inflows, FDI outflows, gross domestic income, net income from abroad and worker’s remittances and compensation of employees paid. This study found that in Pakistan gross national expenditures, goods exports, gross saving and final consumption expenditure have a positive effect on the GDP. But the factors such as external debts total stock and services exports have a negative effect on the GDP of Pakistan. In case of Bangladesh, this study found that factors such as gross national expenditures, external debts stock total, goods import and exports have positive effect on the GDP of Bangladesh but factors such as final consumption expenditure [have] negative effect on the GDP of Bangladesh.”

Adams (2009) cited by Maliwa and Nyambe (2015, 42) points “that endogenous growth theorists have based their arguments on economic growth requiring investment in capital and regard FDI as important for developing countries.” To Nunnenkamp and Spatz (2003) cited by Maliwa and Nyambe (2015, 42), “the effects of FDI on economic growth depend on economic and technological conditions in the host country.” Maliwa and Nyambe (2015, 42) state that, “it is argued that host countries with better endowment in human capital are supposed to benefit more from FDI in the form of technology spillovers from foreign enterprises to local enterprises.” To them “thus when foreign enterprises set up companies in developing countries, they introduce more efficient technologies to the local markets. Through contact in the market place, local producers might imitate the advanced practices used by their foreign counterparts, causing increased production through the use of more efficient technologies”

Maliwa and Nyambe (2015, 42) further claim that, “FDI’s projected role as an important factor in the transfer of technology or knowledge suggests that this might have a direct effect on growth. However, it appears that developing countries have to reach a certain level of development in education and or infrastructure before they are able to capture the potential benefits associated with FDI. The larger the technology gap between the host and the home country, the smaller is the impact of FDI on economic growth.” Nunnenkamp and Spatz (2003) in Maliwa and Nyambe (2015, 42) further claim that, “...countries that are less technologically advanced may have a limited FDI impact on economic growth.” According to Maliwa and Nyambe (2015, 42), “this may be especially worrying for a country like Zambia that has been experiencing very slow economic growth rates.”

Alfaro *et al.* (2004) cited by Jain *et al.* (2015, 43) “examined the various links among FDI, financial markets, and economic growth. They explored whether countries with better financial systems can exploit FDI more efficiently. They showed that FDI alone plays an ambiguous role in contributing to economic growth. However, countries with well-developed financial markets gain significantly from FDI. The results were robust to different measures of financial market development, the inclusion of other determinants of economic growth, and consideration of endogeneity.”

2. Research methodology

This article described the Zimbabwean economy from 2004 to 2017 through an interpretivism paradigm. This design concerns ontology, epistemology, axiology as well as the methodology (Kuhn 1962). This article was informed by both inductive and deductive approaches. Maune (2014b) states that a multiple reality is considered hence the need to dig deeper to explore and reconstruct the meaning.

A literature review was conducted with secondary data collected from central bank reports, journal articles, and government documents as well as World Bank world development data indicators. Literature review was employed to evaluate other studies on the Zimbabwean economy from 2004 to 2017 as well as looking at macroeconomic development philosophies found in the data. The study provided a review regarding Zimbabwe’s macroeconomic environment from 2004 to 2017. Maune (2014a) recommends the use of academic databases and search engines as a way of early identifying relevant articles. More relevant articles and documents were also identified through evaluating references of related articles and these were needed for further analysis. Critical words were used to search for relevant articles and other sources and these were, ‘economic growth’, ‘GDP’, ‘economic development’, and ‘Zimbabwe.’

According to Maune (2014c, 32), “trustworthiness ensures the quality of the findings and increases the confidence of the reader that the findings are worthy of attention. Many different strategies are used in qualitative research to establish trustworthiness and this [article used] triangulation to enhance its trustworthiness. This involved the use of multiple [reputable] sources and perspectives to reduce the chance of bias. The article achieved this by: source (data was collected from different published and peer reviewed journal articles from different sources), methods (the researcher believed the depth of the journal articles and the methodologies used ensured the credibility of the data), and researcher (the [article] was [also peer] reviewed).”

Although there are a number of approaches that could have been used, the author felt this was the best approach considering the nature of the research. The choice of this method can be further supported by arguments by Professor K.P. Dzvimbo who at a workshop on mixed methods research at the University of South Africa in 2014 argues that truth is a normative conception and truth is what works, so researchers need to forge ahead with what works, hence the adoption of this approach for this study.

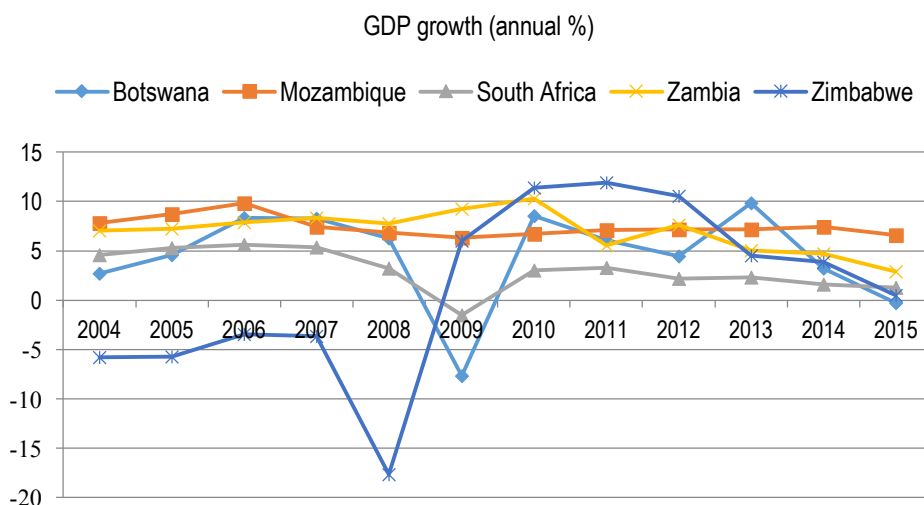
3. Discussion of findings

3.1. The period of rapid decline: 2004 – 2008

Following the Zimbabwean government’s watershed land redistribution programme to correct the colonial imbalance in 2000, the Zimbabwe economy plunged into economic meltdown characterized by hyperinflation. This period saw the country abandoning its own currency as well as experiencing hyperinflation. The land redistribution programme created sower relationships with the European Union and the USA who responded by imposing economic sanctions to Zimbabwe. This period also saw the country experiencing hyperinflation, critical foreign

exchange shortages as well as a decline in economic growth. By December 2004, the country had recorded an inflation rate of 132.7%, a decline from a peak of 622.8% in January the same year, to a record high of 26, 470.8% in November, 2007 (Gono 2008). Gono (2008) states that food category contributed 32% of the consumer price index (CPI) basket due to a decline in food output in the country attributed partially to the land reform programme. However, the government implemented some anti-inflationary measures but with little success as inflation continued to rise. Zimbabwean economy declined by 5.8% in 2004, 5.7% in 2005, 5.4% in 2006, 3.6% in 2007 before a deep plunge in 2008 of 17.67% (World Bank 2015). In comparison with her neighboring partners, Zimbabwe's performance has not been encouraging since 2004 with the exception of 2010, 2011 and 2012 when she recorded GDP annual growth rates that were above the other four countries (Figure 1).

Figure 1. GDP growth for Zimbabwe and her neighboring countries, 2004 to 2015 (annual %)



Source: Author (Data collected from World Bank' WDIs) (2017)

In GDP per capita Zimbabwe was below Botswana, South Africa and Zambia from 2004 to 2015 though above Mozambique (Table 1). In 2008 Zimbabwe recorded her worst GDP annual decline due to both local and global financial crises. This period coincided with the local and global financial crisis that resulted hyperinflation, economic decline, low industrial capacity and company closures among other challenges. The economy declined by a high of 17.67% in 2008 down from -5.81% (2004), -5.71% (2005), -3.46% (2006) and -3.65% (2007) (Figure 1). All in all, the country's GDP declined by 50%. By the end of 2008 the situation had worsened that beginning 2009 government had to come up with a number of economic measures to contain the economic crisis.

Table 1. Gross domestic product per capita for Zimbabwe and its neighboring countries, 2004 to 2015 (current US\$)

Year	GDP per capita (current US\$)				
	Botswana	Mozambique	South Africa	Zambia	Zimbabwe
2004	4,879	333	4,901	531	454
2005	5,328	366	5,453	692	445
2006	5,342	382	5,668	1,030	415
2007	5,667	419	6,161	1,103	397
2008	5,562	500	5,817	1,366	326
2009	5,115	461	5,916	1,135	606
2010	6,244	418	7,393	1,456	714
2011	7,505	525	8,078	1,636	839
2012	6,886	565	7,570	1,725	956
2013	6,807	605	6,911	1,840	1,011
2014	7,153	623	6,499	1,727	1,027

Year	GDP per capita (current US\$)				
	Botswana	Mozambique	South Africa	Zambia	Zimbabwe
2015	6,360	529	5,724	1,305	1,019

Source: Author (Data collected from World Bank` WDIs) (2017)

What accounts for the bust in the Zimbabwean economy? Many analysts have attributed the bust in Zimbabwe`s economy to the chaotic Land Redistribution Programme that was implemented in 2000. This has been a center of controversy as some thought that it was ill-timed and poorly implemented. Gono (2009) states that the country`s economic meltdown between 2004 and 2008 was as a result of a number of factors intertwined together with major challenges emanating from the untimed chaotic land redistribution programme that started in 2000 which resulted in the imposition of economic sanctions by the European Union and the USA in retaliation. This was, however, further exacerbated by the Zimbabwean financial crisis of 2004 to 2008. This period also resulted in financial service sector indiscipline, inadequate inputs for farmers, acute foreign exchange shortages, hyperinflation and a further deterioration in all sectors of the economy as a result of capacity underutilization (Maune 2014a). The effects of the global financial crisis worsened Zimbabwe`s already bad situation as the country found herself in the doldrums as it failed to capitalize the economic due to acute foreign exchange shortages as a result of cutoffs in international lines of credit. This created serious liquidity challenges for the country once dubbed the bread basket of Africa (for more details on Zimbabwe`s FDI net inflows in comparison with her neighboring partners see Figure 3).

Besides the post March 29, 2008 election difficulties, the financial service sector indiscipline contaminated a number of institutions as well as fueled the black market. This, however, further resulted in hyperinflationary activities that caused serious distortions within the economy. The black market thrived on the back of banking sector and the stock market activities. A term was coined as a result of these activities in the black market that saw the economy creating many multi-sextillionaires from merely nothing and this was termed `burning money.` The financial service sector indiscipline was cited as one major factor that propelled the global financial crises especially in the U.S.A. The Zimbabwean banking sector indiscipline also resulted in serious corporate governance breaches that killed public confidence and trust. A lot of fraudulent activities, insider loans, related party transactions were rampant in many banking institutions especially those that were locally owned. These activities resulted in acute cash shortages that caused devastating inflationary activities within the economy (Gono 2009).

Friedman and Friedman (2009) note that had the world would have adopted the business ethics and principles as enunciated by the Talmudic sages and the Torah, the global financial crises would have never occurred. A deep analysis of the causes of the global financial crises shows that all the Jewish business ethics and principles as dictated by the Talmud and the Torah were all violated resulting in the global financial crises which had deeper negative effects the world over. The Talmudic laws, however, insists on not merely adhering to the letter of the law but to go beyond. To Friedman and Friedman (2009), not even one party to the global financial crises was in adherence to the lowest standards of Jewish ethics as given in the Talmud and the Torah. According to Maune (2015a, 112), the Bible (Jeremiah 22, 13) criticizes those who are not honesty and just; in his words: "Woe to him who builds his house with unrighteousness and his upper stories with injustice...." The cause for this according to Jeremiah (22, 17) is that people`s eyes and hearts usually focus on nothing but on profit, which results in some cases shedding innocent blood as well as oppressing and persecuting others. The global financial crisis was due to greed. Maune (2015a) concludes that the Zimbabwean financial service sector crisis was a result of covetousness and violation of ethics and corporate governance. Furthermore, had the Talmudic rabbis` teachings followed, the crisis would have been avoided.

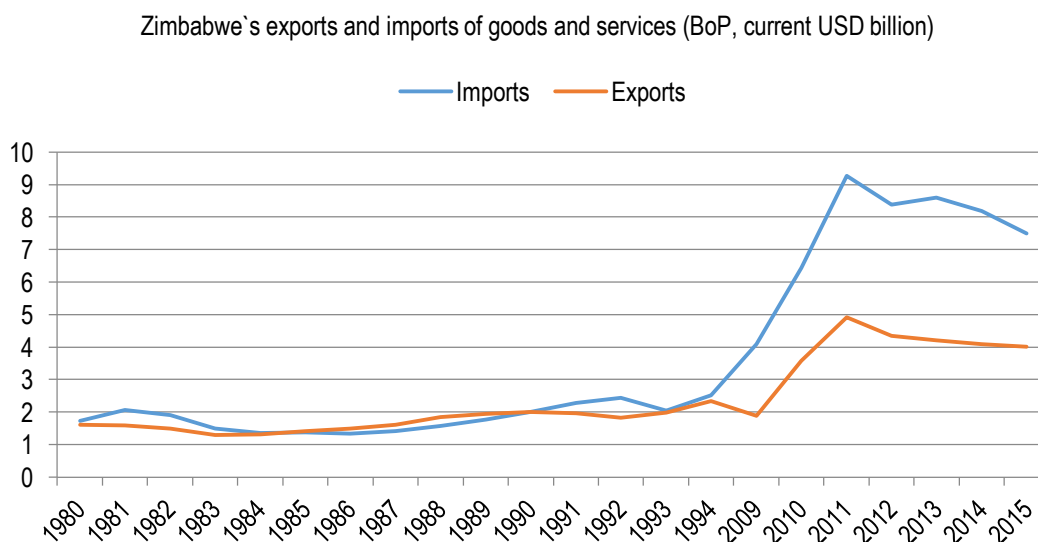
The bust period ended in 2008 and from 2009 the economy entered a period of moderate growth due to a number of factors.

3.2. The moderate growth period (2009 to 2013)

The period 2009 – 2013 was quite different from previous years. The government`s economic measures that were introduced in 2009 resulted in economic stability and an upturn in economic growth from 2009-2013. GDP increased significantly from a negative 17.67% in 2008 to a positive growth of 5.98% in 2009 before increasing to 11.9% in

2011 which was the highest during the period (World Bank 2015). The upturn was, however, unstable as growth decreased to 10.5% in 2012 before settling at 4.48% in 2013. Figure 1 and Table 1 above shows Zimbabwe's annual GDP and GDP per capita from 2004 to 2015 in comparison with her neighbors. The period 2004 – 2008 recorded a decline in GDP whilst the period 2009 – 2013 recorded an increase in GDP. Inflation declined significantly from a record high of 24, 411% in 2007 to 3.03% in 2010 before easing to 1.63% in 2013 (Table 2). In comparison to her neighboring partners, Zimbabwe's economy grew by 5.98% in 2009 against 9.22% in Zambia, 6.35% in Mozambique, negative 1.54% in South Africa and negative 7.65% in Botswana (Figure 1). In 2011 when Zimbabwe recorded a GDP of 11.91%, South Africa had a GDP of 3.28%, Botswana 6.05%, Mozambique 7.12% and Zambia 5.56%. Zimbabwe's FDI net inflows increased from 1.29% in 2009 to a peak of 3.14% in 2011 above South Africa's 0.99% though below the rest of other partners before easing to 2.77% by 2013 below Mozambique (41.81%) and Zambia (7.49%) (Figure 3). This was due mainly to government's policy reforms as well as increased mineral exports that resulted in increased FDI net inflows (Gono 2013). Figure 3 compares Zimbabwe's FDI, net inflows as a percentage of GDP with her neighboring countries from 2004 to 2015. The period 2009 - 2013 shows a drastic change in growth rates (Figure 1) with huge trade deficits recorded in goods and services of USD2.2 billion in 2009 and USD4.4 billion in 2013 since 1980 (Figure 2).

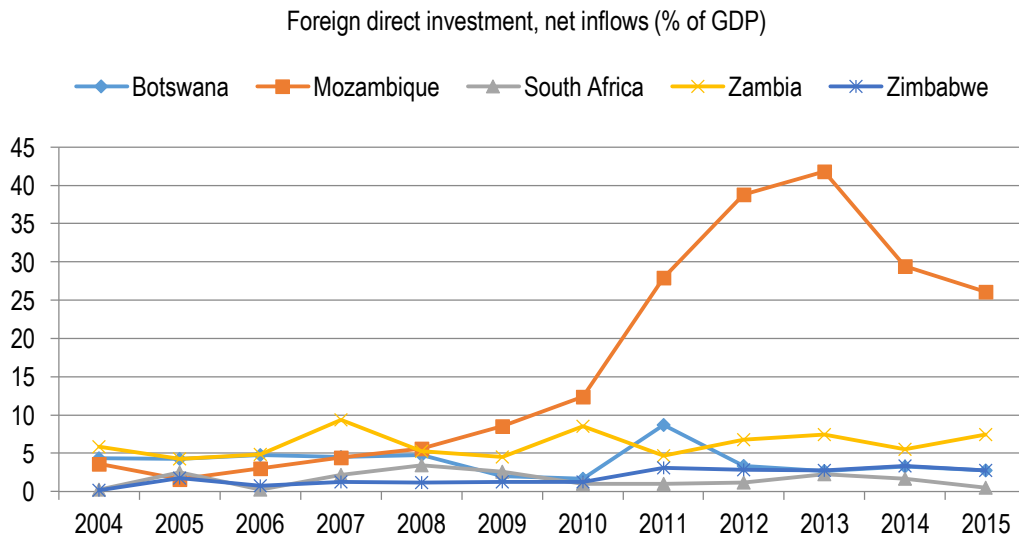
Figure 2. Zimbabwe's exports and imports of goods and services, 1980 to 2015 (BoP, current USD billion)



Source: Author (Data collected from World Bank' WDIs) (2017)

Zilberfarb (2006) argues that many factors both internal and external are of major impact to a country's economic growth. In Zimbabwe, fiscal reforms were critical to economic growth during this period. The Zimbabwean government abandoned its local currency and opted for a multiple currency regime in early 2009. This was also the same period that saw the formation of a three tie government that brought some economic and political relief to the country. Hyperinflation ceased with the abandonment of the Zimbabwean dollar and the legalization of multiple foreign currencies. The global political agreement (GPA) created a politically conducive and stable economic environment. This environment created confidence for the investors as was witnessed by the increase in FDI, net inflows from 2009 (1.29%) to 2013 (2.77%) (Figure 3). GDP growth was also realized. According to World Bank (2015) figures, GDP grew from a decline of 17.67% in 2008 to a positive growth rate of 5.98% in 2009 before rising higher to 11.91% in 2011. Zimbabwe's GDP growth rates of 2010 to 2012 were higher than those of her neighboring partners (Figure 1). It is clear that following the GPA of 2009, the coalition government managed to address some of the economic challenges that had faced Zimbabwe since 2004.

Figure 3. FDI, net inflows, for Zimbabwe and its neighboring countries, 2004 to 2015 (% of GDP)



Source: Author Data collected from World Bank` WDIs (2017)

Table 2. Inflation, consumer prices (annual %) for Zimbabwe and its neighboring countries

Year	Inflation, consumer prices (annual %)				
	Botswana	Mozambique	South Africa	Zambia	Zimbabwe
2004	7	13	1	18	282
2005	9	7	3	18	302
2006	12	13	5	9	1,097
2007	7	8	7	11	24,411
2008	13	10	12	12	..
2009	8	3	7	13	..
2010	7	13	4	9	3
2011	8	10	5	6	3
2012	8	3	6	7	4
2013	6	4	5	7	2
2014	4	3	6	8	(0)
2015	3	4	5	10	(2)

Source: Author (Data collected from World Bank` WDIs) (2017)

The government of Zimbabwe had to take stringent measures to curb liquidity challenges that emerged as a result of some speculative tendencies and financial service sector indiscipline. The multiple currency regime forced government to spend within its budgetary constraints, that is, spending the available resources without causing any inflationary pressures within the economy through monetary finance. This was also because of the central bank's inability to print or avail foreign currency besides what the economy would have generated. The central bank had to streamline its business to concentrate on its core mandate as monetary authorities without interfering with the fiscal or quasi fiscal activities as before. Government had to maintain the fiscal discipline and commit itself to its budgetary revenue and spending. This commitment, though difficult to a government that was used to print its local currency paid a lot of dividends to the recovery of the economy. Government had to implement various innovative programmes, interventions and sacrifices in line with its new policy framework to stimulate the economy. The new policy was very successful in curbing the challenges that were as a result of the activities that took place between 2004 and 2008.

Monetary policy changes became the second endogenous reason to moderate Zimbabwe's economic growth between 2009 and 2013. Consequently, the central bank implemented tight monetary policy that resulted in the financial service sector stability as well as improving confidence in the banking sector. The central bank had to come in to restore public confidence and trust in the banking sector through a number of mechanisms that included; improved corporate governance, improved risk management, improve monitoring and regulation, promoting Basel III implementation as well as increasing the banking sector capital requirements (Gono 2009). The same period witnessed some negative internal forces despite the positive reforms in fiscal and monetary policies. High lending rates created havoc in 2012 within the economy as most banks tried to cushion themselves from liquidity challenges as a result of cutoffs in external credit lines from international financial institutions (Gono 2013). These lending rates averaged 22% per annum causing a serious disparity with deposit rates that averaged 4% per annum. The second internal factor was the effect of troubled banks on the entire banking sector. The entire financial sector was negatively impacted by a number of troubled banks which included; Barbican Bank (which failed to capitalize by 31 July 2012), Interfin Bank (was placed under liquidation), Genesis Investment Bank (surrendered its licence on the 11th of June 2012), and Royal Bank following suit on 27 July of that same year. To curb the negative effects caused by troubled banks, the central bank had to move in by creating a Troubled and Insolvent Bank policy to regulate these banks.

It must be noted that non-debt creating capital inflows, notably FDIs continued to be restrained due to internal factors such as government's empowerment Act that scared a lot of investors both current and potential. The government unveiled the Indigenization and Economic Empowerment Act in 2007 to regulate corporate ownership in some selected economic sectors. The Act was to ensure all foreign entities in those selected economic sectors cede 51% ownership to local people. This was to be done within a five-year period from the enactment of the Act. However, this initiative though had good intentions scared away many investors thereby causing negative balance of payments of around USD498.1 million by 2012 (Gono 2013).

Gono (2013) argues that the country's economic revival remained marred by a lot of challenges with the illegal sanctions causing unprecedented levels of suffering in the economy. The sanctions slowed down the pace of meaningful resource mobilization, investment promotion and vibrancy of the productive sectors of the economy (Gono 2010). Targeted sanctions had a major negative impact on the growth of the Zimbabwean economy. The sanctions had a major impact towards the exportation of diamonds which were considered to be a major cash cow for the economy. This resulted in the difficulty in accounting the revenue that was generated through sporadic exports done through the informal market. However, the exports peaked after the certification of the diamonds by the Kimberly Process Certification Scheme. Zimbabwe's manufacturing sector capacity utilization decreased significantly from 57% in 2011 to 44% in 2012 before reaching 39% in 2013 (Gono 2013). This was as a result of many factors both internal and external. Some of these factors included; power shortages, foreign exchange shortages, poor infrastructure, expensive cost of capital, negative trade balance and FDI net outflows among other factors.

The following is a discussion of some of the exogenous factors that accounted for the moderate growth in the Zimbabwe economy during the period 2009 – 2013. Zimbabwe recorded a GDP growth of 11.38% in 2010 which was way above an estimate of 5% recorded for sub-Saharan Africa in 2010 (Gono 2011). High export and import demands in Europe and the USA as well as the recovery of commodity prices spurred Africa's economic growth for the period. The rebound in global mineral prices positively affected the sub-Saharan Africa's local mining entities. This resulted in increased foreign exchange inflows. These prices and foreign exchange inflows had positive effects to African economies in general and Zimbabwe in particular. This growth was also assisted by a 2% contraction in South Africa's economy in 2009 before its recovery in 2010 (Gono 2011). Emerging economies' increased commodity demands also affected the regional growth. Strong domestic demand coupled with low interest rates in 2010 positively affected Zimbabwe's economic recovery (Gono 2011).

The world economic activity resurgence saw a surge in global commodity prices for minerals such as crude oil, copper, platinum and gold in 2010. The rising commodity demand in countries such as China and India added to the surge in the commodity prices. There has been a huge demand in nickel in these two markets that resulted in price increases of a bigger magnitude. Gono (2011) argues that gold firmed by 24% from USD 1,118.8/oz in

January to USD 1,392.3/oz by December 2010 owing to the devaluation of the US dollar increasing gold's demand as a store of value. This resulted in huge investments in gold's subsectors with positive returns. Nickel prices firmed by 30% in 2010, a significant movement from USD 18,470.13 to USD 24,045.00 per tonne from January to December 2010 (Gono 2011). Gono (2011) further states that the revival in global automotive and jewelry sectors particularly those in China and the USA caused a significant increase in demand for platinum in 2010 of 3%. Platinum prices increased by 9% by December 2010 from USD 1,564.00 per ounce in January 2010 to USD 1 711.17 per ounce by end of 2010 (Gono 2011). The firming commodity prices shows economic recovery signs for sub-Saharan Africa as well as improved foreign investor interest in the region.

The moderate growth period of 2009 to 2013 saw a number of activities happening in the international stock markets. In mid-2009, South Africa rejoined the international bond market with Senegal issuing its first international bonds by December of that same year while Seychelles finalized a debt exchange process by February 2010. International lines of credit from both private and official parties increased in 2010 due to market growth, interest rates, economic stability, deep and open financial markets as well as quality of institutions among other factors (Gono 2011).

3.3. Period 2014 to 2017

Is Zimbabwe's future bright or bleak? The sections above touched on a number of issues surrounding Zimbabwe's period of rapid economic decline (2004 – 2008) and the period of moderate growth (2009 – 2013) as well as highlighting a number of challenges experienced during the two periods. Some of the sources of these challenges include land redistribution programme, rampant financial service sector indiscipline, targeted economic sanctions, the plunge in global commodity prices, subdued FDI inflows as well as policy inconsistency among others. However, early 2009 recorded some critical economic improvements due to a number of factors. Moreover, by end of 2013 the economic situation had also improved although there were some areas that needed serious consideration.

The year 2009 was critical in the history of Zimbabwe as it was the year that marked the beginning of positive economic growth and stability with a positive GDP growth rate of 5.98% since 1999. The rate of growth increased to 11.38% in 2010, with 2011 recording the highest growth rate of 11.91% before easing to 10.57% in 2012 with 2013 recording the lowest growth rate of 4.48% (Figure 1). Zimbabwe's GDP per capita grew from USD 606.00 in 2009 to USD 1,019.00 in 2015, that is, 68% (Table 1). Towards the end of 2017 Zimbabwe made history when the military intervened due the political crisis by removing President Mugabe and replaced him with President Mnangagwa under operation restore legacy that created a new economic dispensation with a lot of hope for economic recovery.

3.3.1. Upturn in world markets

According to Gono (2011), the world economy grew by 4.8% in 2010 that was way above average growth rate of 3.6% a decade ago. The post global financial crisis of 2008 created many investment opportunities in the whole world in trade, infrastructure and energy generation among others (Gono 2011). Developed nations recorded an average growth of 2.7% compared with a growth rate 7.1% recorded by emerging and developing economies. The growth in domestic market demand in countries such as China, India and Indonesia helped stimulate growth in emerging economies. Economic activities in many developed economies, however, slightly grew by 1.3% and 1.5% in 2012 and 2013 respectively and the global economy fairly grew by 3.3% (2012) and 3.6% (2013) (Gono 2013).

The volatility in global commodity prices in major minerals such as copper, nickel and platinum resulted in a drop in international trade (Gono 2013). In consequence, Zimbabwe's growth rate was 4.48% in 2013, a drop from a high of 11.91% in 2011 though above that of South Africa at 2.33% (Figure 1). Exports, especially mineral exports accounts for a major portion of Zimbabwe's export earnings, hence the surge in global commodity market prices positively affected the country's economy. This has been shown in the country's positive economic growth as measured by GDP since 2009, a period that coincided with the world recovery from the global financial crisis of 2008. With global growth projected to rise from 3.1% in 2016, to 3.4% in 2017 and 3.6% in 2018 (Mangudya 2017) under the backdrop of improvements in some large emerging market and low income economies that were stressed

in 2016, the prospects of growth in Zimbabwe's economy are high, though a number of economic reforms need to be implemented.

3.3.2. Zimbabwe's monetary policy reforms

The formulation and implementation of Zimbabwe's new economic blueprint (Zimbabwe Agenda for Sustainable Socio-Economic Transformation [Zim Asset]) in 2013 was immediately followed by a stringent monetary policy framework by the central bank. Since Zim Asset's inception, the central bank formulated monetary policies within the framework of achieving a robust financial services sector. Zim Asset implementation saw the central bank returning to its core business as a monetary policy authority. According to Gono (2013), monetary policies must be formulated within the framework of achieving a robust financial services sector with some of the following key features and characteristics and capabilities; cashless society characterized by electronic and mobile banking, financial inclusion, adequately capitalized and competitive financial institutions as well as a strong legal and regulatory framework that is benchmarked by international best practices.

The appointment of the Central Bank governor, Dr John Mangudya, a Keynesian economist and former Commercial Bank of Zimbabwe CEO on the 1st of May 2014 brought confidence and trust to both the international and domestic business community that monetary policy will continue in the right path up until he introduced bond notes and coins in 2016. The new Central Bank governor's experience with the same institution dates back to 1986 when he joined as an economist until he joined the African Export-Import bank in 1996 as its Southern African regional manager.

This period has seen the introduction of bond notes and coins in a basket of other currencies with their exchange rate pegged at 1:1 to the USD in 2016. The bond notes and coins were initially introduced as an incentive facility for exporters but they have, however, triggered serious liquidity challenges in an economy that was already experiencing economic decline. The central bank together with the Ministry of Finance was forced to criminalise foreign exchange dealings that had resurfaced reminiscent of the 2008 black market activities as a desperate measure to control the situation. The liquidity challenge has fueled inflation and shortages of basic commodities in the market that has restricted the importation of some basic commodities through Statutory Instrument 64 of 2016 promulgated by the Ministry of Industry and Commerce to protect local manufacturing companies. The main challenge bedeviling the country is that these short term economic measures are implemented in contrast with well-established macroeconomic fundamentals of economic growth and development. Government policies have seen the collapse of major companies rendering the economy informal and vending the major order of the day.

3.3.3. Zimbabwe's fiscal policy reforms

In 2013, the government of Zimbabwe announced a stringent budget the first of its kind compared to previous years according to policy analysts. A results based management system was adopted as the base that guides Zim Asset's implementation. The Ministry of Finance has been using this system to formulate the country's macroeconomic budgetary framework since 2014. The Zimbabwean economy grew by 3.4% and 3.8% in 2013 and 2014 and is projected to grow by 1.7% in 2017 (Mangudya 2017) which target might be missed due to both internal and external factors. The main underpinning factor towards realizing these targets was fiscal discipline on the part of government. Fiscal discipline and reforms become critical in resource mobilization by Treasury. There are quite a number of measures put in place to enable Treasury to mobilise resources and some of them include; strengthening the sustainability of fiscal management, robust banking systems, efficient taxation systems, sovereign wealth fund, special economic zones, value addition as well as treasury bond issuance. Government needs also to promote the three legged approach, that is, the cooperation between, the private sector, the public sector and the academia. Fiscal policy reforms become critical as they bring public confidence and trust within the economy Zilberfarb (2006). This then reduce uncertainty to current and potential investors. The positive developments in the global economy have also helped stabilize the Zimbabwean economy.

This period saw on one hand, a 6.9% decline in merchandise exports from USD3.6 billion in 2015 to USD3.4 billion in 2016 (Figure 2). On the other hand, merchandise imports also declined by 11.7% from USD6.1 billion in 2015 to USD5.4 billion in 2016 (Figure 2). Remittances also declined by 17.9% in 2016 from USD1.9 billion in 2015

to USD 1.6 billion in 2016 (Mangudya 2017). Although this has been attributed to poor global economic performance as well as the depreciation of the South African Rand, this also points to the poor local economic environment. However, the success of command agriculture programme by the government will help increase government fiscal space as the import bill is going to be reduced in a significant way as funds (est. USD200 million) that were channeled towards the importation of grains as a result of the El Nino induced drought of 2015/2016 will now be moved to more productive sectors of the economy.

3.3.4. High-technology industry

World Bank (2015) in Maune (2015b) defines hi-tech exports as products of high research and development (R&D) intensity. Such products are usually found in electrical engineering, aerospace, computer and software technology, scientific instruments and pharmaceuticals. The hi-tech industry has been the backbone for growth in many economies. Israel, for example, has been converted from a Start-up Nation to an Innovation Nation because of its innovativeness. Netanyahu (2014) in Maune (2015b) states that, Israel a Start-Up Nation has of recently graduated into an Innovation Nation. He further states that, the future now belongs to those who innovate with those that do not innovate falling behind.

Netanyahu (2014) in Maune (2015b) insists that the Israeli brains are now the global heart for innovative idea generation, scientific breakthroughs as well as an essential element for ground-breaking innovative solutions to the global challenges. Israel, because of its policies that supports R&D and start-up companies through the Office of the Chief Scientist (OCS) and the Israel Defense Forces (IDF) becomes second from USA. in terms of companies that are on the NASDAQ exchange (World Bank 2015). It has also managed to create unique conditions to lure technology companies and global investors. Zimbabwe boasts of its strong natural resource base as well as its intellect that is compared to non in Africa. Zimbabwe, though having these competitive advantages, legs behind in terms of innovation and promotion of scientific R&D.

Table 3 shows Zimbabwe's hi-tech and ICT performance from 2004 to 2015. Zimbabwe has managed to raise a total of USD14.7 million from high-technology exports in 2014 a mere 1.71% of manufactured exports as per the 2017 World Bank's world development indicators. Hi-tech industry has become a major source of FDIs for many countries especially in developed economies. ICT service exports have contributed on average 20% of total service exports in Zimbabwe. Services sector has become the major focus for development and economic growth in many countries as the reliance for manufacturing and agriculture is proving to be a thing of the past.

Table 3. Zimbabwe's High-technology and ICT sector performance, 2004 to 2015 (%)

Year	High-technology exports (% of manufactured exports)	ICT goods exports (% of total goods exports)	ICT goods imports (% total goods imports)	ICT service exports (% of service exports, BoP)
2004	0.90	0.11	4.18	..
2005	1.55	0.08	2.47	..
2006	13.49	0.18	2.83	..
2007	3.09	0.32	1.60	..
2008	12.21	0.21	2.25	..
2009	0.98	0.59	4.09	23.08
2010	0.84	0.04	5.53	20.51
2011	1.21	0.03	2.84	18.07
2012	5.95	0.04	3.37	19.00
2013	3.61	0.04	3.78	19.15
2014	1.71	0.06	3.87	19.52
2015	2.89	0.06	4.88	19.19

Source: Author (Data collected from World Bank' WDIs) (2015)

3.3.5. Zimbabwe economic blueprint: 2013 – 2018

Zimbabwe Agenda for Sustainable Socio-Economic Transformation (Zim Asset) as a new economic plan for Zimbabwe for the period 2013 – 2018 has taken centre stage for policy creation and implementation. The

Zimbabwean economic blueprint seeks among other things to economically empower citizens through accelerated growth and development. The Zimbabwean economic plan anchors mainly on indigenization, value addition and beneficiation of its natural resources as well as through the promotion of STEM (Science, Technology, Engineering and Mathematics) policy. To achieve this, Zimbabwe has to have a zero tolerance on corruption, fiscal and monetary discipline as well as a consistent policy implementation process. However, the government of Zimbabwe must put much emphasis in promoting innovation through scientific R&D if it wants the plan to be a success. There is need for government to recapitalize and capacitate R&D related institutions, universities responsible for science and technology, Defense industries, the Scientific and Industrial Research Development Centre (SIRDC) as well as promoting hi-tech industries and start-up companies. Government must also promote the Zimbabwe Defense Forces (ZDF) spillover companies and technologies to recoup its military budgetary expenditure allocation. The role of the Office of the President and Cabinet's (OPC) becomes very critical in monitoring and evaluating the implementation of the Zim Asset plan. Israel has almost the same set up although Israel has established an OCS under the Ministry of Economy. Israel has charged the OCS to execute the country's R&D related policies. The OCS' major role and objective is to develop Israel's high-tech base so as to create a firm foundation for economic growth and development. The OCS is also tasked with the duty to promote the country's innovation and entrepreneurship, boosting scientific potential through R&D cooperation from within and without (Senor and Singer 2009). The OPC has much to learn from OCS for Zim Asset to be a success.

Given the abundance of natural resources, the government of Zimbabwe must invest much in innovation through promoting scientific R&D collaboration, entrepreneurship, hi-tech industry and venture capital. Zim Asset projects Zimbabwe to lead sub-Saharan Africa by 2020 in economic growth given the country's knowledge base and productive resources. The Zimbabwean economy grew by 3.85% in 2014 (Figure 1) and was expected to grow by 6.4% in 2015, 6.5% in 2016 and 7.9% in 2017 before reaching a high of 9.9% in 2018 as per Zim Asset (2013) projections though these targets have already been missed. However, economic growth in Zimbabwe now relies heavily on the success of the blueprint especially from the command agriculture that was launched in the 2016/2017 agriculture season. The new economic dispensation under President Mnangagwa has created a positive environment for potential investors and for economic growth engagement with other global economic players especially from the west. This has also seen government coming hard on corruption.

The following areas are some of the major economic drivers under Zim Asset (2013); startups development, ICT ecosystem, tourism, agriculture, mining as well as infrastructural development among others. Ministries responsible for Defense, Mining and Higher education must play critical and leading roles in promoting scientific R&D that will cascade down to other ministries and the economy at large.

3.3.6. Shortcomings of Zimbabwe's economic blueprint

Economic blueprints as they are sometimes called are there to direct policy implementation. However, in Zimbabwe, Zim Asset was received with mixed reactions from the political and economic spectrum as well as from the general populace. Political and economic commentators have argued that Zim Asset falls short in providing economic solutions in Zimbabwe given the economic and political challenges that the country is currently faced with. Some commentators, however, are of the opinion that Zim Asset has failed to act as a panacea for economic development in Zimbabwe. It has failed to stimulate economic development and growth in a country endowed with huge mineral deposits and a vast area of arable land.

Given government's fiscal space challenges, prioritization of critical sectors of the economy through promoting investment in long term sustainable scientific R&D activities will go a long way in boosting output and value-addition. Innovation must be government's number one priority in each and every sector of the economy. Government must be on the forefront in promoting innovation. Valuable economic development lessons can be learnt from countries like Israel, a Start-up Nation with a population around eight million¹⁰, with few natural resources and 13.62% arable land¹¹ that have achieved economic growth through innovation. Zimbabwe can achieve

¹⁰ The World Bank. 2015

¹¹ Ibid.

meaningful growth with its abundant resources through proper and well thought economy policies. However, many economic and political commentators feel that Zim Asset will fail to achieve its goals as a result of lack of political will from government. Zim Asset will likely to face hurdles in implementation, as is the current scenario with the government failing to raise the immediately required significant foreign direct investment (FDI) to “quick-fix” the economy as envisaged in the blueprint. Failure to attract FDI in Zimbabwe has crippled the economy as liquidity is the lifeblood of an economy. However, government’s debt (US\$7 billion) as well as its underperforming economy poses a huge challenge towards realizing the objectives of the blueprint.

Government must strike a balance between FDI attraction and its indigenization and economic empowerment agenda to avoid negative economic repercussions. Government’s policy inconsistency has not done any good as it has affected the operating economic environment in a negative way. This has chased away potential investors as well as hampering the local business community. The operating environment has become unpredictable and difficult to operate under. There is need to create a conducive environment that enables the flow of FDIs in a way that positions Zimbabwe as an investment destination of choice. Zim Asset has been taken more of a political party economic policy and not as a national economic blueprint that lacks consultation and deliberation by all stakeholders of the economy, hence the resistance it is facing from other sectors of the economy and political players. Maune (2015b, 182) claims that Zimbabweans lack in argumentative prowess that provides strength to the Israelis. Israel has, however, built its intelligentsia through enthusiasm and intellect. Maune (2015b, 181) further claims that, such was adapted from the Talmudic times that cultivated a mentality of distrust and contention. Unterman (1971) cited in Maune (2015b) provides a very interesting incite with regards to mental games that were played by intellectual-artists in this case the rabbis on the highest logical level.

3.4. Zimbabwe’s election fever

Zimbabwe is expected to hold her harmonised elections in 2018 as per the dictates of her constitution. This has seen a lot of energy being channeled towards the 2018 elections with the Zimbabwe Electoral Commission (ZEC) unveiling the biometric voter registration (BVR) process to compile a new voter’s roll that will be used in the 2018 harmonised elections. The election fever that has gripped the country has left both political parties with an insurmountable task of attracting voters. With the ruling party given a new lease of life after the change of guard that saw the military chipping in with operation restore legacy which resulted in the resignation of the president of the party and government.

The main opposition party, with its leader diagnosed of cancer of the colon, is divided on whether to replace him or not given the time remaining before the elections. The electorate is still to come to terms with what will actually happen. The new dispensation has given some certainty to many potential investors whose hopes were dampened by the political situation prior to the coming in of the new president and new cabinet. The political situation had stalled a number of infrastructural development projects. The opposition political parties are mulling for a grand coalition against the ruling party that has since reformed and resolved its succession issue which had threatened to tear apart the party. This had also seen the fallout between the ruling party and the war veterans resolved. Many analysts argue that as long as there are no serious economic reforms, Zimbabwe’s path to economic recovery will just be but an unrealized dream. However, Zimbabwe has a lot of potential to recover from its economic abyss given her abundant natural and human resources. All hopes are now pinned in the new dispensation.

Conclusion

This article seeks to examine Zimbabwe’s economic performance from 2004 to 2017 and beyond. The study undertook an interpretivism paradigm that is qualitative and quantitative. The country’s economic performance can be described as a story of bust and boom.

Zimbabwe’s economic performance can be categorized into rapid economic decline (2004-2008), moderate growth (2009-2013) and the period 2014 to 2017 and beyond that is underpinned by Zim Asset economic blueprint. The rapid economic decline was fuelled mainly by government’s land reform that attracted negative publicity from both private and international media. The government of Zimbabwe had to reverse the colonial imbalance through

land redistribution. However, the European Union and the USA responded by imposing economic sanctions. This period coincided with the local and global financial crisis that resulted into hyperinflation, economic decline, low industrial capacity and company closures among other challenges. The economy declined by a high of 17.67% in 2008 down from a decline of 5.81% in 2004. All in all the country's GDP declined by 50%. By the end of 2008 the situation had worsened that beginning 2009 government had to come up with a number of economic measures to contain the economic situation.

However, the period beginning 2009 saw government introducing a number of cocktail measures to stabilize the economy, with the country achieving real meaningful growth rates. GDP increased significantly from a negative 17.67% in 2008 to positive growth rate of 5.98% in 2009 before increasing to 11.9% in 2011 which was the highest during the period. The upturn remained unstable with 2010, 2011 and 2012 recording 11%, 11.9% and 10.56% respectively before declining to a growth rate of 4.48% in 2013 (Figure 1). The measures introduced by government include among other things the reduction in fiscal expenditure, tightening monetary policy, adoption of the multi-currency regime as well as the global political agreement. The world markets contributed positively to the country's economic growth through improved commodity prices.

The period 2014 to 2017 and beyond is underpinned by Zim Asset that was drawn in line with the AU Agenda 2063. The framework divides the economy into different economic clusters. The following areas are some of the major economic drivers under Zim Asset; startups development, ICT ecosystem, tourism, agriculture, mining as well as infrastructural development among others. Ministries responsible for Defense, Mining and Higher education plays a critical and leading role in promoting scientific R&D that will cascade down to other ministries and the economy at large. Of much emphasis is the three legged approach to economic growth and development. This approach involves the coming together of government, the private sector and the academia to provide solutions to economic challenges. The success of Zim Asset lies in government's ability to prioritise critical sectors of the economy through promoting investment in long term sustainable scientific R&D activities, value-addition and economic beneficiation.

Much has not been realized during the period 2004 to 2013 when compared to countries such as South Africa especially in the hi-tech industry. Policy inconsistency by policy-makers had a share in the economic meltdown of 2004 to 2008. Zimbabwe's future looks bright considering its competitive advantages although much needs to be done especially in promoting scientific R&D and innovation. Many countries have realized the importance of innovation towards economic development. Israel is one country that has realized meaningful economic growth through innovation. Israel although a small nation, less than 70 years old with eight million people, has managed to attract huge inflows of FDIs through its promotion of scientific R&D, national service and policy targeting.

Research limitations and potential future research

The study was limited to Zimbabwe as well as to an interpretivism paradigm that is often qualitative in nature though rich in context and aims to understand what is happening in the totality of each situation. A mixed methodology could be used to overcome some of these challenges through providing answers to a broader and more complete range of research questions because the researcher will not be confined to a single method or approach. In this case the strengths of an additional method can be used to overcome the weaknesses in another method by using both in a research study.

The study of economic development and growth is a very rich area for economists, economic researchers and scholars alike. The following areas might attract much future research attention given global trends and economic dynamism; economic growth and aggregate productivity; economic development, technological change and growth; technological innovation and R&D towards economic growth; financial integration and economic growth; regional integration and growth as well as the international trade and gender.

References

- [1] Adams, S. 2009. Foreign Direct Investment, Domestic Investment and Economic Growth in sub-Saharan Africa. *Journal of Policy Modeling*, 31(6): 939 - 949.

- [2] Alfaro, L., Chanda, A., Kalemli-Ozcan, S. and Sayek, S. 2004. FDI and economic growth: the role of local financial markets. *Journal of International Economics*, 64(1): 89–112.
- [3] Bodie, Z., Kane, A., and Marcus, A.J. 2008. *Essentials of Investments, 7th Ed.* The McGraw-Hill/Irwin, ISBN-0073405175, 708 pp.
- [4] de Soto, H. 2003. *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else.* Basic Books, Reprint edition (July 9, 2003), (first published January 1st 2000), ISBN-10: 0465016154, 288 pp. Available at: <https://yendieu.files.wordpress.com/2009/04/the-mystery-of-capital.pdf>
- [5] Dihel, N., and Goswami, A.G. 2016. *From Hair Stylists and Teachers to Accountants and Doctors: The Unexplored Potential of Trade in Services in Africa.* World Bank Group, Available at: <http://documents.worldbank.org/curated/en/477321469182630728/pdf/107185-WP-TradeinServiceWeb-PUBLIC.pdf>
- [6] Dogan, E. 2014. Foreign direct investment and economic growth in Zambia. *International Journal of Economics and Finance*, 6(1): 148 – 153.
- [7] Friedman, H.H., and Friedman, L.W. 2009. *The financial meltdown of 2008: The perspective of Jewish Law, Jewish Law*, Available at: http://jlaw.com/Commentary/FinancialMeltdownTORAHVIEW_Jun17.pdf.
- [8] Gono, G. 2008. *Monetary Policy Statement.* Reserve Bank of Zimbabwe. Available at: <http://www.rbz.co.zw/assets/mps2008.pdf>
- [9] Gono, G. 2009. *Monetary Policy Statement.* Reserve Bank of Zimbabwe. Available at: <http://www.rbz.co.zw/assets/mpsjan2009.pdf>
- [10] Gono, G. 2010. *Monetary Policy Statement.* Reserve Bank of Zimbabwe. Available at: <http://www.rbz.co.zw/assets/mpsjanuary2010.pdf>
- [11] Gono, G. 2011. *Monetary Policy Statement.* Reserve Bank of Zimbabwe. Available at: <http://www.rbz.co.zw/assets/mpsjan2011.pdf>
- [12] Gono, G. 2013. *Monetary Policy Statement.* Reserve Bank of Zimbabwe. Available at: <http://www.rbz.co.zw/assets/jan-2013-mps.pdf>
- [13] Jain, D., Nair, K.S., Jian, V. 2015. Factors affecting GDP (Manufacturing, Services, Industry): An Indian Perspective. *Annual Research Journal of SCMS, Pune*, 3: 38-56. Available at: <https://scmspune.ac.in/chapter/chapter%203.pdf>.
- [14] Kuhn, T.S. 1962. *The Structure of Scientific Revolutions.* University of Chicago Press, 264 pp.
- [15] Loungani, P., Mishra, S., Papageorgiou, C., and Wang, K. 2017. The Future Wealth of Nations: World Trade in Services. *IMF Research Bulletin*, 18(1): 4-7.
- [16] Maliwa, E., and Nyambe, J.M. 2015. Investigating the impact of FDI on Economic Growth in Zambia: 1980 – 2012. *European Journal of Business, Economics and Accountancy*, 3(3): 41-50. Available at: <https://www.idpublications.org>.
- [17] Mangudya, J.P. 2017. *Stimulating Economic growth and Bolstering Confidence, Monetary Policy Statement.* Reserve Bank of Zimbabwe, Available at: <http://www.rbz.co.zw/assets/2017-monetary-policy-statement-.pdf>
- [18] Maune, A. 2014a. Competitive Intelligence as an important contributor to the growth of banks: A Zimbabwean perspective. *Journal of Governance and Regulation*, 3 (3): 98-112.
- [19] Maune, A. 2014b. Competitive Intelligence and Firm Competitiveness: An Overview. *Journal of Corporate Ownership and Control*, 12(1) (continued 6): 533-542.

- [20] Maune, A. 2014c. Competitive Intelligence as an Enabler for Firm Competitiveness: An Overview. *Journal of Governance and Regulation*, 3 (2): 29-42.
- [21] Maune, A. 2015a. A Talmudic Perspective of the Zimbabwean Banking Crisis of 2004/2005. *Risk Governance & Control: Financial Markets & Institutions*, 5(3) (continued 1): 104-113.
- [22] Maune, A. 2015b. Economic Miracles: Valuable Economic Lessons for Developing Nations. *Risk Governance & Control: Financial Markets & Institutions*, 5(4) (continued 1): 199-204.
- [23] Mehmood, S. 2012. Effect of different factors on Gross Domestic Product: A comparative study of Pakistan and Bangladesh. *Academy of Contemporary Research Journal*, 1(1): 11-12.
- [24] Moyo, T. 2013. The impact of foreign direct investment on economic growth: The case of Zimbabwe (2009-2012). *International Journal of Economics, Finance and Management Sciences*, 1(6): 323-329.
- [25] Netanyahu, B. 2014. *World Economic Forum (WEF) address at Davos on 23 January*, Available at: <http://mfa.gov.il/MFA/PressRoom/2014/Pages/PM-Netanyahu-addresses-World-Economic-Forum-at-Davos-23-Jan-2014.aspx>.
- [26] Nunnenkamp, P., and Spatz, J. 2003. *Foreign direct investment and economic growth in developing countries: how relevant are host countries and industry countries?* Kiel Working Paper No.1175, 3 – 38 pp.
- [27] Rodney, W. 1989. *How Europe Underdeveloped Africa*. East African Educational Publishers Ltd., 316 pp.
- [28] Sáez, S., Mckenna, M., and Hoffman, B. 2015. *Valuing Trade in Services in Africa, The Africa Competitiveness Report 2015*. (Chapter 2.2), World Bank Group, Available at: http://reports.weforum.org/africa-competitiveness-report-2015/chapter-2-2-valuing-trade-in-services-inafrica/?doing_wp_cron=1516754026.5619809627532958984375
- [29] Senor, D., and Singer, S. 2009. *Start-up Nation: The story of Israel's Economic Miracle*. McClelland & Stewart, ISBN: 0771079672, 9780771079672, 320 pp.
- [30] Sichei, M. M., and Kinyondo, G. 2012. Determinants of foreign direct investment in Africa: A panel data analysis. *Global Journal of Management and Business Research*, 12(18): 84-97. Available at: <https://www.journalofbusiness.org/index.php/GJMBR/article/view/835>.
- [31] Zilberfarb, B-Z. 2006. From Boom to Bust: The Israeli Economy 1990–2003. *Israel Affairs*, 12 (2): 221–233.
- *** UNCTAD 2015. *Unlocking the potential of Africa's Services Trade for Growth and Development*. Economic Development in Africa Report, UN, N.Y.
- *** Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZIMASSET) 2013. *Towards an Empowered Society and a Growing Economy: October 2013 - December 2018*. Chapter 3, Zimbabwe Government Printers. Available at: <https://www.southerneye.co.zw/2013/12/03/towards-empowered-society-growing-economy/>
- *** World Bank 2015. "World Development Indicators," Washington, D.C., *The World Bank* (producer and distributor). Available at: <http://data.worldbank.org/data-catalog/world-development-indicators>.

Improving the Russian Regulatory Basis for International Financial Reporting Standards - based Qualitative Characteristics of Financial Information

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Abstract:

The goal of the study is to substantiate the system of qualitative characteristics of useful financial information as a basis for the reengineering of IFRS-based accounting standards in Russia. The research study has been undertaken using the comparative legal research method and the content analysis of the regulatory instruments that govern the conceptual framework of financial reporting internationally and, in particular, within the jurisdiction of the Russian Federation. The results consist in the substantiation of the system of qualitative characteristics of financial information for the Russian jurisdiction in the context of current trends in IFRS development. The system includes, among others: a certain set of properties and attributes of useful financial information; a hierarchy of qualitative characteristics based on the requirements and the level of competency of its users; special cases for certain properties and requirements, such as “prudence” and “the priority of substance over form” resulting from the low investment appeal of Russian businesses, as well as from the tight relationship between the accounting, civil and taxation laws. Scope of application: the research results produced in the paper can be used by the national regulator for designing and advancing the system of Russian standards for financial accounting and reporting. The suggested system of qualitative characteristics of financial information can become a robust platform for improving the direct measurements of the quality of financial reporting.

Keywords: international financial reporting standards; Russian accounting standards; understandability; neutrality; prudence

JEL Classification: M41; M48

Introduction

Based on its political priorities, as well as economical and institutional specifics, the Russian Federation is currently building a system of federal accounting standards adapted from IFRS, which is set forth in the national accounting legislation (402-FZ 2011). However, there is a significant impeding factor in building the system of general-purpose national accounting and reporting standards, namely the lack of any theoretical foundation, any conceptual framework facilitating the accumulation of useful financial information for concerned users. The Concept of Accounting in the Russian Market Economy (MBA 1997), which was approved by the Methodology Board for Accounting of the Ministry of Finances of the Russian Federation and by the Presidential Council of the Institute of Professional Accountants in 1997, has now lost its relevance due to the changes in economic and political reality. The official Russian translation of the Conceptual Framework for Financial Reporting (2010) is a reference document to be applied in the situations prescribed by IFRS and is not part of the public laws and regulations.

The lack of statutory basis that would define the structure, hierarchy and content of individual qualitative characteristics of financial information raises serious nation-wide obstacles for the preparation and provision of financial statements that could be useful to prospective users. In these circumstances, investors and creditors

cannot be sure of the accuracy of financial information, and this circumstance renders the usage of the information inefficient for managerial decision-making.

1. Research background

The regulatory ambiguity of the qualitative characteristics of financial information also makes it impossible to hold reporting organizations accountable for providing inaccurate information. Apart from that, the missing standard requirements for the information in financial statements hampers the development of knowledge areas related to accounting, such as audit and internal control (due to the poorly defined object), management accounting and analysis (due to the uncertainty of the measurement of financial reporting indicators).

Therefore, this study was aimed at substantiating a system of qualitative characteristics of useful financial information as a basis for reengineering Russian accounting standards based on the international experience. In line with the purpose of the study, the following goals were set and achieved:

- analysis of the system of IFRS-based qualitative characteristics of financial information as a product of the concerned users' evolved needs;
- content analysis of the national accounting standards that lay down requirements for financial information to examine their consistency and compliance with IFRS;
- substantiation of the system of qualitative characteristics of useful financial information in order to design a conceptual framework for financial reporting in the Russian Federation amid the adoption of IFRS.

The subject of the study is the problems of forming the methodological platform for qualitative characteristics of useful information in the system of national accounting standards (as exemplified by the Russian Federation), while the object of the study is the system of general-purpose international and Russian standards for accounting and reporting.

The authors' contribution to the solving of the problems outlined above lies in the substantiation of the system of qualitative characteristics of financial information for the Russian jurisdiction aligned with the current trends in the development of IFRS. The system includes, among others:

- a certain set of properties and attributes of useful financial information;
- a hierarchy of qualitative characteristics that brings the "understandability" concept to the list of fundamental properties;
- special cases for certain properties and requirements, such as "neutrality", "prudence" and "the priority of substance over form" resulting from the low investment appeal of Russian businesses, as well as from the tight relationship between the accounting, civil and taxation laws.

The research results produced in the paper can be used by the national regulator for designing and advancing the system of Russian standards for financial accounting and reporting. In addition, the suggested system of qualitative characteristics of financial information can become a robust platform for improving the direct measurements of the quality of financial reporting.

The paper starts with the examination of priority trends in the development of fundamental and enhancing qualitative characteristics of useful financial information within the IFRS system. To that end, the authors analyzed the text of chapter "Qualitative Characteristics of Useful Financial Information" of the Conceptual Framework of Financial Reporting (2010), and the Exposure Draft (2015) along with the feedback and comments to the Exposure Draft 2015 (Hoffman 2016). The paper goes on to produce the results of the analysis of Russian statutory instruments setting forth the requirements for the quality of information in accounting and financial reporting, in terms of their consistency and compliance with IFRS. Lastly, the paper describes the system of qualitative characteristics of useful financial information that can serve as a basis for the reengineering of the Russian accounting and reporting standards.

2. Literature review

The modern literature on economics defines the qualitative characteristics of useful financial information as the attributes (properties), which render the information in financial statements useful to its users. (Tsygankov and Fadeykina 2016).

Within IFRS, the qualitative characteristics of financial information make one of the components of the Conceptual Framework for Financial Reporting, which are historically determined by the ever-changing informational needs of primary groups of users (Baker and Burlaud 2015.)

The Conceptual Framework 1989 defined four basic qualitative characteristics of financial information: understandability, relevance, reliability and comparability. They were not subject to hierarchy and did not take into account any past events (Nobes and Stadler 2015). However, a streak of financial crises revealed the inadequacy of that Conceptual Framework as many companies regarded successful in terms of their financial statements failed miserably (Kuznetsova 2011). This was determined, above all, by the fact that the reporting procedures did not take into account many future events that could influence the financial statements.

In its Conceptual Framework for Financial Reporting 2010, the IFRS's International Accounting Standards Board (IASB) broke the qualitative characteristics of useful financial information into two groups:

- fundamental qualitative characteristics, namely relevance and faithful representation. If a company's financial statements fail to comply with at least one of them, they cannot be considered of satisfactory quality;
- enhancing characteristics that make information more useful, including comparability, verifiability, timeliness and understandability. The word "enhancing" emphasizes that these characteristics cannot replace the fundamental ones (Figure 1). Even if a company's financial statements demonstrate a high level of enhancing characteristics yet they lack relevance or faithful representation, they cannot be considered of satisfactory quality (Renkas *et al.* 2016).

In the Exposure Draft (2015), the professional community was posed, among others, a question regarding the support of the suggestion to further define relevance and faithful representation as the two fundamental qualitative characteristics of useful financial information. The majority of respondents (81%) voted for this suggestion (Hoffman 2016). Some respondents (those both for and against this idea) thought it necessary to either reinstate reliability as the third fundamental characteristics or use it to replace faithful representation. A proposal was also put forward about adding transparency to the list of fundamental characteristics.

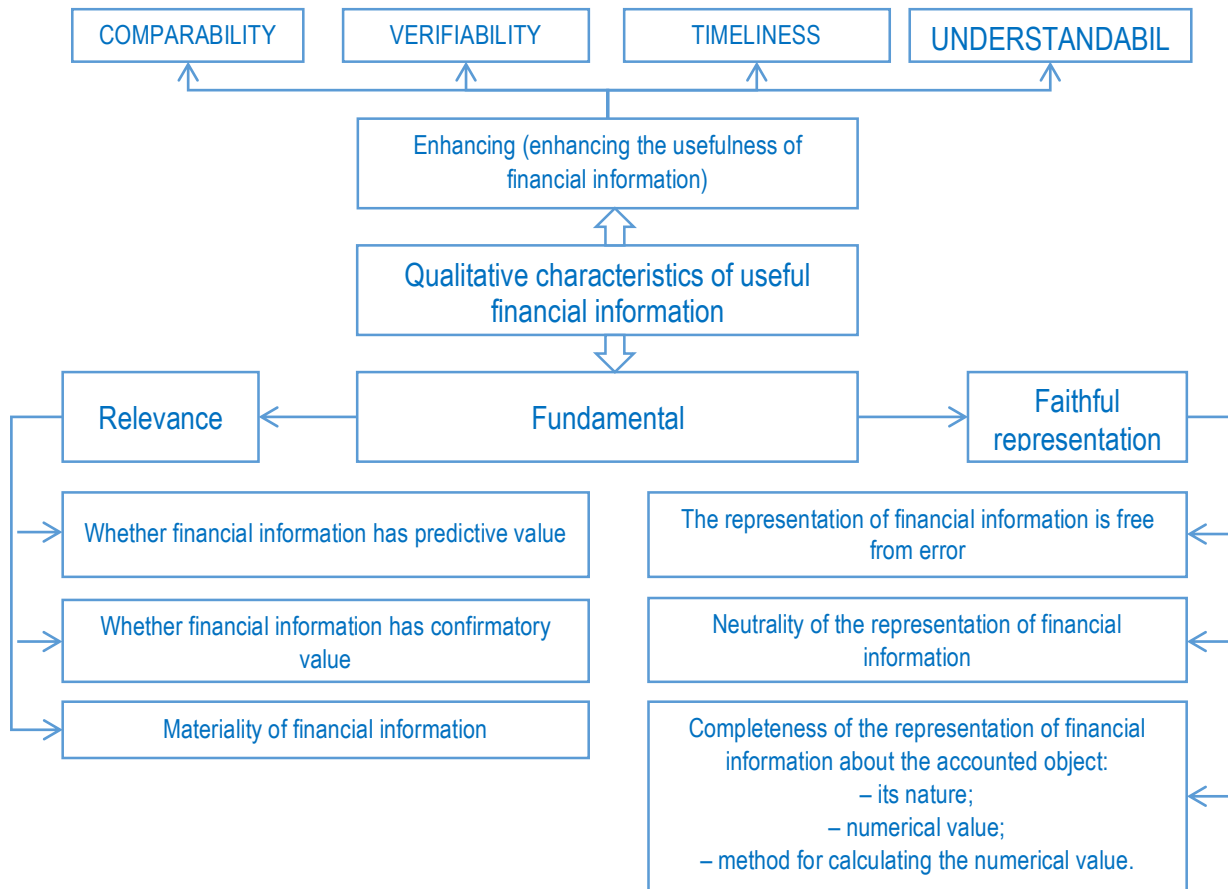
Currently IASB is looking to ensure that financial statements prepared by companies would not only and not so much represent the effect of the past events and facts, as also contain predictive information. To that end, additional concepts of "predictive value" and "confirmatory value" were introduced into the Conceptual Framework as the properties of relevance (Strojek-Filus 2013).

ED 2015 considers a new attribute of "measurement uncertainty" as a relevance-limiting factor and a provision about the existence of a certain compromise between the degree (level) of measurement uncertainty and other properties ensuring information relevance. The majority of respondents (71%) backed this idea (Hoffman 2016). Many opponents argued that the measurement uncertainty should be a factor of faithful representation rather than a factor of relevance.

The striking out of the term "prudence" from the Conceptual Framework 2010 was dictated by the possibility to manipulate financial statements, which was against the neutrality principle. However, this step was premature and unleashed a wave of criticism on the part of the professional community: since the key term was removed, it is reasonable to assume that IFRS financial statements are not "neutral" and are instead "imprudent" (Karpova and Vinokurova 2015, Hogarth 2015, Wagenhofer 2015).

The proposal to reintroduce the reference to the notion of prudence was approved by a significant number (68%) of respondents (Hoffman 2016). Almost all respondents think it necessary to come up with a new definition of prudence (discretion) in order to rule out any alternative interpretations of the term.

Figure. 1. Qualitative characteristics of useful financial information



As an IASB member Stephen Cooper points out (Cooper 2015), all opinions on the interpretation of the term “prudence” were split into two groups:

1. Prudence refers to the more conservative way of recognizing and measuring assets and income against liabilities and expenses (*leading to the understatement of financial outcome and net assets* — authors). The respondents in this group, including the members of the UK Financial Reporting Council, advise IASB to embrace “asymmetric prudence” instead of just “prudence as caution” (GAAP 2016). The British regulator finds it odd that IASB recognizes the asymmetrical approach to the prudence concept in some of its standards (*e.g.* in IFRS 15 “Revenue from Contracts with Customers”), yet for some reason ignores it in the Conceptual Framework.
2. Prudence must ensure the neutral representation of a company’s financial statements without systematic bias (prudence as caution). According to Stephen Cooper, “for investors using financial statements to make decisions on their investment, any deliberate over- or understatement is likely to lead to suboptimal decisions and a misallocation of capital.” Therefore, prudent and carefully thought-out measurements must be neither over- nor understated (Cooper 2015).

In its ED (2015), IASB proposed the concept of prudence as caution, “Neutrality is supported by the exercise of prudence. Prudence is the exercise of caution when making judgements under conditions of uncertainty. The exercise of prudence means that assets and income are not overstated and liabilities and expenses are not understated. Equally, the exercise of prudence does not allow for the understatement of assets and income or the overstatement of liabilities and expenses, because such misstatements can lead to the overstatement of income or the understatement of expenses in future periods.”

Let us also point out that the Conceptual Framework 2010 introduced a new characteristic of faithful representation stipulating that financial reports must be free from error. At the present stage, the term “free from error” means there are no errors or omissions in the description of the phenomenon, and the process used to produce the reported information has been selected and applied with no errors in the process.

A notable difference between the Conceptual Framework 2010 and its version from year 1989 is the missing property of the priority of “substance over form.” This attribute was derecognized due to the formalization of financial statements by many legislations across the world. In the course of the discussion of ED 2015, 92% of respondents agreed that the representation of information based on the economic substance of a phenomenon rather than its legal form is a major attribute of a faithful representation (Hoffman 2016). There is also an opinion that substance over form is an important characteristic of relevance rather than of faithful representation (Hoffman 2016).

In practical applications, there has to be a balance or a compromise between qualitative characteristics. This usually aims to achieve an adequate balance between the characteristics and the practical objectives that have to be met in the financial statements. The Conceptual Framework 2010 imposed the cost constraint on useful financial reporting. The benefit from the information must exceed the cost of reporting that information.

Another problem widely discussed in scientific circles is the identification of the place and role of the “understandability” of financial information in the hierarchy of fundamental and enhancing characteristics.

As E.S. Hendriksen and M.F. Van Breda (1997, 89) rightly put it, “a user type is a key factor in making a decision as to which information to report, since information perceptibility (understandability) depends on the qualities of users”. The Russian Federation tends to have a low level of financial proficiency in ordinary users of financial information. Because of the national specifics, “understandability” as a qualitative characteristic of information, appears to be key (fundamental, major) (Tsygankov and Fadeykina 2016, 103; Bogatyryova 2017, Trofimova 2012, 22). This stand is based on the argument that the most relevant, faithful, verifiable and timely statements are totally useless if they are impossible to understand.

By comparison, the United States began addressing the problem of the quality of users back in the 2000s after a series of high-profile financial scandals related to reporting fraud. The Sarbanes-Oxley Act (SOX 2002) was passed which is subject to compulsory implementation for all listed companies. SOX has a provision stipulating that at least the members of the Board of Directors should be financially educated, well-versed in accounting and able to understand and analyze financial reports. There is no such requirement in the Russian Federation yet, however companies that realize the risks associated with financial reporting and the responsibility for the decisions made on its basis are trying to adopt this approach.

Therefore, the conceptual ambiguity of the place, role and content of such attributes of financial information as “neutrality,” “prudence,” “priority of substance over form,” and “understandability” hinders the development of the national systems of financial reporting standards.

3. Data and method

In order to reveal the content of the qualitative characteristics of financial information, the authors conducted the content analysis of national and international standards for accounting and financial reporting within different historical periods. The detailed examination of the evolution undergone by the conceptual principles of financial reporting globally has been undertaken based on the Conceptual Framework for Financial Reporting 2010 and the Exposure Draft Conceptual Framework for Financial Reporting (ED 2015). The factual support for the content analysis of the national principles of preparing financial statements in the Russian Federation was provided by a range of regulatory acts on accounting, namely the Federal Law “On Accounting” # 402-FZ of 06/11/2013 and the Provisions on Accounting approved by the Ministry of Finances of the Russian Federation.

To identify key issues in the content, goals and application principles of individual qualitative characteristics of financial reporting, the authors used the comparative legal method, which allowed them proposing concrete recommendations as to the unification of the fundamental conceptual framework for financial reporting with respect to the qualitative characteristics of useful financial information.

4. Results of the study

The content analysis of the Russian accounting legislation and the federal accounting standards for their compliance with IFRS allowed identifying a range of significant issues in the statutory regulation of financial reporting:

- the lack of consistent approach to defining the qualitative characteristics of the information provided in accounting (financial) reports;
- a fewer (compared to IFRS) number of qualitative characteristics of information;
- inconsistent interpretation of certain qualitative characteristics or a complete lack thereof;
- the uncertainty in the application of the qualitative characteristics of financial information, etc.

First of all, let us emphasize the uncertainty of the degree to which hierarchical qualitative characteristics affect the usefulness of financial information. While comparing the IFRS fundamental qualitative characteristics with the Russian standards in Table 1, let us point out that the national statutory acts do not mention the relevance of financial information. The fact that the Russian standards omit this qualitative characteristic of information is to a great extent due to the underdeveloped practice of considering the accountant's professional judgement in Russian accounting (Shvyreva and Kruglyak 2016).

Table 1. Fundamental qualitative characteristics of useful financial information

Conceptual Framework for Financial Reporting *	Exposure Draft Conceptual Framework for Financial Reporting**	Regulatory legal acts of the Russian Federation
1. Relevance: relevant financial information is capable of making a difference in the decisions made by users		<i>Missing</i>
a) predictive value: financial information can be used as an input to processes employed by users to predict future outcomes.		<i>Missing</i>
b) confirmatory value: financial information provides feedback about (confirms or changes) previous evaluations.		<i>Missing</i>
c) materiality: information is material if omitting it or misstating it could influence decisions that the primary users of general purpose financial reports make on the basis of financial information about a specific reporting entity.		GAAP 4/99 (1999) requires a separate representation of material indicators in financial reports. GAAP 9/99 (1999) and 10/99 (1999) set forth the quantitative criterion of materiality for gains and expenses, which is 5% or more of the total amount of the corresponding indicator. <i>The inconsistent approach to defining the materiality characteristic</i>
-	Measurement uncertainty: a high level of measurement uncertainty may undermine the relevance of financial information.	<i>Factors limiting the relevance of financial information are not taken into account</i>
2. Faithful representation: the financial information that represents economic phenomena faithfully must be complete, neutral and free from error. According to IAS 1, <i>faithful</i> representation requires a <i>truthful</i> depiction of the consequences of executed transactions, other events and conditions according to the definitions and recognition criteria for assets, liabilities, income and expenses set forth in the Conceptual Framework. It is assumed that the application of IFRS will make it possible to establish financial reporting that ensures faithful representation.		According to GAAP 4/99, financial reports are considered faithful and complete if they have been prepared based on the requirements of the corresponding accounting regulations. GAAP 1/2008 (2008) interprets faithful representation as a degree to which the reports depict the real situation in an entity. <i>These interpretations cover both financial reporting concepts at once — relevance and faithful representation</i>
-	The priority of the substance of an economic phenomenon over its legal form	According to GAAP 4/99 and GAAP 1/2008, when assessing financial statement items, an entity must ensure the priority of substance over form. <i>The definition is generally identical to that in ED/2015</i>

Conceptual Framework for Financial Reporting *	Exposure Draft Conceptual Framework for Financial Reporting**	Regulatory legal acts of the Russian Federation
a) Completeness: a complete depiction includes all information necessary for a user to understand the phenomenon being depicted, including all necessary descriptions and explanations.		The requirement of the completeness of financial information is stated in the Federal Law "On Accounting" (402-FZ, 2011), the Provision on Accounting and Financial Reporting in the Russian Federation (1998), GAAP 4/99 and GAAP 1/2008. It means a complete depiction of all business facts in financial reports. <i>The definition does not match the one in the Conceptual Framework by its scope and the nature of disclosed information</i>
b) Neutrality: a neutral depiction is not slanted, weighted, emphasized, de-emphasized or otherwise manipulated to increase the probability that financial information will be received favorably or unfavorably by users.		According to GAAP 4/99, entities must ensure the neutrality of the information they include in their financial statements, i.e. they must avoid the situations when certain groups of users of financial reports unilaterally satisfy their interests in the prejudice of other users. <i>The definition has a narrower scope compared to the Conceptual Framework</i>
	Prudence as the supporting factor of neutrality: assets and income are not overstated and liabilities and expenses are not understated. Equally, the exercise of prudence does not allow for the understatement of assets and income or the overstatement of liabilities and expenses.	According to GAAP 4/99 and GAAP 1/2008, entities must prepare their financial statements with consideration for the requirement of prudence, which means that expenses and liabilities in the reports should be acknowledged more readily than possible income and assets, without allowing for hidden reserves. <i>Opposite to ED/2015/3, the definition is based on the conservative approach to prudence</i>
c) Free from error: there are no errors or omissions in the description of the phenomenon, and the process used to produce the reported information has been selected and applied with no errors in the process.		<i>Missing</i>

Source: * Conceptual FW, 2010; **Exposure Draft, 2015

Information materiality, being an aspect of relevance, has been declared in the Russian standards, but its content has not been explored. Contrary to IASB's conclusion about the impossibility of specifying a uniform quantitative threshold for materiality, the national standards determine a quantitative criterion of materiality for such financial reporting items as income and expenses. Besides, the factors limiting the relevance of financial information have not been explained. The analysis also revealed the discrepancy between the definitions of some qualitative characteristics of financial information (such as completeness and neutrality), as well as the fact that the "free from error" characteristic is ignored.

It is commonly known that the contents of financial statements are determined by the requirements of the applicable concept guiding the preparation of financial reports. Modern accounting and audit theories refer to two of them: the concept of faithful representation and the concept of correspondence (Ustinova 2010). In the scope of this paper, one of the disadvantages of the Russian statutory instruments consists in their posing the requirement for the faithful representation of financial information based on both concepts at the same time – correspondence (GAAP 4/99 "Financial reporting for entities" (1999) and faithful representation (GAAP 1/2008 "Accounting policy of an entity" (2008)). However, it is a common belief that the coexistence of multiple conceptual frameworks for financial reporting may lead to both unintended falsifications on the part of the reporting entity and the inadequate interpretation of the reports by their users.

Let us also stress that the notion of the cost constraint on useful financial reporting was introduced to the legislation of the Russian Federation as late as in 2017, however instead of being introduced as an attribute of the qualitative characteristics of useful financial information, it was presented as a requirement for accounting policy:

“An accounting policy must ensure ... the maintenance of rational accounting premised on the business conditions and the entity’s scale, as well as based on the ratio of the cost of reporting the information about a specific accounting object to the usefulness (value) of that information (the rationality requirement)” (GAAP 1/2008, 2008).

The content analysis of the national accounting standards for their consistency with the Conceptual Framework for Financial Reporting in the content of the additional qualitative characteristics enhancing the usefulness of information also justifies the conclusion as to the significant narrowing of the requirements for its reporting in financial statements (Table 2).

Table 2. Qualitative characteristics of financial information enhancing its usefulness

Conceptual Framework for Financial Reporting (2010)	Regulatory legal acts of the Russian Federation
1. Comparability: information about a reporting entity is more useful if it can be compared with similar information about other entities and with similar information about the same entity for another period or another date.	According to the Federal Law “On Accounting” (402-FZ, 2011), the comparability of financial reports can be achieved through the consistent application of accounting policies. According to the Provision on accounting and financial reporting in the Russian Federation (1998) and GAAP 4/99 (1999), comparability is achieved through the consistent implementation of both substance and form of financial statements. GAAP 4/99 stipulates the requirement for the financial balance data at the beginning of a financial period to be comparable with the financial balance data for the preceding period. <i>The substitution of the notion of comparability with the notion of consistency</i>
2. Verifiability: different knowledgeable and independent observers could reach consensus, although not necessarily complete agreement, that a particular depiction is a faithful representation.	Supposedly, the requirement of verifiability is put into effect in the Federal Law “On Accounting” (402-FZ, 2011) through the mandatory support of each economic transaction with a primary accounting document and the rejection of accounting documents that support the economic transactions that have never taken place, including those underlying fictitious or fraudulent transactions. <i>The characteristic is undefined</i>
3. Timeliness: having information available to decision-makers in time to be capable of influencing their decisions.	According to GAAP 4/99 (1999) and GAAP 1/2008 (2008) entities must evaluate accounting items in compliance with the requirement for the timely depiction of economic transactions in accounting and financial reports. <i>The definition focuses on the accounting techniques rather than on financial reporting</i>
4. Understandability: achieved through the clear and concise classification, systematizing and presentation of information for users who have a reasonable knowledge of business and economic activities and who review and analyze the information diligently.	<i>Missing</i>

There happens to be a substitution of notions in the Russian standards, whereby consistency is used in place of comparability. It should be noted that comparability is the objective whereas consistency facilitates the achievement of this objective. Consistency implies using the same methods with the same objects either during different timeframes within the same entity or during the same timeframe but across different entities.

The national accounting standards also do not mention such qualitative characteristics of financial information as verifiability and understandability. Despite the provision in the Russian accounting laws regarding the need to support each transaction with a primary accounting document, verifiability as a separate requirement is not declared there.

The requirement of timeliness in the Russian accounting standards gets a narrower interpretation compared to that of IFRS. We believe that the timely recording of transactions in accounting files is not the only prerequisite of a timely representation of information for its users.

We should also point out that the Russian standards do not explain how to apply the fundamental and enhancing qualitative characteristics of information and how to ensure their balance.

5. Discussion

The authors bring to the attention of the scientific community some recommendations as to the improvement of the national standards with respect to qualitative characteristics of useful financial information. The recommendations, unlike those suggested by preceding researches (Tsygankov and Fadeykina 2016, Druzhilovskaya 2016, Yagovtseva 2016), are based on a modern IFRS-compatible financial reporting platform and take into account the institutional specifics of the Russian Federation's economy.

Here are the most essential of the recommendations:

- In a bid to build a unified theoretical and statutory basis for presenting information in accounting (financial) reports, it makes sense defining and systemizing the requirements for the qualitative characteristics of financial information at the level of the Federal Accounting Standard.
- It is necessary to systemize qualitative characteristics of useful financial information by separating the fundamental ones from the enhancing ones (Figure 2). This being said, the qualitative characteristics of useful financial information should be read as the attributes of that information which are of the greatest use to its users (existing and prospective investors, moneylenders or other creditors) when they are trying to make decisions on the reporting entity based on the information provided in its accounting (financial) statements.

The fundamental qualitative characteristics of information should comprise understandability, relevance and faithful representation, whereas the usefulness-enhancing characteristics should include comparability, verifiability and timeliness. The choice for the place of the “understandability” of financial information as part of fundamental qualitative characteristics is dictated by the incoherence of certain accounting standards and the rather low level of financial proficiency of the users of financial reports.

The authors think that, since measurement uncertainty affects the numerical values of financial reporting indicators, this factor limits both the relevance and the faithful representation of information, that is, its usefulness in general. The authors reckon that the definition of neutrality suggested by IASB implies its tight relationship with prudence. The narrower understanding of neutrality in the Russian accounting standards, which focuses on the ruling out of the unilateral satisfaction of the interests of some users over the others instead of focusing on the selection and representation of information in a manner which is free from bias that aims to secure a favorable or unfavorable user attitude, predetermines the independence of these two qualitative characteristics.

In the authors' opinion, should the concept of “symmetrical prudence” be adopted, prudence must be interpreted as a characteristic ensuring the neutrality of information. On the other hand, with a conservative (asymmetrical) approach, this qualitative characteristic can be reasonably considered a separate attribute of faithful representation. In particular, in the Russian accounting and reporting standards, the term “prudence” should guard against any ungrounded optimistic estimates by the company's management preparing the statements. This approach admits of a certain shift of reported information from neutrality to conservatism, *i.e.* a certain understatement of assets and income that allows retaining the entity's ownership capital. Conservative prudence suggests a pragmatic approach to preparing reports and, amid the turbulent economy, helps reduce the risks associated with resource allocation.

Let us consider the application of the principle of conservative caution as exemplified by the reserve for doubtful debts, which is an imputation. The main methods for calculating the size of the reserve are expert, proportional and statistical ones.

Suppose, as of the reporting date on December 31, 2016, the total value of trade receivables amounted to USD 220,000 thousand, including the amount of doubtful debts – USD 9,000 thousand.

Within the expert method, for each doubtful debt, the amount of debt that will not be repaid is determined; it is included in the total amount of the reserve (Table 3).

Table 3. Calculation of the reserve for doubtful debts by expert method

Debtor	The amount of doubtful debts as of December 31, 2016, thousand dollars	Payment term under the contract	Probability of non-repayment of the debt, %	The amount of the reserve for doubtful debts as of December 31, 2016, thousand dollars
1	2	3	5	6 (2 × 5)
Company A	3,500	15.11.2016	80	2,800
Company B	3,000	20.06.2016	100	3,000
Company C	2,500	25.12.2016	10	250,000
TOTAL	9,000			6,050

By applying the proportional method, the reserves are calculated, as a rule, based on certain time intervals of the delay in payment by the debtors. For example, if overdue makes more than 45 to 90 days, 50% of the debt amount is allocated to the reserve and this figure increases to 100% of the debt amount in case of overdue for more than 90 days (Table 4).

Table 4. Calculation of the reserve for doubtful debts in proportion to the days in arrears

Debtor	The amount of doubtful debts as of December 31, 2016, thousand dollars	Payment term under the contract	Days in arrears	The amount of the reserve for doubtful debts as of December 31, 2016, thousand dollars
Company A	3,500	15.11.2016	46	1,750
Company B	3,000	20.06.2016	194	3,000
Company C	2,500	25.12.2016	6	-
TOTAL	9,000			4,750

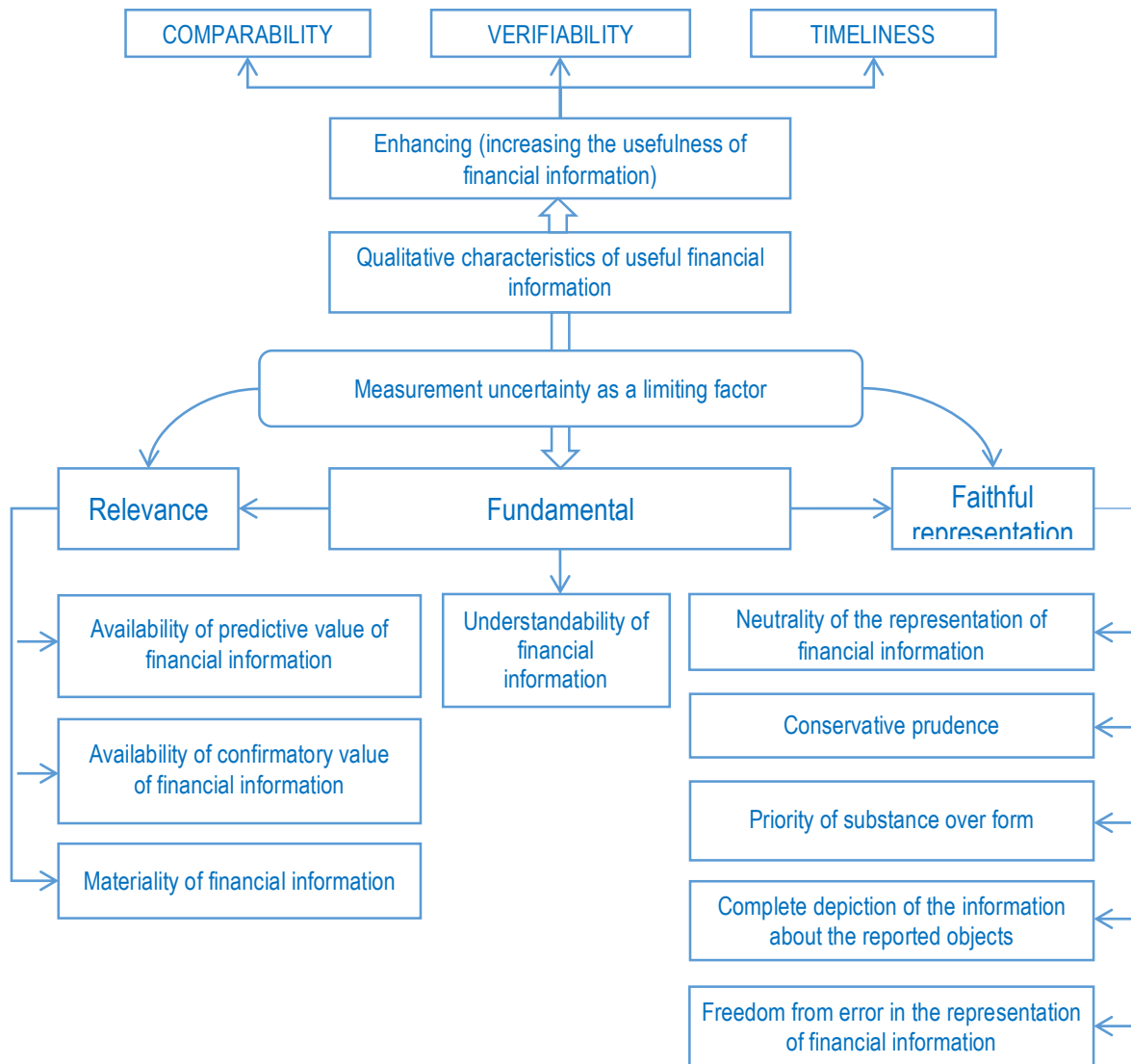
The amount of the reserve for doubtful debts is determined by the statistical method for the example in question on the basis of data for the previous three years, according to which on average 2% of the value of shipped goods were not paid by the buyers at all. The amount of the reserve of USD 4,400 thousand is calculated as the share of outstanding debts in the total amount of receivables (220,000 thousand dollars × 2%).

The alternative calculation performed in this way, when recording, makes it possible to choose the very way to determine the amount of the reserve for doubtful debts, which will result in a more conservative estimate of the company's receivables and profits. In the example considered, this is performed by the expert method.

The authors regard that in the context of the Russian jurisdiction, the real, rather than formal, application of the substance-over-form principle for economic phenomena can only exist after the methodological link between accounting and any related areas of legislation, above all civil and taxation, is removed.

Following these recommendations will help develop the Russian concept of accounting and financial reporting in the face of globalization and cross-border integration.

Figure 2. The system of qualitative characteristics of useful financial information as a basis for the reengineering of the system of Russian financial reporting standards



Conclusion

The lack of statutory basis that would define the structure, hierarchy and content of individual qualitative characteristics of financial information raises serious nation-wide obstacles for the preparation and provision of financial statements that could be useful to prospective users. Based on the IFRS guidelines and today's academic advances, the authors have developed the recommendations on improving the Russian standards with respect to the qualitative characteristics of useful financial information; their structure has been defined and their content clarified in view of some national specifics.

The authors hope that their contribution to the project of the national Conceptual Framework for Financial Reporting will help bring together the Russian and the international financial reporting standards, as well as unify qualitative characteristics of useful financial information in order to help directly measure the quality of financial statements and advance the profession of an accountant.

References

- [1] Baker, C.R., and Burlaud, A. 2015. The historical evolution from accounting theory to conceptual framework in financial standards setting. *The CPA Journal*, 85(8): 54-60.
- [2] Bogatyryova, S.N. 2017. Measuring the understandability of the information presented in accounting and financial reports in Russia. *Theory and Practice in Modern Science*, 3(21). Available at: [http://modern-j.ru/domains_data/files/21/BOGATYREVA%20S.N.%20\(osnovnoy%20razdel\).pdf](http://modern-j.ru/domains_data/files/21/BOGATYREVA%20S.N.%20(osnovnoy%20razdel).pdf)
- [3] Cooper, S. 2015. *Investor Perspectives – A tale of ‘prudence’*. Available at: http://www.ifrs.org/Investor-resources/Investor-perspectives-2/Documents/Prudence_Investor-Perspective_Conceptual-FW.PDF
- [4] Druzhilovskaya, E.S. 2016. *The principles of preparing financial reports in Russia and IFRS*. Accounting in Public and Non-Profit Organizations, 15 pp.
- [5] Hendriksen, E.S. and Van Breda, M.F. (Eds.) 1996. *Accounting Theory* 6th., United States: Irwin.
- [6] Hoffman, C.W. 2016. Revising the Conceptual Framework of the International Standards: IASB proposals met with support and skepticism. *World Journal of Business and Management*, 2(1). Available at: <http://www.macrothink.org/journal/index.php/wjbm/article/download/8868/7503>
- [7] Hogarth, P. 2015. *Dear Prudence*, International Financial Reporting Standards blog, Available at: <http://pwc.blogs.com/ifrs/2015/06/dear-prudence.html>.
- [8] Karpova, V.V., and Vinokurova O.A. 2015. The consequences of exercising prudence in financial reporting. *Accounting. Analysis. Audit*, 2: 53-58.
- [9] Kuznetsova, Ye. 2011. Assessing and improving the quality of reporting: new rules in action. *IFRS in Practice*, 6. Available at: <http://msfo-practice.ru/article.aspx?aid=285003>
- [10] Nobes, C.W., and Stadler, C. 2015. The qualitative characteristics of financial information, and managers' accounting decisions: evidence from IFRS policy changes. *Accounting and Business Research*. 45: 572-601. Available at: <http://www.tandfonline.com/doi/full/10.1080/00014788.2015.1044495>.
- [11] Renkas, J., Goncharenko, O., Lukianets, O. 2016. Quality of financial reporting: approaches to measuring. *International Journal of Accounting and Economics Studies*, 4 (1): 1-5. DOI: 10.14419/ijaes.v4i1.5509
- [12] Shvyreva, O.I., and Kruglyak, Z.I. 2016. Problems of professional judgment application in evaluating the company's going concern. *Indian Journal of Science and Technology*, 9 (14): 91520.
- [13] Strojek-Filus, M. 2013. Qualitative characteristics of financial information presented in financial statements according to IFRS/IAS versus the information function-contribution to the discussion. *Journal of Interdisciplinary Research*, 3(1). Available at: http://www.magnanimitas.cz/ADALTA/0301/papers/A_strojek.pdf
- [14] Trofimova, L.B. 2012. Integrated diagrams of IFRS' Conceptual Framework for Financial Reporting and the Russian accounting. *International Accounting*; 23: 13-26.
- [15] Tsygankov, K.Yu., and Fadeykina, N.V. 2016. The conceptual framework for financial reporting: qualitative characteristics. *Siberian Scientific School*; 4: 98-105.
- [16] Ustinova, Ya.I. 2010. The concept of faithful and diligent approach to accounting information: the Russian theory and practice. *Audit and Financial Analysis*; 1, 32-40.
- [17] Wagenhofer, A. 2015. *The never ending story of prudence and IFRS*. IFAC Business Reporting. Available at: <https://www.ifac.org/global-knowledge-gateway/business-reporting/discussion/never-ending-story-prudence-and-ifrs>

- [18] Yagovtseva, A.A. 2016. Reporting information in compliance with IFRS: a global project on quality improvement. Corporate financial reporting. *International Standards*, 2.
- *** 402-FZ. 2011. The Federal Law #402-FZ of 06/12/2011 (rev. 18/07/2017) "On Accounting".
- *** Conceptual FW. 2010. The conceptual framework for financial reporting 2010. Available at: <http://www.ifrs.org/News/Press-Releases/Documents/ConceptualFW2010vb.pdf>
- *** ED. 2015. Exposure Draft Conceptual Framework for Financial Reporting. Available at: http://www.ifrs.org/Current-Projects/IASB-Projects/ConceptualFramework/Documents/May%202015/ED_CF_MAY%202015.pdf
- *** GAAP 1/2008. 2008. Order of the Ministry of Finances of the Russian Federation #106n (rev. 28/04/2017) of 06/10/2008 "On the approval of Provisions on Accounting" (along with the "Provision on Accounting "Reporting Policy for Entities".
- *** GAAP 10/99. 1999. Order of the Ministry of Finances of the Russian Federation #33n (rev. 06/04/2015) of 06/05/1999 "On the approval of the Provision on Accounting "Expenses of Entities".
- *** GAAP 4/99. 1999. Order of the Ministry of Finances of the Russian Federation #43n (rev. 08/11/2010) of 06/07/1999 "On the approval of the Provision on Accounting "Financial Reporting for Entities"
- *** GAAP 9/99. 1999. Order of the Ministry of Finances of the Russian Federation #32n (rev. 06/04/2015) of 06/05/1999 "On the approval of the Provision on Accounting "Income of Entities".
- *** GAAP. 2016. The British regulator recommends "asymmetrical prudence" in IFRS' Conceptual Framework. GAAP.RU. Available at: <http://gaap.ru/news/148541/>. (Accessed 26/11/2016).
- *** MBA. 1997. The concept of accounting in the Russian market economy: approved by the Methodology Board for Accounting of the Ministry of Finances of the Russian Federation and by the Presidential Council of the Institute of Professional Accountants of the Russian Federation.
- *** Order of the Ministry of Finances of the Russian Federation #34n (rev. 29/03/2017) of 29/07/1998 "On the approval of the Provision on Accounting and Financial Reporting in the Russian Federation".
- *** Sarbanes-Oxley Act of 2002. Available at: <https://www.sec.gov/about/laws/soa2002.pdf>

Does Financial Deregulation Spurs Economic Development in Nigeria?

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Abstract:

The problem of low investment caused by mismanagement of the financial deregulation process is a worrisome issue that needs to be addressed. Data spanning 46 years from 1970 to 2016 and which are relevant to variables of study like gross fixed capital formation, etc were gathered from secondary sources and analyzed using the Auto-Regressive Distribution Lag model. The result showed that both financial deregulation and investment growth have a long-term but negative significant impact on economic development. The paper recommends amongst others that the deregulation process needs to be properly sequenced into the financial system.

Keywords: financial deregulation; gross fixed capital formation; economic development

JEL Classification: O1; O160; O23

Introduction

Financial deregulation refers to the orderly withdrawal of regulatory controls, structures, and operational rules which may be regarded as suppressive to organized growth, competition, and efficient apportioning of resources in the financial system of a country. Financial repression, which is the opposite of financial deregulation, is a direct control of financial rates by the government in an economy, for example, administrative control of interest rates and exchange rates by the government (Ayadi, Adegbite 2008).

Before the deregulation of the Nigerian economy, the financial sector was the most highly regulated (Ogbu 2010). The reasons for this include first, funds are needed to finance developmental projects, and since fund is also the major financial instrument of the financial sector, the government had to firmly control the sector. The financial system not only collect funds from savers and channel them to investors, it also allows easy payment system services that aid transactions. Furthermore, the financial sector also creates a platform that allows the Central Bank of Nigeria's monetary policy to function perfectly and enable macroeconomic stability for all economic players.

Also, with the major function of the financial system, the government firmly managed all area of its activities (Omankhanlen 2012). For example, under the banking subsector, the Central Bank of Nigeria controlled the interest rates on loans the banks charged, and the amount banks could lend to different sectors. The Central Bank of Nigeria also controlled the deposit interest rate and the rate at which credit could grow. There were strong guidelines controlling entry into the banking sector during the repression era of early 1970s to 1985. The effect of this was that the financial system was suppressed, and it could not create adequate savings at the prevailing interest rate,

and also it could not find enough investment for meaningful development. This made the country to adopt financial deregulation policy for her financial sector.

With the creation of the Structural Adjustment Programme in 1986, the financial markets were deregulated in 1987. Adekanye (2002) posited that “deregulation was adopted in 1987 against a crash in the international oil market, and the reactant deteriorating economic condition in the country due to stringent policies in the financial sector which made savings and investment unrealizable”. The deregulation reform stirred up competition in the banking sector with increase financial services such as the usage of debit and credit cards, utilization of payment technologies for example the Automated Teller Machines and electronic transfer of deposits, internet banking services and mobile banking technology (Ikpefan 2012). Other reforms that were introduced include flexible exchange rate which facilitated the introduction of new local and foreign banks, the deregulation of both lending interest rates and deposit interest rates, and so on, thus leading to financial deepening in the economy.

However, there were wide variations and unnecessarily high interest rates and this led to a change of policy in 2004 with the government introducing some regulatory measures to manage the interest rate. This is termed prudential or partial deregulation (Olokoyo 2012). Thus, deposit rates were set at 2 to 5% per annum while lending rate was fixed at a ceiling of 20% per annum (Omole and Falokun 1999). Although prudential deregulation was introduced to reduce financial risk and spring up stability, it imposed increased regulatory costs and hampered competition. Hence, prudential deregulation had opposite effects on bank performance (Olokoyo 2012). First, it hampered the effect of financial deepening on the economy, and second, the vital purpose of monetary policy stability in Nigeria has not been achieved after deregulation. There have been consistent high inflation figures. Both the Federal Government fiscal deficit and the interbank rates were very high and this affected other rates. Also, massive sets of regulations introduced by the regulatory bodies led to the introduction of several new financial products. However, these new financial products led to the liquidation of some financial institutions and banks due to the fact that they were rigidly controlled by the government through its regulatory bodies (Olokoyo 2012).

By contrast, financial deregulation reform in South Korea, Malaysia, and Indonesia was applied step-by-step and together with measures that brought about macroeconomic stability. Hence, financial deregulation made the financial systems in the three countries more efficient, thus pushing the need to reintroduce controls (Ojo 2010). It is generally accepted in theoretical literature that deregulating the financial system plays a vital role in economic development. The literature on financial deregulation posited that the relaxation of government controls on the financial system would lead to more savings since interest rate would be determined by market forces. The increased savings would lead to higher and bigger investment. More investments would result in economic development and growth. Therefore, there would be higher deposit rates (plus increased investment and economic growth) after deregulation; but it has been a different result with Nigeria. Against this background therefore, the basic thrust of this study is to empirically investigate the impact of financial deregulation on the performance of the Nigerian economy from 1970 to 2016 using the McKinnon-Shaw model.

1. Literature review

Financial deregulation is seen as a process of moving towards both market-determined interest rate and market-determined prices on all categories of financial products. Ikhide (2005) stressed the fact that it can also be characterized by symmetric entry and exit conditions of all the participants in the banking system, the opening up of the domestic market to international competition, and limited barriers to the introduction of new financial products. According to Ikpefan, Isibor, and Okafor (2016), financial deregulation reform in Nigeria was driven by the need to deepen the financial system and reposition the Nigerian economy for growth.

Ndebbio (2004) observed that though financial deregulation has been variously portrayed in different empirical literatures, whatever depiction still usually include no government control on interest rate, and removal of controls on foreign exchange deals. Furthermore, deregulation tries to introduce, strengthen, and improve both the price mechanism and the considerations for financial system competition. On the contrary, financial repression is supported by limits on interest rates and credit enlargement, selective policies on credit, high reserve requirements, and limitations on entry into the banking sector.

New Keynesian economists criticized the assumptions of deregulation (Krugman 1998, Laumas 1995). The clearest effort at the refusal of deregulation came from Laumas (1995)'s three sector model, which he divided into households, private business firms and government. According to the model, the high deposit interest rates caused by financial deregulation would benefit households, who saves lower than firms. However, high cost of borrowing would affect firm's profits. Also, savings rate would reduce because high-saving business firms would face the problem of low profits, while low-saving households would collect a larger ratio of total savings. Public revenue would also reduce as it would be affected by low taxes on interest income (which is a deregulation measure), while high interest payments on public debt would increase consumption by private firms. Thus, while the model assumed the McKinnon (1973) and Shaw (1973) theory that an increase in deposits rates would increase financial deepening; such measures were also expected to lower private savings (because of the shift in income from firms to renters) and government saving (because of lower tax revenues and higher interest payments on debt).

However, the most complete rejection of deregulation comes from a debate on the relationship between finance and development that came before the propositions of McKinnon (1973) and Shaw (1973). Thornton (1990) opined that in the developing economies, the banking sector would not have the capacity to mobilize the financial resources essential for economic development. Such undertaking would involve institutional arrangements outside the banking sector. According to Thornton (1990), financial deregulation would also be secondary to the problem of inducing speedy and sustained growth for many African economies. Thornton (1990) also concluded by positioning the needs of developing economies against the potentials of the banking sector. In his view, "the most backward economies face not a large deficit in accumulated capital but also large technological and institutional gaps, as well as a shortage of entrepreneurial talent" (Thornton 1990).

"In the financial system, the banking sector would not only be ineffective in mobilizing enough resources due to limited savings and lack of trust in the banking sector, but would also be ineffective in providing the requisites of technology transfer and entrepreneurship" (Thornton 1990). These situations typically authorized the use of "special institutional factor" in mobilizing additional resources plus reliance on entrepreneurial direction. An example of such "special institutional factor" is government interest in the industrialization process and savings mobilization (as in the case of Russia and Hungary).

1.1. Investment in Nigeria

According to Ikpefan (2012), the Nigerian investment climate is characterized by high production costs, inadequate infrastructure and corruption, high rate of crime, inflation, political instability, and macroeconomic imbalance. Nevertheless, private capital flows are motivated by profit considerations. For government to achieve its desired objectives of high economic growth and rapid development, it must pursue policies that will increase both the public and the private investment. Aggregate investment in any economy comprises both the public and private investments. Although the prime motive of the public sector investment may be different from that of the private sector, they both face the same challenges in financing their investment requirements.

A study by Busari (2007) explained that lack of guarded deregulation was the major cause of low domestic investment figures in Nigeria. According to him, deregulation was supposing to foster domestic investment, thereby reducing the influx of foreign direct investment, but this is not the case in Nigeria, compared to China that developed her local industries and increased the amount of funds that go into her local industries. Hence, Busari (2007) concluded that lack and/or access to funds was the major setback of local investment growth in Nigeria, and this factor is caused by lack of guided deregulation.

1.2. Economic Development

Economic development implies an upward movement of the entire economic and social system in terms of income, savings and investment along with progressive changes in socioeconomic structure of a country (institutional and technological changes). Development relates to growth of human capital indexes, a decrease in income inequality, and structural changes that improve the general population's quality of life (Ayadi, Adegbite, and Ayadi 2008). Economic development is a broader concept than economic growth. Development reflects social and economic progress and requires economic growth.

Growth is a vital and necessary condition for development, but it is not a sufficient condition as it cannot guarantee development. Economic development can be measured by GDP per capita, HDI (Human Development Index), Gender- Related Index (GDI), Human Poverty Index (HPI), infant mortality, and literacy rate etc. All these bring both qualitative and quantitative changes in the economy as compared to growth that brings only quantitative changes in the economy. Economic development is more relevant to measure progress and quality of life in developing nations since it is concerned with structural changes in the economy compared to economic growth which is concerned with increase in the economy's income (Ikhide 2005). GDP per capita is the commonest indicator of material standards of living and it is found by measuring Gross Domestic Product in a year and dividing it by the population.

1.3. Theoretical Evidence and Framework

McKinnon and Shaw Hypothesis: The main thrust of the McKinnon-Shaw framework is that government restrictions on the financial system like interest rate ceilings, high reserve requirements and controlled credit policies suppress financial deepening and hence hamper economic development. Financial deepening refers to the increased provision of financial services with a wider choice of services geared at all levels of society. It means an increased ratio of money supply to GDP or some price index. It also refers to the liquid money. The more liquid money is available in an economy; the more opportunities exist for continued growth. Financial deepening plays a very important role in reducing risk and vulnerability for disadvantaged group, and increasing the ability of individuals and households to access basic services like health and education, thus having a more direct impact on poverty reduction.

On the other hand, researchers such as Kraay (1998) and Stiglitz (2000) are of the view that financial market imperfections like asymmetric information and imperfect competition mean that financial deregulation can have a negative effect on economic growth and development. The McKinnon and Shaw hypotheses assumed that deregulation, which would involve higher real interest rates (since controls on these will be lifted) would stimulate saving. This follows the assumption that savings is reactive to interest rates. The higher saving rates would finance a higher level of investment, leading to higher growth. Therefore, from this view, one should expect to have higher saving rates (as well as higher levels of investment and growth) following financial deregulation. The separate but complementary studies of McKinnon (1973) and Shaw (1973) opened the floodgate of studies on the relationship between financial deregulation and growth.

1.4. Empirical Framework

Uduak and Ubong (2015) studied the banking sector reforms and their impact on the performance of deposit money banks in Nigeria, using co-integration to analyze data from 1999 to 2015; he found out that those reforms in the banking sector increases the profitability of deposit money banks due to high interest rate spread. However, the study failed to specify the particular reform it used in the model.

Abogan, Olajide, and Oloba (2014) studied the impact of deregulation of the economy on Nigerian deposit money banks using the analysis of variance (ANOVA) technique. The study revealed that deregulation of the economy caused high technology information which actually reduced incidence of fraud in banking industry and increased the number of deposit money banks as a result of competitive environment, with increase in skilled manpower. The author should have used secondary data instead.

Asamoah (2008) assessed financial deregulation and its impact on savings, investment and the growth of GDP in Ghana. The empirical estimation of 42 observations *i.e.* January 2000 to June 2003 was evaluated using the Ordinary Least Square regression analysis. The results showed that the rise in interest rate over the years after deregulation of the financial sector has led to a corresponding increase in savings which has a positive impact on the growth of GDP. The findings showed that financial deregulation has increased the rate of capital accumulation and improved efficiency in capital utilization which is both essential for economic growth. The researcher should have used the panel data estimation to get a more concrete result.

Ogunsakin (2013) examined the impact of financial deregulation on the growth of the Nigerian economy, using the Johansen co-integration method. The time-series data from 1980 to 2010 was employed and his results

showed that the financial sector has impact on the growth of the Nigerian economy, but not remarkable impact, which might be due to the underdeveloped financial market, inadequate financial instrument and poor monitoring of the activities of money market by the central bank. The researcher should have extended the study to other emerging economies in order to see if the finding is applicable to them.

Olokoyo (2012) examined the impact of deregulation on Nigerian deposit money bank performance using ordinary least squares single equation technique. She discovered that there is a significant relationship between the regulation of banks and bank performance and hence does not support the position that deregulation brings about improvement in bank performance, that deregulation should be combined with other regulatory policies for better performance. However, a more robust technique like the multiple regression technique or the two-stage least squares technique should have been used instead.

Oyovwi and Eshenake (2013) studied the effect of financial deregulation on economic growth in Nigeria, adopting the methodology of the vector error correction technique. Annual data on GDP, financial deepening (proxied by the ratio of M2 to GDP), government policy (represented as the ratio of total trade to GDP) and investment to GDP were employed for the study. The study found that financial deepening exerts a significant positive impact on economic growth while government policy or trade openness and investment-GDP ratio impact growth significantly but in the opposite (negative) direction. However, financial deepening correlates with investment growth; therefore, it cannot be related positively to growth while investment is negatively related to it.

Donald and Adeyele (2013) examined the effect of both bank consolidation and deregulation on the level of competition in the Nigerian banking industry using the ordinary least squares technique (OLS). They concluded that bank recapitalization and other consolidation catalysis did improve efficiency and economics of scale in the banking industry. Other econometric techniques should have been considered by the researcher apart from OLS.

Donald (2013) examined the impact of financial deregulation on credit mobilization to the real sectors and SMEs in Nigeria. Using a Fitting co-integration technique, he argued that deregulation of Nigeria financial system had an adverse boomerang effect on the credit allocated to the real sector, financial deregulation was insignificant and negative. Credit to other sectors too should have been considered by the author, most especially the business sector. Iganiga (2010) evaluated the Nigerian financial sector reforms using behavioural models and the OLS technique. The study found that the adoption of financial deregulation triggered a significant realignment of financial depth, width and savings mobilization. That financial deregulation promotes the efficiency of the intermediation process. Multiple regression technique would have been a better option here than OLS.

2. Methodology

The model used for this hypothesis will be based on the theoretical framework of financial deregulation as posited by McKinnon (1973) and Shaw (1973) whereby they both explained that deregulation will lead to increase in banks' deposits and with competitive lending rate, there will be enough funds to give out as loans for investment purposes. This will then lead to investment growth which will spur economic development. The implicit form of the model will be:

$$\Delta \text{GDP pc} = a_0 + a_1 \Delta \text{LER} + a_2 \Delta \text{GFCF} + U_1 \quad (1)$$

where: $\Delta \text{GDP pc}$ represents GDP per capita and was used as a proxy for economic development according to the study of Ojo (2008).

Ehinomen and Afolabi (2015) in their study adopted lending rate (LER) as a proxy for financial deregulation. Gross Fixed Capita Formation (GFCF) was used as a proxy for domestic investment following the study of Asamoah (2008). Also, a_0 is the intercept, a_1 , a_2 , a_3 , a_4 , a_5 , and a_6 are parameters estimating LER, GFCF and their lags while U_1 is error term used to measure variables not mentioned in the model but has impact on GDP pc.

All the data to be analyzed are from 1970 to 2016, thus spanning for 46 years. The reason for this large span is to examine the impact of all the independent variables on the dependent variables for a long period of time. The data will be tested for structural breaks to examine the effect of financial deregulation policy over the years. The data would be analyzed using the Auto-regressive Distributive Lag (ARDL) econometric approach so as to test for long run impact between the dependent variable and the independent variables.

3. Demonstrations

3.1. Zivot-Andrews Unit Root/Structural Break Test

This test was carried out to examine whether the data is stationary or not. The value of the Zivot-Andrews test statistics must be greater than the value of its critical values at 5% significance levels, whether at level or at first difference. Using the table below:

Table 1. Result of Zivot-Andrews unit root/structural break test at trend and intercept with maximum lag of 4

VARIABLES	Zivot-Andrews test statistics	5% Test Critical Values	Remark
LGDP PC	-6.563485	-5.08	Stationary at 1st Difference
LER	-6.020282	-5.08	Stationary at level
LGFCF	-5.204057	-5.08	Stationary at level

Source: Author's computation using Eviews 9 (2017)

From the table above, it can be seen that all the variables were stationary at 5% critical value, trend and intercept. While economic development (LGDP PC) was stationary at first difference, all other variables were stationary at level. Auto - Regressive Distribution Lag ResultModel:

$$\Delta \text{GDP pc} = a_0 + a_1 \Delta \text{LER} + a_2 \Delta \text{GFCF} + U_1 \quad (2)$$

Table 2. Result of Auto - Regressive Distribution Lag

VARIABLES	Coefficient	Std. Error	t-Statistic	Prob.
LGDP PC(-1)	1.988460	0.014879	66.43330	0.0000
LER	-4.018515	0.005355	-3.457872	0.0013
LGFCF	-6.005315	0.005500	-2.966312	0.0394
C	0.076095	0.096056	0.792196	0.4327
R2 = 0.9968	Adjusted R2 = 0.9866	F-statistics=4449.549	Durbin-Watson Test = 2.17	

Source: Author's computation using Eviews 9 (2017)

From the table above, the R2 was 0.99 to show that all the exogenous variables cause 99% changes in the endogenous variable GDP PC. After adjusting for degree of freedom, the adjusted R2 becomes 0.98 to show that all the coefficients now explain 98% changes in GDP PC while holding other factors constant.

Using the probability value to test for the significance of the parameter of the coefficients at 10% significance level, the result shows that both dependent variables financial deregulation (LER) and investment (GFCF) are all statistically significant in impacting economic development (LGDP PC). The next step is to examine if there is the presence of co-integration in the model. The co-integration will reveal whether a short-run or long-run relationship exists between the exogenous variables and the endogenous variable. The Bounds F test will be used to examine this fact. The value of the F Statistics from the ARDL Bounds Test must be greater than all the Critical Value Bounds whether at I0 or at I1 Bound to prove the presence of co-integration in the model. The result of the F Statistics test is shown below.

3.2. ARDL Bounds Test

Table 3. Result of ARDL Bounds Test

F-statistic	I0 Bound	I1 Bound
12.56826	3.17	4.14
	3.79	4.85
	4.41	5.52
	5.15	6.36

Source: Author's computation using Eviews 9 (2017)

From the result above, the F Statistics value of 12.56826 is greater than all the values of the Critical Value Bounds at all the significance levels to establish the fact that there is co-integration in the model. Therefore, the

next step is to carry out the co-integration to establish whether a short-run or long-run relationship exists among all the variables. The ARDL Cointegrating and Long Run Form test will be used to carry out this test. The coefficient value of the co-integration equation CointEq (-1) must be both negative and significant at 10% significance level to establish a long run relationship. If the coefficient value of the co-integration equation is positive and insignificant, then a short-run relationship exists in the model. The result is shown below:

3.3. ARDL Cointegrating and Long Run Form

Table 4. Result of ARDL Cointegrating and Long Run Form

VARIABLES	Coefficient	Std. Error	t-Statistic	Prob.
D(LER)	4.018515	0.005355	3.457872	0.0013
D(LGFCF)	-4.005315	0.005500	-4.966312	0.0394
CointEq(-1)	-3.011540	0.014879	-2.775577	0.0000

Source: Author's computation using Eviews 9 (2017)

From the result above, the coefficient value of the co-integration equation CointEq (-1) is negative and significant at 10% significance level to show that a long run relationship exists in the model. The value of total savings [D (LER)] is also significant at 10% significance level from the probability value to show that it has a long run positive and significant relationship with the dependent variable. The value of D (LGFCF) also proves significant at 10% significance level in explaining the dependent variable.

3.4. Heteroskedasticity Test

This test also be carried out to examine if the error term has a constant variance or not. If both the p-value and the p-chi square values are significant at 10% significance level, then there is the presence of Heteroskedasticity in the data. The result is shown below:

Table 5. Result of Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.258131	Prob. F(3,42)	0.8551
Obs*R-squared	0.832789	Prob. Chi-Square(3)	0.8416
Scaled explained SS	2.587379	Prob. Chi-Square(3)	0.4597

Source: Author's computation using Eviews 9 (2017)

From the result above, none of the probability values are significant at 10%; hence, there is no Heteroskedasticity in the data.

3.5. Breusch–Godfrey serial correlation LM test

This test performs the same function as the Durbin-Watson test which is to test for serial correlation or autocorrelation in the model. Both the probability and probability chi-square values must be significant at 10% significance level to prove that there is evidence of serial correlation in the model. Using the result below:

Table 6. Result of Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.431228	Prob. F(2,40)	0.6527
Obs*R-squared	0.970890	Prob. Chi-Square(2)	0.6154

Source: Author's computation using Eviews 9 (2017)

From the result above, both probability and probability chi square values are not significant at 10% significance level; hence there is no serial correlation in the model.

3.6. Variance Inflation Factor (VIF) Test for Multicollinearity

A variance inflation factor (VIF) looks for Multicollinearity in any given model. The rule of thumb for interpreting the variance inflation factor is if the coefficient variance value for all the variables is approximately 1, then there is no Multicollinearity in the model.

If the coefficient variance is approximately between 2 and 5, then all the dependent variables are moderately correlated. Finally, if the coefficient variance is approximately greater than 5, then there is a high level of Multicollinearity among the dependent variables. Examining the result below:

Table 7. Result of Variance Inflation Factor (VIF) Test for Multicollinearity

VARIABLE	Coefficient Variance	Uncentered VIF	Centered VIF
LGDP_PC(-1)	0.000221	36.88376	2.947172
LER	0.07E-05	15.19919	2.128335
LGFCF	0.03E-05	17.60910	4.037979
C	0.009227	17.68298	NA

Source: Author's computation using Eviews 9 (2017)

From the above result, the value of all the coefficient variance is approximately one; hence there is no Multicollinearity in the model.

3.7. Cumulative Cum (CUSUM) and Cumulative Sum Squared (CUSUM-Sq) Test

The CUSUM (cumulative sum) and CUSUM-sq (CUSUM squared) tests are used to test the constancy of the coefficients in a model. Both tests are always in charts and both charts are time-weighted control charts that display the cumulative sums (CUSUMs) of the deviations of each exogenous variable from the endogenous variable.

The rule of thumb states that the wavy line must be in-between the other two lines and must not at any point shoot out between the two lines. The result of both tests is in the appendix section (appendices 2 and 3) and both point to the fact that there is no deviation of the exogenous variables from the endogenous variable.

Conclusion

This study examined how financial deregulation can be utilized as a factor to drive economic development in Nigeria. Literatures relating to both financial deregulation and economic development were examined. Economic development was made a function of lending rate (used to capture financial deregulation) and investment growth (captured by gross fixed capital formation). Data pertaining to the three variables was analyzed using the Autoregressive Distributive Lag (ARDL) econometric technique, and the data span a period of 46 years from 1979 to 2016.

From the results obtained, both financial deregulation and investment growth have a long-term but negative significant impact on economic development.

Recommendations

In view of the above findings that financial deregulation (LER) and investment growth (GFCF) have a negative and long-run impact on economic development (GDP_PC), the following recommendations are made:

- The deregulation process needs to be introduced gradually into the financial system. The sequence of the introduction of the policy was poor in Nigeria. For example, before allowing free entry into the financial system, there ought to have been the introduction of indirect monetary instruments first, then next would be the overhauling of the financial system's regulatory framework, then next would be a gradual relaxation of entry rules into the financial system, and finally would be the removal of interest rate ceilings. In Nigeria's case, the removal of interest and exchange rates ceilings came first, this then depreciated the cost of imported materials, and the high interest rates drove manufacturers out of the financial markets, and speculators then had a field day;

- Government should look into the issue of infrastructure as a method of reducing production cost and increasing production investment. Low cost of production brings low price output and this causes a decrease in general price levels which boosts economic development;
- The government should encourage strong credit support to the private sector to increase investment. This can be done by reviewing credit policies so as to reduce bureaucracy that obstruct access to credit, and also stressing the supervision of the loan portfolio of financial institutions;
- Different financial products and services that would increase and ensure efficient allocation of credit to the private sector and deepen the financial system should be encouraged as this would boost domestic investment.

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References

- [1] Abogan, O.P., Olajide, E., and Oloba, O. 2014. The Impact of Deregulation of the Economy on Nigerian Commercial Banks. *Australian Journal of Business and Management Research*, 3: 12 – 23.
- [2] Adekanye, O.A. 2002. Interest Rate Policy in Nigeria. Comparative analysis, *CBN Bulletin*, 12: 11-13.
- [3] Asamoah, G.N. 2008. The Impact of Financial Sector Reforms on Savings, Investment, and Growth of GDP in Ghana. *International Business and Economic Research Journal*, 7: 73 – 84.
- [4] Ayadi, F.O., Adegbite, O.E., and Ayadi, S.F. 2008. Structural Adjustment, Financial Sector Development and Economic Prosperity in Nigeria. *International Research Journal of Finance and Economics*, 20: 23 – 36.
- [5] Busari, O. Private. 2007. Investment Behaviour & Trade Policy in Nigeria. *African Economic Research Consortium*, 23: 89 - 90.
- [6] Donald, O.I. 2013. Financial Deregulation Bounding to Credit Mobilization in Nigeria. *Journal of Humanities and Social Science*, 5: 23 – 34.
- [7] Donald, O.I., and Adeyele, I.T. 2013. Bank Consolidation and Deregulation Effects on the Level of Competition in the Nigerian Banking Industry. *International Journal of Economic Practices and Theories*, 3: 12 – 20.
- [8] Ehinomen, C., and Afolabi, B. 2015. *Financial Liberalization and Bank Performance in Nigeria: A perspective from the McKinnon-Shaw Hypothesis*. Working Paper Series, No. 1506.
- [9] Iganiga, B.O. 2010. Evaluation of the Nigerian Financial Sector Reforms using Behavioral Models. *Journal of Economics*, 1: 65-75.
- [10] Ikhide, S. 2005. Financial Sector Reforms. *African Economic Research Consortium*, 8: 76 – 89.
- [11] Ikpefan, O.A. 2012. *Issues in Banking and Finance*. Lagos, CIBN Publishers, 436 pp.
- [12] Ikpefan, O.A. 2012. Post-Consolidation Effect of Mergers and Acquisitions on Nigeria Deposit Money Bank. *European Journal of Business and Management*, 4: 1 – 10.
- [13] Ikpefan, O.A., Isibor, A.A., and Okafor, T.C. 2016. Deregulation of Foreign Exchange Market and its Effect on Industrial Produce in Nigeria. *Global Media Journal*, 1: 1 – 7.
- [14] Johnston, R, and Sundararajan, V. (ed.) 1999. *Sequencing Financing Sector Reforms, Country Experiences and Issues*. New York, New York Press. Available at: <https://books.google.ro/books?id=QxTlxDW9TAcC&printsec=frontcover&dq=Sequencing+Financing+Sector+Reforms,+Country+Experiences+and+Issues.+1999&hl=ro&sa=X&ved=0ahUKEwj5sOKDmoXZAhUSZVAKHf6DCK8Q6AEIJjAA#v=onepage&q=Sequencing%20Ofinancing%20Sector%20Reforms%2C%20Country%20Experiences%20and%20Issues.%201999&f=false>

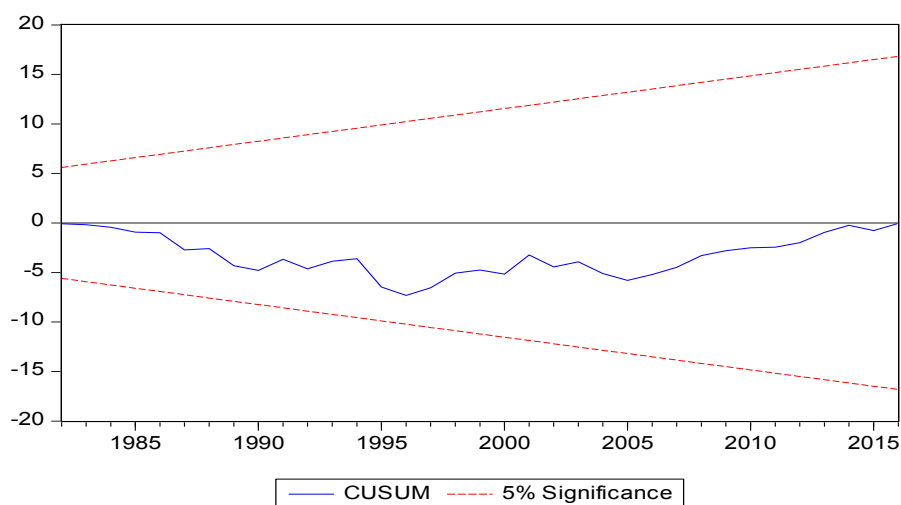
- [15] Kraay, A. 1998. In Search of the Macroeconomic Effects of Capital Account Liberalization. *World Bank Working Paper*, No 3523, Washington DC.
- [16] Krugman, P. 1998. Saving Asia: It's Time to Get Radical. *Fortune*, 7: 74 – 80.
- [17] Laumas, P.S. 1995. Monetization, Financial Liberalization, and Economic Development. *Economic Development and Cultural Change*, 38: 377 – 390.
- [18] McKinnon, R.I. 2010. *Money and Capital in Economic Development*, Washington DC, Brookings Institution press, 184 pp., Available at: https://books.google.ro/books?id=erOVIDIY1jEC&printsec=frontcover&dq=Money+and+Capital+in+Economic+Development+1973&hl=ro&sa=X&ved=0ahUKEwjUq_HbmoXZAhWNJ1AKHRZ5BzAQ6AEIjAA#v=onepage&q=Money%20and%20Capital%20in%20Economic%20Development%201973&f=false
- [19] Ndebbio, J.E.U. 2004. Financial Deepening, Economic Growth and Development: Evidence from Selected SSA Countries. *African Economic and Research Consortium*, 10: 142 – 153.
- [20] Ogbu, O. 2010. *The Global Economic Crisis and Nigeria*. Lagos, El'Demak Publishers.
- [21] Ogunsakin, S. 2013. Financial Liberalization and Economic Growth: Implications for the Conduct of Monetary Policy in Emerging Economies. *Journal of Natural Sciences Research*, 3: 123 – 145.
- [22] Ojo Ade, T. 2008. The Financial Sector and Nigerian's Development Dilemma: Challenge for Vision 2020. *Lagos Journal of Banking, Finance and Economic Issues*, 2: 1 – 16.
- [23] Ojo Ade, T. 2013. Rewiew on the Nigerian Maladapted Financial System: Reforming Tasks and Development Dilemma, *Ife Journal of Humanities and Social Sciences (IJOHUSS)*, 1: 151 – 156.
- [24] Olokoyo, F.O. 2012. The Effect of Bank Deregulation on Bank Performance in Nigeria. *International Journal of Advances in Management and Economics*, 1: 31-36.
- [25] Olomola, A.S. 1997. Financial Deepening and Real Private Investment: Empirical Evidence from Nigeria (1960-96), *NCEMA Journal of Economic Management*, 4: 1 – 13.
- [26] Omankhanlen, A.E. 2012. The Financial Sector Reforms and Their Effect on the Nigerian Economy. *Economy Transdisciplinarity Cognition*, 15: 45 – 57.
- [27] Omole, D.A. and Falokun G.O. 1999. The Impact of Interest Rate Deregulation on Corporate Financing Strategies of Quoted Companies in Nigeria. *African Economic Research Consortium*, 5: 23 – 35.
- [28] Oyowwi, O.D. and Eshanake, S.J. 2013. Financial Openness and Economic Growth in Nigeria: A Vector Error Correction Approach, *African Research Review*, 7: 79 - 92.
- [29] Shaw E.S. 1973. *Financial Deepening and Economic Development*. NY: Oxford University Press, 260 pp.
- [30] Stiglitz, J. 2000. Capital Market Liberalization, Economic Growth, and Instability. *World Development*, 28: 75 – 85.
- [31] Thornton, J. 1990. The Demand for Money in India: a test of McKinnon's Complementarity Hypothesis. *Journal of Savings and Development*, 14: 153-157.

APPENDICES

Appendix 1

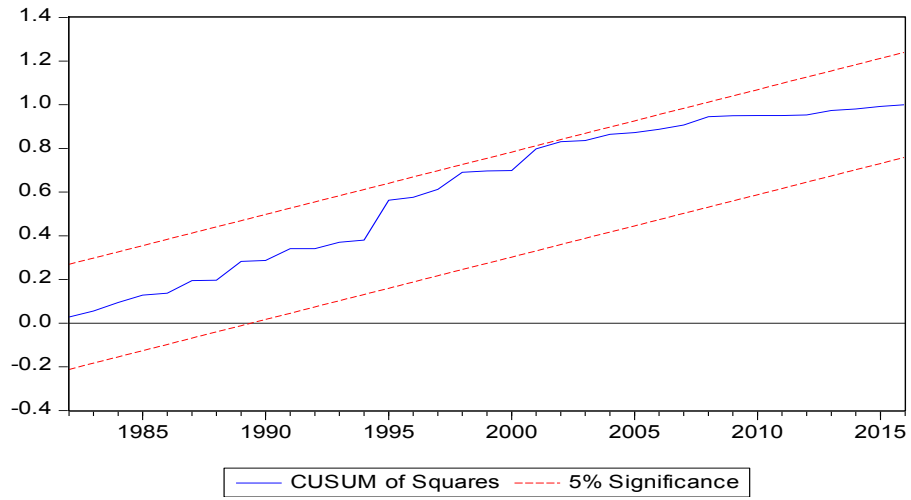
Dependent Variable: LGDP_PC				
Method: ARDL				
Date: 08/10/17 Time: 15:59				
Sample (adjusted): 1971 2016				
Included observations: 46 after adjustments				
Maximum dependent lags: 4 (Automatic selection)				
Model selection method: Akaike info criterion (AIC)				
Dynamic regressors (4 lags, automatic): LER LGFCF				
Fixed regressors: C				
Number of models evaluated: 100				
Selected Model: ARDL(1, 0, 0)				
Note: final equation sample is larger than selection sample				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LGDP_PC(-1)	1.988460	0.014879	66.43330	0.0000
LER	4.018515	0.005355	3.457872	0.0013
LGFCF	-6.005315	0.005500	-2.966312	0.3394
C	0.076095	0.096056	0.792196	0.4327
R-squared	0.996863	Mean dependent var		9.120668
Adjusted R-squared	0.996639	S.D. dependent var		2.672524
S.E. of regression	0.154927	Akaike info criterion		-0.808784
Sum squared resid	1.008099	Schwarz criterion		-0.649772
Log likelihood	22.60204	Hannan-Quinn criter.		-0.749218
F-statistic	4449.549	Durbin-Watson stat		2.178492
Prob(F-statistic)	0.000000			
*Note: p-values and any subsequent tests do not account for model selection				

Appendix 2. CUSUM Test



Source: Author's computation using Eviews 9 (2017)

Appendix 3. CUSUM of Square Test



Source: Author's computation using Eviews 9 (2017)

The Dynamics of Female Entrepreneurs in Fulfilling Their Financial Needs: Demand Side Entrepreneurial Finance Perspective of Small and Medium-sized Enterprises

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Abstract:

This research contributes to the entrepreneurial finance theory from the demand side – where previously it was more emphasized on the supply side – by the way it depicts how an entrepreneur recognizes opportunities, develops ideas, looks for financing, and assembles other resources in order to begin and develop a business. The purpose of this research is to explore how an individual, in beginning a business, assembles resources, including financial capital, as well as constructs funding strength in developing a batik enterprise. This study is conducted by identifying the business environment, alternative funding, as well as how the funding is advantageous in developing a business. A descriptive qualitative research is conducted with case studies to depict the dynamics of female entrepreneurs in starting a business, receiving, using, and developing funds, as well as the environment that covers it. Eight participants were chosen from three different locations that could reflect the coastal batik region condition/variation (Lasem and Pekalongan) and non-coastal batik region condition/variation (Solo and Gemawang), using a purposive sampling method with a type of sampling quota. The data was then analyzed by using a narrative type of descriptive qualitative technique. The research results show that an individual who has thinking power will possess a strong desire to be independent and more developed, so that the individual can take advantage of business opportunities and funding that were previously not known. In addition, funds are beneficial in being able to facilitate entrepreneurs to recognize and utilize opportunities as well as develop their businesses, as a production factor, improve their business scale, so that they can have a successful business cycle. This research produces a proposition in the form of a funding model for small and medium enterprises. In the future, empirical testing is needed, in order that a model generalization can be attained. There are two funding perspectives, from the funding provider (supply) and funding recipient (demand). Up until now, there is no known in-depth research that discusses this aspect.

Keywords: entrepreneurial finance; entrepreneurial mind; start-up business; female entrepreneurs; SMEs

JEL Classification: B54; G40; M13

Introduction

Until the beginning of the 1990s, the topic of entrepreneurial finance (EF) was rarely discussed. Entrepreneurship was even considered as being separate from corporate finance. Several years later, interest surfaced on

researching financial market behavior and financial intermediaries in allocating finances to start-up companies or developing companies, but there are still many issues that have not been explored (Mitter and Kraus 2011). Previous research examined entrepreneurial finance from the supply side, which discussed financiers as the focus of study like formal and informal equity (venture, capitalists, angel investors, corporate venturing, crowdfunding), formal and informal debt like bank debt, borrowing from friends, family members, and separate from other finances (mezzanine) (Fraser, Bhaumik, and Wright 2015, Harrison and Mason 2007). Testing from the supply side is found in how financial sources and financing composition are able to make entrepreneurs assemble resources and innovate to develop their businesses. Meanwhile, testing from the demand side, which is in looking at how the entrepreneur dynamic handles financial needs, searches for and uses the funds has not been explored much, especially for female entrepreneurs.

Several previous research studies have not exposed the different facts between males and females in beginning a business. Female and male entrepreneurs are the same or different with regard to a number of individual, business, and environmental characteristics (Yordanova and Davidkov 2009). The question that arises then is whether there are any differences regarding this as examined from a gender perspective. If considered from various literature resources, females are different from males, so that there is a possibility that there are differences between males and females in starting an enterprise. Gender affects business success (Strielkowski 2012). Bakan (1966) revealed that there are personality differences in males and females in their orientation towards achieving results (agentic) as well as differences in characteristics that are oriented towards service and social activities (communal). Males are characterized as being aggressive, like challenges, as well as firm and independent. Meanwhile, females have a nurturing trait, like to help others, and have a higher level of empathy. Likewise, when female entrepreneurs manage their businesses, they will put more of their souls into the enterprises. Gender stereotype can influence the cognitive aspect and behavior of an individual (Heilman 2001).

There is a gender stereotype in the entrepreneurship intensity. Jobs that are labeled as being more appropriate to be done by men (masculine stereotypes) like becoming entrepreneurs can weaken women's roles in the business world (Gupta, Turban, and Bhawe 2008). Previous findings found that good organizational management is that which applies a management type that is dominated by masculine traits (Brenner, Tomkiewicz, and Schein 1989, Martell *et al.* 1998, Powell and Butterfield 1989, Schein 1973).

The business world can be analogous as an organization that is full of challenges, has various risks, and demands quick responses when faced with numerous opportunities. This kind of an environmental situation is identified as being more appropriate for men (Marlow and Patton 2005). Nevertheless, the empirical condition that was discovered in the Lasem and Gemawang batik villages actually reveals that many women have become entrepreneurs. There are gender and cultural background differences that can provide color and dynamics in conducting a business (Lerner and Malach-Pines 2011). These aspects influence how an entrepreneur analyzes a company's needs until eventually making a business decision (Tinkler *et al.* 2015). This condition is interesting to be researched further to see how women begin and develop their businesses. Besides that, in making a business come to fruition, it is integrated with various business decisions, such as funding and investment decisions. Different environments can influence various company decisions and activities, so that a company's work performance will be different as well. Female entrepreneurs tend to be more prudential in their funding activities and uses (Garwe and Fatoki 2012, Karanja, Mwangi, and Nyakarimi 2014). Various previous research shows that the family factor, especially parents, has a dominant role in determining the speed of business successors. The majority of female entrepreneurs in Turkey do not understand business risks, financial planning, and investment decisions (Çaliyurt 2011). They place more trust in business advice from their families instead of consultants/business experts, because they have previous business experience.

In the financing aspect, there are financing variations in terms of gender (Garwe and Fatoki 2012, Tinkler *et al.* 2015). There are psychological differences between men and women that affect access to funds through debt. This can be explained with the discouraged borrower theory (Kon and Storey 2003). Women are not too active and not as brave to take on debt compared with men. Actually, it can be said that female entrepreneurs are the type who are credible borrowers. However, they are reluctant to make credit requests because they are worried that they will be rejected by creditors. This fear of rejection can be caused by a perception towards themselves that they

have insufficient business skills as well as a low level of education. Furthermore Jappelli (1990) described several reasons why an individual does not go through with one's desire to have debt, including the number of family members, race, kind of job, amount of credit ceiling, size of installments, insufficient assets and income, age, and no previous debt history. However, it is not clear whether or not female batik entrepreneurs in Central Java also have the same condition as mentioned in the literature.

Based on the above explanation, there are still variations or not enough information regarding how female entrepreneurs start their businesses, how they compile resources and financial capital, and how financing plays a role in developing their businesses. It is interesting to explore how they begin their businesses, starting from the initial intention to become an entrepreneur until how an individual considers and takes advantage of financial capital to start a business. Is financial capital still a primary factor in beginning a business or are other factors involved in triggering an entrepreneur to start a business? In a conventional viewpoint, what always becomes a constraint for someone not to be interested in having an enterprise is financial problems. However, is this really the true condition? Or does a person's motivation to start a business come from within, such as a desire to advance and improve one's fate? Then how strong is that funding to develop a batik enterprise? The purpose of this research is to describe how an individual can start a company, assemble resources including financial capital, as well as construct financial power to develop a batik business through identifying the business environment, alternative funding, how to take advantage of the funds, as well as the effects for developing an enterprise.

1. Literature Review

1.1. Capital Structure Theory

There are two primary funding theories, which are the balancing theories and the pecking order theory. It began with the appearance of a traditional approach theory, which states that a model structure influences the company value. This traditional approach considers that changes in the financial capital structure on the equity or debt can be adjusted, so that the company value becomes optimal. Next, there was the theoretical approach by Modigliani and Miller (1958), who were opposed to the traditional approach. The MM proposition states that in a perfect financial capital market condition and without taxes, then funding decisions and whether they will use debt or their own financial capital are no longer relevant / do not have an effect on the company owner's prosperity.

In 1963, Modigliani and Miller adjusted their previous opinion which states that the financial capital structure does not have an effect on the company value by adding a tax element. MM explained that a company with debt will have higher value than a company which does not have any debt. This is due to the advantages of reducing the tax burden which is imposed on company revenue. This increase in company value is bigger when the company adds to its debt ratio. As a result, the clean revenue, which is a stockholder's right, becomes bigger, with the assumption of *ceteris paribus*.

This financial capital structural theory experienced development. Kraus and Litzenberger (1973) formulated a hypothesis about the balance between the advantages of tax savings and bankruptcy costs that arise from debt. In their opinion, the financial capital structure needs to be changed, so that it creates balance between the advantages obtained from being in debt with the costs that surface if there is additional debt. A company has big profit if it uses more debt rather than its own financial capital, because the company has a small risk of bankruptcy. This opinion is supported by Miller (1977), who devised the static trade-off theory. According to Miller, an increase in the debt ratio is only able to increase the company value until a certain level. Adding debt will actually reduce the company value, because there are agency fees and bankruptcy fees.

The next theory is the pecking order theory, which uses assumptions that are very different with the previous balancing theories. This leveled funding theory discusses a company's preference in accessing alternative funding resources (Myers and Majluf 1984). This theory also explains that there is no optimal debt to equity ratio for a company.

1.2. Behavioral Finance Theory

In exploring previous studies about funding for micro, small, and medium enterprises (SMEs), it was found that there is an irrationality symptom of entrepreneurs in funding decision making. According to a psychological

viewpoint, humans have emotions besides rational, where both of them can influence humans short-term or long-term. There are times where emotions might be more dominant in a person's reaction towards a piece of information, and at a different time being rational is more dominant in forming someone's reaction.

The kinds of bias in entrepreneurship have been summarized by (Zhang and Cueto 2015), which include overconfidence, over optimism, self-serving attribution, illusion of control, the law of small numbers, similarity, availability, representativeness, status quo, planning fallacy, and commitment escalation. In looking at previous studies about funding, it was also discovered that there is an irrationality symptom in managers or entrepreneurs in choosing funding resources (Adomako, Danso, and Ofori Damoah 2016, Chong 2008, Gombola and Marciukaityte 2007, Nguyen Anh and Toshitsugu 2014, Tomak 2013).

Gombola and Marciukaityte (2007), who researched companies that were classified as having high growth, found that over optimism and overconfidence in managers influence funding choices in the form of debt compared to their own financial capital. Through debt, companies obtain advantages, such as a high accrual discretion compared to funding in the form of their own financial capital (Marciukaityte and Szewczyk 2011). When a company wants to invest, it does not need to use its own cash to fund a certain investment, because it can use an external funding source. Bias in funding was also researched as in Estwick (2013), where an entrepreneur has a funding preference in using one's own financial capital, because the individual wants to maintain control of the company, in order that it can be passed down to the owner's grandchildren. This reveals that there is high interdependency related with external funding.

1.3. Entrepreneurial Finance (EF) Theory

Original research does not explicitly mention the term EF, but King and Levine (1993) have already tried to connect the relationship between funding and entrepreneurship as well as see its effects for economic growth. Next, the EF concept is also referred to in research Ennew and Binks (1995), who discussed the connection between banks and businesses. Several early research connected EF with funding for small and medium enterprises during the start-up stage (Bergset 2015, Markova and Petkovska-MirčEvska 2010, Nofsinger and Wang 2011, Oranburg 2016, Paré, Rédis, and Sahut 2009, Rehm and Xavier 2016) or early stage (Kim and Wagman 2016) as well as young firms (Koch *et al.* 2010, Takahashi 2015). There are also those who defined EF in general as a funding activity for small and medium enterprises (SME) (Rocca, Rocca, and Cariola 2011). Moreover, a study about EF explained the relationship between fund providers and entrepreneurs in providing alternative funding to increase the company work performance that comes from: venture financial capital and angel investors (Mitter and Kraus 2011); the bank, venture financial capital, angel investors, and crowdfunding (Chemmanur and Fulghieri 2014); debt, asset-based funding, crowdfunding, a hybrid instrument, as well as its own financial capital/equity (OECD 2015).

1.4. Entrepreneurship Theory

Having a business until it is able to grow and develop is inseparable from an individual's initial idea/concept to start a business. This idea can surface when an individual sees a business opportunity that is perceived as having good prospects and is able to produce profit in the future. An early idea to start a business will eventually be transformed through the creation of an organization to create that opportunity. So, the entrepreneurship process involves all functions, activities, and actions that are related with a perception towards opportunity, and in creating an organization to bring that opportunity into realization (Bygrave and Hofer 1991).

According to Maine, Soh, and Dos Santos (2015), the creativity process of a person can be done through a process of effectuation and causation. Effectuation places more emphasis on selecting various business opportunities that can be executed by an individual based on the available resources (logic of control). Meanwhile, causation emphasizes the logic of prediction. This means that an entrepreneur will first provide funds, technology, a workforce, raw materials, and other production factors that will be needed to start up a business (Sarasvathy 2001).

Shane, Locke, and Collins (2003) stated that the ability to assemble resources is greatly influenced by the entrepreneurial motivation and cognitive factor. Individuals who possess a life vision, a need for achievement, a desire for independence supported by knowledge, expertise, and capability – with the support of a conducive

environment like entrepreneurial opportunity and environmental condition – will be able to recognize opportunities, develop ideas, and follow through on those ideas.

1.5. Gender, Entrepreneurship and Financing Decision

Several previous research studies have not exposed the different facts between males and females in beginning a business. The question that arises then is whether there are any differences regarding this as examined from a gender perspective. If considered from various literature resources, females are different from males, so that there is a possibility that there are differences between males and females in starting an enterprise. Bakan (1966) revealed that there are personality differences in males and females in their orientation towards achieving results (agentic) as well as differences in characteristics that are oriented towards service and social activities (communal). Males are characterized as being aggressive, like challenges, as well as firm and independent. Meanwhile, females have a nurturing trait, like to help others, and have a higher level of empathy. Likewise, when female entrepreneurs manage their businesses, they will put more of their souls into the enterprises. Gender stereotype can influence the cognitive aspect and behavior of an individual (Heilman 2001). There is a gender stereotype in the entrepreneurship intensity that tends to be more authoritative in males. Jobs that are labeled as being more appropriate to be done by men (masculine stereotypes) like becoming entrepreneurs can weaken women's roles in the business world (Gupta, Turban, and Bhawe 2008). Previous findings found that good organizational management is that which applies a management type that is dominated by masculine traits (Brenner, Tomkiewicz, and Schein 1989, Martell *et al.* 1998, Powell and Butterfield 1989, Schein 1973).

There are also variations in the financing. If someone does not have obstacles in acquiring funds, then they will not have as many difficulties in developing their own business. This condition is reinforced with the need for growth and developments that are perceived by the entrepreneur, which is able to influence them to have a more open attitude. An entrepreneur's open attitude will lead to external financing behavior, for instance, access to bank debt (Berggren, Olofsson, and Silver 2000). Opposite that, if someone has difficulty in obtaining financial capital, they will have little incentive to become an entrepreneur. This is generally experienced by small scale entrepreneurs, where the opportunity to obtain funds is lower compared to bigger companies (Mambula 2002). Moreover, there are financing variations in terms of gender (Garwe and Fatoki 2012, Tinkler *et al.* 2015). There are psychological differences between men and women that affect access to funds through debt. This can be explained with the discouraged borrower theory (Kon and Storey 2003). Women are not too active and not as brave to take on debt compared with men. Actually, it can be said that female entrepreneurs are the type who are credible borrowers. However, they are reluctant to make credit requests because they are worried that they will be rejected by creditors. This fear of rejection can be caused by a perception towards themselves that they have insufficient business skills as well as a low level of education. Furthermore, Jappelli (1990) described several reasons why an individual does not go through with one's desire to have debt, including the number of family members, race, kind of job, amount of credit ceiling, size of installments, insufficient assets and income, age, and no previous debt history.

2. Methodology

In order to respond to the research problem, this research uses a descriptive qualitative study with a case study method. Through this kind of research, it will depict the dynamics of female entrepreneurs in obtaining, using, and developing the funds as well as the environment that it covers. Participants in this research were taken from four regions considered as batik producers like Pekalongan, Lasem, Solo, and Gemawang, Central Java Province. This province was chosen because all the regencies/cities are batik industries. These four locations were picked due to the large number of batik small and medium enterprises found here, whether they have already exported or not. In addition, these regions have their own unique aspects. Solo was chosen because its batik industry is influenced by the Solo Palace (special); Lasem was picked because its batik is a mixture of Javanese culture and Chinese culture (mixture); Pekalongan was selected since its batik is a mixture of more complex cultures, including Chinese, Malaysian, Japanese, Dutch, and Arab. Besides that, Pekalongan batik has developed to become a batik industry that is not only handmade and printed, but also it is a printing industry (assortment). Then Gemawang was chosen

because it is a new batik area that does not have a special cultural characteristic. Related with this, 8 participants were chosen from 4 different locations, who were considered as being able to reflect the conditions/variations of shoreline and non-shoreline batik regions

The stage in choosing the participants consisted of first determining the regency locations. Related with this, four regencies were selected which have batik special characteristics in Central Java, which were Pekalongan, Lasem, Semarang, and Solo. Second, after deciding on the regencies, the sub-districts that had batik small and medium enterprises were chosen. Third, the next stage after determining the sub-district locations was to choose the villages/ village districts where batik small and medium enterprises were found. After the villages/ village districts were selected, with the assistance of the Cooperative and Small and Medium Enterprise Agency, the village officials, the heads of the associations in the four regencies, and other key informants, the names of the participants were chosen with each regency having 2 entrepreneurs. The participants were selected with a purposive sampling technique that used judgment sampling. The participants were small and medium enterprise owners, entrepreneurs, or managers who had a deep understanding of the businesses they were involved in as well as how the businesses were financed.

This research was planned to be conducted in three stages of data gathering, processing, as well as analysis and synthesis. The data collection was done with an observation technique, in-depth interviews, discussion, communication, and interactions through social media. Arranging the transcripts, reduction, grouping, themes, and patterns were part of the data processing stage, before conducting an analysis and synthesis by using a union analysis by searching for similarities and differences from the information collected.

The Kvale working framework (Kvale 1996) was adopted for this research. The setting for this analysis started from the topic about how they began their enterprises. In this stage, the participants were asked to tell about how they got started with their businesses, beginning with why they started the business, where the idea to begin the business came from, what was in their minds when they began the business; starting from finding opportunities, developing the opportunities, and assembling the resources, including the funds. The second setting was how the entrepreneurs obtained and used the funds. The obstacles faced and how they overcame them were also examined. The third setting was how they reached their work performance, especially exploring how they obtained funds for the next cycle.

Before being analyzed, a data validity test was conducted with different methods (triangulation). There were different interview techniques, observations, sources, and times utilized. After the data underwent a reduction process, coding, grouping, classification, theme and pattern arrangement, the data was then analyzed by using a descriptive qualitative technique, by narrating the field data and describing in-depth about the funding strengths for female batik entrepreneurs.

3. Findings and Discussion

3.1. Funds as an Antecedent

When funds become a stimulus to be able to conduct a business, then an entrepreneur will engage in various funding patterns. Every phase that occurs in the lifecycle of a company will determine the fund fulfillment strategies, availability of financial resources, as well as financial costs (Rocca, Rocca, and Cariola 2011). Although they have similarities, no funding pattern is exactly the same in the small and medium enterprises (SME) researched. These funding pattern differences are related with a dynamic when pioneering female entrepreneur businesses, the condition of the company (the ability to produce cash and potential for growth) as well as characteristic (nature) diversity of the conditions of each SME region.

In the early stage of starting a business, most of the respondents used their own financial capital that they obtained from their salaries as employees, holiday bonus money, and personal funds that they collected over time. They just started to access bank credit when they felt their funds were insufficient to cover the business needs. When their businesses started to develop, they needed additional funds to meet their work capital needs or investments.

“After getting married at a very young age and having children, I was determined to fulfill my life needs for myself and my children. Then I worked as an employee in a batik enterprise. After receiving my salary and holiday bonus, I resigned from my job and started my own business. I was determined to become independent, so that I could have a better life. With my salary, I started a batik business with the skills I learned from my mom. Then I felt that the money I had saved wasn't sufficient, so I borrowed IDR 5 million from the bank to add to my financial capital. After running the business for 2 years, I saw a good business opportunity. Therefore, I borrowed IDR 20 million more, so that I could develop my company and take advantage of the available opportunities.” (Mrs. Nurjanah, 27 years old, batik entrepreneur of Trisula Lasem)

“I started the business by using funds from my husband and parents. Then after running the business for 2 years, I then borrowed KUR funds from BRI Bank in the amount of IDR 20 million. From these funds, I could buy many raw materials and I could produce and sell more batik.” (Mrs. Muflikah, 33 years old, handmade batik entrepreneur of Lasem).

Early capital that is used to start a business, whether its own financial capital or debt, can be considered as entrepreneurial funds. The presence of these funds is considered as still being insufficient to acquire bigger business opportunities. Then a need arises to increase the funding amount, in order that the production scale increases. Besides that, the early capital can also facilitate the entrepreneur to learn how to enter the real business (learning process to gain entry into the business).

Various literature reveals that funds are a determinant factor of a business. Moreover, in the Cobb Douglas classic production theory, it is mentioned that financial capital is a production factor along with land and the workforce. This means that capital is positioned as the beginning and becomes the antecedent of a business. This viewpoint is followed by a majority of individuals, and even to start a business there should be capital or money first, so that if there is no money for capital, they will not begin the business. In this context, financial capital has a strength in facilitating someone to begin a business and develop it (Cook 2001, Denis 2004, Markova and Petkovska-MirčEvska 2010). By having money for capital, they will feel “able” and willing to start a business. Then they will be able to see business prospects and opportunities, measure the ideal business conditions and sufficient production capacity, and even assemble other resources for company development, including compiling financial resources in the next cyclical stage. Funds become crucial elements. Moreover, when small and medium enterprises (SME) find difficulties in accessing funding, it can have a negative effect towards the company growth and development (Levy 1993).

The entrepreneurs who were respondents used personal funds (their own capital) as initial capital to begin their businesses. Their own capital was actually insufficient to fulfill the business capital needs when the businesses started to develop. The alternative funding available was in the form of bank credit. Besides providing advantages in providing funds, credit from the bank – compared with other creditors – the bank provides a special service, in the form of supervision of the companies it funds. With the funds, oftentimes small and medium enterprises (SME) increase their work performance continuously, because entrepreneurs feel they have sufficient financial needs as well as are assisted in controlling their businesses. Meanwhile, other non-bank financial institutions can also play a role in accommodating business funding needs but with a lower credit quality (Denis 2004).

After their businesses ran smoothly with the initial funds, then the fund providers were interested to provide funds and additional funds for their businesses. There were two reactions that occurred towards female entrepreneurs. The first was that the female entrepreneurs were hesitant to take bank credit in a large amount (above IDR. 20 million), although actually the bank offered credit with a ceiling of up to IDR. 100 million. This offer appeared when a creditor considered a business' work performance to be good and without any constraints in paying the loan. Several respondents did not want to use bank debt or cooperative debt, because among others, there was a perception that bank debt was not proper because it contained usury, could burden the companies because it had a responsibility to pay interest, as well as had a desire to be independent in business financing (self-financing) in the future.

On another side, bank debt is perceived positively for a number of companies because there is a belief that they are trusted by the bank to receive additional capital, so that they have more enthusiasm to operate the businesses (Oranburg 2016). Besides that, funds from debt can be used to increase investments or add to work

capital. Having an increase in business capacity will stimulate a production increase and the ability to fulfill market needs compared to their competitors. These market responses are reflected from the sales increases produced. Therefore, it can be said that using debt can cause a leverage effect that facilitates a company to have competitive superiority (Campello 2006).

The research results show that small and medium enterprise entrepreneurs started their businesses with their own financial capital. This finding is not much different from that in research carried out by Koch *et al.* (2010), who stated that the financial capital funds for their start-up businesses depended on their own financial capital initially, while debt could be obtained if they still lacked funds. Wing (2010) discovered that more than 90% of new businesses used informal financing sources, and more than 60% of the start-up capital came from the company founders. Other financing sources could be in the form of financial support from family members and social networks (Basu and Parker 2001, Bates 1997), bootstrapping (Wing 2010), angel investors (Mitter and Kraus 2011), or crowdfunding (Chemmanur and Fulghieri 2014). However, this research was different not because the funds were already available, but also because of the limitations of small and medium enterprise entrepreneurs related to asymmetric information, where entrepreneurs or financiers did not know much about the condition of the entrepreneurs and their companies as well as their business capacity, which could not facilitate external financiers in loaning funds. Barnea, Haugen, and Senbet (1980) revealed that small and medium enterprises tended to have higher asymmetric information costs than companies which had already gone public related with the regulation to publish financial reports. There were no obligations for small and medium enterprises to publish financial reports, whereas investors and creditors needed that information. Several small and medium enterprises had arranged their company financial reports, but the quality was inferior to that of large companies. Managers or owners of small and medium enterprises were not obligated to show transparency regarding their financial factual conditions. This ultimately increased the asymmetric information costs.

If there were no asymmetric information and business capacity issues, actually a company could use its own financial capital or debt. Oranburg (2016) explained that company financing in the start-up stage could use its own financial capital or debt. Financing from debt is considered as being beneficial for start-up companies, because creditors are not involved in company management, so that entrepreneurs can obtain complete control over their company advancements; having an obligation to pay interest routinely and settle debts on time makes entrepreneurs more disciplined in running their businesses. When the entrepreneurs have credibility, it can facilitate them in borrowing again in the future. Nevertheless, access to debt can become an obstacle for start-up companies, because in general companies have cash flow limitations which will make it difficult for them to repay their obligations every month. In this stage, usually entrepreneurs prefer to use their cash flow to reinvest rather than pay installments. If this happens, then a risk of default will surface. The worst effect is it will close the opportunity for the entrepreneur to request more credit in the future.

In a financial theory context, the higher the debt is, it will increase the risk for bankruptcy. According to Miller (1977), an increase in the debt ratio is only able to increase the company value until a certain level (optimal financial capital structure point). After that, if the debt continues to increase, then the company value will go down. On one side, increasing the debt (measured from the debt to equity ratio or DER) will add to the company value, because there are tax savings. However, on another side, it can result in bankruptcy costs. When the debt ratio is still small, then the advantages of tax savings will still outweigh the consequences of bankruptcy risks, so that it can still improve the company value. Despite this, adding to the debt will actually reduce the company value because it increases the bankruptcy risk. Besides that, a company will also bear agency fees, because increasing the debt has the potential to increase conflict between the owner and creditor resulting from the potential loss that is borne by the creditor that is higher (for instance, underinvestment risks and/or asset replacement) (Jensen and Meckling 1976). This agency cost can obstruct improving the company value, so that it makes the company unable to continue to add to its debt portion. It is clear that after a while, the advantages of having debt are unable to cover for the bankruptcy or agency costs, so that the company value curve will start to decline.

However, from the entrepreneurship theory, as long as the funds can still increase the company's capacity, whether it is a company that is owned directly or managed by someone else, a company which is still one line or a different line, an increase in debt will actually develop the company when the entrepreneur has entrepreneurial and

management competency. Therefore, when looking at debt, it is necessary to look at it from sides, whether it is from a behavioral financial side or an entrepreneurial side. Behavioral and entrepreneurial finance as well as the resource-based entrepreneurship theory (RBET) are able to explain this. From the demand side, an entrepreneur who is entrepreneurial oriented will be able to recognize opportunities, develop ideas, and assemble available resources, so that additional funds from debt will actually increase entrepreneurial motivation to use the funds in order to expand the business. From the RBET theory side, an entrepreneur who has special (idiosyncratic) resources and heuristic resources will consider additional finances as an opportunity to develop ideas and assemble resources, so that it can produce higher company performance (Alvarez and Busenitz 2001, Brown, Davidsson, and Wiklund 2001).

There is a strong connection between entrepreneurship orientation with entrepreneurial ability in searching for funds, developing the business, or even towards the company results. Glancey, Greig, and Pettigrew (1998) formulated that entrepreneurial orientation will influence managerial practices, which will ultimately affect the business performance. In other words, an individual who has high entrepreneurship that is marked by wide knowledge and experiences, a strong character, technical competence, financial competence, and marketing ability will facilitate that individual in making strategic decisions.

Every entrepreneur can have different levels of entrepreneurial orientation. However, essentially this aspect measures a person's basic desire to strive for new opportunities in running a company. Stam (2007) stated that in general, an entrepreneur who has high entrepreneurial orientation has a greater need to build a business network in the industry. This has an effect on the increase in resource needs compared with more conservative entrepreneurs to reach optimal business performance. In the context of financing small and medium enterprises, Mohammed, Umar, and Nzelibe (2016) stated that a company which tends to be entrepreneurial orientated will strive to increase its funding access by having connections with financiers or other entrepreneurs, which will eventually result in an increase in company performance.

Based on the behavior finance theory, an entrepreneur who has an ability and willingness to obtain and use funds can produce higher company performance compared with other entrepreneurs. This means that entrepreneurs experience positive cognition bias. Cognition bias in financing decision making, which consists of planning fallacy, overconfidence, and optimism in viewing the company, can influence an entrepreneur in obtaining funds and using the funds to improve the company performance (Adomdza, Åstebro, and Yong 2016). An entrepreneur who has entrepreneurial orientation usually experiences positive cognition bias in acquiring funds and using the funds for one's business (McMahon 2003). This means that an entrepreneur who is willing to take risks, be innovative, and be proactive will be able to look for company funds and add to the financial capital, in order to produce new materials, methods, products, markets, and organizations through a creative-innovative process and utilize the company results to increase the company growth and win over the competition.

3.2. Funds as a Consequence

The second viewpoint on female entrepreneurs is that they consider financial capital as a consequence of a business. To operate a business, it will certainly take financial capital. However, capital is not the beginning, but it can be seen as a consequence of what should be done. They consider the business first. Then they think about what is needed to run the business. They usually start it from a hobby, just trying it out, following their parents, joining their friends, going along with neighbours, or taking a course that lets them know about the batik business. They start a business from being used to the batik environment, enjoy it, learn about it, are interested in it, understand it, and master the batik business. When they start to know about it, then they begin their businesses on a small scale. However, there is also an empirical fact that shows that a person tries because he/she has a need and determination to improve one's life. They do not have expertise or money as capital. They usually work in cooperation with others or with people who have competencies in making batik and/or have business capital. Afterwards, they start their businesses from a small scale.

"I chose the batik business because I have enjoyed doing batik as a hobby since I was still in high school. At the time I was in high school, there was a batik making class in my village. Then in 2010, I started to make my

own batik and I posted the results on Facebook. There are also some that I gave to people to replace the cost of making them.” (Miss Umi, 26 years old, batik entrepreneur of Nila Gemawang)

“At first, it started from my hobby to do batik. Then it was turned into a business continuously. There were no special funds provided for it. When I started the business, I used personal funds in the amount of IDR. 2 million to buy batik instruments (pan, bucket, stove, etc.).” (Miss Umi, 26 years old, batik entrepreneur of Nila Gemawang)

This small scale business facilitates them to improve in terms of their next desire. They have a need for achievement to run a batik business with a higher scale and wider scope after starting from a small scale and experimenting (Keats and Bracker 1988, Drucker 1964). There is trust in themselves that they can carry out the businesses. They already have an internal locus of control in conducting their businesses (Boone, de Brabander, and Hellemans 2000, Van Gelderen, Kautonen, and Fink 2015, Shane, Locke, and Collins 2003)

At this level, they have already started to think about the business needs, including the financial capital that will be used for the businesses. They have already started to want and be able to calculate the needs and risks that may surface. They already have bravery to try on a larger scale, including the consequences that could happen. To prepare to have a bigger business, they start to think about having cooperation with various parties, including fund providers to make their plans come to fruition. The ability to assemble resources starts to surface, including related to searching for bigger funds.

When they need funds, they will then start to look for funds, whether from their own capital or through debt. Capital itself usually comes from savings, family, friends, other people (angel investors), or non-financial institutions like the Education Agency. Through education programs and non-formal training, they provide batik training that is then used to run a business, and given a stimulus of IDR 10 million in funds. There are those who borrow from the bank to set-up their businesses with affordable interest for them.

In certain conditions, when a business starts to develop, the fund provider who offers credit to the batik entrepreneur may provide a ceiling up to IDR. 100 million. This means that a business which has been started and conducted can attract funds, which are a consequence of the business prospects. There was a business funded by an angel investor (someone who had a business funded with a system of sharing distribution results). However, that individual was rejected because the person was considered as feeling burdened, keeping in mind that the batik process takes a long time and the sales are uncertain. Meanwhile, another person was also offered by an individual to fund the business. But that person was rejected also, with the reason that the person felt burdened by using funds from another individual. The group that is included in this viewpoint, it seems that money is a consequence of a business. If they do not yet need it, they do not want to take on debt.

3.3. The Power of Finance

There is already much understanding about the role of money in a business, but there is not much insight into the power of finance. Using a theory of request analogy, the power of finance can be depicted in developing a business. When one has enough financial capital and debt with a low interest level, the financial constraints and budget line in the theory of request will shift to the right. This means that the financial capital will be bigger with the presence of additional funds that enter the company. With an increasing financial capacity, innovation as an entrepreneurial result will increase also to overcome market problems, production difficulties, efficiency obstacles, and productivity issues.

“If you only have IDR. 5 million, it seems it is enough to start. Oh, there is great potential in the batik business. To be able to take advantage of the opportunities, a business has to be expanded. To expand it, you have to add to the financial capital by borrowing from the bank (KUR).” (Mrs. Nurjanah, 27 years old, batik entrepreneur of Trisula Lasem)

In an entrepreneurial theoretical context, with the availability of funding, a need for achievement, independence, creativity, and innovation will increase. They will also be brave to try to develop their business ideas and implement them to solve their business problems. Based on this explanation, it seems funding has a power in increasing someone’s entrepreneurship.

Through a continuous cycle and learning process, entrepreneurship will increase, so that it facilitates someone to innovate again at a higher business cycle. Over time, the production and sales will increase, there will

be more consumers, there will be additional profit, and finally, the business work performance will increase. At first, the products will be limited; over time, the products will increase. The market will initially be small and limited; then it will increase and expand. There will be product and market development; the business cycle will grow. It begins with a start-up stage. By having funding, the business cycle will develop to become a growth stage and head towards a maturity stage. This means that besides increasing entrepreneurship, funding can increase the business cycle from the entrepreneurial stage towards the growth and maturity stage. In the theory of financing lifecycle, every business cycle has different finance structures. Funding decisions in the following business cycle are influenced by funding decision results in the previous business cycle. There are funding decision influences from one cycle to the next cycle. However, this paper mentions that funding has a power in adding to the growth of a business cycle (Frielinghaus, Mostert, and Firer 2005).

By funding, a production factor can be bought, whether it is supplemental raw materials, the ability to hire workers, or utilizing technology to develop a business. Related to this, funds have a power in providing all production factors, conducting the production process, and delivering products to the consumers. A production process can run smoothly according to a schedule and does not cause idle capacity. This means that funds have a strength as working capital. The proper working capital management will support the growth and sustainability of a small business (Kargar and Blumenthal 1994). In this context, it can show that funds have a power as working capital to support business operations.

"In 2013, I took a credit of IDR. 5 million from KUR BRI (credit for public business from BRI bank) to purchase raw materials and pay for the workforce. The guarantee was only the BPKB (evidence of tax motor vehicles) because I did not have a SIUP (commerce business permit) yet. The time period was 1 year with installments of IDR. 480 thousand/month. The daily wages ranged from IDR. 20-30 thousand, depending on the workers' abilities. The wholesale wages ranged from IDR. 50-75 thousand, depending on the level of difficulty of the motif. The wages were only given after the goods were completed. Then in 2014, I took credit again in the amount of IDR. 10 million to make a special batik work room. The funding source was from BRI Bank KUR, with a 1-year period and installments of IDR. 898 thousand/month." (Miss Umi, 27 years old, batik entrepreneur of Gemawang)

Funding also has a strength in expanding the business scale, especially funds that originate from debt. When an entrepreneur receives funds, the production capacity can be bigger than before. With a greater capacity, they need more raw materials and other production factors. At one point, purchasing raw materials in a large amount will usually receive cheaper prices. With the assumption that nothing changes, these low prices can cause production prices to be cheaper, prices will become cheaper, the market segment will increase, and finally the business competitiveness will increase. Funding moderates the relationship between the entrepreneurial orientation and competitive advantage of small and medium enterprises (Zeebaree and Siron 2017). This statement reveals that funding has a power as a moderator in increasing competitiveness. Related to this, funding has the power to increase competition.

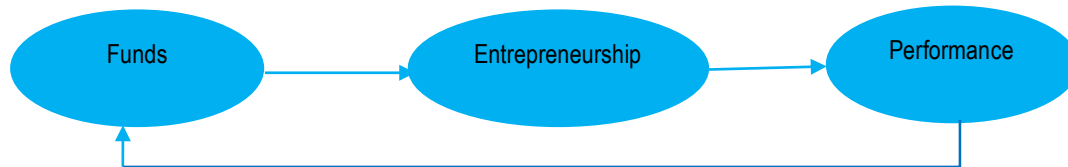
In an opportunity based entrepreneurship theory context, increasing funds that come from internal capital or external capital will be a source of change that can cause business opportunities. Based on this theory, the main component that needs to be considered in business activities, included in accessing resources, is the locus of change, the source of opportunity, and the initiator of change (Eckhardt and Shane 2003). There are various opportunity sources, such as those caused by asymmetric information between market actors, imbalances between requests and offers, as well as new shocks in the market and additional funds. These additional funds will be able to increase the entrepreneurial capacity in searching for opportunities, developing ideas, and assembling resources (Brown, Davidsson, and Wiklund 2001, Alvarez and Busenitz 2001). However, this still did not specifically cover the role of financing; it still discussed in general terms about unique and heterogeneous resources. From the research results, it can be concluded that by having additional funds, small and medium company entrepreneurs will have more energy, possess an additional need for achievement, and increase their business expansions, starting from adding raw materials, adding supporting materials, developing new designs, increasing production, and adding new markets. This means that funds can increase entrepreneurship and company performance.

Based on the empirical findings, a synthesis can be composed that funds can affect an entrepreneurship. Funds can spur and develop a business. On another side, when an entrepreneur has an entrepreneurship, it can

be developed to become productive. This productive company can make financier interested in lending and/or investing their capital.

In short, it can be synthesized that funds can influence an enterprise, an enterprise can produce productivity, and productivity can draw in more funds. This is the funding cycle. An entrepreneur can start from anywhere, whether it is from the funds or from the entrepreneurship. This cycle is depicted in Figure 1 below.

Figure 1. Relationship between funds, entrepreneurship, and performance



Source: Research synthesis

From Figure 1 it appears that funds can affect performance with mediation of entrepreneurship. In addition, entrepreneurs who have entrepreneurial and able to produce the performance, could generate funds from its equity and funds from external parties. These results answer the research carried out by previous researchers that is why the funding of debt (Belwal, Tamiru, and Singh 2012) and the equity (McMahon 2007, Ortiz-Walters and Gius 2012) does not affect the performance of the business. We propose that the funds will affect the performance of the venture at a time when the relationship is mediated by entrepreneurship.

Conclusion

Previous research showed that funds or what is often mentioned as capital seems to be a production factor (Kargar and Blumenthal 1994, Denis 2004, Cook 2001, Markova and Petkovska-MirČEvska 2010, Sarasvathy 2001). From this research, it reveals that funds have an extraordinary power in fostering and increasing a business to become bigger, more advanced, and expansive. Funds have a power in facilitating an entrepreneur to recognize and take advantage of opportunities as well as develop one's business. Besides that, an individual who has a strong desire to be independent and more developed can capture funding opportunities that were previously unseen.

Whether a funding role is great or not in a business greatly depends on various aspects like the business environment, background, as well as entrepreneur's characteristics, the business traits, and funding sources. A very competitive business environment, much competition, business culture, and the proper setting make an entrepreneur not just look for funds, facilitate available funds, and then it will be responded by the entrepreneur by taking advantage of making the funds develop the business. An entrepreneur's background and characteristics, such as parents, society, desire to be successful and advance, bravery, unending desire to succeed, independent-free to create, and having a life vision all play a great role in triggering funds to become an important production factor in a business. In this case, female entrepreneurs have entrepreneurial traits such as tenacity, an internal locus of control, a life vision, and a need for achievement (Brockhaus and Howtz 1982, McClelland 1961, Rotter 1966, Shane, Locke, and Collins 2003, Boone, de Brabander, and Hellemans 2000, Keats and Bracker 1988, Van Gelderen, Kautonen, and Fink 2015), so that it facilitates them to be able to obtain funds and develop their businesses to acquire fund, in order to increase their business capacity. The characteristics of a batik business are it needs to foster a feeling of enjoyment and pleasure, cause the entrepreneur to have a high degree of involvement in the business, and feel that they own the business, so that they will not easily give up if they experience business difficulties, including financial obstacles. Actually, in this kind of a condition, fund providers will have a positive response by providing funds for the entrepreneur if needed.

This research produced a proposition in the form of a financing model for small and medium enterprises. In the future, empirical testing needs to be conducted, in order that a model generalization can be obtained. There are two funding perspectives, which are supply and demand. As of now, there is no known in-depth study of this issue. There is an indication that there is a relationship between funds, an entrepreneurship, and performance. Despite this, it is still not clear what kinds of funds can improve an entrepreneurship, what type of an entrepreneurship can improve performance, and what kind of performance can attract company funds. This is a

future research topic that should be conducted by searching for dimensions and indicators from funds, an entrepreneurship, and performance. It is further necessary to examine what form of a relationship exists between these three aspects, including whether an entrepreneurship functions as a mediator between funds and performance.

From the demand side, the behavioral and entrepreneurial finance theory needs to be expanded and more in-depth by building concepts, measurements, and models. In the behavioral finance theory, the positive and negative cognition biases have been discussed. Are these cognition biases strongly connected with entrepreneurship orientation? This needs to be confirmed in further research. In a resource-based and entrepreneurship theory context, the idiosyncratic and heuristic ability can differentiate between entrepreneurs and non-entrepreneurs. In this kind of a premise, it is possible that these cognition biases can result in entrepreneurs having entrepreneurship competence. This phenomenon can also be discussed by using a resource and opportunity-based entrepreneurship working framework, especially related with financing, including related with the problem of asymmetric information and agency

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References

- [1] Adomako, S., Danso, A., and Damoah, J.O. 2016. The moderating influence of financial literacy on the relationship between access to finance and firm growth in Ghana. *Venture Capital*, 18 (1): 43-61. DOI:10.1080/13691066.2015.1079952
- [2] Adomdza, G.K., Åstebro, T. and Yong. K. 2016. Decision biases and entrepreneurial finance. *Small Business Economics* 47 (4):819–834. DOI:10.1007/s11187-016-9739-4
- [3] Alvarez, S.A, and Busenitz, L.W. 2001. The entrepreneurship of resource-based theory. *Journal of Management*, 27 (6):755-775.
- [4] Alvarez, Sharon A, and Lowell W Busenitz. 2001. The entrepreneurship of resource-based theory. *Journal of Management*, 27 (6):755-775.
- [5] Anuradha, B., and Parker, S.C. 2001. Family finance and new business start-ups. *Oxford Bulletin of Economics and Statistics*, 63 (3):333-358.
- [6] Bakan, D. 1966. *The duality of human existence: An essay on psychology and religion*, 242 pp.
- [7] Barnea, A., Haugen, R.A., and Senbet, L.W. 1980. A rationale for debt maturity structure and call provisions in the agency theoretic framework. *The Journal of Finance*, 35 (5):1223-1234.
- [8] Bates, T. 1997. Financing small business creation: The case of Chinese and Korean immigrant entrepreneurs. *Journal of Business Venturing*, 12 (2):109-124.
- [9] Belwal, R., Misrak T., and Gurmeet, S. 2012. Microfinance and sustained economic improvement: Women small-scale entrepreneurs in Ethiopia. *Journal of International Development*, 24: 84-99. DOI:10.1002/jid.1782
- [10] Bergset, L. 2015. The Rationality and irrationality of financing green start-ups. *Administrative Sciences*, 5 (4): 260-285. DOI:10.3390/admsci5040260
- [11] Björn, B., Olofsson, C., and Silver, L. 2000. Control aversion and the search for external financing in Swedish SMEs. *Small Business Economics*, 15 (3):233-242.

- [12] Boone, C., Bert de Brabander, and John Hellemans, J. 2000. Research Note: CEO locus of control and small firm performance. *Organization Studies*, 21 (3):641-646.
- [13] Brenner, O.C, Tomkiewicz, J. and Schein, V.E. 1989. The relationship between sex role stereotypes and requisite management characteristics revisited. *Academy of Management Journal*, 32 (3):662-669.
- [14] Brockhaus, R.H. 1982. *The Psychology of the Entrepreneur*, Encyclopedia of Entrepreneurship, Englewood Cliffs, NJ : Prentice-Hall, ISBN 0132758261, 39-57 pp.
- [15] Bygrave, W.D, and Hofer, C.W. 1991. Theorizing about entrepreneurship. *Entrepreneurship theory and Practice*, 16 (2):13-22.
- [16] Chemmanur, T.J., and Fulghieri, P. 2014. Entrepreneurial finance and innovation: an introduction and agenda for future research. *Review of Financial Studies*, 27 (1):1-19. doi:10.1093/rfs/hht063
- [17] Chong, H G. 2008. Measuring performance of small-and-medium sized enterprises: the grounded theory approach. *Journal of Business and Public Affairs*, 2 (1):1-10.
- [18] Cook, P. 2001. Finance and small and medium-sized enterprise in developing countries. *Journal of Developmental Entrepreneurship*, 6 (1):17.
- [19] Danladi, M.U., Umar,B.O., and Nzelibe, G.O.N. 2016. Entrepreneurial orientation, access to debt finance and the performance of small and medium enterprises in Nigeria. *Proceedings of the Multidisciplinary Academic Conference: 77-94*.
- [20] David, D.J. 2004. Entrepreneurial finance: An overview of the issues and evidence. *Journal of Corporate Finance*, 10:301-326.
- [21] Drucker, P.F. 1964. The big power of little ideas. *Harvard Business Review*, 42 (3):6-182.
- [22] Eckhardt, J.T., and Shane, S.A. 2003. Opportunities and entrepreneurship. *Journal of Management*, 29 (3): 333-349.
- [23] Ennew, C.T., and Binks, M.R. 1995. The provision of finance to small businesses: Does the banking relationship constrain performance. *The Journal of Entrepreneurial Finance*, 4 (1):57-73.
- [24] Fraser, S., Bhaumik, S.K., and Wright, M. 2015. What do we know about entrepreneurial finance and its relationship with growth? *International Small Business Journal*, 33 (1):70-88. DOI:10.1177/0266242614547827
- [25] Frielinghaus, A., Mostert, B., and Firer, C. 2005. Capital structure and the firm's life stage. *South African Journal of Business Management*, 36 (4):9-18.
- [26] Gakuu,K.J., Mwangi, A.K., and Nyakarimi, S.N. 2014. Analysis of factors influencing access to credit services by women entrepreneurs in Kenya. *Research Journal of Finance and Accounting*, 5 (11):34-41.
- [27] Garwe, D.K., and Fatoki, O. 2012. The Impact of gender on SME characteristics and access to debt finance in South Africa. *Development Southern Africa*, 29 (3):448-461. DOI:10.1080/0376835x.2012.706040
- [28] Glancey, K., Malcolm, G., and Malcolm, P. 1998. Entrepreneurial dynamics in small business service firms. *International Journal of Entrepreneurial Behavior & Research*, 4 (3):249-268.
- [29] Gombola, M., and Marciukaiyte, D. 2007. Managerial overoptimism and the choice between debt and equity financing. *Journal of Behavioral Finance*, 8 (4):225-235. DOI:10.1080/15427560701699510
- [30] Harrison, R.T., and Mason, C.M. 2007. Does gender matter women business angels and the supply of entrepreneurial finance. *Entrepreneurship Theory and Practice* 31 (3):445-472.
- [31] Heilman, M.E. 2001. Description and prescription: How gender stereotypes prevent women's ascent up the organizational ladder. *Journal of Social Issues*, 57 (4):657-674.

- [32] Hidenori, T. 2015. Dynamics of bank relationships in entrepreneurial finance. *Journal of Corporate Finance* 34:23-31. DOI: <http://dx.doi.org/10.1016/j.jcorpfin.2015.07.006>
- [33] Hoang, N.A., and Toshitsugu, O. 2014. Credit participation and credit source selection of Vietnam small and medium enterprises. *South East Asian Journal of Management* 8 (2):104-128.
- [34] Jappelli, T. 1990. Who is credit constrained in the US economy? *The Quarterly Journal of Economics*, 105 (1):219-234.
- [35] Javad, K., and Blumenthal, R.A. 1994. Leverage impact on working capital in small businesses. *TMA Journal* 14:46-46.
- [36] Jensen, M.C., and Meckling, W.H. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3 (4): 305-360.
- [37] Jin-Hyuk, K., and Wagman, L. 2016. Early-stage entrepreneurial financing: A signaling perspective. *Journal of Banking & Finance*, 67:12-22.
- [38] Keats, B.W., and Bracker, J.S. 1988. Toward a theory of small firm performance: A conceptual model. *American Journal of Small Business*, 12 (4):41-58.
- [39] King, R.G., and Levine, R. 1993. Finance, entrepreneurship, and growth. Theory and evidence. *Journal of Monetary Economics*, 32:513-542.
- [40] Kraus, A., and Litzenberger, R.H. 1973. A state-preference model of optimal financial leverage. *The Journal of Finance*, 28 (4):911-922.
- [41] Lam, W.2010. Funding gap, what funding gap? Financial bootstrapping: Supply, demand and creation of entrepreneurial finance. *International Journal of Entrepreneurial Behavior & Research*, 16 (4):268-295. DOI: <http://dx.doi.org/10.1016/j.jbusvent.2015.01.003>
- [42] Lambert T.K., Kuhn, W., Gruenhagen, M., and Hisrich, R.D. 2010. The 'irrelevance of irrelevance' in entrepreneurial finance: Modeling the cost of capital in start-ups beyond Modigliani–Miller. *Strategic Change: Briefings in Entrepreneurial Finance*, 19:29–43.
- [43] Lerner, M., and Pines, A.M. 2011. Gender and culture in family business: a ten-nation study. *International Journal of Cross Cultural Management*, 11 (2):113-131.
- [44] Levy, B. 1993. Obstacles to developing indigenous small and medium enterprises: an empirical assessment. *The World Bank Economic Review*, 7 (1):65-83.
- [45] Maine, E., Pek-Hooi S., and Dos Santos, N. 2015. The role of entrepreneurial decision-making in opportunity creation and recognition. *Technovation*, 39–40: 53-72. DOI: <http://dx.doi.org/10.1016/j.technovation.2014.02.007>
- [46] Mambula, C. 2002. Perceptions of SME growth constraints in Nigeria. *Journal of Small Business Management* 40 (1):58.
- [47] Marciukaityte, D., and Szewczyk, S.H. 2011. Financing decisions and discretionary accruals: managerial manipulation or managerial overoptimism. *Review of Behavioral Finance*, 3 (2):91-114.
- [48] Markova, S., and MirČEvska, T.P. 2010. Entrepreneurial finance: angel investing as a source of funding high-growth start-up firms. *Annals of the University of Petrosani, Economics*, 10 (3):217-224.
- [49] Marlow, S., and Patton, D. 2005. All credit to men? Entrepreneurship, finance, and gender. *Entrepreneurship Theory and Practice*, 29 (6):717-735.

- [50] Martell, R.F, Parker, C., Emrich, C.G., and Crawford, M.S 1998. Sex Stereotyping in the Executive Suite:" Much Ado About Something. *Journal of Social Behavior and Personality*, 13 (1):127-138.
- [51] McClelland, D.C. 1961. *The Achieving Society*. Princeton, N.J.: Van Nostrand, 512 pp.
- [52] McMahon, R.G.P. 2003. An exploratory study of underand over-investment amongst manufacturing SMEs from Australia's Business Longitudinal Survey. *International Small Business Journal*, 21 (1):29-53.
- [53] McMahon, R.G.P. 2007. Ownership structure, business growth and financial performance amongst SMEs: From Australia's business longitudinal survey. *Journal of Small Business and Enterprise Development*, 14 (3): 458-477.
- [54] Merton H.M. 1977. Debt and Taxes. *The Journal of Finance*, 32 (2):261-275.
- [55] Mitter, C., and Kraus, S. 2011. Entrepreneurial finance - issues and evidence, revisited. *International Journal of Entrepreneurship and Innovation Management*, 14 (2/3):132-150. DOI:10.1504/IJEIM.2011.041728
- [56] Modigliani, F., and Miller, M.H. 1958. Associationthe cost of capital, corporation finance and the theory of investment. *The American Economic Revie*, 48 (3):261-297.
- [57] Murillo, C. 2006. Debt financing: does it boost or hurt firm performance in product markets? *Journal of Financial Economics*, 82 (1):135-172. DOI:10.1016/j.jfineco.2005.04.001
- [58] Myers, S.C., and Majluf, N.S. 1984. Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13 (2):187-221.
- [59] Nofsinger, J.R., and Wang, W. 2011. Determinants of start-up firm external financing worldwide. *Journal of Banking and Finance*, 35 (9):2282-2294. DOI: <http://dx.doi.org/10.1016/j.jbankfin.2011.01.024>
- [60] Oranburg, S.C. 2016. 4 - *Start-up financing*. In *Start-Up Creation*: Woodhead Publishing, 23 pp.
- [61] Ortiz-Walters, R., and Gius, M. 2012. Performance of newly-formed micro firms: the role of capital financing in minority-owned enterprises. *Journal of Developmental Entrepreneurship* 17 (3): 1-22. DOI: 10.1142/S1084946712500148
- [62] Paré, J.L., Rédis, J., and Sahut, J.M. 2009. The development of entrepreneurial finance research. *International Journal of Business*, 14 (4):283-290.
- [63] Powell, G.N, and Butterfield, D.A. 1989. The" good manager" did androgyny fare better in the 1980s? *Group & Organization Management*, 14 (2): 216-233.
- [64] Rehm, F., and Xavier, A. 2016. *Financing sources and performance metrics in early-stage start-ups*. Paper read at The XXVII ISPIM Innovation Conference – Blending Tomorrow's Innovation Vintage, at Porto, Portugal.
- [65] Rocca, M.L., La Rocca, T., and Cariola, A. 2011. Capital structure decisions during a firm's life cycle. *Small Business Economics* 37 (1):107-130. DOI: 10.1007/s11187-009-9229-z
- [66] Rotter, J.B. 1966. Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied*, 80 (1):1-28.
- [67] Sarasvathy, S.D. 2001. Causation and effectuation: toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of management Review*, 26 (2):243-263.
- [68] Schein, V.E. 1973. The relationship between sex role stereotypes and requisite management characteristics. *Journal of Applied Psychology*, 57 (2):95.
- [69] Scott, S., Locke, E.A., and Collins, C.J. 2003. Entrepreneurial motivation *human resource*. *Management Review*, 13 (1): 257-279.

- [70] Serpil, T. 2013. The impact of overconfidence on capital structure in Turkey. *International Journal of Economics and Financial Issues*, 3(2): 512-518.
- [71] Stacey, E. 2013. The small business finance dilemma: An exploratory study of Barbadian firms. *Journal of Eastern Caribbean Studies*, 38(3): 1-28.
- [72] Stam, E. 2007. Why butterflies don't leave: locational behavior of entrepreneurial firms. *Economic Geography* 83 (1):27-50.
- [73] Steinar, K. 1996. Interviews. An introduction to qualitative research writing. *Thousand Oaks, CA: Sage. J., Dalton, M., Ernst, C., & Dea global context. Greensboro, NC: Center for Creative Leadership., MK, & Whitney, DJ (2001). Accounting for common method variance in cross-sectional research designs. Journal of Applied Psychology*, 86:114-121.
- [74] Strielkowski, W. 2012. Factors that determine success of small and medium enterprises. The role of internal and external factors. *Journal of Applied Economic Sciences*, Volume VII, 3(21): 334 – 350.
- [75] Terrence, E.B., Davidsson, P., and Wiklund, J. 2001. An operationalization of Stevenson's conceptualization of entrepreneurship as opportunity-based firm behavior. *Strategic Management Journal*, 22 (10): 953-968.
- [76] Tinkler, J.E., Whittington, K.B., Ku, M.C., and Davies, A.R. 2015. Gender and venture capital decision-making: the effects of technical background and social capital on entrepreneurial evaluations. *Social Science Research* 51: 1-16.
- [77] Tunca, C.K. 2011. Importance of financial management knowledge of SMEs managing by women. *Trakya Üniversitesi Sosyal Bilimler Dergisi*, 13(2): 327-354.
- [78] Van Gelderen, M., Kautonen, T., and Fink, M. 2015. From entrepreneurial intentions to actions: Self-control and action-related doubt, fear, and aversion. *Journal of Business Venturing*, 30(5): 655-673. DOI: <http://dx.doi.org/10.1016/j.jbusvent.2015.01.003>
- [79] Vishal K.G., Turban, D.B., and Bhawe, N.M. 2008. The effect of gender stereotype activation on entrepreneurial intentions. *Journal of Applied Psychology*, 93(5): 1053.
- [80] Yaseen, Z.M.R., and Siron, R.S. 2017. The impact of entrepreneurial orientation on competitive advantage moderated by financing support in SMEs. *International Review of Management and Marketing*, 7(1): 43-52.
- [81] Yordanova, D., and Davidkov, T. 2009. Similarities and differences between female and male entrepreneurs in a transition context: Evidence from Bulgaria. *Journal of Applied Economic Sciences*, 4(4): 571-582.
- [82] Yoshinori, K., and Storey, D.J. 2003. A theory of discouraged borrowers. *Small Business Economics*, 21(1): 37-49.
- [83] Zhang, S.X., and Cueto, J.2015. The study of bias in entrepreneurship. *Entrepreneurship Theory and Practice* (November): 1-36. DOI:10.1111/etap.12212
- *** OECD. 2015. *New approaches to SME and entrepreneurship financing: Broadening the range of instruments*: OECD.

Institutions of Social Partnership in Providing Youth Employment in the Labor Market of the Republic of Crimea

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Abstract:

The article studies the structure of youth employment in the labor market of the region based on the analysis of the dynamics of labor relations in the Republic of Crimea. In the regulation of youth employment in the labor market of the Republic of Crimea, the effectiveness of the institution of social partnership is of great importance. Structural functionalization of the institution of social partnership has been carried out through the prism of the allocation of labor remuneration institutions, social networks, trust, education, and the saving of business. The importance of developing such components of the institution of social partnership as trust, social solidarity and tolerance is shown.

Keywords: institutions; labor market; youth; employment; social partnership; institutions of social partnership

JEL Classification: J01; M54; O15; P25

Introduction

Social institutions regulating young people's employment directly affect the labor market formation and functioning, and changes vector assessment in social and labor relations in employment (Morozova and Torgashev 2014). In this regard, their research is relevant and timely.

Many foreign scholars have been involved in the development of social institutions, among which representatives of institutionalism, such as: (North 1990, Knight 1992, Hodgson 2006, Mitchell 1987), as well as

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modern Russian scientists, among which the authors note (Akindinova *et al.* 2016, Kostina and Orlova 2016, Nizhegorodtsev 2010, Polterovich 2005, Tambovtsev 2011, Tavokin 2016).

A significant amount of foreign scientific literature is devoted to the issues of social partnership. Theoretical and methodological aspects of social partnership are revealed in the works by Schultz (1971), Nieto (2005), Stehr (2002), and Altbach, Reisberg, and Rumbley (2010). The Russian science developed schools and directions of research of various aspects of the labor market, interaction-state and business in the labor market, regulation of emerging in these market relations of labor values and motivations formation.

1. Materials and Methods

The purpose of this article is to study the prerequisites for the development of social partnership institutions in ensuring the employment of young people in the labor market of the Republic of Crimea.

The following methodological principles are the basis of the research. The research involves the use of the following methodological principles:

- the principle of systemic nature, which allows thoroughly exploring the possibilities of society and reducing the tension in the labor market of the youth of the Republic of Crimea in the new economic conditions;
- the principle of complexity, involving a thorough assessment of the development of social processes in the regional labor market of young people;
- the principle of synergy, which allows obtaining a cumulative effect from a large number of actions and processes undertaken in regulating the labor market of young people in conditions of integration;
- the principle of integrity, providing for the economic effect of increasing the level of economic activity of young people, increasing the level of youth employment in the leading sectors of the economy of the Crimean region;
- the principle of determinism, allowing taking into account the influence of various socio-economic processes on the development of social institutions regulating the labor market of the youth of the Republic of Crimea;
- the principle of variation, allowing the development of options for the influence of social institutions on the state of the labor market of the youth of the region, based on a comparison of features, trends in regional and social development of the Republic of Crimea.

The following methods were used to obtain the results:

- systematic approach to the structural functionalization of the institution of social partnership. The novelty of the proposed approach is to formulate a methodology for the development of the institution of social partnership to regulate youth employment in the labor market of the Republic of Crimea;
- the method for analyzing statistical materials, which involves the analysis of data on the employment of young people in the Republic of Crimea, as well as textual arrays with a view to the subsequent meaningful interpretation of the identified patterns;
- the method of economic and statistical analysis, providing socio-economic analysis of the results of research on the structure of employed in the economy of the region, including by age groups of young people;
- methodical approach to carrying out structural and logical analysis for the structuring of social institutions regulating employment in the Crimean region. The novelty of using the methodological method to the question under investigation consists in the development of the structure of methods for using the labor resources of the Republic of Crimea on the principles of dichotomy.

The target group of the study envisages groups of young people aged 15 to 29.

2. Results

The effectiveness of the regulation of youth employment processes is largely related to the operation of social institutions. Traditionally, social institutions of the labor market are subdivided into institutions for regulating the labor market; institutions of property rights for labor services; job search institutions; institutions for contracting;

Institutes for the protection of the rights of employees; institute of social capital; institutions of social partnership. The institutions of social partnership are of particular interest in the study. According to the Labor Code of the Russian Federation (Article 23), social partnership in the world of work is a system of relationships between workers (representatives of workers), employers (representatives of employers), government bodies, local self-government bodies aimed at ensuring the coordination of interests of workers and employers in regulating labor relations and other directly related relations.

The authors believe that the institution of social partnership is a set of established norms, rules, mechanisms aimed at regulating and controlling social, economic, labor relations between labor market subjects. Institutions of social partnership function depending on the changes and changes taking place, for example, in the remuneration of an employee, labor legislation, sectoral structure of the labor market, the needs and preferences of potential employers in cadres, and also in altering the stereotypes of public consciousness.

Taking into account the existing modern directions of world research in the field of social partnership development: Boulos and Wheeler (2007), Broecke *et al.* (2017), Evans (2017), Rodríguez Bravo *et al.* (2017), Kotsilieris (2017), Matsheke and Dhurup (2017), Smith (2017), Bain (2017), Papadopoulos (2016), Lester *et al.* (2016), Montgomery (2017), Robert *et al.* (2017), institutions of social partnership in ensuring the employment of young people in the labor market include the following: labor remuneration institution; institute of social networks; institute of trust; institute of education; institute of savings; institute of entrepreneurship.

One of the most important social institutions is the labor remuneration institution. Low remuneration does not ensure simple reproduction of labor and is not a motivational factor in the growth of labor productivity of hired workers. Therefore, the goal of the state is to match the labor cost of labor. Remuneration regulation is carried out with the help of the established minimum remuneration, the regulation of remuneration premiums, indexation due to price increases, the freezing of remuneration and prices, and the taxation of personal incomes.

Considering social networks as the most important component of the social partnership system, we note that in the scientific literature different types of social networks are indicated: closed and open, formal and informal. Based on the results of the study, it can be concluded that the social networks existing in the Crimean region mostly rely on well-established, proven personal connections of the subjects, sometimes having a related nature. Underlining the closed nature of functioning social networks, we draw attention to this aspect in the activity of entrepreneurs, like insurance risk of loss of positive business reputation due to imposed restrictions on the development of business relations with new business partners. Here it is necessary to emphasize the special role of trust in established business practice. Formation of new partnership labor relations in the society between representatives of different social groups requires regular exchange of services and resources between these groups.

Based on our research, it was revealed that interpersonal trust is the most important form of trust among citizens. This was indicated by 32.6% of representatives of small, 23.6% of medium and 21.8% of large businesses, respectively. The research was conducted on the basis of 283 enterprises of the region with the involvement of 642 respondents. The second most important factor affecting the level of citizens' trust in social institutions is social solidarity and tolerance. This witnesses the mentality of the citizens of the Crimean region, manifested in a high degree of cohesion in the expression of historically important civil expression of will and rights. Along with the dominance of the form of interpersonal trust among citizens, social institutions such as education (19.3% of small businesses versus 32.6% who favored interpersonal trust), local authorities (9.7% of small business) turned out to be less popular, medicine (8.3% - representatives of small business). A similar situation is characteristic for employees of medium-sized firms (11.5% of respondents noted loyalty to educational institutions, 13.3% - confidence in local authorities, and 12.4% - trust in health-care institutions). In this regard, the role of social institutions is significantly strengthened and their influence on the growth of employment is growing.

The obtained results in their totality confirm the prevailing tendencies in the post-Soviet society of a relatively low level of public trust in existing social institutions. At the same time, it is through trust that the development of social capital is checked. Without trust, investments are impossible, transaction costs increase, economic growth slows.

Functioning of social partnership institutions is mediated by the action of institution-structures, which include employment services, territorial committees on labor and employment of the population; territorial bodies of the Federal Service for Labor and Employment, carrying out state supervision and control over observance of labor legislation and other normative legal acts containing labor law norms in the territories of the constituent entities of the Russian Federation (Vinogradova 2015). In addition to the above-mentioned state organizations, trade unions that represent and protect the interests of hired workers, as well as business associations that protect the interests of employers, can be referred to institutional structures. Without a doubt, in the labor market an important role is played by public organizations, which include unions of trade unions and employers that coordinate issues in the social and labor sphere. Thus, trade unions participate in the formation of the state employment policy and in the regulation of labor market processes, protect and express the rights and interests of hired workers, strive for social justice, promote the creation of proper conditions, remuneration and modes of work.

Social and economic development of the Republic of Crimea largely depends on the number of young people in the total population and in the volume of labor resources. The changes in the number of young people by age groups for the period 2010-2016 are given in Table 1.

Table 1. Youth in the Republic of Crimea

	Years						
	2010	2011	2012	2013	2014	2015	2016
Permanent population of the Republic of Crimea, people.	1,956,550	1,954,759	1,954,253	1,956,422	1,891,465	1,895,915	1,907,106
<i>including:</i>							
General share of youth, %	23	22	21.3	20.5	20.2	18.2	17.5
<i>Including on age groups from the general share of youth:</i>							
15-19 years	24.0	24	23.4	22.8	22.9	23.8	23.9
20-24 years	34.9	35	35.4	34.0	33.9	31.7	35.0
25-29 years	41.1	41	41.2	43.2	43.2	44.5	41.1

Source: The Federal State Statistics Service of the Republic of Crimea

Analysis of the data for the indicated period shows that at the end of 2016 the number of young people was 17.5% of the total population of the Republic. According to the territorial agency of the Federal State Statistics Service of the Republic of Crimea, the age group 25-29 (41.1%) occupied the leading positions in the total number of young people, including the labor market, at the highest level, with the highest level of labor potential, since it is composed of young people who have a diploma of education and pay attention to work directly.

The age group of young people 20-24 years in the total number of occupies 35%, it includes young citizens (80%) studying in secondary professional educational organizations and educational organizations of higher education.

The smallest one among the youth of the Republic is the age group of 15-19 years (23.9%), which includes students of general education organizations and students of the first courses of educational organizations of secondary professional and higher education. The highest level of economic activity of economic activity is naturally observed in the age group of youth 25-29 years, which is rightly so, since its representatives have already completed the training process and are among the full-fledged subjects in the labor market.

In general, in the period from 2010 to 2016, there is an increase in this indicator for all age groups of young people: by 4.5% in the group of 15-24 years, by 4.8% in the group of 25-29 years, respectively. At the same time, the employment rate among young people aged 25-29 years is an average of 36.9% higher in comparison with the age group of 15-24 years. This trend is characterized by the following circumstances. As noted above, the main number of young people aged 15 to 22 (23) years old are students (learners) of general education organizations, secondary professional and higher educational organizations. Entering into a labor agreement is allowed for young

people who reached the age of 16, except for cases provided for by this Code (young people who received general education or who received it and reached the age of fifteen have the right to enter into a labor agreement for performing light labor that does not harm health, young people who reached the age of fourteen, receiving general education, with the consent of one of the parents (trustee, guardianship authority), have the right to enter into a labor agreement to perform easy work in time free from education, which does not harm their health and without prejudice to the development of the educational program).

Table 2 shows the structure of youth employment by economic activity.

Table 2. Structure of youth employment in the Republic of Crimea (by economic activity, thousand people)

Type of economic activity	Years						
	2010	2011	2012	2013	2014	2015	2016
Agriculture, forestry and fisheries	6.5	6.4	5.2	4.7	3.8	4.1	4.4
Industry	19.5	19.3	19.2	18.8	17.0	17.1	17.5
Construction	4.3	3.2	2.7	2.3	1.9	2.0	2.3
Wholesale and retail trade, repair of motor vehicles and motorcycles	14.4	14.5	16.1	15.5	14.7	14.9	15.2
Transportation, warehousing, postal and courier activities	11.9	10.8	11.2	9.2	8.3	8.5	8.7
Temporary accommodation and catering	3.4	3.5	3.4	3.3	3.0	3.1	3.2
Information and telecommunications	4.1	3.9	3.5	3.2	3.2	3.7	3.9
Financial and insurance activity	4.7	4.4	4.5	4.3	4.5	4.5	4.6
Real estate activities	6.7	6.0	6.1	5.4	4.6	4.8	5.1
Education	14.1	14.0	15.3	15.1	14.5	14.8	15.0
Health care and social assistance	17.4	16.8	16.7	16.3	15.6	15.7	16.0
Provision of other services	9.2	8.3	7.6	6.3	5.4	5.5	5.8

Source: The Federal State Statistics Service of the Republic of Crimea

A significant number of young cadres in the Republic of Crimea carry out their work in the financial sector (56.8%), trade (53%), public administration (35%), hotels and restaurants (36.3%), *etc.* The most obvious need Employers are observed in those areas that are identified as priorities until 2020: construction (skilled workers - 78%, highly qualified specialists: engineers - 22%), industry (skilled workers: welders - 14%, turners-universal specialists - 12%, *etc.*, highly qualified specialists: production engineers in catering - 9%, electrical engineers - 8.6%, *etc.*); agriculture (engineers-mechanics - 23%, agricultural production specialists - 22%, tractor drivers - 16%, *etc.*), hospitality services, including hotels, restaurants, sanatoriums and other organizations (maids - 24% , Waiters - 18%, medical workers - 17%, administrators - 13%, *etc.*), *etc.*

We will highlight the following main problems that hamper the employment of young people and the conclusion of contractual agreements: overcrowding of the labor market with “prestigious professions” and inconsistency in the direction of training young professionals for the needs of the labor market; discrepancy of the skill level of an employee with the requirements and needs of employers; overestimated expectations of youth representatives, *etc.*

Formation of an effective system for the promotion of youth employment in Crimea is currently becoming the most relevant, for the implementation of which it is advisable to strengthen the interaction of the labor market and the market of educational services. To do this, it is necessary to monitor demand and supply in the youth labor market; to develop and implement a set of measures to improve the structure of sought after specialties in the system of higher and vocational education, *etc.*

3. Discussion

The effectiveness of the institution of social partnership determines the importance of using a number of economic incentives that can increase the interest of organizations in providing employment services for young people, their vocational training, advanced training, retraining, *etc.*

Based on the study, the following options for stabilizing the situation are proposed:

- strengthening the activities of municipal authorities to ensure the employment of young people, in particular graduates of educational organizations;
- consideration of the age and sex composition of the working specialists of certain areas for possible substitution;
- reduction in the scope of training specialists in areas of training, for which employment becomes problematic;
- creation of the most favorable conditions on the part of state authorities for the development of entrepreneurial activities (in particular, small business), which would significantly increase the number of jobs and reduce tensions in the labor market;
- calculating the number of employees to be released in different economic situations, etc.

In modern conditions of the development of the Republic of Crimea, one of the tools that facilitate the employment of the population, including youth, are state programs that are a complex of various kinds of activities (organizational, economic, social) aimed at ensuring state guarantees in the field of increasing employment and reducing Social tensions in the labor market.

The implementation of these programs is aimed at solving the main tasks:

- employment growth, efficiency of use and improvement of the quality of the workforce;
- increasing the flexibility of the regional labor market;
- ensuring balance between supply and demand in the labor market;
- creation of working conditions that preserve the working capacity of the population;
- promotion of employment of the population of the region in need of social protection due to their inability to compete on the labor market on an equal footing;
- increasing mobility in the labor market;
- creating conditions for attracting foreign labor, taking into account the long-term regional needs of the economy in labor resources and the principle of priority use of personnel of the Republic, etc.

As the authors see it, promising areas for regulating the forms of contractual relations are the following: change in the legal framework (indication of flexible forms of employment and their remuneration); regulation of issues related to “work at home”, outstaffing; flexible forms of employment, fixed-term contracts and temporary work; toughening responsibility of employers for informal employment of youth representatives, etc.

Conclusion

The article contains the results of studies of the prerequisites for the development of social partnership institutions in ensuring the employment of young people in the labor market of the Republic of Crimea. It is revealed that the modern development of the labor market of youth is based on the contradictions between the demand for the workforce of this age group and its proposal, the deformity of the regional, sectoral and sectoral structure of employment, as well as the imperfection of the regulation mechanism of this element of the labor market in the region. Youth unemployment causes significant disparities in the labor market of the Republic of Crimea, which ultimately leads to socioeconomic differentiation of cities and regions.

In the course of the studies it is justified that the effectiveness of the institution of social partnership is of great importance in regulating the processes of youth employment in the labor market of the Republic of Crimea. Social partnership is realized through a system of agreements at the federal, sectoral, territorial, professional levels, as well as through the conclusion of collective agreements at enterprises, organizations and institutions. The conceptual basis for increasing the economic activity of young people should be the prioritization of the innovative direction of the social and economic development of the Crimea, the implementation of which will provide an opportunity to provide expanded reproduction of highly intelligent workforce through employment in science-intensive industries. This will create a new type of workforce with sufficient professional training, the ability to continuously improve skills, their productivity in various sectors of economic activity. In the development of the modern institutional environment, it seems advisable to put the ideology of responsible management integrated

into the mandatory structure of both the power structure and the education system, health care and other institutional environments.

As further directions of research in this area, it is necessary to single out the analysis and assessment of the impact of the labor employment of young people in high-tech sectors of the economy on the formation of a gross regional product with the development of the digital economy.

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References

- [1] Akindinova, N., Kuzminov, Ya., Yasin, E. 2016. Russia's economy: before the long transition. *Russian Journal of Economics*, 2(3): 219–245.
- [2] Altbach, P.G., Reisberg, L., Rumbley, L. 2010. *Trends in Global Higher Education: Tracking an Academic Revolution*. Paris; Rotterdam, Boston: UNESCO Pub.; Sense Publishers, 270 pp., ISBN: 9789460913389
- [3] Bain, C. 2017. Entrepreneurship and innovation in the fight against human trafficking. *Social Inclusion*, 5(2): 81–84. DOI: 10.17645/si.v5i2.924
- [4] Boulos, M.N.K., Wheeler, S. 2007. The emerging Web 2.0 social software: An enabling suite of sociable technologies in health and health care education. *Health Information and Libraries Journal*, 24(1): 2–23. DOI: 10.1111/j.1471-1842.2007.00701.x
- [5] Broecke, S., Forti, A., Vandeweyer, M. 2017. The effect of minimum wages on employment in emerging economies: a survey and meta-analysis. *Oxford Development Studies*, 45(3): 366–391. DOI: 10.1080/13600818.2017.1279134
- [6] Evans, C. 2017. Framing young people's educational transitions: the role of local and contemporary economic contexts. *British Journal of Sociology of Education*, 38(5): 656–670. DOI: 10.1080/01425692.2016.1150154
- [7] Hodgson, G.M. 2006. What Are Institutions? *Journal of Economic Issues*, 40(1): 1–25.
- [8] Knight, J. 1992. *Institutions and Social Conflict*. Cambridge: Cambridge University Press, 234 pp.
- [9] Kostina, E.Y., Orlova, N.A. 2016. Choice of employment career by Russian students in modern labor market conditions. *Indian Journal of Science and Technology*, 9(44): 1–5. DOI: 10.17485/ijst/2016/v9i44/104710.
- [10] Kotsilieris, T.A., Pavlaki, A.A, Christopoulou, S.A, Anagnostopoulos, I.B. 2017. The impact of social networks on health care. *Social Network Analysis and Mining*, 7(1): 18-28. DOI: 10.1007/s13278-017-0438-1.
- [11] Lester, L., Cross, D.B., Terrelinck, D.D., Falconer, S.B., Thomas, L.C. 2016. Encouraging the positive use of technology through community engagement. *Safer Communities*, 15(3): 134–141. DOI: 10.1108/SC-11-2015-0035
- [12] Matsheke, O., Dhurup, M. 2017. Entrepreneurial-related Programmes and Students' Intentions to Venture into New Business Creation: Finding Synergy of Constructs in a University of Technology. *Science, Technology and Society*, 22(2): 259–283. DOI: 10.1177/0971721817702287
- [13] Mitchell, W. 1987. Institutions and Quantitative Methods. *Eastern Economic Journal*, Volume XII, 1: 63-73.
- [14] Montgomery, T., Mazzei, M., Baglioni, S., Sinclair, S. 2017. Who cares? The social care sector and the future of youth employment. *Policy and Politics*, 45(3): 413–429. DOI: 10.1332/030557316X1477831216518

- [15] Morozova, O.I., and Torgashev, D.N. 2014. Organization and management monitoring of socio-labor relations in the system of Russian Management. *Contemporary Economic Issues*, 1: Available at: <http://economic-journal.net/index.php/CEI/article/view/94/81>, DOI: 10.24194/11402
- [16] Nieto, S. 2005. Public education in the twentieth century and beyond: High hopes, broken promises, and an uncertain future. *Harvard Educational Review*, 75(1): 43–64.
- [17] Nizhegorodtsev, R.M. 2010. *Network effects and institutional filters: a piece of new reality for economic systems of systems*. Moscow: International Congress on Ultra-Modern Telecommunications and Control Systems and Workshops, 677–680 pp.
- [18] North, D.C. 1990. *Institutions, institutional change and economic performance*. Cambridge: Cambridge University Press, 40 pp.
- [19] Papadopoulos, O. 2016. Youth unemployment discourses in Greece and Ireland before and during the economic crisis: Moving from divergence to 'contingent convergence'. *Economic and Industrial Democracy*, 37(3): 493–515. DOI: 10.1177/0143831X14550694
- [20] Polterovich, V. 2005. Institutional traps: is there a way out? *Social Sciences*, 36(1): 30–40.
- [21] Robert S., Lesieur S., Chastang, J.B., Kergoat, V.C., Dutertre, J.C., Chauvin, P.A. 2017. Health and access to health care of 18–25 years old people not in employment, education or training (NEETs) attending the French 'missions locales'. *Revue d'Epidemiologie et de Sante Publique*, 65(4): 265–276. DOI: 10.1016/j.respe.2017.01.120. Article in French]
- [22] Rodríguez Bravo, P.A.E., De-Juanas O.A., González, Olivares, Á.L. 2016. Attributions of youth in social vulnerability on the benefits of study and employment. *Revista Espanolade Pedagogia*, 74(263): 109–126.
- [23] Schultz, T. 1971. *Investment in Human Capital. The Role of Education and of Research*. New York: The Free Press, ISBN-10: 0029282209, 272 pp.
- [24] Smith, K.L. 2017. Social innovation partnerships: An opportunity for critical, activist scholarship. *Canadian Journal of Communication*, 42(1): 99–112.
- [25] Stehr, N. 2002. *Knowledge and Economic Conduct: The Social Foundations of the Modern Economy*. Toronto; Buffalo: University of Toronto Press. ISBN-10: 0802078869, 384 pp.
- [26] Tambovtsev, V. 2011. Types of economic action. *Social Sciences*, 42(2): 3–17.
- [27] Tavokin, E.P. 2016. Russian youth in the labor market in the expert assessments. *The Monitoring of Public Opinion: Economic and Social Changes*, 132(2): 175–184. DOI: 10.14515/monitoring.2016.2.10
- [28] Vinogradova, N.A. 2015. Methods of evaluation of social development. *Contemporary Economic Issues*, 1, Available at: <http://economic-journal.net/index.php/CEI/article/view/123/106>. DOI: 10.24194/11506
- *** Russian Statistical Yearbook 2014. Available at: http://www.gks.ru/bgd/regl/b13_13/lssWWW.exe/Stg/d1/04-01.htm

Comparison of Europe 2020 Implementation Process among European Union Members States

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Abstract:

The three key drivers for EU (European Union) growth - smart growth, sustainable growth and inclusive growth - were identified in the European Union development strategy known as Europe2020. These days, the time for fulfilling the strategy targets is almost at the end and it seems to be interesting to compare the success of implementing headline objectives by particular EU member states. The Europe2020 strategy is defined by its priorities, objectives and main initiatives. Every headline objective is described by more indicators, which are identified and reported to European Commission on the year basis. There is possible to find many information and data about success of integrating strategy itself, but unfortunately they are concerned mostly on publishing information about particular indicator level at the particular country, there is no aggregated information about integration success the strategy as a whole. Therefore, the assessment of the Europe 2020 strategy is more than actual and important. The paper presents brief description of the Europe 2020 main ideas and main indicators influencing the defined target using which could be done the comparison of the success of strategy implementation process. The aim of the paper is to present results of conducted comparison of the implementation of Europe 2020 targets and objectives to evaluate the Europe 2020 strategy progress among EU Member states and to assess how the amount of invested money influenced the success of Europe 2020 implementation process. Within the research were employed different methods: scaling technique, semaphore method, cluster analysis and spatial analysis used by R software. Research results pointed out that greatest implementation progress is visible in fields of environment and education, while in case of R&D target has worst one and that the national and regional disparities exist in providing an enabling enterprise and innovative environment in Europe.

Keywords: Europe 2020; strategy; integration; indicators, targets; econometric analysis; semaphore method; clusters

JEL Classification: A13; F63

Introduction

In this globalization age, it is important to stay competitive. We can say, that economy is competitive, if is able to provide high and rising living standards, allowing all members of a society to contribute to and benefit from these levels of prosperity. Moreover, it is important that it meet the needs of the present generation and not compromising the ability of future generations to meet their needs. EU is union of 28 economically different countries where national and regional disparities are present. (World Economic Forum 2014) The set of various tools and mechanisms can be employed to enable the weaker members to achieve the stated objectives of the development of the EU as a whole. This is the main idea of Europe 2020, the strategy of European development. In connection with previous, the strategy Europe 2020 highlighted three mutually reinforcing priorities: smart growth, sustainable growth and inclusive growth. (European Commission 2010c). Ensuring this ambitious goal, it is necessary to cover continual growth in all areas within EU member states. It was the reason to define headline targets and

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expectations, which are necessary to reach or to approach maximally by 2020. Indicators of employment, R&D, environment, education, poverty and social exclusion allows monitoring the stated expectations performance of the particular EU member states or EU as a whole. The planned budget for this strategy was 638.2 mld. Euros during the years 2014 – 2020.

There is possible to find many information and data about success of integrating strategy itself, but unfortunately they are concerned mostly on publishing information about particular indicator level at the particular country, there is no aggregated information about integration success the strategy as a whole. Therefore, the motivation of our research is to check the progress of implementation the Europe 2020 strategy, not only from point of view achieved values of indicators, but also try to find answer whether investments were used effectively. Based on the mentioned above, the aim of this paper is to present results of conducted comparison of the implementation of Europe 2020 targets and objectives to evaluate the Europe 2020 strategy progress among EU Member states and to assess how the amount of invested money influenced the success of Europe 2020 implementation process.

1. Research Background

The agenda of Europe2020 strategy (European Commission 2010a) presents a common European Union strategy to ensure sustainable economic growth and also to overcome the economic crisis and create new jobs. Its predecessor, the Lisbon strategy ended in time of economic crisis affects without achieving its main objectives (European Commission 2010b), (Ministry of Finance of the Slovak Republic 2010). Within its follower – Europe2020 strategy - above mentioned the three dimensions of growth: smart growth (developing an economy based on knowledge and innovation), sustainable growth (promoting a more resource efficient, greener and more competitive economy) and inclusive growth (fostering a high-employment economy delivering social and territorial cohesion), focus more on other dimensions of an overall development strategy (European Commission 2010b). To strengthen the success of these dimensions, they were divided into more detailed targets:

- 75 % of the population aged 20-64 should be employed;
- 3% of the EU's GDP should be invested in R&D;
- the "20/20/20" climate/energy targets should be met (including an increase to 30% of emissions reduction if the conditions are right);
- the share of early school leavers should be under 10% and at least 40% of the younger generation should have a tertiary degree;
- 20 million less people should be at risk of poverty. (European Commission 2010c)

These objectives are mutually related. For example, a higher level of education helps to find work and helps to increase employment, while reducing poverty. Greater share of research, development and innovation capacity in all sectors of the economy combined with more efficient use of resources will improve competitiveness and promote new job development, etc. (European Commission 2010c). Under this document, seven flagship initiatives have been defined and signed by all members:

- "Innovation Union" to improve framework conditions and access to finance for research and innovation so as to ensure that innovative ideas can be turned into products and services that create growth and jobs;
- "Youth on the move" to enhance the performance of education systems and to facilitate the entry of young people to the labour market;
- "A digital agenda for Europe" to speed up the roll-out of high-speed internet and reap the benefits of a digital single market for households and firms;
- "Resource efficient Europe" to help decouple economic growth from the use of resources, support the shift towards a low carbon economy, increase the use of renewable energy sources, modernise our transport sector and promote energy efficiency;
- "An industrial policy for the globalisation era" to improve the business environment, notably for SMEs, and to support the development of a strong and sustainable industrial base able to compete globally;

- "An agenda for new skills and jobs" to modernise labour markets and empower people by developing their skills throughout the lifecycle with a view to increase labour participation and better match labour supply and demand, including through labour mobility;
- "European platform against poverty" to ensure social and territorial cohesion such that the benefits of growth and jobs are widely shared and people experiencing poverty and social exclusion are enabled to live in dignity and take an active part in society. (European Commission 2010a).

Mobilisation of union level instruments (single market, financial levers, external policy tools, *etc.*) is necessary in tackling the possible bottlenecks, delivering the Europe 2020 objectives, ensuring budgetary consolidation for long-term growth, and strengthening coordination within the Economic and Monetary Union. (European Commission 2010c)

Effective governance mechanisms at the regional, national and European levels and the combined support of government, business and civil society are necessary for managing, monitoring and enforcing changes. For indicating the implementation process progress there is defined set of indicators helping during whole the strategy lifetime, which also serve as a useful and succinct communications tool. (European Commission 2013) The monitoring process itself, so called European Semester, represents an annual cycle of macro-economic, budgetary and structural policy coordination. European Semester is described by following key levels (Figure 1).

Figure 1 European Semester scheme



Source: own, based on (European Commission 2012), (European Commission 2016)

There is possible to find many information and data about success of integrating strategy itself, but unfortunately they are concerned mostly on publishing information about particular indicator level at the particular country, there is no aggregated information about integration success the strategy as a whole. The official pages of European Commission publish just particular country documents, data, reports (for example: European Commission (2010c), European Commission (2015), World Economic Forum (2014)). The published information and outcomes of European Semester help to EU Member States to establish and implement national strategies to overcome crisis consequences, to restore macroeconomic stability and to detect possible obstacles existing on national level, to restore sustainable growth of national economies and public finances (World Economic Forum 2014). The financial crisis had a major impact on the ability of European businesses and governments to finance investments and innovative projects. To achieve the objectives of the Europe 2020 strategy, it is essential to create a regulated environment that will ensure the efficiency and security of financial markets. Europe will succeed only by full and effective use of own funding sources and various combinations of private and public finances for

developing innovative instruments to finance investment needs, including public-private partnerships (Bratislava region 2014). To achieve this EC employs following:

- stronger prioritization and harmonization of funding in connection to strategy targets;
- development of new financial tools, especially in cooperation with The European Investment Bank and The European Investment Fund and private sector to reach unmet needs of enterprises;
- realization an efficient European venture capital market, by which will be significantly facilitated direct access to capital markets for companies (European Commission 2010c), (European Commission 2010a).

Europe2020 strategy as such, does not have its own budget, but European Commission (EC) adopts multi-annual financial programming plans. The strategy is influenced by two of them – 2007–2013 (with funding of 347 mld. Euros for all EU Member states) and 2014-2020 (with funding of 454 mld. Euros for all EU Member states). (Office of the Government of the Slovak Republic 2016)), (Ministry of regional development, Czech Republic 2010), (European Structural and Investment Funds 2017). These finance presents base for funding various programs like JEREMIE (Slovak Guarantee and Development Fund 2016)), CIP (European Commission 2014), COSME (Slovak Exporter 2016)), Horizon2020 concerned on help to SEs and SMEs, to increase of innovativeness, information sharing, development of information society. (European Parliament 2017), (Slovak Exporter 2016). The expectations are, that mentioned programs help to 39 000 companies to create and keep 29500 working positions and develop 900 new products, services or procedures. (European Parliament 2017)

From previous follows, that it is important to regularly check the progress of implementation the Europe 2020 strategy also not only from point of view values of indicators, but also try to find answer whether these finances are used effectively.

2. Data and Methods of the Research

As was indicated above, there is shortage of aggregated information about integration success the Europe 2020 strategy as whole. There are some available publications, for example (Dijkstra and Athanasoglou 2014), (Dijkstra and Athanasoglou 2015), but they mostly compare particular countries and particular indicators values. Complex comparison of countries is presented in (Pasimeni 2013) as synthetic „Europe2020 Index“. This index allows a quantification of the relative position of each member state towards the objectives of the strategy.

Our research uses the freely available data originating different statistic portals, mainly from Eurostat databank (Eurostat 2017) and also other data from related resources (Dijkstra, Athanasoglou 2014), (Dijkstra, Athanasoglou 2015), (European Commission 2015), (European Commission 2016), (Eurostat 2016). In order to evaluate the success of the implementation of Europe 2020 targets by individual countries, we have used data comparison methods and spatial analysis of all EU Member States. As input data for spatial analysis are used:

- 28 EU Member States data from the 2014 and 2015 years;
- and particular target values defined by particular EU Member States for the year 2020.

To be able to evaluate success of implementing Europa 2020 targets, the values of 9 indicators are used Table 1. To evaluate the success of the implementation of the Europe 2020 objectives, we used scaling technique (Kothari 2004), semaphore method (Kutscherauer 2010) and spatial analysis (Greene 2017), (Stanila, Andreica and Cristescu 2014). Using this approach, we divided all EU countries into five groups according to the success of individual Europa 2020 objectives performance indicators, and also the success of the implementation of headline targets as a whole.

Implementation success is computed using:

$$IL_{xC} = \frac{IL_x(C)}{TL_x(C)} * 100 \quad (1)$$

where: IL_{xC} represents percentage of achievement of the final target value by following the value of indicator x by country C in 2015; $IL_x(C)$ represents the indicator x value achieved by country C in 2015; $TL_x(C)$ represents the indicator x value planned to achieve by country C in 2015.

Table 1. Main targets and indicators used for evaluation the implementation process of Europa 2020 strategy

No of indicator	Indicator	Target
1	Employment rate (in % of total population)	Increasing the employment rate of the population aged 20 to 64 to at least 75%.
2	Rate of people out of the risk of poverty and social exclusion (in % of total population)	Lifting at least 20 million people out of the risk of poverty and social exclusion.
3	Early school leavers rate;	Reducing school drop out rates to less than 10% and increasing the share of the population aged 30 to 34 having completed tertiary education to at least 40%.
4	Tertiary educated population rate (in % of total population)	
5	Volume of the investments (in % of GDP)	Increasing combined public and private investment in R&D to 3% of GDP.
6	Volume of greenhouse gas emissions (in %, while 1990 = 100%)	Reducing greenhouse gas emissions by at least 20% compared to 1990 levels.
7	The share of renewable energy in final energy consumption (in % of total energy consumption)	Increasing the share of renewable energy in final energy consumption to 20%.
8	Final energy consumption;	Moving towards a 20% increase in energy efficiency.
9	Primary energy consumption (in Mtoe ¹⁴)	

Source: Own based on (European Commission 2010c)

In order to distinguish the level of Europa 2020 target implementation by particular countries, we employed the scaling/ranking method. (Kutscherauer 2010) The level of success was scaled into following 7 levels, Table 2.

Table 2. Description of scaling levels

No of scale level	Description of scale level
1	Achievement of 100% and more of monitored indicator value
2	Achievement of 90% - 99% of monitored indicator value
3	Achievement of 80% - 89% of monitored indicator value
4	Achievement of 70% - 79% of monitored indicator value
5	Achievement of 60% - 69% of monitored indicator value
6	Achievement of 50% - 59% of monitored indicator value
7	<i>Achievement less than 50% of monitored indicator value, what means that particular country fails in implementing particular Europa 2020 target</i>

Source: author, own elaboration

As was mentioned at beginning of the paper, we are also interested in how the amount of investment invested to meet the specific objectives influenced changes the success level of the groups. The used approach can be described following: as baseline was set the level of target reached in the year 2014. We were interested, whether additional investments, invested next year 2015, impact level of target fulfilment in positive or negative way. Using variance function, we computed the variance of values within the group of countries and place the results into dependence with invested amount.

¹⁴ Mtoe means Million tons of oil equivalent

3. Research Results and Discussion

EU countries comparison is important and more complicated, because every target is covered by more different indicators and every country achieves different level of indicators. The specific target implementation level can be influenced by more as one identifier (climate changes and energy consumption, education, etc.), that is why it was computed the average value of target implementation based of mentioned indicators. All EU Member States were grouped according their achieved level of Europa2020 target implementation. This grouping method help us to reach insights into similarities among particular countries in EU. EU countries we grouped depending conditions listed in Table 3.

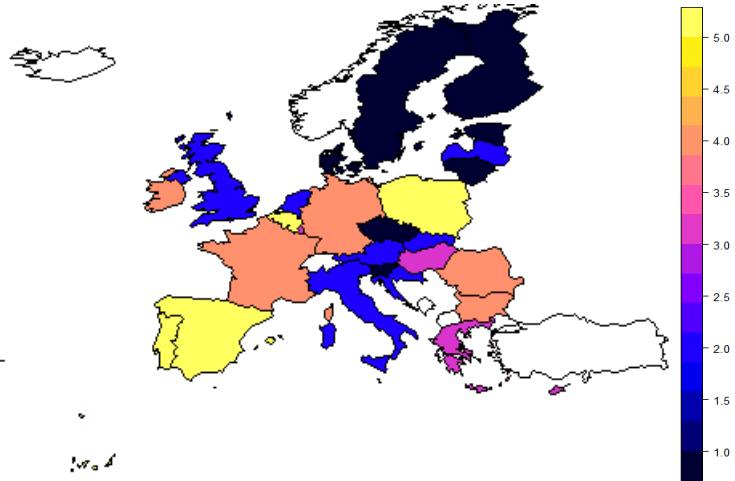
Table 3 Country Group Description

No of group	Description of group
1	Fulfilment of min. 5 indicators, min. 3 partial targets and min. 2 full targets
2	Fulfilment of min. 3 indicators, min. 2 partial targets and 2 full targets
3	Fulfilment of 4 indicators, min. 2 partial targets and 1 full target
4	Fulfilment of 2 indicators, min. 1 partial target and min. 1 full target
5	Fulfilment of 0, 1 or 2 indicators, 0 or 1 partial target and 0 full target

Source: author, own elaboration

From table follows, that particular country was grouped into specific group when achieved predefined values of monitored indicators (doesn't matter the type of target), achieved target value close (fulfilment of target on 80%) to predefined target value and reached specific predefined target value. Based on these three values (indicator values, number of partially fulfilled targets and completely fulfilled targets) was every EU member state included into specific group. The result of grouping procedure, done in R program, is presented at Figure 2.

Figure 2 Success of Europa 2020 strategy implementation by all EU Member States



Source: own, based on Eurostat data

Not all member countries are equal in implementation process of the Europa 2020 targets. Based on the previous analysis, countries could be splited into the following groups (Figure 2):

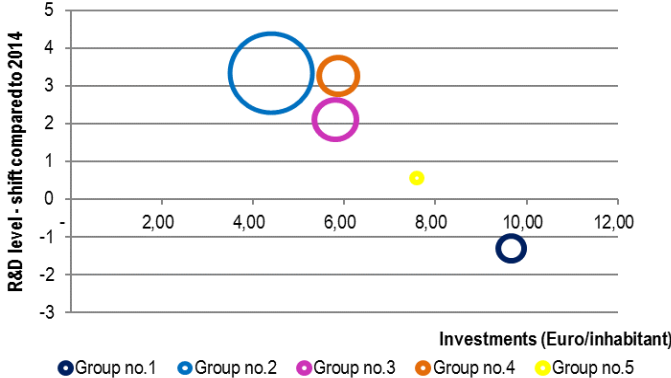
- Group No.1: Czech Republic, Denmark, Estonia, Lithuania, Slovenia, Finland and Sweden;
- Group No.2: Croatia, Italy, Latvia, the Netherlands, Austria, Slovakia and the United Kingdom;
- Group No.3: Greece, Cyprus, Luxembourg and Hungary;
- Group No.4: Bulgaria, Germany, Ireland, France and Romania;
- Group No.5: Belgium, Spain, Malta, Poland and Portugal.

From grouping results follows, that mainly Scandinavian countries belonging to the EU, the Baltic countries except Latvia and the Czech Republic and Slovenia are the most successful countries. Analysing results in more detail, Denmark is most successful implementator from group No.1 countries (by fulfilling 8 from 9 indicators and 4 targets; target employment reached 96% by the 2015). The second is Sweden with 6 indicators on more than 100% and reached 4 targets (but there are still shortcomings in R&D investments; they reached just 82% by the 2015 and in energy consumption reduction). On the other hand, the worst implementator is represented by Malta which was not able to reach any indicator level and also any target (the best results were achieved in field of employment with 97% of target value by 2015; the worst results presents R&D with 39% of final target value). From the point of view of connection between the investment amount of money and achievement expected target we can conclude, that countries including to group 1 kept up the high levels of achievement of the targets, but at same time they focused on the achievement of other targets. On the other side, the countries from poor implementators group continues to lag and the results pointed out that despite the additional investment to fulfill certain goals, values indicator compared to the previous year did not grow, but fluctuated around last year's values.

As was mentioned previously, EU plans to invest 638.2 mld EUR in programming period 2014-2020 with a Member states cofinancing budget of 454.5 mld. EUR. This amount of money is planned to be invested together in the 11 regions and all Member States. By 2017, it has already invested more than 20 mld. EUR, and 176.7 mld. EUR is already decided where and for what purpose it will be used (European Structural and Investment Funds 2017). That was the reason why we were interested in how the change in investment affects the value of the goal fulfillment in the created groups (see above) in addition to reaching the strategy targets as whole.

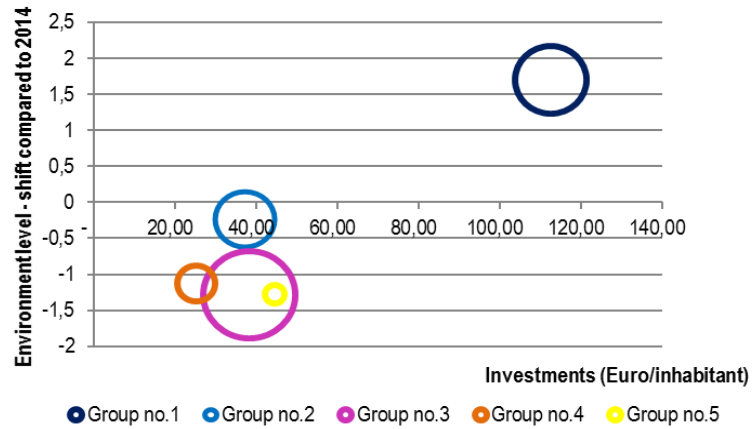
For data analysis we used the variables: the value of fulfillment of the partial targets, the amount of investment and the number of inhabitants in the EU member states and basic statistic functions - average and variance, which help us to define level of change in the particular target fulfillment when the size of investment is changing. The outcomes were compared within the groups of countries. In every graph (Figure 3 – Figure 7), the x axis represents the value of the investment invested in the fulfillment of the given partial target/per capita; the axis y represents the shift in the target fulfillment values, where the zero value of the y axis represents the value achieved in 2014; the center of the circles represent the average shift of the target fulfillment value in 2015 within the group and the circle size is determined by the value of the variance of the target fulfillment values by the individual states in the group.

Figure 3 Change in the success rate of the R&D target per euro spent per capita



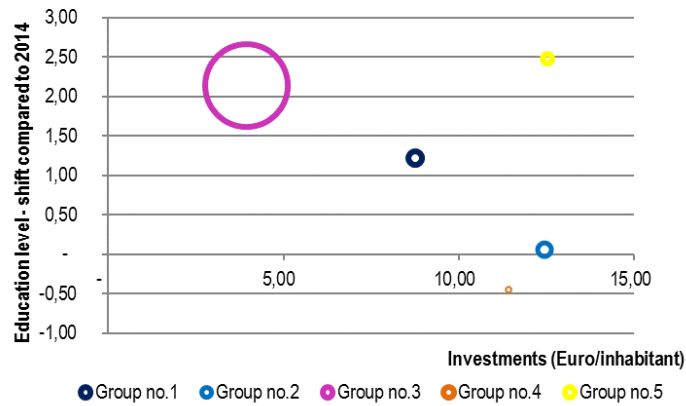
Source: own, based on European commission and Eurostat data

Figure 4 Change in the success rate of the environmental target per euro spent per capita



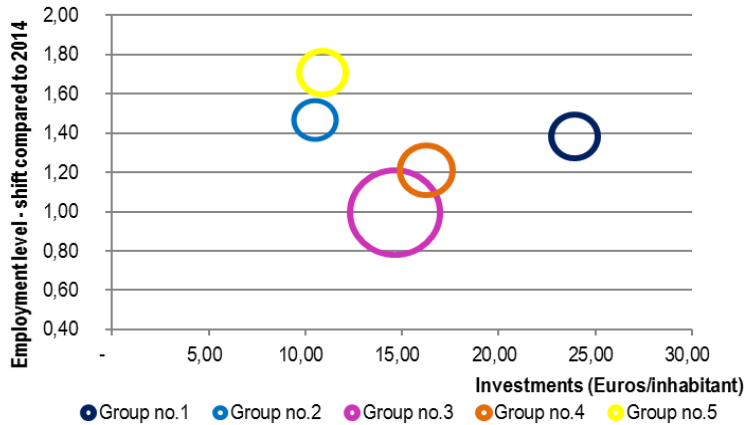
Source: own, based on European commission and Eurostat data

Figure 5 Change in the success rate of the education target per euro spent per capita



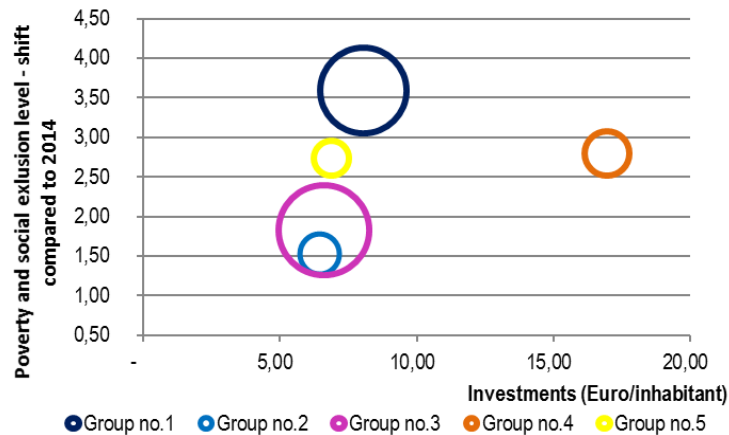
Source: own, based on European commission and Eurostat data

Figure 6 Change in the success rate of the employment target per euro spent per capita



Source: own, based on European commission and Eurostat data

Figure 7. Change in the success rate of the poverty and social exclusion target per euro spent per capita



Source: own, based on European commission and Eurostat data

Based on the results shown in Figures 3-7, we can summarize following:

- investments in R&D have a delayed impact on the achievement of this target, with expected gradual increase in the success of the target in the coming years, depending on the level of investments in previous years. In Figure 3 we can see that the highest average root-mean-square deviation of the individual measured values from the sample average had Group No.2. that means that these countries are at least consistent in changing the success rate of achieving the R&D target. On the contrary, the smallest variation is present in group including worst implementators;
- changes in the success of reaching the climate change and energy sustainability objectives (Figure 4) showed ten-times lower values than in the case of previous target; the countries in each group show roughly equal changes in the success of this target. The highest value of variation resulted in Group No.3. From above can be concluded the presence of interdependence between amount of investment to this agenda and achieved success value;
- from the point of view of investing in education, it can be seen that most of the money has been invested in countries where the attainment of this objective is the smallest. Surprisingly we can conclude that, with higher investments not necessarily implying a higher rate of success; this applies only to the worst countries. The greatest variance of values is present again in case of the third group of countries;
- Figure 6 presents change in success rate of employment target. The smallest variation for all country groups is visible for that target. In all groups, success in achieving the target has increased comparing to 2014; with the highest investments being made by the best countries;
- last target – poverty and social exclusion – results are shown on Figure 7. Even in this case, as in the case of employment, there has been an increase in the achievement of the goal and the environmental objective in all groups. From results concludes - the more the investment was made in the target, the higher is the growth of success level. One exception the resulted - Group No.4, where the highest investments were invested, but the success rate was not the highest. On the basis of a more detailed data analysis, we found out that the environmental target and the poverty target are that of kind, where investments have immediate effect on achieved success rate.

To generalize EU as a whole, the greatest implementation progress is visible in fields of environment and education, while in case of R&D target has worst one. The success of the implementation of the Europe 2020 strategy of particular EU Member States is influenced by several factors. Among the most important belongs the gross domestic product, as is also shown by (Stanilaa, Andreicab and Cristescub 2014). Other one is amount of particular countries' investments invested to increase indicators of specific target and reach the set objective level.

Different objectives, however, are affected by different factors, but since all objectives are interrelated, we can conclude that the indicator/factor that affects one goal also affects other goals. For example: Employment itself is affected by the employment of the long-term unemployed, unemployment among young people under 29, unemployment among people over the age of 50, the gap between men and women, population aging, employment of the Roma population, large inequalities in income distribution, integration of young people and education. Research and development is mainly influenced by the level of investment concentrated on them and the education of the population. Factors that affect climate change and energy sustainability include the rate of municipal waste recycling and landfill, the limitation of food waste, the emissions trading system, awareness raising and the form of a source of energy production. Education is affected by the invested amount into education itself, the wages of teachers and the employment rate, depending on the level of education attained. And finally, the impact factors on poverty and social exclusion in member countries are age and gender, unemployment, education, social protection, children, elderly people, single mothers, single parents and immigrants.

Conclusion

Because the lifetime of the Europe 2020 strategy is coming to the end, it is really important to map the target fulfilment progress in every member country. The main objective of our research was to evaluate Europe2020 strategy progress itself, and help to identify the implementation leaders and motivate and inspire the poor integrators to follow them and implement similar strategies and tools in governance of the country. There are available some publications concerned on similar complex comparisons (Athanasoglou and Dijkstra 2014), (Dijkstra and Athanasoglou 2015), (Pasimeni 2013), but all of them worked with older data (available till 2013). Other and latest publications working with up-to-date data presented only indicators level comparisons. For that reason, our research had ambition to work-out missing complex comparison view to Europe 2020 headline targets implementation by particular EU Member States.

As was above mentioned, Europe 2020, the strategy for smart, sustainable and inclusive growth very precisely describes the headline targets and indicators. As was stated above, EU is union of 28 economically different countries and is far from a homogeneous entity in terms of competitiveness. The national and regional disparities exist in providing an enabling enterprise and innovative environment in Europe - between strong performers at northern and north-western Europe as also our comparison prove and poor performers at southern Europe and Central and Eastern Europe. By 2020, there still remain a few years, so countries that do not meet their targets should focus on the areas where they have the worst results and try to improve it. It is necessary to take inspiration from the northern European countries that are successful and take similar steps to achieve the targets. Countries that at least meet the individual objectives should take an example of countries which are more successful in objectives implementation. This seems to be the only way for the EU to remain competitive to other countries of the world.

References

- [1] Athanasoglou, S., and Dijkstra, L. 2014. *The Europe 2020 Regional Index.*, JRC Science and Policy Reports Available at: http://publications.jrc.ec.europa.eu/repository/bitstream/JRC90238/regno_jrc90238_the%20europe%202020%20regional%20index_final_online.pdf (accessed February 10, 2017). DOI: <http://dx.doi.org/10.2788/87940>
- [2] Dijk, L., Athanasoglou, S. 2015. The Europe2020 index: the progress of eu countries, regions and cities to the 2020 targets. Available at: http://ec.europa.eu/regional_policy/sources/docgener/focus/2015_01_europe2020_index.pdf (accessed February 10, 2017)
- [3] Greene, W.H. 2017. *Econometric Analysis.* New York, Pearson Prentice Hall Education, ISBN: 0134811933, 9780134811932, 1169 pp.
- [4] Kothari, C.R. 2004. *Research Methodology, Methods and Techniques.* New Delhi, New age international (p) limited, publishers, ISBN: 8122415229, 9788122415223, 401 pp.

- [5] Kutscherauer, A. *et al.* 2010. Regional disparity (Regionální disparity). Ostrava, VŠB - Technická univerzita Ostrava, Ekonomická fakulta, Available at: http://alkut.cz/edice_cd/cd10_regdis_monografie/pdf/region_disparity_monografie.pdf
- [6] Pasimeni, P. 2013. The Europe 2020 Index. *Social Indicators Research*, 110(2): 613-635. Available at: <http://www.jstor.org/stable/24718725> (accessed June 8, 2017)
- [7] Rayp, G., and Standaert, S. 2013 *Measuring Actual Economic Integration* Available at: <http://www.etsg.org/ETSG2013/Papers/298.pdf> (accessed March 12, 2017)
- [8] Rayp, G., and Standaert, S. 2017. Measuring Actual Economic Integration: Bayesian State-Space Approach. Available at: https://link.springer.com/chapter/10.1007%2F978-3-319-50860-3_16 (accessed June 12, 2017). DOI: http://dx.doi.org/10.1007/978-3-319-50860-3_16DO
- [9] Stanila, L., Andreica, M.E., and Cristescu, A. 2014. Econometric Analysis of the Employment Rate for the EU Countries. *Procedia - Social and Behavioral Sciences*, 109: 178-182. DOI: <https://dx.doi.org/10.1016/j.sbspro.2013.12.440>
- *** Bratislava región 2014. Committee of the Regions (Výbor regiónov – in Slovak). Available at: <http://www.bratislavaregion.eu/sk/stranka/20/vybor-regionov> (accessed January 19, 2017)
- *** European 2013. Strengthening the social dimension of the Economic and Monetary Union: frequently asked questions. Available at: http://europa.eu/rapid/press-release_MEMO-13-837_en.htm (accessed June 23, 2017)
- *** European Commission 2010a. Commission Communication, Europe 2020: A strategy for smart, sustainable and inclusive growth. Available at: https://www.employment.gov.sk/files/legislativa/dokumenty-zoznamy-pod/kom_2010_2020.pdf (accessed July 14, 2017) (in Slovak)
- *** European Commission 2010c. Europe 2020 - A strategy for smart, sustainable and inclusive growth. Available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:en:PDF> (accessed January 23, 2017)
- *** European Commission 2012. The European Semester: Who does what and when? Available at: http://ec.europa.eu/europe2020/pdf/chart_en.pdf (accessed June 23, 2017)
- *** European Commission 2014. Competitiveness and Innovation Framework Programme (CIP). Available at: http://ec.europa.eu/cip/index_sk.htm (accessed August 20, 2017)
- *** European Commission 2015. Europe 2020 indicators: comparing Member States performance, Country Fact Sheet. Available at: http://ec.europa.eu/regional_policy/en/newsroom/news/2015/02/europe-2020-indicators-comparing-member-states-performance (accessed July 6, 2017)
- *** European Commission 2016. Europe2020 in a nutshell. Available at: http://ec.europa.eu/europe2020/index_sk.htm (accessed July 6, 2017)
- *** European Commission. 2010b. Commission Staff Working Paper: Lisbon Strategy Assessment. Available at: http://ec.europa.eu/europe2020/pdf/lisbon_strategy_evaluation_sk.pdf (accessed March 10, 2017) (in Slovak)
- *** European Parliament. 2017. Small and medium enterprises (In Slovak: Malé a stredné podniky). Available at: http://www.europarl.europa.eu/atyourservice/sk/displayFtu.html?ftuld=FTU_5.9.2.html (accessed June 28, 2017)
- *** European Structural and Investment 2017. European Structural and Investment Funds (ESI Funds)- explore our data. Available at: <https://cohesiondata.ec.europa.eu/> (accessed July 15, 2017)
- *** Eurostat 2016. Europe 2020 indicators – country profiles. Available at: http://ec.europa.eu/eurostat/statistics-explained/index.php/Europe_2020_indicators_-_country_profiles (accessed July 12, 2017)

- *** Eurostat 2017. EU Policy Indicators. Available at: <http://ec.europa.eu/eurostat/data/browse-statistics-b> (accessed February 10, 2017)
- *** Ministry of Finance of the Slovak Republic 2010. What is Europa2020? Available at: <http://www.finance.gov.sk/Default.aspx?CatID=7643> (accessed May 20, 2017) (in Slovak)
- *** Ministry of regional development, Czech Republic. 2010. Program period 2007 – 2013 (in Czech: Programové období 2007-2013). Available at: <https://www.strukturalni-fondy.cz/cs/Fondy-EU/Programove-obdobi-2007-2013> (accessed July 18, 2017)
- *** Office of the Government of the Slovak Republic. 2016. The EU money flow in the period 2007 - 2013 reached 97.2% (In Slovak: Čerpanie peňazí EÚ v období 2007 - 2013 dosiahlo 97,2 %). Available at: <http://www.partner.skadohoda.gov.sk/cerpanie-penazi-eu-v-obdobi-2007-2013-dosiahlo-972-/> (accessed, July 7, 2017)
- *** Slovak Exporter 2016. COSME – European program for financing small and medium enterprises (In Slovak: COSME – Európsky program financovania pre malé a stredné podniky). Available at: <http://www.slovakexporter.sk/2016/06/27/cosme-europsky-program-financovania-pre-male-a-stredne-podniky/>.(accessed May 20, 2017)
- *** Slovak Guarantee and Development Fund 2016. About JEREMIE (In Slovak: O JEREMIE). Available at: <http://www.szrf.sk/sk/jeremie>.(accessed May 20, 2017)
- *** World Economic Forum 2014. The Europe 2020 Competitiveness Report. Available at: http://www3.weforum.org/docs/WEF_Europe2020_CompetitivenessReport_2014.pdf (accessed June 23, 2017)

A Fuzzy Ranking Model to Performance Assessment of Cooperative Companies

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Abstract:

Performance assessment is used to identify the best companies and to present the effective solutions for the purpose of improving performance of cooperative companies. Thus, improving the assessment tools enhance the performance rank of the cooperative companies. In this study, a fuzzy model based on Sogno-Mamdani inference system was proposed to evaluate the performance of cooperative companies. In the proposed fuzzy rule based model, the knowledge base was created using a questionnaire tool to collect the experts' knowledge in terms of the coefficient of performance assessment indicators in the cooperative companies. Then, the proposed weighting method was used to find the rules in the fuzzy inference system. Moreover, an Indicator Ranking Method based on the EFQM method was used to find the best indicators effectively improve the company performance. The results of study showed that in the proposed performance assessment model, trade indicators and social responsibility are much important compared to the conventional models in the performance assessment of cooperative companies. Moreover, education is the most effective indicator to enhance the performance of cooperative companies.

Keywords: performance assessment tools; performance indicators; cooperative companies; fuzzy decision systems; EFQM method

JEL Classification: L25, D81

Introduction

The performance assessment history back to some years ago. With the complexity of duties and definition of expectations, performance assessment has evolved. The assessment system was raised widely since 1800 in Scotland by Robert Owen in textile industry (Choong 2014).

In Iran, performance assessment history returns to 7th century. The performance assessment was reflected in different stages in administrative rules of our country. The assessment of state organizations in the ministry in 1970, formation of the deputy of assessment of state organizations in budget planning organization in 1973, assessment of performance of executive systems by management and planning organization in 2003 and systematic assessment in different fields in development perspective in recent years are the actions to oblige the executive and staff organizations to assess the performance of their units. Performance assessment in cooperative companies is of great importance. In these organizations, governments and shareholders consider their aim of formation of cooperative besides economic profitability, growth and actualization of beneficiaries and communities (Ronagh 2007).

Cooperation generally means collaboration and specifically it is an economic or social organization as manifested all around the world in all economies from development to developing (Fareghi 2008).

Fuzzy set theory is introduced to solve the ambiguous and non-clear problems. Fuzzy sets generalize crisp sets. In crisp sets, the sets are definite. In other words, each set is defined with its own feature. If an object has the feature, it is the member of corresponding set and if it doesn't have the feature, it is not the member.

Fuzzy logic means grey logic. Fuzzy logic states that the entire reality is grey reality while two-value logic states that the entire reality is black and white, fully true or fully wrong. Fuzzy logic is reasoning with a fuzzy set. Fuzzy logic is a fully flexible system at the service of natural language (Azar and Faraji 2001). Based on the visual goals of cooperative companies, various performance indicators are considered for cooperative companies. Various goals make the presentation of model presenting general performance of cooperatives by collecting performance indicators as unified. Fuzzy inference systems by development of various fuzzy rules and considering the experts' opinion can provide such mapping. Thus, by survey of experts, performance assessment indicators regarding cooperative companies are identified and then, the fuzzy inference system of Sogno and Mamdani are used modeling the preference of decision makers in relation to performance indicators in the form of a fuzzy inference system and the general performance of the company is stated as 0-100.

1. Literature review

Abbasi and Eftekhari (2014), presented a model for evaluation of small and medium knowledge-based companies using fuzzy logic and evolutionary algorithms. This study presented a fuzzy model for performance assessment of knowledge-based companies by Genetic algorithm. Radius parameters were optimized in all dimensions as the accuracy and complexity of the fuzzy model were optimized by decreasing clustering. Shirdel et al (2014), evaluated the performance of agriculture cooperative companies from the view of members of cooperatives of Ardebil town in Iran. The results of study showed that despite the need of farmers to different services of agriculture cooperatives, these units have no suitable performance to meet the demands of farmers. Also, the modified seed and fertilizer before cultivation including integration of land, development of river and development of irrigation systems were the highest performance of cooperatives in cultivation stage. Rajabbeigi *et al.* (2012), evaluated the performance of Karaj municipality based on balanced assessment approach. This method monitored tangible and intangible assets with great importance in the contemporary world that the organization can eliminate the weaknesses.

In the study by Glykas (2013), the strategic map was designed by scenario making. In this study, static disadvantages of balanced scorecard are explained and to eliminate these problems, Fuzzy Cognitive Map (FCM) was used for scenario making of basic success factors and its effect on organization performance in the strategy map. In the study of Ahmed *et al.* (2013), a fuzzy inference system was presented to evaluate the performance of employees by which the sample employees were selected. In this study, fuzzy inference system was used based on the number of performance assessment indicators, ambiguity, non-completeness and subjective judgment.

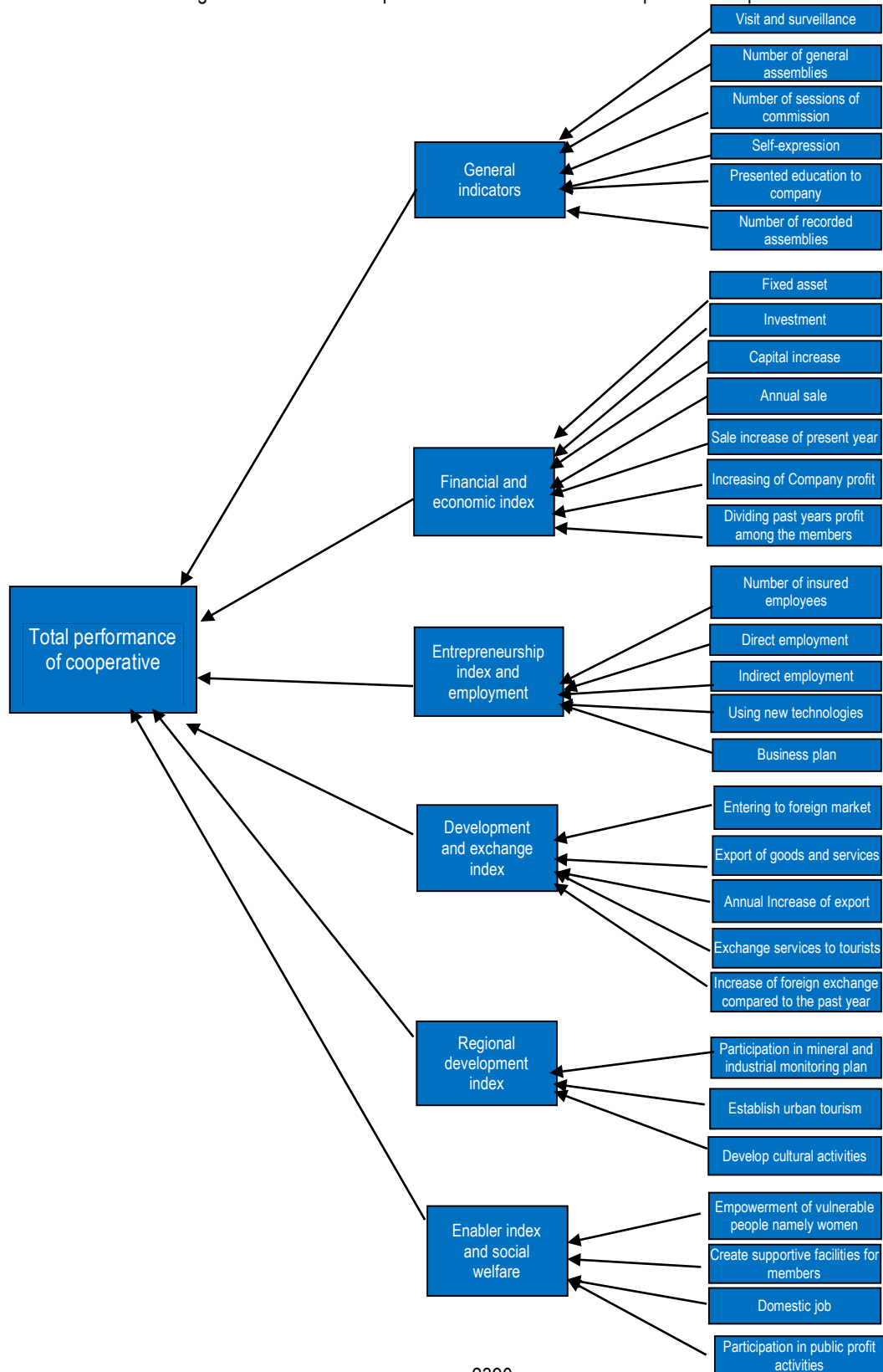
In the study of Bai *et al.* (2014), company performance was evaluated using C-means clustering method and fuzzy Topsis. Therefore, fuzzy C-means method was used to classify the the performance indicators including strategic and operating indicators in each balanced score card aspects. Then, Fuzzy Topsis method used for priority of performance indicators, based on the ambiguity and subjective judgment of indicators. In the study of Esen *et al.* (2016), a fuzzy inference system was used for performance assessment of employees of purchase department of organization. The main indicators of performance assessment included leadership and participation in decision making, technical skills and communication of employees. In the study of Sofiabadi *et al.* (2015), the control strategies were prioritized in an electric equipment manufacturing company. To do this, by review of literature and opinion of experts, the most important performance assessment indicators were identified. The results of study showed that services were qualified and human capital development was one of the most important control strategies. Based on the results of this study, culture perspectives, growth and learning were the most important perspectives of organization.

2. Methodology

Research methodology of this study is descriptive-survey. The study population was including experts of cooperative companies. Experts' knowledge was used in determining the impact of performance indicators as well as for creating the fuzzy inference system (Jamshidnezhad *et al.* 2016), (Jamshidnezhad *et al.* 2017). Therefore, a population of 30 experts were participated from ministry of cooperative companies. The developed fuzzy model was implemented in Matlab environment. The conceptual model of study is including the indicators used for performance assessment of cooperative companies. By review of literature, a set of performance indicators used

for assessment of cooperative companies' performance was identified. Figure 1 shows the performance indicators model.

Figure 1. Initial model of performance assessment of cooperative companies



The indicators in Figure 1 reduced to the following 12 indicators according to the experts' knowledge:

- 1) Number of general assemblies and commission sessions (public index);
- 2) Presented training to company (public index);
- 3) Investment (financial and economic index);
- 4) The capital increase and percent of profit increase (financial and economic index);
- 5) Job creation and number of insured employees of cooperative company (entrepreneurship index and employment);
- 6) Export of goods and services (development and foreign exchange index);
- 7) The amount of foreign exchange from services to tourists (development and foreign exchange index);
- 8) Entering foreign market and increase of foreign exchange compared to the past year (development and foreign exchange index);
- 9) Create tourism center and urban tourism (regional development index);
- 10) Development of cultural activities (regional development index);
- 11) Empowerment of vulnerable people namely women (regional development index);
- 12) Create supportive loan for members (empowerment and welfare index).

2.1. Study population

The study population to find the Fuzzy knowledge base included 30 experts of cooperative ministry. Table 1 shows the descriptive information of the population.

Table 1. The descriptive information of experts

Cumulative percent	%	F	Variable
Age			
6.6	6.67	2	25-30
10	3.33	1	31-35
40	30	9	36-40
80	40	12	41-45
96.6	16.67	5	46-50
100	3.33	1	Above 51
	100	30	TOTAL
Field			
3.33	3.33	1	Public health
6.66	3.33	1	Sociologist
13.33	6.66	2	Geography
16.66	3.33	1	Veterinary
20	3.33	1	Literature
23.33	3.33	1	Food industry
26.66	3.33	1	Social sciences
30	3.33	1	Educational management
40	10	3	Business management
60	20	6	Administrative management
63.33	3.33	1	Industrial management
66.66	3.33	1	Human resources management
80	13.33	4	Civil engineering
83.33	3.33	1	Metallurgy engineering
100	16.6	5	Agriculture engineering
	100	30	TOTAL
Work experience			
40	40	12	10-15
70	30	9	16-20

Cumulative percent	%	F	Variable
90	20	6	21-25
100	10	3	above 25
	100	30	TOTAL
Job			
3.33	3.33	1	Auditor
13.33	10	3	Chief
16.66	3.33	1	Chief of distribution department
20	3.33	1	Chief of economic department
23.33	3.33	1	Chief of services department
26.66	3.33	1	Chief of housing department
30	3.33	1	Manager of education
33.33	3.33	1	Cooperative management
36.66	3.33	1	Deputy of management
96.66	60	18	Expert
100	3.33	1	Service expert
	30		TOTAL
Education			
6.66	6.66	2	BA
40	33.33	10	MA
60	60	18	PhD
100	100		TOTAL

3. Fuzzy performance assessment model

In the present study, four steps were used to implement the assessment model:

- Create fuzzy rules-model;
- Create fuzzy database based on the experts;
- Assessment of model using EFQM method and selection of effective variables;
- Assessment of model by standards of cooperative companies

3.1 Fuzzy rule based system

Fuzzy inference systems based on their rules are presented in two forms:

- 1- Mamdani: In this system, *if* and *then* both are in the form of fuzzy rules.

$$\text{if } x_1 \text{ is } \tilde{A}_1 \text{ and (or) } x_2 \text{ is } \tilde{A}_2 \dots x_n \text{ is } \tilde{A}_n \text{ then } y = \tilde{B} \quad (1)$$

$$\text{2- Takagi-Sugeno-Kang (TSK): In this system, if is fuzzy but then is presented in non-fuzzy form} \\ \text{if } x_1 \text{ is } \tilde{A}_1 \text{ and (or) } x_2 \text{ is } \tilde{A}_2 \dots x_n \text{ is } \tilde{A}_n \text{ then } y = a_1 x_1 + a_2 x_2 + \dots + a_n x_n \quad (2)$$

In the present study, Mamdani and Sugeno system were used to evaluate performance of cooperative companies. For defuzzification of general performance of cooperative companies, center method was used. As the applied fuzzy variables are triangular values ($\tilde{A} = (a_l, a_m, a_u)$), its non-fuzzy equivalent in center method is defined as:

$$A = \frac{(a_u - a_l) + (a_m - a_l)}{3} + a_l \quad (3)$$

In this study to create the fuzzy rules of Sugeno and Mamdani model, first, the impact of performance indicators was extracted from the experts' knowledge. Then, based on the significance of each indicator, a linear relationship defined. Therefore, the final performance of cooperative companies was determined with the mapping of input variables as performance indicators in a range of 0 to 100. For this purpose, a questionnaire was used to

find the experts knowledge in regarding to the impact of performance indicators. Next, based on the mean and standard deviation of responses of experts, the score of performance as the basis of mapping of input variables to output variable as the total performance of cooperative companies was determined. The proposed method based on the mean and standard deviation of scores called EFQM is summarized in the following steps:

- *Step 1:* The mean score of each of indicators of performance is computed based on the results of questionnaire.

We assume the mean score of index i is equal w_i^1 .

Thus, the weight of importance of normalized mean of index i th of w_i^1 is computed by the following Equation:

$$w_i^m = \frac{w_i^1}{\sum_{i=1}^n w_i^1} \quad (4)$$

- *Step 2:* Based on the standard deviation and ranging of performance indicators by different respondents, we can compute the weight of importance called the weight of importance based on standard deviation as follows proposed in the study of Xu and Da (2010). In this method, we assume that $k = 1, \dots, i$ is the index of respondents and the score in questionnaire stating the k^{th} respondent for i^{th} index is a_i^k .

Thus, the mean index of standard deviation of i th index by respondent k^{th} to other criteria, V_i^k is computed by the following equation:

$$V_i^k = \frac{1}{n} (a_i^k - \frac{1}{n} \sum_{j=1}^n a_j^k) \quad (5)$$

- *Step 3:* By defining the weight of importance of standard deviation of i^{th} index, w_i^s is defined as follows:

$$w_i^s = \frac{\sum_{k=1}^l V_i^k}{\sum_{i=1}^n \sum_{k=1}^l V_i^k} \quad (6)$$

- *Step 4:* The importance weight of a criterion based on mean and standard deviation w_i is computed by the following equation:

$$w_i = \frac{w_i^m + w_i^s}{\sum_{i=1}^n (w_i^m + w_i^s)} \quad (7)$$

- *Step 5:* After defining w_i , score of each criterion from 100 scores (SCi) is defined by the following Equation:

$$SC_i = 100 \times w_i \quad (8)$$

To extract fuzzy rules, Likert scale is sued, very good is denoted by 9, good 7, average 5, weak 3 and very weak 1 and then by dividing the values by 9, these values are normalized. To show the performance of this method, we assume we have three criteria of C1, C2, C3 and their scores is defined after collection of questionnaire and Equation (3) as 30, 50, 20, respectively. The legal output as C1 good, C2 average and C3 very good is defined as:

$$\left(\frac{7}{9}\right).SC_{c1} + \left(\frac{5}{9}\right).SC_{c2} + \left(\frac{9}{9}\right).SC_{c3} = \left(\frac{7}{9}\right).30 + \left(\frac{5}{9}\right).50 + \left(\frac{9}{9}\right).20 = 71.11 \quad (9)$$

After defining the score of each of performance indicators, a similar linear relationship of Equation (4) used to define the output of Sugeno fuzzy inference system in this study. This equation used to define fuzzy inference rules in Mamdani system by determining “if” part of rules and using the replacement of inputs to identify the then part. We should consider that one of the goals of performance assessment is identification of weaknesses of assessment unit and presenting suitable solutions to improve its performance. In this study, a method was used to create performance indicators with the highest improvement in assessment unit performance. Thus, we used the method proposed in the study of Sing *et al* (2015), as follows:

- by the proposed methodology, define the general index of organization performance and denote it S.
- for each of performance indicators of company $i=1, \dots, n$, perform the following steps:
 - a. increase the performance of company in the index as 10%;
 - b. if the new value is higher than 100, it is equal to 100;
 - c. by considering other performance indicators and new value of i th performance index as constant, by the proposed method, compute the general index of organization performance and denote it by S_i ;
 - d. denote S_i-S difference as W_i .

Order the performance indicators based on W_i values as descending. The index with the highest rank is the highest improvement in performance.

4. Results

Based on the experts’ indicators as performance assessment of cooperative companies, a questionnaire was provided in which the participants are asked to define the importance of performance index in a scale 1-9 in which the higher the importance of index, the bigger the value.

After the collection of questionnaire, the validity and reliability was evaluated. The reliability was computed by Cronbach’s alpha with SPSS software (Cronbach 1951). The coefficient of the questionnaire in this study was 0.926. By the results of questionnaire, the weight of mean, weight of standard deviation, total weight and score of each index are explained in Table 2.

Table 3 shows the verbal variables in the fuzzy inference system. The membership functions of input variables (performance assessment indicators) are shown in Table 3. In Mamdani fuzzy inference system, the company performance is shown by ideal and non-ideal verbal variables with membership functions in Table 4. By the calculated score for performance assessment indicators, the output of Sugeno fuzzy inference system is computed.

Table 2. Mean and standard deviation of performance assessment indicators

Score	Total weight	SD weight	Mean weight	Index
10.81	0.11	0.1	0.11	Number of general assemblies and commission session
8.91	0.09	0.09	0.09	Presented education to company
9.19	0.09	0.10	0.09	Investment
8.71	0.09	0.09	0.08	Capital increase and profit increase of company
7.73	0.08	0.08	0.07	Job creation and number of insured employees of cooperative
7.11	0.07	0.08	0.06	Export of goods and services
8.11	0.08	0.08	0.08	Foreign exchange amount from services to tourists
8.30	0.08	0.08	0.09	Entering foreign market and increase of exchange rate compared to the past year
8.11	0.08	0.07	0.09	Establish urban tourism centers
7.90	0.08	0.07	0.08	Develop cultural activities
7.16	0.07	0.07	0.07	Enable the vulnerable class namely women
7.96	0.08	0.08	0.08	Create supportive facilities for members

Table 3. Fuzzy equivalent of verbal variables

Verbal variables	Triangular fuzzy value
Very low	(1,1,3)
Low	(1,3,5)
Average	(3,5,7)
Good	(5,7,9)
Very good	(7,7,9)

Source: Abbasi and Eftekhari 2014

Table 4. Membership function of performance of cooperative companies as the output of fuzzy inference system

Verbal variables	Triangular fuzzy values
Average (non-ideal)	(0,0,50)
Good (non-ideal)	(0,50,100)
Very good (ideal)	(50,100,100)

Fuzzy inference system was implemented with the above features in Matlab software. By introduction of performance of cooperative companies in each of input indicators to fuzzy inference system, we can measure the performance of cooperative company. According to the method proposed in the study of Sing *et al.* we can define how much a company by improving performance indicators can improve its performance. To show this, we considered the performance of a cooperative company as a case study to test the validity of the proposed model as shown in Table 5.

Table 5. The performance of a cooperative company as a case study

Condition	Performance index	Condition	Performance index
Very good	Index 7	Very good	Index 1
Good	Index 8	Good	Index 2
Average	Index 9	Average	Index 3
Average	Index 10	Weak	Index 4
Good	Index 11	Good	Index 5
Very good	Index 12	Weak	Index 6

Source: Study results

By the proposed method, the improvement of performance of cooperative company after the change of different performance indicators as 30% is shown in Table 6.

Table 6. The performance improvement as the change of each of performance indicators as 30%

Improvement	Performance index	Improvement	Performance index
2.43	Index 7	3.24	Index 1
3.78	Index 8	4.06	Index 2
2.7	Index 9	3.06	Index 3
2.63	Index 10	1.74	Index 4
3.26	Index 11	3.52	Index 5
2.38	Index 12	1.42	Index 6

Source: Results of study

As shown, index 2, the presented education to cooperative company has the highest improvement in cooperative performance. By improving education, this company can improve its performance higher than other indicators. Finally, we compare the proposed approach in this study with the common approach of performance

assessment of cooperative companies in the note (2) of section (3), article (10) of Executive Regulation of Import and Export Rules (ERIER) approved in the common proposition of chamber of commerce, industry, mine and agriculture of Iran and central cooperative of Islamic Republic of Iran in 2010. ERIER determines the ranking of legal and real personalities as well as cooperative companies. In this instruction, the companies received top rank cards based on the scores. The applied indicators in this method are different from the indicators presented in this study. We can classify the presented indicators in this study as shown in Table 7 in each of general indicators in the instruction of ministry of cooperative.

Table 7. The equivalent of applied indicators in this study based on existing indicators in the instruction of ministry of cooperative company

Instruction of ministry of cooperative	The applied index of study
Professional qualification competence	Number of general meetings and commission session
Professional qualification competence	Educational activities in company
Financial performance	Investment
Financial performance	Capital growth and profit in company
Professional qualification competence	Job creation and number of insured employees
Business and foreign	Export goods and services
Business and foreign	Foreign income from services to tourists
Business and foreign	Entering to abroad market and increasing the annual interest rate
Social responsibility	Establishing urban tourism centers
Social responsibility	Developing cultural activities
Social responsibility	Vulnerable empowerment especially women
Professional qualification competence	Create supportive facilities for members

Source: Study results

By this division, shown in Table (7), by performance evaluation system, Table 8 compares the scoring in proposed method and instruction of ministry of cooperative in performance assessment of cooperative companies.

Table 8. The comparison of applied indicators of study with the indicators of instruction of ministry of cooperative

Score by the proposed method	Score of instruction of ministry of cooperative	Performance index
35.5	35	Professional qualification and competence
18	35	Financial performance
23.5	15	Business and foreign
23	15	Social responsibility

By comparison of the proposed methodology and instruction of ministry of cooperative, we can say in professional qualification and competence, both methods have similar scoring. The financial index in cooperative instruction has high score compared to the proposed method and business and social responsibility in the proposed method have high score compared to the instruction of cooperative ministry. We can say the proposed index of this study includes wide range compared to four proposed criteria in the instruction of cooperative and some of sub-indicators of business and export indicators in the proposed method as foreign exchange with financial performance can be common. Briefly, we can say in evaluation of service companies, social responsibility in the proposed method and accordance to the results of experts' questionnaire to instruction of ministry of cooperative is much important and this refers to the social responsibility of cooperative and service companies as the important goals of cooperative companies.

Conclusion

Unstructured condition of decision making is a managers' challenge for the performance assessment of companies. In this study, a fuzzy decision system has been developed for ranking the performance of cooperative companies.

In the proposed model an EFQM method was used to optimize the fuzzy rules base in the performance assessment process. The results showed that the proposed model was an accurate method to analyze the performance of cooperative companies. Moreover, the model showed an important role to select the high impact factors for improving the company performance. As a result, cooperative companies with the improvement of performance indicators can enhance their proficiency. The developed fuzzy model can be replaced with existing qualitative methods for the purpose of minimizing analyzers' biases and improper weights on the various deciding factors in the performance assessments of the companies.

Future works

The developed model can be combined with other methodologies of study as development of quality function to identify and prioritize the organization improvement strategies based on performance indicators. Also, using other performance assessment methods in a hybrid model as balanced scorecard and neural networks can be considered to evaluate the performance of cooperative companies in the future works.

References

- [1] Abbasi, Sh., Eftekhari, M. 2014. *Propose a model to evaluate small and medium knowledge-based companies using fuzzy logic and evolutionary algorithms*. National conference of computer engineering and IT management.
- [2] Ahmed, I., Sultana, I., Kumar, S., Azeem, A. 2013. Employee Performance Evaluation: A Fuzzy Approach, *International Journal of Productivity and Performance Management*, 62(7): 718-734. Available at: www.emeraldinsight.com/1741-0401.htm
- [3] Azar, A., Faraji, H. 2001. *Fuzzy management knowledge*. Tehran publications.
- [4] Bai, C., Dhavale, D., and Sarkis, J. 2014. Integrating Fuzzy C-Means and TOPSIS for performance evaluation: An application and comparative analysis. *Expert Systems with Applications*, 41(9): 4186-4196.
- [5] Choong, K. 2014. Has this large number of PMS publications contributed to a better understanding of performance measurement? A literature review. *International Journal of Production Research*, 52(14): 4174-4197.
- [6] Esen, H., Hatipoğlu, T., and Boyacı, A.İ. 2016. A Fuzzy Approach for Performance Appraisal: The Evaluation of a Purchasing Specialist, in *Studies in Computational Intelligence*, 620: 235–250, Springer International Publishing
- [7] Fareghi, B. 2008. *Introduction to the history of cooperative*. Hamshahri newspaper.
- [8] Glykas, M. 2013. Fuzzy cognitive strategic maps in business process performance measurement. *Expert Systems with Applications*, 40(1): 1-14.
- [9] Jamshidnezhad, A., Azizi, A., Shirali, S., Rekabeslamizadeh, S., Haddadzadeh, M., Sabaghan, Y. 2016. Evaluation of Suspected Pediatric Appendicitis with Alvarado Method Using a Computerized Intelligent Model, *International Journal of Pediatrics*, 4(3): 1465-1473. Available at: http://ijp.mums.ac.ir/article_6467.html
- [10] Jamshidnezhad, A., Lotfinejad, M.M., Shirali, S., Ziaghham, V., Attarzadeh, M. 2017. Bees Reproduction Cycle: A Solution to Diagnosis of Acute Appendicitis, *TEM journal*, 6(2): 232-241, DOI: 10.18421/TEM62-06. Available at: http://www.temjournal.com/content/62/TemJournalMay2017_232_241.pdf

- [11] Rajabbeigi, M., Hashemnia, Sh., Tayebitoluh, A. 2012. Performance assessment measures based on balanced assessment approach (Case study: Karaj Municipality). *Journal of Economics and Urban Management*. 1: 69-82.
- [12] Ronagh, Y. 2007. *Management law of state services*. Farmanesh publications. Tehran
- [13] Shirdel, A., Ghafari, A. Bagheri. A. 2014. *Performance assessment of cooperatives of agriculture from the view of cooperatives of Ardebil*. Cooperative and agriculture. 11 pp.
- [14] Singh, S., Olugu, E.U., Musa, S.N., and Mahat, A.B. 2015. Fuzzy-based sustainability evaluation method for manufacturing SMEs using balanced scorecard framework. *Journal of Intelligent Manufacturing*, 29 (1):1-18. DOI 10.1007/s10845-015-1081-1
- [15] Sofiyabadi, J., Kolahi, B., and Valmohammadi, C. 2015. Key performance indicators measurement in service business: a fuzzy VIKOR approach. *Total Quality Management & Business Excellence*, 27 (9-10): 1028-1042
- [16] Xu, Y.J., and Da, Q.L. 2010. Standard and mean deviation methods for linguistic group decision making and their applications. *Expert Systems with Applications*, 37(8): 5905-5912.

Comparative Analysis of Russia Public Sector Pension Scheme

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Abstract:

The purpose of this research is comparison of Russia's and European states' public sector pension schemes (PSPS) by key parameters. The tasks solved: 1. Substantiation of structural deformations existence in the current Russian PSPS; 2. Comparison of the situation in Russia's and European states' PSPS on key parameters; 3. Expansion of the possibilities of adaptation of Harsanyi-Selten's games theory to the tasks of the PSPS reforming by creating a unified technology based on mathematical modeling. Structural deformations of the existing PSPS are manifested in low parameters of its stability. Comparison of the key parameters of Russia's and a number of European states' PSPSs is conducted and a conclusion is drawn on the need for a Russian PSPS in fundamental transformation across a wide range of areas. The use of mathematical tools in the modeling of the public choice of the PSPS for equilibrium conditions between the state and the private system is scientifically based. The research can serve as a theoretical basis for reforming PSPSs in many states' difficult social and economic conditions, for a comprehensive assessment of the social protection quality of the population, and for constructing predictive scenarios on the social policy transformation prospects for many states.

Keywords: public sector pension scheme; key parameters; structural deformations; mathematical modeling; social protection quality; social policy transformation.

JEL Classification: G18; H55; P35

Introduction

The choice of the PSPS aimed at the social guarantees stable system formation should be considered as strategic for the society. This choice is based on the mechanism of transforming the income of the population into organized financial resources based on the synthesis of the principles of annuity life insurance and citizens' investment

strategies. The consequences of this choice have implications both for society and state. The development of the latter depends on the decision made.

The latter causes the state, as a participant in the choice, to offer different conditions determining the vector of decision-making by society in the direction desirable for the state, while preserving the conditions favorable for its development (Medvedev 2016).

According to the "invisible hand law" by A. Smith, the rational choice of individuals leads to positive consequences for society (Smith 2007). Therefore, the modeling of financial relations within the framework of the PSPS choice is oriented to the achievement of the citizens' interests and to the emergence of a positive effect for the entire economy.

1. Literature Review

In the analysis of the income impact of the population on the magnitude of consumer demand, as the most sensitive indicator of the market state, J. M. Keynes paid special attention to the importance of income in providing consumer activity of the population, which is estimated as a catalyst for production growth in classical economic science. It seems reasonable in this case to offer the authors to treat NPF as mechanisms that ensure that citizens maintain their income level when there is a substitution for paid labor with rental income.

In researches of questions about the sources of financing the economy, J. J.M. Keynes noted that the key role in this process is assigned to the state. By regulating the state of the budget, justifying state spending, controlling the activities of financial institutions, the authorities directly and indirectly affect the interests of the whole society. Keynes assigned a special place among the financial structures to those who were involved in attracting people's money for a long time and could influence the aggregate demand for money in the state (Keynes 1999). The authors proceed from the assumption that the category of modern financial institutions is non-state pension funds (NPF) that fully meet the Keynesian criteria.

Merton and Bodi (2008) defined pension funds in general, as organizations that finance pension payments under existing annuity life insurance programs. Annuity life insurance in the world is divided into interest-bearing and incentive, participation in which is taken by non-state structures, but the payment of pensions is the last, however, are regulated by the state.

The beginning of the pension schemes formation by developed states dates back to the very beginning of the 20th century, in states such as Britain, France, Germany, and in some others, relations began to take shape on the basis of mixed pension coverage, initially within the framework of the general social protection system. Thus, the English pension scheme is considered to be one of the oldest in the world, having formed by 1908, it is the most difficult according to the principles of organization and regulation, but also the availability of opportunities for pensioners. British pensioners have the right to a basic pension from the state (uniform for all), a retirement pension from the national insurance system (depending on wages and length of service) and an individual pension, which is formed by the people themselves through deductions to the NPF. The aggregate state pension guarantees receipt of up to 40% of the lost income, while the personally calculated pension can be larger. The existence of several ways of accumulating private pensions - from corporate programs at enterprises to a developed system of voluntary pension savings in NPF - has formed a stable platform for social protection of the population. Modern changes in practice and emerging new trends in the development of UK pension schemes are such that they are able to provide decent living conditions in the period of incapacity for work by age to millions of people around the world through a system of non-state pension funds (Matuk1994).

The English economist Pigou (1985), in the 1920s, turned to the issues of the policy of social reforms, creating a conceptual platform for the bourgeois theory of the "welfare state". A. Pigou believed that the magnitude and rate of growth of national income is affected by a number of factors: Resources, capital and foreign trade policy of the authorities. Noting in particular that, apart from economic growth, welfare is important for society, which can be achieved through the desire for a uniform distribution of income through rational taxation and state regulation of social policy, forming an economic welfare theory that later became the basis of the UK pension scheme.

The reform of the American pension scheme was completed in 1935. It was based on the distribution principle, as it was intended to provide ensemble pensions for all citizens, in accordance with the legislation on

social insurance. State and private pension programs were integrated into the renewed pension scheme. The former provided pension guarantees for jobholders on an interest-bearing basis, the latter for workers employed in the private sector of the economy who had the opportunity to participate in pension schemes organized by professional associations, non-state funds and in other formats.

The reform resulted in the formation of three parallel public sector pension schemes: immanent state and two private: collective in the place of work and individual (personal pension account). The state aims at the fairness of pension payments for all generations on a solidary basis, and the private has realized the possibility of obtaining a higher pension for relatively well-off and far-sighted citizens. Nevertheless, changes in many financial and economic processes could not but affect the largest public sector pension scheme. After relatively stable socially decades, in the United States, by 1983, the permanent deficit of trust funds began to affect, providing obligations for the payment of pensions, which entailed rather serious consequences for the American economy. Earlier in the United States, a system was established that provided for the implementation of annuity life insurance system based on self-financing. Pension scheme was provided from deductions from labor payment without additional financing from other sources. The deductions were accumulated in trust funds, the scale of which was set according to the projected income inflow in the next 75 years for annuity life insurance and for 25 years for health insurance and incapacity for work (Musgrave and Musgrave 1989).

The problems of "old age" insurance and the effectiveness of the state public sector pension schemes are widely covered in the papers of R.A. Musgrave and P.B. Musgrave. The emphasis is shifted to justice issues with respect to individual generations of existing in sympathy with principles of the state annuity life insurance system. In the framework of macroeconomic analysis, the impact analysis of pension scheme on the taxation system and the rate of capital growth remain relevant. These issues are universal for all states of the world, especially for the Russian economy, which is experiencing the burdensome impact of social contributions that generate shadow schemes for wages.

Creation of a functional and efficient pension scheme for the conditions of a dynamically changing society that has not reached the indicators of developed economies is a very difficult task. The difficulty, mainly, is the need to harmonize the interests of citizens insured in the pension scheme, that is, future and potential pensioners and pension funds - state and non-state, accumulating pension contributions of insured persons and not always able to cope with the volume of obligations that are obviously burdened with temporary management of pension savings funds. The range of functional duties that are imputed to non-state pension funds (NPF) and the state (traditionally unique) body that provides pension guarantees to citizens largely limit the possibilities of financial maneuvers in managing temporarily free funds of the population. The role assigned to it rests on state regulation, which is often necessary to level out market failures and protect pension savings funds of citizens from loss (loss) of equivalent commodity value. Without touching upon the role of the state in other sectors of the economies of states that have gone through the transition and the disintegration of the command and control system, one cannot but ignore the issues related to the need for really strict regulation and control of financial institutions, including NPF, the state to level, as far as possible, the shadow sector. The functioning of the shadow economy in all sectors of the Russian economy has become extremely widespread during the shock of market reforms in the 1990s and continues to have a negative impact on the regions of the state with varying intensity, exacerbating the period of economic downturns (Kuklin *et al.* 2012).

Issues of development and implementation of social and economic policy, including pension scheme, are also devoted to modern research, in particular, specialists from The Urban Institute (Washington, USA), the United States Agency for International Development (USAID) in 2001-2003, the results of which led to very definite conclusions about the effectiveness of the transformations of countries of the Eastern European bloc in the 1990s, with the assistance of the European Bank for Reconstruction and Development (EBRD) and the World Bank. The fundamental provisions of such reforms, for example, in East Germany, were stimulation of private sector investment and colossal social programs (from 40 to 60% of GDP) (Morse *et al.* 2007). It was the generous financial of social programs, to a large extent - the pension scheme- that enabled the FRG, when merged with the GDR, to overcome social stratification and to unite the disparate society without damaging the economy.

Quite resonant in scientific circles was the paper of Piketti (2015) on issues affecting the fundamental values of the civilized world: Social construct, as a mechanism for the distribution of benefits and social guarantees. Research T. Piketti on the assessment of the economic growth impact on the quality and standard of people living, on the role of the state as a guarantor of social stability and equality in society and on inequalities in the distribution of income from labor and capital allows us to conclude that, that pension scheme should be viewed as a mechanism that levels out the gap in the incomes of the population in different periods of people's lives and thus smooths decile and centile inequalities in the second and lower.

In Russian market, in addition to the aim of doubling GDP, President V. Putin in 2012 tasked to reduce poverty by half by 2022. Guriev (2012) believes that this cannot be achieved even with a favorable external economic situation and foreign policy conjuncture. Those approaches that exist today in developed countries proceed from a different mentality: European Community states prefer to level social inequality by redistributing poor taxes in favor of the poor, while the United States takes a different position, believing that poor people should help themselves. American logic is much more pragmatic: high taxes on business and household incomes reduce the rate of economic growth and slow the development of the economy, so it is much less costly to create the conditions for "vertical mobility", which spawned the so-called American dream. According to data for 2012, the growth rate of the US economy is about 1% higher than the European average, and the share of state expenditure in GDP is about 30%, while on average in European states it is 45%, in the Scandinavian states - more than 50% %, in the UK - 38%.

The Russian public sector pension scheme faces similar tasks; the next stage of the current pension reform is called upon to serve it. The forecast of the Ministry of Economic Development of the Russian Federation says that by 2035 the real incomes of citizens will increase by 56.5%, the economy will grow by 78%, while pensions will increase by only 2.5%, which is 4% lower than in pre-devaluation 2013 (Akindinova *et al.* 2017). It is possible to get out of the pique, in which, according to the authors' deep conviction, the Russian economy is possible only by really expedient methods, rather than by securing a third of the budget (RBC) and not using the Pension Fund funds in aims other than stipulated by the law. The history of countries that were in much more difficult conditions shows that there are such methods - for example, the German economy of 1932-1934, when the efforts of Yalmar Shacht, the head of the Reichsbank, led in four years to a reduction in unemployment from 6 to 1.5 million Man and a twofold increase in industrial production (Liaquat 2011).

The leading role for personal pension planning is given in the researches of the American Institute for Chartered Property Casualty Underwriters (AICPCU) and the Insurance Institute of America (IIA). Personal pension planning, in fact, acquired in the United States, the status of self-provision and is viewed as an element of investment planning implemented by the population in non-state pension, investment, unit investment funds and other financial institutions (Hamilton 2010). This approach is considered the most promising by the authors, since it is implemented on the basis of discretionary financial decisions of households and does not require the growth of the social burden in the economy.

The modern format of relations between the state and society makes more and more demands on those issues that affect the aspects of financial planning in the framework of investment and savings decisions of the population. One of the most effective forms that can realize the potential of current and prospective financial planning for the citizens of most states is participation in the system of non-state annuity life insurance (NALI).

The construction of forecasts regarding the prospects for development and directions of the transformation of public sector pension scheme, traditionally, is based on the possible dynamics of such important variables, such as wages, retirement age, price level, inflation, unemployment, migration trends, demographic situation and some others that are difficult to predict in significant time horizons. The formation of complex forecasts, of course, is carried out using mathematical and econometric tools and involves modeling of dynamic processes at the macroeconomic level. To model this category, you must have extremely large amounts of information for very long time periods, which, in turn, has the reliability and allows you to build scenario models with all the variables listed - it is available, perhaps, only for the US economy. Thus, the tasks of constructing econometric models of macroeconomic parameters, including the "block" of annuity life insurance, are given attention in the paper of Fisher "Econometrics. Essays in Theory Application» (Fisher 1992).

2. Materials and methods

The present paper is devoted to the problem of developing a pension scheme strategy in Russia. The authors presented the opinions of leading scientists and researchers, allowing forming an idea of the formation and transformation of the social protection system in developed states that went through a difficult and difficult path before they created effective pension scheme for their citizens. The key element of the European pension schemes are non-state financial institutions, whose functions extend to accumulation, and temporary use for investment purposes of the population's monetary resources, including pension savings funds of the population.

The search for a fundamental scientific based for expressing the authors' position on the need for Russia to follow the same path as the advanced world and European powers led to the adaptation of the theory of games, in particular, the Harsanyi-Selten model for modeling the choice of society with respect to the public sector pension scheme. It seems fully based to simulate free choice by the population of financial institutions to which it can entrust pension savings funds as a choice between the conditions of the two equilibriums: preference in the risk participants' strategy, which is related to the Nash equilibrium and the preference of the win, corresponding, respectively, to the Pareto equilibrium. The graphic representation of the Harsanyi-Selten model is intended, according to the authors' intention, to justify the logical basis for the formation of a theoretical platform for the long-term strategy of public sector pension scheme for the population of Russia.

The scientific justification for this formulation of the problem and its further solution is contained in two key criteria for choosing a society. The application of Harsanyi-Selten theory on the choice of a society between two equilibriums, some solutions of the problem¹⁵, allows us to disclose it as a preference for winning dominance (Pareto equilibrium) or for risk dominance (Nash equilibrium).

This choice is made by society from the standpoint of striving for social justice, rather than economic expediency and development prospects. The society inevitably tends to such a scenario, which, other things being equal conditions, can ensure the achievement of some citizens interests without infringing on the interests of others - in essence, striving for Pareto equilibrium (Dixit and Neilbaff 2015). However, the authors consider it quite permissible to consider the choice in favor of the Nash equilibrium, which is due to participation in the choice of any participants' number. The advantage of the Nash equilibrium for the public sector pension scheme selection model is that none of the participants can increase their winnings by changing their decision unilaterally, unless other participants in their decisions change. Such an important condition makes the model of the choice of the public sector pension scheme fair, because in a democratic society a group of persons cannot make a decision affecting the interests of its other members so that it does not become known to everyone (Bielecki *et al.* 2015).

Adaptation of the conditions of the model in relation to the present research makes it possible to take into account the social and financial interests of all participants in the public sector pension scheme. The model is based on a choice that takes into account the interests of pensioners and does not infringe on the interests of working citizens. The implementation of such a choice is economically reasonable and causes the emergence of external positive externalities: reducing the social burden on the state and preserving the conditions for economic growth.

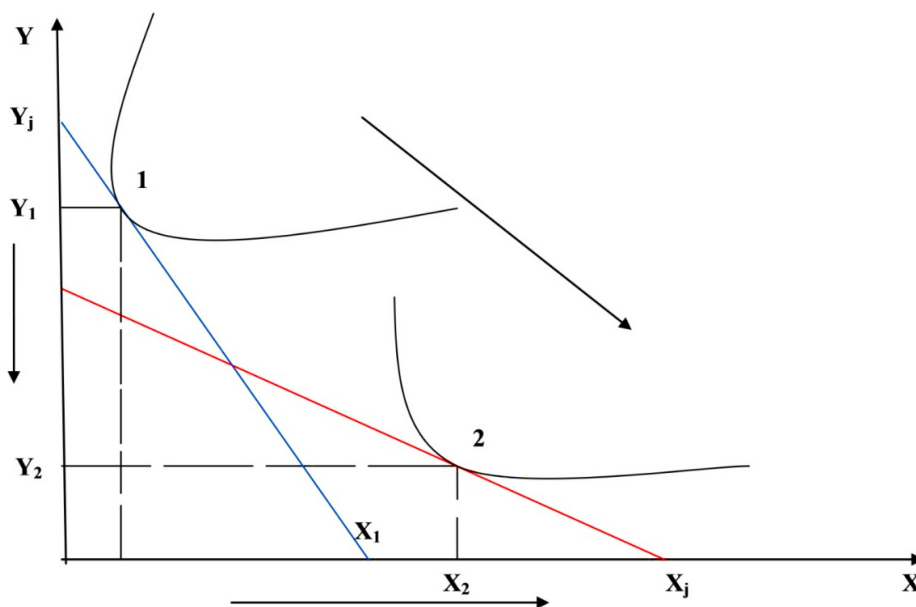
The model has a graphical solution (Figure 1). The essence of the society choice is to decide on pension scheme between the state and non-state systems. The abscise axis reflects the state pension scheme, the axial of ordinates is non-state. The red line illustrates the selection of citizens in conditions of restrictions on participation in non-state pension programs, blue - the absence of restrictions on such participation.

Parabolic curves - there are curves of indifference for two scenarios for the choice of society: Choice "1", reflects the tendency of the society to participate in the system of non-state pension scheme. The amounts of financial resources "x1" and "y1" show the expenditures of the state and non-state pension schemes, respectively. The shift of the equilibrium choice to the "2" point, taking into account the Nash and Pareto equilibriums parameters, means that the society has made a decision in favor of the state pension scheme and the solidarity principles of participation in it. The question of taking into account the opinion of all stakeholders of the pension scheme remains open without prejudice to anyone's interests-this is hardly possible in reality. This choice significantly increases the

¹⁵ In the case under consideration - decisions on the application of the public sector pension scheme.

outflow of financial resources into the state pension scheme, increasing the social burden on the state (from "x1" to "x2"). Such a shift in equilibrium will inevitably lead to a decrease in the potential of the entire economy through the accumulation of funds for redistribution and payment of pensions. Equilibrium "1", which comes as a result of the society choice in favor of the non-state pension scheme, provides for the influx of people's savings into NPF and helps to strengthen the socially just format of pensions financing instead of the "generation agreement" solid principles. For the state, in this case, the role of the fulfillment guarantor of obligations by all parties of relations within the framework of the pension scheme is secured by exercising control over compliance with legislation in the process of formation, circulation and payment of pension funds.

Figure 1. Model of the society choice of the pension scheme



Source: Compiled by the authors

The graphic model of society's choice of the public sector pension scheme between the solidarity and interest-bearing formats is based on two independent and, of course, distinct criteria of rationality. One of the criteria is the prevalence of risk, it provides for a joint redistribution mechanism. It is based on individual rationality, when the decision of one person is "n", belongs to a set consisting of many decisions of other people. All decisions from a certain set cannot be related to each other and cannot take into account the consequences of some people decisions in influencing the other members of society positions. The reverse side of such a situation may consist in concealing the incomes of working citizens, which inevitably entails a reduction in the income of pension contributions to the solidarity system and, as a consequence, the restriction of current pensions.

The reverse effect is dominated by the win, that is, the choice of a non-state interest-bearing pension scheme. This choice is based on the principle of collective rationality, which is realized in the desire of rational participants to win for all participants in the relationship (Harsanyi and Selten 2001). The implementation of the selection based on the win will create a risk-resistant system capable of securing pensions accumulated in personal accounts that do not entail a violation of the rights of other members of society, including working citizens. The state will remain the winner - the burden on pension obligations will be reduced. Back in 1978, A. Bergson in his work "Productivity and the socialist system: The Soviet Union and the West" noted the inevitability of the centrally planned economic system collapse and the transition to market principles in view of the state ability exhaustion to finance the economy and social needs.

Thus, the fundamental provisions of economic science and the world practice of implementing pension systems strengthens the authors in the validity of the provisions application of the Harsanyi-Selten theory for modeling the strategy of choosing by society the principles of transforming the disposable income of the population

into resources for financing the economy within the framework of pension schemes. Traditional researches using the theory of games is used in politics, management and other areas of science related to the analysis of people's behavior and conflict resolution based on mathematical methods. However, to solve problems in the social and economic sphere, the theory of games is not so widely used that allows authors to consider their contribution as an extension of the possibilities of using this kind of modeling with respect to the choice of the public sector pension scheme in the society.

3. Results

Non-state pension funds of developed states with modern market relations, have huge amounts of financial resources: by 2000, the total amount of funds attracted by pension funds in relation to the gross domestic product (GDP) was 101% in the UK, 107% in Sweden, and 141% in the Netherlands. The pension schemes of European states are largely focused on the participation of NPF in creating domestic capital markets that make national economies much less dependent on foreign investment. Of course, the preservation of state pensions on the principles of solidarity of generations (PAYG: Pay-As-You-Go) is necessary both for reasons of preserving social guarantees and safety for any developed society (Rotschedl 2015). Forecasts of the International Social Security Association experts (ISSA) suggest that, provided that the conditions of pension scheme remain unchanged, there will not be a significant increase in the share of expenditures for the payment of pensions in GDP in the next few years (Table 1).

Table 1. Forecast of the costs dynamics for pension scheme in European states

States	Share of expenses on pension scheme, as % of GDP	
	2010	2030
Austria	11	14
Belgium	9	12
Bulgaria	7	14
United Kingdom	10	14
Hungary	7	12
Denmark	10	13
Germany	12	13
Greece	11	15
Iceland	8	11
Spain	12	15
Italy	11	15
Latvia	7	8
Lithuania	7	8
Netherlands	9	12
Norway	10	10
Poland	11	10
Portugal	9	12
Romania	6	11
Slovakia	7	13
Finland	11	14
France	11	16
Czech Republic	7	13
Switzerland	10	13
Sweden	10	11
Estonia	7	8
Russia	10	7

Source: Compiled by the authors according to the International Association of Social Security // Electronic resource, Available at: www.issa.int.com (accessed 05/15/2017) and according to the research of the Research Institute of Labor and Employee Insurance (LTI) of the Ministry of Health and Social Development of the Russian Federation Project No. 10-02-00249-a.

Forecasting a reduction in the share of costs for pension scheme, with certainly some increase in gross domestic product, can mean a decrease in the effectiveness of the entire pension scheme and necessitates its reform. Equally unfavorable is the situation in the Baltic countries of the former socialist camp (Mavlutova *et al.* 2016). The question of financing sources for the Pension Fund of Russia, whose budget is comparable to the federal budget as revenue, and on expenses (Ministry of Finance of the Russian Federation 2017).

In this regard, fundamentally important at the next stage of reforms, the conditions for maintaining pension guarantees for the elderly population should be (Razumovskaya 2016):

- freedom in choosing a strategy and an institutional subject for financing a future pension;
- state guarantees of the pension scheme at an acceptable level (k substitution of at least 35%);
- consolidation of opportunities for feasible participation in the economic and social life for pensioners.

In Germany - with a 19% tariff, - the pension provides more than 64% of the lost earnings, while in the Russian Federation, with a deduction from the wage fund of 22%, the average pension replaces just about 22% of the average value of lost earnings. Moreover, the average pension received by European citizens from non-state pension funds is up to 10 times higher than the pension paid from the PAYG state annuity life insurance (Garon 2016, Alda 2017). In the conditions of the population aging in developed states aggravated by migration waves, analysts predict an increase in insurance pension tariffs by 2030 in France from 17 to 24-28%; In Germany from 19 to 28%; In Italy from 18 to 32% of wages¹⁶.

Annuity life insurance in Organization for Economic Cooperation states is mandatory under strict state control of the pension sector, but this does not prevent the wide spreading of non-state pension funds that provide a higher pension replacement rate than Russia (Table 2).

Table 2. The wage replacement rate and type of pensions financing

State	Type of pensions financing ¹⁷	K replacement of the average wage, %
Austria	Combination of interest-bearing and distributive	58.1
Belgium	Combination of interest-bearing and distributive	63.1
Bulgaria	Combination of interest-bearing and distributive	36.4
United Kingdom	Combination of interest-bearing and distributive	59.4
Hungary	Interest-bearing	34.2
Denmark	Interest-bearing	43.3
Germany	Combination of interest-bearing and distributive	64.3
Greece	Distributive	32.3
Iceland	Interest-bearing	52.8
Spain	Interest-bearing	46.8
Italy	Interest-bearing	58.4
Latvia	Combination of interest-bearing and distributive	41.1
Lithuania	Combination of interest-bearing and distributive	40.8
Netherlands	Interest-bearing	68.3
Norway	Combination of interest-bearing and distributive	63.1
Poland	Combination of interest-bearing and distributive	40.4
Portugal	Interest-bearing	39.9
Romania	Combination of interest-bearing and distributive	29.6
Slovakia	Combination of interest-bearing and distributive	36.7
Finland	Interest-bearing	64.2

¹⁶ According to the International Association of Social Security // Electronic resource, Available at: www.issa.int.com (accessed 05/15/2017) and research of the Research Institute of Labor and Social Insurance and the Ministry of Health and Social Development of Russia. The project "Conceptual foundations of the formation of market institutions of compulsory social insurance in Russia" No. 10-02-00249-a.

¹⁷ This is about the predominance of the financing type.

State	Type of pensions financing ¹⁷	K replacement of the average wage, %
France	Distributive	52.9
Czech Republic	Combination of interest-bearing and distributive	45.1
Switzerland	Interest-bearing	58.2
Sweden	Combination of interest-bearing and distributive	64.8
Estonia	Combination of interest-bearing and distributive	35.3
Russia	Distributive	22.0

Source: Compiled by the authors, Available at: www.issa.int.com (accessed 05/15/2017)

The replacement rate is much higher in states with a developed non-state pension scheme sector, with state regulation of voluntary pension programs and the availability of tax benefits with the participation of citizens in NPF. (Staveley-O'Carroll and Staveley-O'Carroll 2017).

Of course, the system of non-state pension scheme is not deprived of the risks determined by the activities of the NPF. Being financial institutions, they are subject to the influence of market volatility, which makes them vulnerable during periods of economic downturns. To overcome such situations, many states combine mandatory and voluntary pension savings schemes, relying on the "support rate", which shows the number of employees per 100 persons receiving a pension (Table 3).

Table 3. K support data 2017

States	K support	States	K support
Austria	147	Bulgaria	122
Belgium	168	Hungary	128
United Kingdom	211	Latvia	111
Germany	159	Lithuania	110
Greece	151	Poland	152
Denmark	288	Romania	107
Iceland	172	Slovakia	198
Spain	261	Czech Republic	172
Italy	178	Estonia	112
Netherlands	331	Russia	103
Norway	278	On average for the sample (taking into account Russia)	131.5
Portugal	131		
Finland	282		
France	178		
Switzerland	228		
Sweden	253		
On average for the developed states of Europe	213.5		

Source: Compiled by the authors according to the International Association of Social Security // Electronic resource, Available at: www.issa.int.com (accessed 05/15/2017)

Of the countries sample, Romania and Russia have the lowest replacement rates (107 and 103 respectively), a slight excess of the working citizens number over the number of pensioners is so insignificant that there is already a situation in which there is reason to expect an increase in contributions to state annuity life insurance, solidary principles. The Netherlands, Spain, Sweden and some other states are in a much more stable position, since the pensioners number is 3.3 times less than the working citizens' number. The forecasted dynamics allows to conclude that serious changes towards increasing the security for future pensioners cannot be expected - the situation will not improve dramatically, but, for Russia, is likely to worsen, as the tendency to reduce the number of the employable population of the state is strengthened with the simultaneous increase in the number of pensioners: the forecast of the Ministry of Finance of the Russian Federation indicates a possible decrease in the value of the support rate by 2050 to 90 (Ministry of Finance of the Russian Federation 2017).

Among the reasons for this situation, obviously - the retirement age, which is much higher than in Russia¹⁸. A well-established system of non-state pension scheme, which forms personal pensions, coupled with the relatively prosperous age structure of the population, makes it possible to consider these states to be socially more prosperous, and their pension schemes more resistant to fluctuations in demographic parameters.

A comparative research of the pension scheme in developed states and in Russia allows us to conclude that the level of social guarantees for Russians is much lower. One of the reasons for this is the position of non-state pension funds. Scenarios for the development of the pension scheme sector by non-state financial institutions, along with the preservation of state mandatory annuity life insurance, largely depend on the choice of the trend for reforming the Russian pension scheme.

The current stage of the next pension reform provided for a moratorium on the formation and use of the interest-bearing part of labor pensions for 2014 - 2015, which was prolonged for the period until 2018. Such a measure undoubtedly aggravates the state of the annuity life insurance market, since the population that is actual in the process of reforming (persons born in 1967 and younger) refers to based mistrust and suspicion of regularly changing initiatives of power. The suspension of liberal reforms is perceived by the population in a mixed way, mainly because of the expectations of the 2018 presidential election results¹⁹.

4. Discussion

The next stage of the research presents statistical and empirical differences in the existing pension scheme in a number of states. In addition, in the conditions of constant presence of the federal authorities, another problem arises that analysts and political scientists did not take into account before the previous presidential elections - it is a question of negative assessments by the population of the current pension scheme. Survey of 7,274 respondents aged 18 years from 150 cities in all regions of Russia found that 81% (according to WCIOM) and 97% (according to LLC Innovation) of citizens consider it unfair to exist in the existing rules for calculating pensions "leveling" principle. The survey carried out by the Levada Center found that respondents, regardless of age, education and gender criteria, support the idea of differentiating the size of pensions depending on the length of service and salary. Russians believe that the non-state pension scheme can provide differentiation for these criteria. At the same time, citizens do not support the authorities' initiatives to raise the retirement age (84% of WCIOM and 91% of Innovation) and increase the minimum work record²⁰. Not more than half of the respondents are ready to continue working on reaching the retirement age and only if the pension is raised.

Nevertheless, some experts believe that the personalization of pension rates will lead to non-transparency of payments and a hidden increase in the retirement age (Expert-Ural 2013).

A universal function for calculating the value of current pension liabilities in the state sector and in the NPF of many states is:

$$GL_{dc} = \sum_q GL_{dc}^{(q)} \quad (1)^{21},$$

where: GL_{dc} - the value of current pension liabilities.

This function is too general, and therefore consistent with the recommended by the Ministry of Labor and Social Protection of Russia by calculating the individual pension rate:

¹⁸ In some of these states, the retirement age is 63 or more years, regardless of gender.

¹⁹ According to survey conducted by the All-Russian Public Opinion Research Center; The Russian Academy of National Economy and the State Service under the President of the Russian Federation, the Levada Center; LLC consulting company "Innovation"; Unified federal telephone service of the Pension Fund of Russia. The survey was commissioned by the Ministry of Labor and Social Protection. Available at: www.rosmintrud.ru/pensions/razvitiye/199/Oprosy_svodnaya.pptx

²⁰ The survey revealed an opinion on the minimum work experience from 15 to 25 years.

²¹ Compiled by the authors on the "General provisions of the new pension formula in questions and answers. New rules for calculating old-age pensions: basic principles and regulations" of November 19, 2013 // Electronic resource., Available at: <http://www.consultant.ru/law/hotdocs/> (accessed 05/15/2017)

$$kpr = \frac{\text{(The amount of insurance contributions for the formation of the insurance part of the pension, paid by the employer at the rate of 10% or 16%)}}{\text{(The amount of insurance contributions from the maximum payable salary paid by the employer at the rate of 16%)}} \times 10 \quad (2)^{22}$$

where: Kpr is the individual pension rate.

The design procedure the old-age insurance pension is as follows:

$$SIP = (FP \times PRR) + (IPR \times PRR) \times CPR \quad (3)^{23}$$

where: SIP is the size of the insurance pension in the year of its appointment; FP – the amount of a fixed payment; IPR is individual pension rate, calculated as the sum of all annual pension rates of citizen; CPR is the cost of one pension rate in the year of appointment of a pension; PRR is the premium rate for retirement upon reaching the primary retirement age.

The reform of the pension scheme in Russia provides for a new methodology for calculating pensions for citizens who have stopped working after the initial retirement age, which makes later retirement profitable, which is taken into account in the solidarity system through bonus rates. A different position is broadcast by non-state pension funds, whose pension programs are oriented to the age rotation of staff within individual companies.

Of particular importance is the component methodology for calculating a non-state pension, the amount of which depends on the obligations paid by the participants:

$$PL_{dc} = \sum_{d=d0}^{dc} \left[\frac{p_d^f}{1+a} \times \frac{\prod_{s=d}^{dc} r_s}{r_{dc}(r_d)^{\text{sgn}(dc-d)}} \right] \quad (4)^{24}$$

where: PL_{dc} - the present value of the obligations paid by the participant as of the date of their valuation dc ; p_d^f - the amount of the pension contribution received on the date d ; a is risk premium established by the NPF; $d0$ - the date of the first pension contribution; d, s - variable date parameters; rd - rate of increment of pension liabilities per day d :

$$r_d = \left[1 + \frac{i^{(y)}}{100\%} \right] \quad (5)^{25}$$

where: $i^{(y)}$ - the actuarial rate of return used for the year y ; Dy - number of days in year y ; sgn^x - function defined on the basis of the date difference.

Comparative presentation of the calculating pension scheme methods in state and non-state pension funds make it possible to understand that the latter have formed a much more socially just, understandable and accessible platform for monitoring, then the state system will not allow further, based on the reasons listed above, to reproduce a reliable and adequate system of pension guarantees for citizens, which is adequate to the current social and economic situation.

However, in the conditions of the federal authorities irremovability, another problem arises, which analysts and political scientists did not take into account on the eve of previous presidential elections - it is a question of negative assessments by the population of the current pension scheme. Analysis of the results of sociological

²² "General provisions of the new pension formula in questions and answers. New rules for calculating old-age pensions: basic principles and regulations" of 19.11.2013.

²³ "General provisions of the new pension formula in questions and answers. New rules for calculating old-age pensions: basic principles and regulations" of 19.11.2013.

²⁴ Compiled by the authors on the "General provisions of the new pension formula in questions and answers. New rules for calculating old-age pensions: basic principles and regulations" of November 19, 2013 // Electronic resource, Available at: <http://www.consultant.ru/law/hotdocs/> (accessed 05/15/2017)

²⁵ Compiled by the authors on the "General provisions of the new pension formula in questions and answers. New rules for calculating old-age pensions: basic principles and regulations" of November 19, 2013 // Electronic resource. Available at: <http://www.consultant.ru/law/hotdocs/> (accessed 05/15/2017)

surveys revealed a critical assessment of the situation, the authorities revised the formula for calculating the insurance part of the labor pension, which, according to the plan of the legislators, will be based on individual rates, the level of which will depend on the length of service, wages and a number of other factors. The changes are designed to provide pensioners who decided to continue working, to increase their pension more quickly. Nevertheless, experts believe that the personalization of pension rates will entail non-transparency of calculations and a hidden increase in the retirement age (Andreasson *et al.* 2017).

Ignoring the existing complicated situation by the officials and the extreme immunity of a large part of the population to the need for a transition to transparent methods for calculating the interest-bearing part of the non-state pension, which could allow participants of non-state pension funds to independently calculate and control the amount of current allocations and future pensions, will lead to the most unfavorable consequences for the whole society.

On the contrary, the high trust credit of citizens to the state pension scheme causes confusion, whereas the methods of calculating pensions of a solidary system do not allow to predict the size of a future pension, since it depends not on individual parameters, but on the overall economic conditions: the rate of economic growth and inflation, the demographic situation in terms of age structure, and so on. All these circumstances led to the transition to a ball system for recording pensions in a solidary system, and the differentiation of a fixed part of insurance pensions is determined mainly by the time interval when applying for a pension after reaching the established age.

Conclusion

The logic of modeling game theory correlates with common sense and fits into the positions of fundamental theories, however, as the authors believe, it will not serve as a sufficient basis for Russian legislators to correct the vector of pension scheme reform. The achievement of a consensus of the social interests of society and economic expediency in the framework of the graphic adaptation of the Harsanyi-Selten model is due to the realization of citizens' choice of pension scheme on the basis of independent criteria of theory rationality of two equilibriums.

The relevance of the presented research is determined by the prevailing conditions in a number of states where pension schemes are taking place: demographic (age structure of society), economic (growth rates of national economies, corruption, shadow sector), financial (instability of national currencies, tax and investment climate), social (society stratification, separation from one's social class, formation of oligarchic layers, criminalization of society and the shadow economy) are quite definitely connected with the need to overcome the contradictions in the society, which is the public sector pension scheme aimed at preserving the principles of social fairness in society.

The analysis of public sector pension schemes in different states allowed the authors to summarize the most essential principles of their functioning:

- the pension scheme is formed by the state annuity life insurance along with non-state financial institutions, which allows providing a level of income sufficient for residing after retirement;
- states have sustainable strategies for financing the pension scheme, which reflects the share forecast of pension scheme in GDP. Most of the Nordic states intend to adjust this amount upwards, a difference from Russia, which implies a reduction in the financing of social programs at the expense of the state, including the pension scheme;
- comparison of the replacement rates of lost income with all certainty allows us to conclude that the developed states provide their citizens with a decent level of pensions - the replacement rate in Greece is 32.3% (the lowest), in the Netherlands - over 68% (the highest). In Russia, this rate is 22%, while the amount of deductions from earnings is 26%;
- it is of quite certain practical interest to analyze the rates of demographic support by states, which quite clearly indicates a critical situation in Russia: Spain has the highest rate (261) and Sweden (253), and the average for developed states is 213.5, while in Russia there are only 103 working people per 100 pensioners. It is obvious that this indicator forms an emergency, in the future - an unbearable - the burden on the employable population;

- analysis of the respondents' opinions in sociological surveys of Russians revealed an extremely negative attitude of the population towards the ongoing pension reform, which along with raising the retirement age, the Russian government does not relax its position with respect to the interest-bearing part of labor pensions of citizens, the formation and use of which has been blocked until 2018 inclusive;
- the authors presented the technologies for calculating pensions in the state and non-state sectors, illustrating the different from the accessibility point of view for monitoring by future pensioners. The state, as follows from the presented, does not seek to disclose information about its plans as to what pensions it will be ready to provide in exchange for today deductions.

The authors emphasize that they do not give a moral assessment of the existing public sector pension schemes in Russia, but it is obviously socially unfair and creates conditions that, in fact, compel citizens to ignore the requirements of legislation, which in the future will exacerbate social tension in society. The ongoing reform does not give unequivocal answers to questions related to taking into account the length of service in the armed forces, leave for childcare, and the rates of accelerated retirement.

The analysis obviously hides illusions about the preservation of the existing state of affairs in the Russian pension scheme, such as: "young" age of retirement, low replacement rate of lost earnings with a high rate of pension deductions from wages, a growing proportion of the elderly population with a reduction in the number of the employable. Taking into account the extremely unfavorable market conditions for Russia: The cost of hydrocarbons, the volatility of the national currency, the sanctions regime for access to world financial resources, one should proceed from the most pessimistic scenario of the development of the situation in the Russian public sector pension scheme.

Functional restructuring of the pension scheme should be based on common sense and respect for the constitutional rights of citizens. However, the next stage of the extremely unpopular reform is realized in conditions of unfavorable demographic tendencies and the critical age structure of the population, characteristic for Russia, which has the lowest ratio of the working population and pensioners among European states. Along with this, the socially irresponsible attitude of some Russians to the responsibility of financing their own pensions aggravate the poverty source of older citizens, prolongs social inequality and threatens the social stability of society. Experts note that the search for consensus on this issue is moving into a plane that is very painful for Russian citizens - it touches on the traditionally urgent problem of achieving justice in society. The authors believe that the experience of developed states may well become a universal platform for Russia to build a modern and effective public sector pension scheme while encouraging the voluntary participation of citizens themselves in financing their future pensions. The latter condition represents a real research interest at once from several scientific points of view, including - from the position of psychological motivation of the population when making financial and other decisions.

At the same time, this research and the results are to some extent limited in its relevance both territorially (directly by the Russian Federation) and in time (there is some hope for positive changes in the political, social and economic climate of the Russian Federation). At the present time, the Russian practice of regular reform of the pension scheme changes the "rules of the game" in the annuity life insurance market, which makes it impossible for citizens to understand what their pension will be and what efforts should be taken to increase it. The democratization of the population to participate in the formation of pensions on a solidary basis is due to common sense and fundamental theories of economic science, so reproducing the current scenario, regardless of the obvious, means entering into an even deeper impasse in the public sector pension scheme and all social policies.

References

- [1] Akindinova, N., Kuzminov, Ya., Yasin, E. 2016. Russia's economy: Before the long transition. *Russian Journal of Economics*, 2 (3): 219-245.
- [2] Alda, M. 2017. The relationship between pension funds and the stock market: Does the aging population of Europe affect it? *International Review of Financial Analysis*, 49: 1-190.

- [3] Andreasson, J.G., Shevchenko, P.V., Novikov, A. 2017. Optimal consumption, investment and housing with means-tested public pension in retirement. *Insurance: Mathematics and Economics*, 75: 32-47.
- [4] Bielecki, M., Goraus, K., Hagemeyer, J., Makarski, K., Joanna Tyrowicz, J. 2015. Small assumptions (can) have a large bearing: evaluating pension system reforms with OLG models. *Economic Modelling*, 48: 210-221.
- [5] Bodi, Z., Merton, R.K. 2008. *Finance*, St. Petersburg., Kiev: Williams, 592 pp.
- [6] Dixit, A., Neilbuff, B. 2015. *Games theory. The art of strategic thinking in business and life*; Trans. from English. N. Yatsyuk (M. Mann, Ivanov and Ferber, 2015), 464 pp.
- [7] Floristeanu, E. 2013. Repercussions of Economic and Social Factors on Pension Systems. *Procedia Economics and Finance*, 6: 627-633.
- [8] Franklin, M. Fisher. 1992. *Econometrics. Essays in Theory Application*, Cambridge, Massachusetts: First MIT Press Edition, ISBN-10: 0262061465, 408 pp.
- [9] Garon, J.D. 2016. The commitment value of funding pensions. *Economics Letters*, 145: 11-14. Available at: https://www.cedia.ca/sites/cedia.ca/files/cahier_16-02_commitment_funding_pensions.pdf
- [10] Grishchenko, N. 2016. Pensions after Pension Reforms: A Comparative Analysis of Belarus, Kazakhstan, and Russia. *Procedia Economics and Finance*, 36: 3–9.
- [11] Guriev, S.M. 2012. *Myths of the economy*, Alpina Business Books, 312 pp.
- [12] Hamilton, K.L. 2010. *Investment, Retirement and Estate Planning*, Malvern, Pennsylvania: Insurance Institute of USA, 306 pp.
- [13] Harsanyi, J., Selten, R. 2001. *General theory of choice in equilibrium games*, SPb: Economic School, 424 pp.
- [14] Keynes, J. 2007. *The general theory of employment, interest and money*, Helios ARV, 960 pp.
- [15] Kuklin, A.A., Naidenov, A.S., Sudakova, A.E., Agarkov, G.A. 2012. Mathematical modeling of certain aspects of shadow economic activity during the economic crisis. *Bulletin of the South Ural State University*, 44 (303): 65-73.
- [16] Kyung Joon Han. 2013. Saving public pensions: Labor migration effects on pension systems in European states. *The Social Science Journal*, 50 (2): 152-161.
- [17] Liaquat, A. 2009. *Lords of Finance*, New York: The Penguin Press, 576 pp.
- [18] Matuk, J. 1994. *Financial systems of France and other states of the world. V. 1*, Moscow: Finstatinform, 326 pp.
- [19] Mavlutova, I., Titova, S., Fomin, A. 2016. Pension System in Changing Economic Environment: Case of Latvia. *Procedia Economics and Finance*, 39: 219-228.
- [20] Medvedev, D. 2016. Social and economic development of Russia: Finding new dynamics. *Russian Journal of Economics*, 2 (4): 327–348.
- [21] Morse, K., Strike, R., Puzanov, A. 2007. *Effective solutions in the economy of the transition period*, Iris Press, 448 pp.
- [22] Musgrave, R.A., Musgrave, P.B. 1989. *Public Finance in Theory and Practice*, NY: McGraw-Hill Book Company, 627 pp.
- [23] Musgrave, R.A., Musgrave, P.B. 2009. *State finance: Theory and practice*, Business Atlas, 716 pp.
- [24] Pigou, A. 1985. *Economic welfare theory. V.1*, Progress, 512 pp.

- [25] Piketti, T. 2015. *Capital in the XXI century*, Ad Marginem Press, 592 pp.
- [26] Razumovskaya, E.A. 2016. *Personal financial planning: Theory and modeling of the process* Deutschland, Saarbrücken: Palmarium Academic Publishing, 313 pp.
- [27] Rotschedl, J. 2015. Selected Factors Affecting the Sustainability of the PAYG Pension System. *Procedia Economics and Finance*, 30: 742–750.
- [28] Smith, A. 2007. *Research on the nature and causes of the wealth of peoples*, Eksmo, 960 pp.
- [29] Staveley-O'Carroll, J., Staveley-O'Carroll, O.M. 2017. Impact of pension system structure on international financial capital allocation. *European Economic Review*, 95: 1–22.
- *** All-Russian Center for the Study of Public Opinion; Russian Academy of National Economy and State Service under the President of the Russian Federation; Levada Center; OOO consulting company "Innovation"; Unified federal telephone service of the Pension Fund of Russia. The poll was commissioned by the Ministry of Labor and Social Protection", Available at: www.rosmintrud.ru/pensions/razvitie/199/Oprosy_svodnaya.pptx.
- *** Editorial article. 2013. *Expert-Ural* 33: 10-15.
- *** International Association for Social Security, Available at: www.issa.int.com
- *** Official site of the Ministry of Finance of the Russian Federation, Available at: <https://www.minfin.ru/ru/>
- *** Official site of the Research Institute of Labor and Social Insurance of the Ministry of Health and Social Development of the Russian Federation (Project No. 10-02-00249-a), Available at: <http://vet-bc.ru/>
- *** RosBusinessConsulting (RBC), Available at: <http://www.rbc.ru/economics/30/05/2017/592c51089a79470ca167f68b?from=main>
- *** Rules of annuity life insurance "General provisions of the new pension formula in questions and answers. New rules for calculating old-age pensions: basic principles and regulations" of November 19, 2013, Available at: <http://www.consultant.ru/law/hotdocs/>

Founder's Motivation for Succession of His Firm – Example from the Czech Republic

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Abstract:

The topic of family businesses and their importance for Czech economy is not sufficiently addressed in the Czech Republic. In order to run a family business in the long term, it is necessary that ownership and management must be successfully handed to younger generation. After the end of previous political regime about 30 years ago, in the Czech Republic, most family businesses were established. Nowadays, they are still managed and owned by generation of first founders and they can be replaced by their offspring. The aim of this paper is to find out what leads the outgoing generation to hand the company over to their offspring. Part of the paper presents the analysis of the results of already performed quantitative surveys among family businesses in the Czech Republic. For the research, qualitative exploration by the method of in-depth interviews with seven current owners was used. It was found that results are influenced by the fact what led respondent to start his/her own business. The effort to maintain a long family tradition, necessity due to the physical condition of the founder, the desire to engage in another business field, the attempt to establish a new tradition in the family and their own fatigue and awareness of the necessity of their departure are the main reasons leading to the transfer of the Czech family firms to the successors.

Keywords: family business; family firm; succession; incumbent motivation; case study

JEL Classification: G30; M10

Introduction

The topic of family businesses and their importance for Czech economy is not sufficiently academic addressed in the Czech Republic. On the other hand, according to some authors, Machek (2017), this is a young but popular and rapidly evolving field of science in the field of management. Family businesses, once they have got the opportunity to do business freely, had started to play an important role in Czech economy. In the 1990s, new form of business - family businesses began to operate on the Czech market. Whether it goes about re-established family business that had a tradition before nationalization in past. Or at the same time, the opportunity to do business has been taken by families who have no previous business history behind them.

Entrepreneurs starting after the revolution in early 90s have been doing their business for more than 20 years. The business environment evolves and changes, and the physical abilities and skills of the individuals change. As time irrefutably bears change of age and medical condition for all individual, thus is limited the ability to fully manage a growing company, increasing the total labor fatigue and person is becoming to be tired. Nowadays, family businesses are increasingly struggling with the question of leaving the founder from the firm and continuing their business without that person.

Selling of the company might be applied as a solution for the aging of key business figures. In this case, the family loses the opportunity to own the company anyway. In order for the family business to remain in family hands, ownership and management must be transferred. Generally, there is a transition from one, usually older, generation to another, usually younger, generation of business owners, followed by the next generation in future. In the Czech Republic, given the briefly renewed history, this problem implies to the generation of founders and then their successors. Generational change and succession is an overall process that can only be successfully completed

under certain assumptions. To successful change of ownership or management is necessary important that all challenges are known to actors of this process.

The aim of this paper is to find out what leads the outgoing generation to hand over company to their successors from family members. Lack of high quality statistical data leads to the development of qualitative research design. This paper has following structure: Firstly, there is placed an overview of the relevant literature on family businesses and succession, which creates the framework for defining basic scientific questions. Within the literature, various definitions of family business are introduced. The following is the analysis of the results of the investigations already carried out by public surveys. Then, the method of data collection is described in the Methodology section followed by described exploration itself. Subsequently, the issues are complemented by the findings of the research. Finally, the conclusion is presented.

1 Literature Review

This paper deals with the success of family business. In the beginning, it is necessary to define how the author perceives the family business and what factors influence the succession process. The academic consensus has not been reached in approach to defining family business. A wide range of family business definitions can be found. The inconsistency of the definition of family businesses leads to different results in its research. Some studies show that only 15% of all business entities are family businesses (Kayser, Wallau 2002). On the contrary, some authors (Chrisman, Chua, Litz 2004) estimate that 79% of all companies can be considered as family.

However, among the definitions of family business, the most important common feature is that business-active persons or persons contributing to the realization of entrepreneurial activity, have as well working relationship as family relationship. The institution that contributes in field of family businesses in the Czech Republic is the Association of Small and Medium-Sized Enterprises (ASMP) of the Czech Republic. This association based on legal analysis, has created a proposal for the definition of family businesses for Czech law environment. Family business is divided into three options in this case. One is a family business company, a second family business craft, and a third family farm. According to ASMP (2017), a family business company can be referred to as a company whose shares are owned by a majority of the members of one family and at least one member of that family is a member of its statutory body. Taking into account the law existence of the Foundation and Trust Fund, the definition is extended as a legal instrument. A family company is also designated as a company whose holdings of an absolute majority hold or own for the benefit of one family fund or trust fund if at least one member of that family is at the same time a member of the statutory body of the foundation or the trustee. Family business craft is perceived as a business activity with a right in which at least two members of the family are involved with their work or property.

For the purposes of this research, the definition of family business is used according to the methodology of the family business EU committee. The EU Commission (2015) proposes to designate family businesses if they meet the following criteria: the majority of the voting rights belong to one or more natural persons who have established or acquired a share in its registered capital or to the spouse, parents, child or direct heirs' children of this person or persons. At the same time, at least one family or relatives is officially involved in managing the business. All this provided that the majority of the rights to the management of the company are realized directly or indirectly. It also does not forget listed companies that meet the definition of a family enterprise if the person who founded or acquired it (through a share in the registered capital) or its family or descendants owns 25 per cent of the voting rights they hold according to their share of share capital.

The succession generally addresses the need to replace people in key positions in the company. If the owner is in executive role in the family business, his successor may be one of his descendants. To maintain business continuity over the next generation, it is inevitable to hand over the family to the next generation. This process is referred to as succession. Literature research can find the most important factors influencing the success of the company handover to the next generation. One of the most important factors is the relationship between the founder and his successor. Cabrera-Suarez (2001), Dyer (1986), Goldberg (1996), Handler (1990, 1992), Hugron (1993), Lansberg (1988) and Ward (1987), found positive links between the quality of the intergenerational relationship and the success of succession. Relationships that are based on mutual respect and understanding. It

helps all participants in the process of change and create a trusting atmosphere. Taguiri and Davis (1989) add that the quality of working relationship between father and son varies depending on the stage of the life cycle.

Another factor leading to success in succession is the very motivation of the behavior and the negotiating behavior of the successor. Dyer (1986), Handler (1990), Lansberg (1988), McGivern (1978), Ward (1987) emphasize their need to realize their departure from the firm. This is accompanied by the overcoming of the fear that results from the loss of control of the company, in part of the company's incumbent personal identity and status. The unwillingness to leave the company is the most important issue in the succession. (Sharma *et al.* 2001) The problem arises when the incumbent is not too open to change. Potential successors need not be given room for self-development and the opportunity to gain further experience (De Massis, Chua, Chrisman 2008).

The main actors of succession are undoubtedly incumbent and successor. Their characteristics and inner needs influence the process of the transfer process. Handler (1990) points out that the incumbent must be sufficiently open, rather optimistic and flexible personality. He must be helpful and be willing to let successor make some mistakes. Because learning by making mistakes or wrong decision is one of the most efficient ways to develop successor's skills.

Many authors (Christensen 1953, Handler, Kram 1988, Sonnenfeld and Spence 1989, Trow 1961) stated that the existence of a successful successor significantly encourages incumbent to leave the firm and remain in the background. This fact helps him not to interfere more with the functioning of the company. The successor's motivation and his capabilities are also key. If a successor has more work experience, work success, has a clear idea of his future career direction and life, he can more easily handle the process of handover. (De Massis, Chua, Chrisman 2008) For all stakeholders is important to be able to decide and control interpersonal relationships. (Chrisman, Chua, Sharma 1998). However, it is quite common, that even after the handover the successor also consults important decisions with the past generation (Mullins and Schoar 2016).

2 The current situation in the Czech Republic

The Association of Small and Medium Sized Enterprises of the Czech Republic, in cooperation with survey provider IPSOS, have carried out several surveys on the area of family business. Looking at their results, we can see growing interest in succession issues.

Table 1. Importance of succession

Is succession your current problem?				
YEAR	YES	NO	NOT IMPORTANT	
2014	66%	22%	11%	n=201
2015	64%	9%	26%	n=408
2016	65%	8%	25%	n=408
2017	70%	9%	21%	n=408

Source: ASMP 2014, 2015, 2016, 2017

As can be seen from the table above, considering the transfer of the company has an increasing tendency. Surveys also show that more than 35% of those surveyed want to start transferring the company in maximum five years. It is also worth mentioning that nearly a third of the owners are already in some form in the process of solving their succession. The survey was conducted by owners of family businesses ranging in size from 6 to 249 employees (ASMP 2016).

The question of what leaving generations would like to do after the end of their work in the company has been devoted to this year's research. The most frequent answer was the possibility to remain in the company as an independent consultant (30% of responses), followed by the option of remaining in the supervisory or management board (14%) and by changing his/her position while staying in the company (10%). From these answers, it can be deduced that owners have a strong relationship with their companies and it is difficult for them to leave.

Approximately 20% of all family businesses have already been offered a consultation for the transfer of the firm, on the other hand more than half of them admit that there is a lack of high-quality and proven consulting

services to the succession (not to sell the company). It should be noted that most of the offers concerned the provision of aid for the sale of the company. Approximately 8% of business entities surveyed used consulting services from 2015 to 2017 (ASMP 2015, 2016, 2017).

Research results also show that current owners of family businesses are aware of the need to pass on the business in time. 87% of the respondents said that the business had to be handed over while the owner was active. 73% also claim that it is not possible without a younger generation, as it is better off in modern technology. Most do not agree with the claim that handing over the business is best to resolve by will (ASMP 2017).

Although the fact that most family-owned business owners are interested in transferring a family business within the family, there is a certain group of owners who do not think about transferring the family within the family. Survey from year 2017 showed that it was 9% of the surveyed. These entrepreneurs would prefer to sell to another family business (45%) or would choose according to the currently offered redemption terms. An interesting finding came in 2016, when respondents answered in 60% of cases that they would be willing to sell the company at favorable terms. Only less than a third of businesses cannot be considered for sales.

Research has also focused on the reasons for family business owners leading them not considering transferring a family business to a family member. 43% of respondents who do not plan to pass on their business have said that their child (potential successor) can decide whether he wants to continue doing business and cannot be forced to do anything. A further 23% of respondents stated that their prospective successors are heading to another work field, 10% perceive the sale of the company as a more advantageous option, and 7% believe there is nobody with ability to lead company (ASMP 2016, 2017).

Advisory company KMPG (2017) states that besides good communication, the formalization of control mechanisms and processes is necessary for a smooth handover from generation to generation. It claims that only 47% of Czech companies have a formal board, which is in comparison with European average (73%) low. One of the features of professionalization is the transfer of a managerial function to a person outside the family in a situation where potential successors are not sufficiently prepared or interested in the job. According to a survey conducted by the company, it is interesting to note that in the Czech Republic there is a successor generation on managerial positions in two thirds of family businesses, comparing in Europe average is half only. On the basis of the statistical data, it can be stated that current owners are interested in passing on their businesses. However, it is not dealt with a question why they are so decided. It is necessary to examine the reasons for the family business owners to decide to pass on their business to the next generation.

3 Methodology and data

The research question of this paper is: Why do Czech business owners want to pass their companies to their offspring? In seeking answers to the basic scientific question, it is possible to rely primarily on the results of qualitative research. Qualitative research methods are suitable for use as the diversity of theoretical approaches and empirical practices in the area under investigation is obvious. Their suitability is confirmed by a number of methodological articles (Kubíček, Štamfestová 2017).

Due to the nature of the issue, in-depth interviews with owners of Czech family firms were carried out. Data collection took place during the July and August of 2017, as respondents expressed their willingness to engage in this research during this period. According to their words, the holiday months are quieter and they have more time. Each interview lasted about an hour and a half to two hours and was conducted without the presence of another person. The interviews were conducted with five owners-man and two business owners-woman who are planning to submit their business to their offspring at the latest in the next five years. Companies are majority-owned by these people and the interviewees hold a managing role in the company. All companies surveyed have a turnover ranging from 5 to 35 million CZK and have between 10 and 150 employees. For better understanding Table below explains researched sample.

Table 2. Profile of respondents

Name	Age	Age of company (years)	Sector	Potential successors	Planned succession
Josef	85	98	Industry	1	yes
Alois	77	24	food	3	no
Vladislav	70	21	sales	2	yes
Jan	65	24	manufacturing	2	not yet
Radek	68	25	manufacturing	1	yes
Věra	63	23	services	3	not yet
Zdena	67	24	warehouse	2	not yet

Source: Author

As you can see, all interviewees are approaching retirement. All companies were founded by them and they contributed to family business whole their life. Field of business was chosen randomly. The current status of succession and number of potential successors is also displayed.

4 Empirical research

This section describes the testimonies of the individual interviewees. As mentioned above, case study methods are also used. The statements of individual interviewees are presented separately. The most important part of the statement is presented, which is also evident from the title.

4.1. Company A - Maintain a long family tradition

The first interviewed was the outgoing owner of the family business, who followed the family tradition founded before Second World War. The respondent was brought up in a family who dedicated their life with a family business. After the fall of the totalitarian regime, he simply decided to re-enter the business and succeeded in buying it. In view of applying the same way of bringing up to his children, he made them be an excellent successor. "I did not punish the kids hardly but I tried to raise them up just like my parents. I did teach them same life priorities like my parents did to me. The family owned the business already in the 30's, we have been living with it for a long time."

The greatest sense in succession sees in the fact that tradition is observed within the family. It is important to mention that even in times of impossibility of private ownership, the interviewee could work in the company for an executive function. "There is no reason why we should stop doing business as a family. The business must continue."

He adds that his descendants are able to lead a business. They know the environment and have a clear idea that they have to do business with their future offspring. He does not perceive or describe his departure as a defeat and is completely reconciled with it.

4.2. Company B - Necessity due to the physical condition

The other respondent described very much his own past. Problems with his own father resulted in leaving the parents and releasing on his own life journey. The beginnings of a young adult boy were not portrayed too positively, but the experience gathered led the interviewee to become more hard working. The effort to prove to his father independence had led to a gradual improvement of the standard of living and the possibility of fully securing the newly-founded family.

"When we got together with my wife, after marriage we started with a debt - 400 crowns. And look where we are today. At the beginning I just wanted to have better independent life. I have never mind doing more extra." After the revolution, the opportunity to start a business was seen as a way to fully safeguard for the growing family. The main reason for his business is the need to secure his closest, both financially and meaningfully. During the interview, several times he has mentioned that his dream would never leave the company. The reason is not the absence of a successful successor, but the fear that without his person the company will not prosper and the family

could be threatened. "I have to keep guarding, I have to, and I want to go to work every day. Children probably do more than I do, but I want to have power to make decision."

On the other hand, the cycle of life is inexorable, and with the loss of physical force there is an available transfer of management powers. At the end of the interview, the 77-year-old respondent stressed that he is afraid that family-run business will not continue without him.

4.3. Company C - Desire to engage in another business

Another businessman established company by chance. In his words, he managed to fill the gap in the market-. He began to be entrepreneurial in the field, which was not close to his past career at first. "At the beginning of the 90s, he tried everything possible. I wanted to do business with real estate, sell and buy houses. Build and sell them. Fortunately, one day came my friend to visit me. She said she wants to buy some jewels and precious stone, but she could not find right place. So that led me to business idea."

The fact that he sees a suitable successor in his children is very positive because, after completing the transfer process, he wants to devote himself entirely to another business. "I am telling them (children) for a long time, I want to give them company as soon as possible. I have other plans, but we will not be competitive to each other." "He will probably return to the field that attracted him most at the beginning. Already with experience and financial facilities. Without risking threatening the future of his children and in the field that entertains him well.

4.4. Company D & E - Attempt to establish a new tradition in the family

The testimonies of the fourth and fifth respondents do not differ basically. They both started to run business in a field in which they were active before being able to become business owners. They were employees of companies, that they knew well and decided to control them at certain times. "To buy a factory where I spent almost a lifetime, it sounded incredible but I managed to do it." (Respondent 4). "The privatization came and everyone turned to me that I should take it into my hands. So it happened." (Respondent 5)

Relationship to the area they are engaged in leads to the fact, that they both are interested in transferring business to their descendants, who also devote their interest to the business. The aim of the business is, according to their words, to secure the standard of their family, as well as the desire to build a new tradition. "You cannot imagine how much effort and effort has been made to run it better. I have established a tradition that is good." (Respondent 4). "I want something left here from mine and people to remember me." (Respondent 5). The desire to build a tradition and to be essentially its founder is very clear. In order for a tradition to happen at all, it is necessary to first hand over their businesses to children, who are fully aware of it.

4.5. Company F - own fatigue

The first respondent expressed her company in a very negative way in the sense that she feels very tired. Family life was brought her to entrepreneurship by her life partner. "I already have enough of it. Still things around need to be solved. I'm tired. At the beginning, I was glad to help my husband to create something meaningful. However, now I would like to rest more. "

Ability to pass duties to someone else seems her to be a comfortable solution. Because she wants to give her children a sense of life, she has decided that her descendants will be the ones who take over the whole business. Including all worries and responsibilities. At the same time, they will ensure their own income. "Children have at least to work on. Let them take care of them. "

4.6. Company G - awareness of the necessity of departure

The trusted woman said she felt herself getting less and less able to learn new things and the flexibility to react quickly to the rapidly changing market conditions. "I will give you an example, I have a new phone and I am not still familiar with it yet. I have my years. Our youth must go forward. "

In comparison with nowadays her plan to work in the company is not to be so active. She wants to avoid a situation where she can become a burden rather than a benefit for a company. According to her words, she intends to devote herself to other things and is not interested in interfering more significantly with the running of the company. Despite the differences between the interviewees, it can be stated that all of them are planning that their

company will continue in family hands. They do not consider another solution. Otherwise, it would be very difficult to include them in the group of entrepreneurs who are willing to hand over their business to their successors.

5. Discussion

In searching for an answer to the question of how the owners of Czech family companies want to success their business to their children, this paper analyzes the quantitative and qualitative research carried out. The quantitative survey focused on finding out the status of family businesses and the area of succession in more detail was analyzed. The Czech Republic's Small and Medium-Sized Enterprises and Trades Association is the active sponsor of surveys of Czech family businesses, which is pursuing this issue in the longer term. Surveys of this institution show a growing interest in solving succession in Czech family firms. This is supported by the fact that the survey conducted this year has, in comparison with previous years, more devoted to the succession.

From the results can be seen that current owners of family businesses are aware of the need to pass on the business in time. 87% of the respondents stated that the business had to be succeed while the owner is still active. 73% also claim that it is not possible to manage company without a younger generation, as they better understand modern technology. Most do not agree with the claim that handing over the business is best to resolve by the last will. (AMSP 2017).

There is also a group of owners who do not plan to transfer their business to someone in the family. This year's survey showed that it was 9% of the surveyed. These entrepreneurs would prefer to sell to another family business (45%) or would choose according to the currently offered redemption terms. (AMSP 2017) The remaining respondents intend to pass on their business, so research has been carried out with those who want to pass on their business.

Quantitative research is expanded in this paper by conclusions from qualitative research. It focused on the fact of finding out exactly what is behind the individual statistical numbers. The result of all the interviews is that the common feature of family business owners is the effort to continue the family business even after leaving the active management function. It is necessary to mention that the interviewees had different reasons to start their own business. For the respondent who follows a long family tradition, the reason for the transfer of the company is above all the continuity of business. Tradition inside the family is observed, which it perceives as the most important.

Another entrepreneur surveyed said that the main reason for doing business is the need to secure their closest ones and would like to further actively drive the whole company. His departure from the company is mainly due to the loss of physical strength. To some extent against his own will.

The third examiner has established and leads a firm in a field that does not fulfill him. The reason for the need to transfer a company is above all the desire to pursue business in a different environment. Two other surveys set up their businesses in an area in which they worked before private entrepreneurship was not allowed. The goal of the business is, according to their words, to secure the standard for their family and the desire to build a new tradition. According their behavior they are trying to establish a new tradition leads them to hand over.

The first female-respondent feels tired by work duties. She got involved in her business by her husband. The ability to pass on all duties to someone else seems to be a comfortable solution. At the same time, she secures herself and it gives her children a kind of sense of life. On the other hand, the second woman examined does not feel tired, but she just wants to avoid being negative in a business rather than a benefit for company.

Despite the differences between the interviewed respondents, the common feature is that all surveyors want the family business to continue after their departure. Otherwise, it would be very difficult to include them in the group of entrepreneurs who are willing to hand over their business to the successors.

Conclusion

The purpose of this paper is to answer the question of what motivates the owners of Czech family companies to hand over their business to their children. In this paper was analyzed the quantitative surveys carried out focused on finding out the status of family businesses and the area of succession in more detail. These surveys made by the Association of Small and Medium-Sized Enterprises and Tradesmen of the Czech Republic show especially

the growing interest in solving succession in Czech family-owned companies. This is supported by the fact that the survey conducted this year was, in comparison with previous years, more devoted to the succession.

In the next stage, a qualitative study was carried out by the method of in-depth interviews, which gave rise to different results based on the facts leading to the entry into business. However, it is necessary to mention that all the persons surveyed wish their firm to continue after their departure. The sale or disappearance of a company in the above companies is not considered. It can be stated that the main reasons leading to the transfer of the Czech family firms to the successors are the effort to maintain a long family tradition, necessity due to the physical condition of the surrender, the desire to engage in another field, the attempt to establish a new tradition in the family, their own fatigue and awareness of the necessity of their departure.

Certain restrictions stem from the nature of qualitative research. The transfer of the findings of the given survey to the general level of all family business owners is controversial. As the surveyed collection was chosen at random basis, irrespective of the size or field of activity, and does not reflect the distribution of the Czech economy.

However, the main findings support the importance of the subject succession for Czech family firms. This research paper can be called as one of the first articles dealing with the reasons for the transfer of Czech family businesses in the Czech Republic. At present, the state of knowledge of the Czech family environment is not sufficient enough and the academic sphere should focus on the issue of succession. Exploring the motivation to enter a family business can be more deeply researched. Comparison with the results of foreign authors should be also applied. It is particularly opportune to investigate further whether the way in which a family business originates or is acquired affects the reasons that motivate the leaving generation to pass company on to their offspring.

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References

- [1] Cabrera-Suárez, K., De Saá-Pérez, P., García-Almeida, D. 2001. The succession process from a resource and knowledge-based view of the family firm. *Family Business Review*, 14(1): 37–47. DOI: 10.1111/j.1741-6248.2001.00037.x. 2001
- [2] Chrisman, J.J., Chua, J.H. and Litz, R.A. 2004. Comparing the Agency Costs of Family and Non-Family Firms: Conceptual Issues and Exploratory Evidence. *Entrepreneurship Theory and Practice* 28(4): 335-354. DOI: 10.1111/j.1540-6520.2004.00049.x
- [3] Chrisman, J.J., Chua, J.H., and Sharma, P. 1998. Important attributes of successors in family businesses: An exploratory study. *Family Business Review*, 11(1):19–34. DOI: <https://doi.org/10.1111/j.1741-6248.1998.00019.x>
- [4] Christensen, C. 1953. *Management succession in small and growing enterprises*. Boston: Division of Research, Harvard Business School, 217 pp.
- [5] Davis, J.A. and Tagiuri, R. 1989. The Influence of Life Stage on Father-Son Work Relationships in Family Companies. *Family Business Review*, 2 (1): 47–74. DOI: <https://doi.org/10.1111/j.1741-6248.1989.00047.x>
- [6] De Massis, A., Chua, J.H. and Chrisman, J.J. 2008. Factors Preventing Intra-Family Succession. *Family Business Review*, 21 (2): 183–199. DOI: <https://doi.org/10.1111/j.1741-6248.2008.00118.x>
- [7] Dyer, W.G., Jr. 1986. *Cultural change in family firms: Anticipating and managing business and family transitions*, San Francisco: Jossey-Bass, 179 pp.
- [8] Goldberg, S.D. 1996. Effective successors in family-owned business. *Family Business Review*, 9(2):185–197. DOI: <https://doi.org/10.1111/j.1741-6248.1996.00185.x>

- [9] Handler, W.C. 1990. Succession in family firms: A mutual role adjustment between entrepreneur and next generation family members. *Entrepreneurship Theory & Practice*, 15(1): 37–51. DOI: <https://doi.org/10.1111/j.1741-6248.1992.00283.x>
- [10] Handler, W.C. 1992. Succession experience of the next generation. *Family Business Review*, 5(3): 283–307. DOI: [10.1111/j.1741-6248.1992.00283.x](https://doi.org/10.1111/j.1741-6248.1992.00283.x)
- [11] Handler, W.C., Kram, K.E. 1988. Succession in family firms: The problem of resistance. *Family Business Review*. 1(4): 361-381. DOI: <https://doi.org/10.1111/j.1741-6248.1988.00361.x>
- [12] Hugron, P., and Dumas, C. 1993. *Modélisation du processus de succession des entreprises familiales québécoises*, Montréal: HEC Montréal. Cahier de recherche no. GREF-93-07
- [13] Kayser, G., and Wallau, F. 2002. Industrial Family Businesses in Germany—Situation and Future. *Family Business Review*, 15 (2): 111–115. DOI: <https://doi.org/10.1111/j.1741-6248.2000.00157.x>
- [14] Kubiček A., Štamfestová P. 2017. Příběhy nástupnictví českých rodinných podniků. *Trendy v podnikání*. 7(1): 33-41.
- [15] Lansberg, I. 1988. The succession conspiracy. *Family Business Review*, 1(2): 119–143. DOI: <https://doi.org/10.1111/j.1741-6248.1988.00119.x>
- [16] McGivern, C. 1978. The dynamics of management succession. *Management Decision*, 16(1): 32-42. DOI: <https://doi.org/10.1108/eb001150>
- [17] Mullins, W., Schoar, A. 2016. How do CEOs see their roles? *Journal of Financial Economics*, 119(1): 24-43
- [18] Sharma, P., Chrisman, J.J., Pablo A.L., and Chua, J.H. 2001. Determinants of initial satisfaction with the succession process in family firms: A conceptual model. *Entrepreneurship Theory and Practice*, 25(3): 17–35. DOI: <https://doi.org/10.1111/j.1741-6248.2003.00001.x>
- [19] Sonnenfeld, J.A., Spence, P.L. 1989. The Parting Patriarch of a Family Firm. *Family Business Review*, 2 (4): 355–375. DOI: <https://doi.org/10.1111/j.1741-6248.1989.tb00004.x>
- [20] Trow, D. 1961. Executive succession in small companies. *Administrative Science Quarterly*, 6 (2): 228–239. DOI: <https://doi.org/10.1177/014920639402000204>
- [21] Ward, J.L. 2011. *Keeping the family business healthy: How to plan for continuing growth, profitability, and family leadership*, Palgrave Macmillan, ISBN-10: 0230111211, 286 pp.
- *** Association of Small and Medium-Sized Enterprises and Crafts of the Czech Republic. 2015. Rodinné firmy – project AMSP ČR. Available at: <http://www.amsp.cz/rodinnafirma>
- *** Association of Small and Medium-Sized Enterprises and Crafts of the Czech Republic. 2014. ASMP – Výsledky 26 průzkumu. Available at: http://www.amsp.cz/uploads/Pruzkumy/Vysledky_26_pruzkumu_AMSP_CR.pdf
- *** Association of Small and Medium-Sized Enterprises and Crafts of the Czech Republic. 2016. Specifika rodinného podnikání – project AMSP ČR. Available at: http://www.amsp.cz/uploads/dokumenty_2016/TZ_IPSOS_pro_AMSP_Rodinne_firmy_novinari_TISK.PDF
- *** Association of Small and Medium-Sized Enterprises and Crafts of the Czech Republic. (2016). 32 průzkum AMSP ČR – Rodinné firmy. Available at: <http://www.amsp.cz/32-pruzkum-amsp-cr-rodinne-firmy>
- *** Association of Small and Medium-Sized Enterprises and Crafts of the Czech Republic. 2017. Výzkum ASMP 2017. Available at: <http://amsp.cz/rodinne-firmy-se-stavaji-podnikatelskym-vzorem/>
- *** European Commission 2015 EUR-Lex Access to European Union law. Available at: <http://eur-lex.europa.eu/legal-content/CS/TXT/?uri=CELEX%3A52015IE0722>
- *** KPMG. 2017. Průzkum: Předávat žezlo bude letos v Česku třetina rodinných firem. Available at: <https://home.kpmg.com/cz/cs/home-pro-media/tiskove-zpravy/2017/04/pruzkum-rodinne-firmy.html>

Model of Assessment of the Degree of Interest in Business Interaction with the University

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Abstract:

The article deals with a problem of search of science-based techniques of estimation of efficiency of presence of the university as an economic agent, and also of the corresponding models allowing to predict market behavior and to form in dynamics key parameters of the activity for future planning. In the work the authors use the method of mathematical modeling with application of an algorithm of estimation of the level of loyalty of commercial partners. They get an algorithm brought to the level of the computer program and carry out calculations on concrete basic data. The estimates and parameters of higher education institution of enterprise type received when using this technique allow the direction to predict their activities for a number of key parameters. At the same time on the basis of researches of market interest of customers of R&D it is also possible to plan number of students, involvement of the faculty and experts, purchase of the equipment and materials for R&D, staff of the invited experts, investment into perspective developments, etc. In practice one can use the results of the work in case source materials are numerous, separated between various services for external partners and there are only samples of economic indicators on interaction of higher education institution with customers of R&D. Besides, the model is necessary at the solution of problems of estimation of competitor's potential when developing scientific and innovative projects when the end results of work are set and entry conditions are not defined up to the end.

Keywords: mathematical model; efficiency estimation; loyalty; innovations.

JEL Classification: M10; O32

Introduction

The terms of competitive fight in a segment of business activity of universities dictate the need to adhere to effective business strategy. It means existence of science-based techniques of estimation of efficiency of presence of higher education institution as an economic agent (Bok 2003), and also of corresponding models allowing to predict market behavior and to form in dynamics key parameters of the activity for future planning. In conditions of approach to the level of technological singularity with a limit of uncertainty, it is difficult to overestimate the importance of productive interaction of science, state educational institutions and business.

Relevance of search of adequate approaches to the solution of this problem is caused by the fact that the key factor giving competitive advantage is the reputation of higher education institution (Macleod and Urquiola 2009). The trend to division of higher education institutions according to such categories as national research universities or federal ones, is aimed at optimization of a high school pool and formation of multistage hierarchy of the Russian higher school that reflects deep processes in scales of macrolevel of economy of knowledge when science is included in the area of production interests of the enterprises. In turn, capitalization of knowledge, effectiveness of scientific and innovative process define a dominant position of demanded (Ebersbach *et al.* 2005) in the market of R&D services of research universities as drivers in segments of the knowledge-intensive economy.

Successful development depends on effective interaction with contractors (Buttle and Maklan 2015) therefore the higher education institution is obliged to develop market methods of interaction on all categories of subjects and to use them for preserving and expanding the partner base by formation and support of high level of

implementation of obligations under contracts. In many respects the solution of this task is reached thanks to development of formats of interaction B2B (business-to-business), B2G (business-to-government), and also B2C, and in the presence of the developed Internet portals WebCollaboration and other interactive methods of business cooperation are set up (Ebersbach *et al.* 2005).

The solution of the questions connected with estimation of a higher education institution role includes the weighed economic (Sergeev 2015) calculation. At creation of long-term plans of work of higher education institution as a research agent one of the defining indicators to be guided by is change of demand for partner services. Such an approach in many respects is defined by reputation indicators of higher education institution that is reflected in financial success and volumes of R&D.

While gaining the competitive market on rendering of services on performance of research work by higher education institutions, strategy for introduction of programs of increase in level of loyalty of clients is formed. They include the methods of maintaining of level of market interest, and also of preserving and developing of interaction with the available partners. They are well developed in the CRM systems (Customer Relationship Management) (Buttle and Maklan 2015).

1. Materials and Methods

Marketing specialists and prepared managers know various approaches and programs of support of level of loyalty, presented at the modern market. Undoubtedly, these techniques give a positive result in practice. However, in the field of the knowledge-intensive production, each concrete situation can have very individual traits. Moreover, in this case one needn't apply programs of growth of number of clients. In this situation more attention should be paid to quality indicators of innovative activity. As for an estimation of effectiveness of the competition among higher education institutions and forecasting of consequences of application of programs and techniques, in some cases Panzar and Rosse's estimation is used (Sufian and Habibullah 2013). In this model applied as a rule in the bank sphere, the factorial prices appear. In a segment of high school science other indicators have a greater influence on the volume of the income of higher education institution. In some cases, estimation of level of the high school competition is carried out by Herfindal—Hirschman index (Ellis and Malkiel 2016).

On the basis of data on the level of market interest of customers of R&D the plan of the solution of a problem of estimation of indicators of higher education institution as a subject of enterprise type is formulated.

In this case basic data are, firstly, the business interaction duration, number of new orders as indicators of reputation of higher education institution, and secondly, data on statistics of renewal of the contractual relations and the termination of contracts reflecting satisfaction of customers for research works.

Calculations are carried out with application of Deming and Glasser's algorithm of estimation of level of loyalty (Deming and Glasser 1968). According to it categories of partners of higher education institution on the basis of duration of interaction are distinguished, their values serve as vector elements $\bar{C} = \{c_1, c_2, \dots, c_n\}$ where n - number of gradations reflecting client structure of the higher education institution contractors. Further we use the technique (Sergeev 2016) of expert estimates, we assign values of probability of transitions (Sergeev *et al.* 2016) between categories which come down in a matrix stochastic on the right $P = \{p_{ij}\}$ for $i, j=1, \dots, n$, and the condition is satisfied: $\sum_j p_{ij} = 1, \forall i$. This matrix is called a partnership matrix. Then the equation of

determination of parameters of a trend to change of number \bar{C}_1 of business partners (on categories) in a year is worked out:

$$\bar{C}_1 = \bar{C} * P + \bar{C}_K, \quad (1)$$

where: \bar{C}_K - characterizes intensity of appearance of new partners and customers. Similarly, in 2 years we have the following expression:

$$\bar{C}_2 = \bar{C}_1 * P + \bar{C}_K = \bar{C} * P^2 + \bar{C}_K * P + \bar{C}_K. \quad (2)$$

From the received equation it is obvious that at expansion of the horizon of planning on M periods, the progression (Searle and Hausman 1970) on matrix degrees P takes place:

$$\bar{C}_M = \bar{C} * P^M + \sum_{q=0}^{M-1} \bar{C}_K * P^q. \quad (3)$$

2. Results

For an illustration of application of the presented technique we will review a simple example where four aggregated gradation of business interaction reduced in table 1 in which columns correspond to vector elements appear only. Here it should be noted that if necessary it is possible to expand this list in any limits, the principle will remain the same.

Table 1. Gradation of categories of “business interaction” with higher education institution

Category of “business interaction” with higher education institution			
C_1	C_2	C_3	C_4
Interacts with higher education institution for less than a year	Interacts with higher education institution for 1-2 years	Interacts with higher education institution for more than 2 years	Stopped the relations with higher education institution

Further the partnership level matrix p which elements are reduced in Table 2 is formed. These values are statistical estimates of probability of transitions p_{ij} between the specified categories $i, j = 1, \dots, 4$ making a full group of events.

Table 2. Estimation of degree of interest in business interaction with higher education institution

Category of business interaction	Expert assessment of probability of transition in categories of business interaction
Interacts with higher education institution for less than a year	Probability that it will stay for 1-2 years = p_{12}
	Probability that it will stop the relations = p_{14}
Interacts with higher education institution for 1-2 years	Probability that it will stay > 2 years = p_{23}
	Probability that it will stop the relations = p_{24}
Interacts with higher education institution for more than 2 years	Probability that it will continue the relations = p_{33}
	Probability that it will stop the relations = p_{34}

For calculation with use of concrete numerical values, in the stated example the data reflecting statistics of interaction (Todaro and Smith 2014) of higher education institution with customers for the 3-year period are used. All provided data are received on the basis of information on the contract and contractual relations by their processing (aggregation by years, percent of prolonged ones, repeated and those who stopped interaction, and also the number of new customers). Then matrix of level (Temali 2002) of partnership is formed:

$$P = \begin{vmatrix} 0 & 0,75 & 0 & 0,25 \\ 0 & 0 & 0,83 & 0,17 \\ 0 & 0 & 0,9 & 0,1 \\ 0 & 0 & 0 & 1 \end{vmatrix} \text{ and current vector } \bar{C} = \{120, 180, 230, 0\}. \quad (4)$$

Thus, distribution of customers to innovations and business partners is fixed, for example, number of concluded R&D, contracts for rendering educational services, etc. for the current date.

The fragment of the program of settling of quantitative indices of interaction of higher education institution with customers by the offered technique (meanwhile each contract is considered as belonging to the certain customer as it is made out by the separate legal document) is presented in Table 3.

Table 3. Fragment of calculation of dynamics of change of total number of R&D

Current vector of number of customers to innovations				
less than a year	1-2 years	1-2 years	left	SUM
120	180	230	0	530
Appearance of new customers per year				
120	0	0	0	
Vol of R&D calculation of work				
0	90	356,4	83,6	
Vector of number of customers in a year				SUM
120	90	356,4	83,6	566,4

Thus distribution of partner base of higher education institutions on the basis of basic data of Table 4 can be presented in the form of a vector of number of customers in 2 years.

Table 4. Data of calculation of a vector of number of customers

Vector of number of customers in 2 years				SUM
120	90	395,46	164,54	605,46

As a result of calculation it is possible to predict a sure trend to increase in number of customers and volume of the contractual relations from 530 contract positions to 605, *i.e.* the growth is estimated to 14% in two years. However, it is also necessary to estimate stability of (Acemoglu and Robinson 2001) received results. For this purpose, we will consider the shift in a partnership level matrix which, *for example*, can be received, having conducted advertizing campaign or PR moving of the university in media space. In this case statistics on duration and renewability of the contractual relations, on making of new contracts and the termination of the relations act as indicators of appeal of the university. Having set the following sizes of elements: $p_{12} = 0.79$, $p_{14} = 0.21$, $p_{23} = 0.85$, $p_{24} = 0.15$, $p_{33} = 0.92$, $p_{34} = 0.08$, $p_{44} = 1$ and, having repeated calculation, as a result we receive that the predicted quantity of the contractual relations will grow to 630. Thus growth will make more than 18% in two years, and it is caused by increase in the statistical data reflected in matrix P on loyalty level in average less than of 3%. Such result shows importance of the additional weighed calculation when holding the expensive actions directed to increase in reputation of higher education institution among potential customers of R&D. The analysis of statistics of interaction with partners does not only form a basis for the current calculation, but also allows to carry out assessment of sensitivity of the results of the solution.

3. Discussion

3.1. Interpretation of results

The estimates and the indicators of higher education institution of enterprise type received when using this technique give the direction a chance to predict the activities for a number of key indicators. In this case on the basis of researches of market interest of customers of R&D, it is also possible to plan number of students, involvement of the faculty and experts, purchase of the equipment and materials for R&D, staff of the invited experts, investment into perspective developments, etc. It is obvious that the degree of stability of results is provided in the existing (Acemoglu and Robinson 2012) economic conditions determined by legislative environment and stable conditions of interaction of B2G.

The results given above can be treated as the solution of a direct task which aim is the calculation which reflects the expectation of higher education institution on dynamics of the volume of performed works, level of financial opportunities and also the most probable directions of use of the available (Volken 2005) competences.

Considering this problem from another point of view we can distinguish a number of problems which can be reduced to two following ones:

- Arises in case when higher education institution has already final data on the general indicators or number of the concluded contractual relations and for several periods. It can be, for example, in case initial materials are numerous, separated between various services working with external partners, and there are only samples of economic indicators (Rushton 2003) on interaction of higher education institution with customers of R&D;
- The problem connected with an assessment of capacity of the competing higher education institution while developing scientific and innovative projects when the end results of work are set and entry conditions are not defined up to the end. Use of the solution of the return task will allow to restore the key initial parameters and to make a partnership level matrix.

For the solution of the return task, we will rewrite the system considered earlier in a form:

$$\bar{C}_1 = \bar{C} * \Omega + \bar{C}_K, \quad (5)$$

where: the matrix Ω contains unknown elements $\omega_{12}, \omega_{14}, \omega_{23}, \omega_{24}, \omega_{33}, \omega_{34}$.

However from a condition $\sum_{j=1}^4 \omega_{ij} = 1, \forall i$, we will receive a joint system of the linear equations. The solution

of this system of the linear equations gives necessary parameters of matrix Ω which will reflect the valid situation. In the case under consideration dimension of a matrix is 4x4. For authentic model (Blaug and Vane 2003) it will be often necessary to make greater specification considering the greatest number of (Frey 2008) parameters which qualitatively influence the end result. In direct and return tasks the calculation procedure is created on the basis of mathematical modeling of stochastic process which parameters are data on quantity and categories of partners of the university on the basis of interaction duration. At the same time values of probability to be in each of the marked-out categories are defined.

3.2. Scope of results

The estimates received when using this technique, indicators of the university of enterprise type, give to the management the chance to predict the activities for a number of key indicators. At the same time on the basis of researches of market interest of customers of R&D it is also possible to plan number of students, involvement of the faculty and experts, purchase of the equipment and materials for R&D, staff of the invited experts, investment into perspective developments and others.

Loyalty indices on duration and renewability of the contractual relations and also involvement of new customers or their leaving from among partners introduced as parameters serve as indicators of attractiveness of the university as responsible and perspective business - subject. It is obvious that degree of stability of results is provided in the existing (Acemoglu and Robinson 2012) economic conditions determined by legislative environment and stable conditions of interaction of B2G. The model can serve as reasons for framing of recommendations about regulation by innovative activities of the university on the basis of implementation of the system of project management.

Conclusion

As a result of the carried-out calculations via offered technique both summary volumes of customers of R&D and separate activities of higher education institution can be calculated. In the latter case stratification of the general indices and creation of matrixes of levels of partnership on each of the directions will be required (we will note that they can be considered as submatrixes of the general matrix of higher education institution having respectively much bigger dimensionality). It is necessary to create the database of the contractual relations of interaction with partners which should consider the period of duration of the contractual relations (the conclusion of new contracts with partners, completion of the contractual relations, etc.).

For determination of planning horizon and prediction it is expedient to use mathematical methods based on computer simulation and prediction. In this case in view of complexity of the tasks being solved connected with stochastic character it is impossible to use regression models. The offered approach to estimation of the degree of the interest in business interaction with the university motivates higher education institutions to the choice of competitive strategies.

References

- [1] Acemoglu, D., and Robinson, J. 2013. *Why Nations Fail*. Crown Publishers, NY., 544 pp.
- [2] Acemoglu, D., Robinson, J. 2001. The Colonial Origins of Comparative Development: An Empirical Investigation. *The American Economic Review*, 5(91): 1369-1401. Available at: <http://dx.doi.org/10.1257/aer.91.5.1369>
- [3] Blaug, M., and Vane, H.R. 2003. *Who's Who in Economics*. Edward Elgar Publishing, 1000 pp.
- [4] Bok, D.C. 2003. *Universities in the Marketplace: The Commercialization of Higher Education*. Princeton University Press, 256 pp. Available at: <http://dx.doi.org/10.1515/9781400825493>
- [5] Buttle, F., and Maklan, S. 2015. *Customer Relationship Management: Concepts and Technologies*. Minjon Pro and Futura Book. Florence Production Ltd, Devon, UK., 426 pp.
- [6] Deming, W.E., and Glasser, G.J. 1968. A Markovian analysis of the life of newspaper subscriptions. *Management Science*, 14 (6): B283–B293.
- [7] Ebersbach, A., Glaser, M., and Heigl, R. 2005. *ISP 523L/ 361 Web Collaboration Projects*, Springer-Verlag.
- [8] Ellis, C.D., and Malkiel, B.G. 2016. *The Index Revolution: Why Investors Should Join it Now*. John Wiley & Sons, Inc. Hoboken, New Jersey, 240 pp.
- [9] Frey, B.S. 1992. *Economics as a Science of Human Behaviour: Towards a New Social Science Paradigm*, Kluwer Academic Pub., 254 pp.
- [10] Macleod, W.B., and Urquiola, M. 2009. *Anti-lemons: School Reputation and Educational Quality*. NBER Working Paper 15112. Available at: <http://www.nber.org/papers/w15112> (accessed September 15, 2017)
- [11] Rushton, J.P. 2003. Book review - The Bigger Bell Curve: Intelligence, National Achievement, and The Global Economy. *Personality and Individual Differences*, 34: 367–372. Available at: [http://dx.doi.org/10.1016/S0191-8869\(02\)00024-7](http://dx.doi.org/10.1016/S0191-8869(02)00024-7)
- [12] Searle, S.R., and Hausman W.H. 1970. *Matrix Algebra for Business and Economics*. Wiley Interscience, NY, 384 pp.
- [13] Sergeev, S.M. 2015. *Cross-systems method of approach to energy economy higher educational institutions*. Paper presented at the International Scientific School “Paradigma”, Varna, Bulgaria.
- [14] Sergeev, S.M. 2016. *Cross-system way of looking to business with limited resources*. Paper presented at the International Scientific School “Paradigma”, Varna, Bulgaria.
- [15] Sergeev, S.M., Sidnenko, T.I., and Sidnenko, D.B. 2016. *Distribution centers for agriculture, their modeling*. Paper presented at the International Scientific School “Paradigma”, Varna, Bulgaria.
- [16] Sufian, F. and Habibullah, M.S. 2013. An application of the Panzar-Rose method. *Journal of Economic Studies*, 3(40): 390-410.
- [17] Temali, M. 2002. *The Community Economic Development Handbook: Strategies and Tools to Revitalize Your Neighborhood*. Wilder Publishing Center, St. Paul NY., 270 pp.
- [18] Todaro, M.P., and Smith, S.C. 2014. *Economic Development*. The Pearson Series in Economics, UK, 860 pp.
- [19] Volken, T. 2005. *The Impact of National IQ on Income and Growth*. A Critique of Richard Lynn and Tatu Vanhanen s Recent Book (Version 1.1). Working Paper. University of Zurich.

Economic Priorities of Russian State University Education in the Light of the Bologna Process

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Abstract:

The purpose of this article is to identify the economic priorities for higher education development and to justify the administrative impacts at the university level for their gradual resolution. In methodological terms the rationale by D.D. North means for authors the effect of the "historical conditioning" of development. The method used: qualitative analysis of statistical data and documentary sources. The economic priorities of Russian higher education modernisation are highlighted and the financial situation in education is characterized. In accordance with the main directions of this reconstruction, the institutional problems of its modernisation were revealed and disclosed. Recommendations to university management structures aimed at solving the problems of higher education development are grounded. The research expands the notion of contradictions, connections, relationships and mechanisms arising and being reproduced in modern Russia's higher education. The conclusions formulated in the article can be applied as principles of higher education applied research and monitoring.

Keywords: economic priorities; state university education; Bologna process; Russian education; higher education, development; modernization; management structures; European Community; labour market

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JEL Classification: H52; I23; I25; I28

Introduction

Modernisation of Russian education is aimed at the activation of human resources, what is confirmed by the experts. For example, according to the calculations by Denison (1967), investments in human capital give a return of 5 to 6 times more than investments in material production. Modernisation of Russian education is carried out within the framework of the Bologna Process. The reasons for Russia's entry into the Bologna process are of a socio-economic nature (Vinogradova 2015).

Reconstruction of Russian education

The Bologna Process is an initiative supported by the financial power of the European Community. The long-term aim of the program of action is the creation of a common European space for higher education to improve the mobility of citizens in the labour market and enhance the competitiveness of European higher education.

The need for educational reforms in the spirit of the Bologna Process was due to the fact that, thanks to the increased integration processes, the free movement of labour (workforce), goods and capital, Europe increasingly began to realise itself as a whole. The lack of comparability of qualifications in the field of higher education has become an obstacle to the free movement of highly qualified personnel. In conditions where higher education becomes not only a highly profitable business area, but also determines the success of the development of countries, Europe can only count on successful competition in this area as a single whole.

The idea for creation of a single educational space was documented by the Bologna Declaration of 1999 (Bologna Declaration 1999), previous documents and subsequent documents, according to which by 2010 a unified system of higher education should be created in Europe. The Bologna agreement in 1999 was signed by 33 out of 45 countries in Europe.

With the signing the Bologna Declaration in September 2003, and Russian higher education became a full participant in the Bologna Process.

The change in the "configuration" of education in Europe and in Russia is largely due to the economic context of the development of society, for the essence of the Bologna process is the simultaneous reform of education and the labour market. Moreover, provision of educational services in modern conditions is a highly profitable business. The world market of educational services is multi-billion, in many respects due to the training of foreign students. The world leader in this sphere of business is the USA. Europe, which for many centuries was a worldwide educational centre, lagged far behind the United States at the end of the 20th century. The Bologna process for a united Europe has become a way to catch up with the United States by increasing the attractiveness of a unified European system of higher education for its own and foreign students and as a means to attract investment in sphere of education.

Unlike Europe, the Bologna process for Russia is not only a way of integrating education into the international educational space, but also a condition for joining the World Trade Organization (WTO) (Kolesov 2006). The WTO requires member countries to remove barriers to the movement of various factors of production, as well as the use of the most favored nation treatment in the field of educational services. The domestic policy of the country, which is part of the WTO, should promote the opening of markets and the provision of equal economic and trade opportunities to all interested parties, including foreign suppliers (individuals, firms and organisations) of educational services (Malysheva 2014).

The WTO offers four ways to purchase a foreign educational service by a Russian consumer:

- distance learning;
- establishment of branch offices;
- training of foreign students;
- mobility of teachers (Senashenko and Baxter 2006).

Russia's accession to the Bologna Process in 2003 facilitated Russia's admission to the WTO in 2012. However, the social and economic problems of Russian education continue to manifest at its various levels and scales: preservation of technological gap with economically developed countries and reduction of competitiveness

of the domestic education; a decrease in its quality; low and untimely wages, aging of teachers and faculty; insufficient state financing of the education system and control over the process of its modernisation; a reduction in the level of scientific and methodological work in universities, a low level of use of modern teaching methods and technologies, including the development of educational and methodological literature and the writing of quality textbooks; a low level of employment of graduates of state universities, proceeding from the directions of their preparation; etc.

The aim of our research is to characterise the economic priorities and tasks of university management in the context of the reconstruction of higher education in the Russian Federation. A number of tasks were envisaged in pursuit of this objective. These include: description of the financial and economic situation in the sphere of higher education of the Russian Federation; characterisation of the main directions of modernisation of the Russian Federation's higher education and identification of corresponding institutional problems; substantiation of managerial tasks for solving problems at the university level.

The leading methods to investigate the problem are the methods of qualitative analysis of statistical data and documentary sources that characterise various aspects of higher education in Russia.

As a result of the research:

- economic priorities for the modernisation of Russian higher education are highlighted;
- the financial situation in the sphere of education is characterised;
- recommendations to university management structures aimed at solving the problems of higher education development are grounded.

The novelty of the research is that, in accordance with the main directions of modernisation of higher education, the institutional problems of its development have been identified and disclosed.

Theoretically, the research expands the notion of contradictions, relationships, relationships and mechanisms that arise and are reproduced in the sphere of higher education in modern Russia. In practical terms, the conclusions formulated in the article can be applied as principles of applied research of higher education, monitoring of this sphere.

1. Literature Review

General questions of the reproduction of education, as well as the tendencies of its globalisation are analysed in the works of Adam (2008), Aghion *et al.* (2008), Altbach, Reisberg and Rumbley (2009), Byram (2009), Davies (2007), Knight (2003) and others.

In the Russian scientific literature there are several interrelated factors that determine the modernisation of higher education:

- acceleration of the rates of social development;
- the emergence and development of the labour market;
- globalisation, which, on the one hand, determines the integration of Russian higher education into the world educational space, but, on the other hand, reveals the peculiarities of the Russian national system of higher education; development and introduction of higher information technologies into the system of higher education.

The factors, the main directions of reconstruction and the problems of modernisation of higher education in the framework of the Bologna process were considered in the publications of Bidenko (2003), Bermus (2008), Bim-Bad (2009), Kasevich and others (2004), Kuznetsova, Shadrikov and Glebov (2012), Lukichev (2012), Shadrikov (2012) and others.

In the framework of this area of research, the most important problem areas are allocated to improve the quality of education. Educational quality systems, methods and tools for its evaluation, mechanisms for ensuring are disclosed in the works of Azarev and others (2012), Bolotov (2005), Klycheva and Merkulova (2009), Maslova (2012) and others.

Integration of Russian higher education into the international one has many aspects. These include: knowledge leak (Mironin 2006, Shalmanov 2008, Magarshak 2009); correlation of European and Russian

educational standards; organisation and implementation of joint educational programmes (Rubtcova and Kaisarova 2016), Inclusive education (Rubtcova *et al.* 2016); the organisation of the social and physical space of Russian universities with the provision of their respective infrastructure; influence of family relations on the formation of social sources of students in the transition to the Bologna system; the role of professional and scientific communities in the formation of students' motivation in the context of modernisation of the national higher education (Vasilieva and Rubtcova 2017), new trends in entrepreneurial education (Kirkwood *et al.* 2014, Jones *et al.* 2014, Morselli *et al.* 2014).

Altbach and Rumbley (2015), Bidenko (2003), Byram (2009), Coleman (2007), Kasevich and others, research the academic mobility of Russian students in the context of the processes of European integration, internationalisation and globalisation of education (2004) and others.

The economic aspects of modernising Russian education are analysed in such works as Abankina, Domnenko and Osovetskaya (2006), Kantorovich and others (2006), Klyachko (2012), Klyachko and Belyakov (2015), *etc.*

A special layer is the papers devoted to the prospects for the development of Russian universities in the context of Russia's accession to the WTO: Grebnev (2006), Kolesov (2006), Zakharevich, Popov and Tereshkov (2006), Senashenko and Volodina (2006) and others.

2. Materials and Methods

The institutional framework for the development of Russian higher education is conditioned by the previous development of society; they are characterised by a historically new specific relationship between economics and politics that determine the course of modernisation of the education system and the direction of its impact throughout the entire transformation of Russia. Therefore, in methodological terms, the authors proceed from North's position on the effect of the "historical conditioning" of society's development (North 1990).

The objectives of the study were to describe the financial and economic situation in the sphere of higher education of the Russian Federation; highlighting the main directions and systematisation of economic and institutional problems of the reconstruction of higher education; substantiation of managerial tasks for solving problems at the university level. The solution of these problems was facilitated by the use of qualitative analysis of valid statistical data, which characterises the various parameters of education in Russia, and the analysis of documents.

The purpose of the analysis of statistical data was to study the general economic characteristics of education. Statistical information was taken from official sources posted on the website of the Federal State Statistics Service of Russia.

A traditional method of systematic document analysis was also used, aimed at obtaining information that is significant for research purposes. Its purpose was to extract the information on higher education contained in the document, fix it in the form of signs, determine its reliability, authenticity, significance and develop with its help the objective and subjective-evaluation characteristics of the object of our research. Since all the documentary information refers to the number of secondary information, its reliability and reliability depended on the positions of the communicator.

Thus, the research used a mixed strategy of combining (combining) principles, methods of collecting and analysing empirical data, quantitative (in this case, descriptive) and qualitative strategies in order to obtain more valid and reliable results.

3. Results

Traditionally, the Government of the Russian Federation sets before the Ministry of Finance the task of making the federal budget deficit-free, hence the natural way to solve it - the desire to cut federal budget expenditures.

For example, according to the parameters of the federal budget for 2016, revenue was planned at RUR13.74 trillion, expenditures - RUR16.1 trillion. Accordingly, the budget deficit is RUR2.36 trillion in 2016 (against RUR 2.67 trillion in 2015).

At the same time, the biggest share of financing from the federal budget was spent for defense and security structures. Thus, RUR1 trillion was allocated to national defence in 2016 (RUR 1.01 trillion in 2015) and another about RUR 1.31 trillion (RUR 1.31 trillion in 2015) - to national security and law enforcement activities. But the expenses of the Ministry of Education and Science, for example, under Section 07 "Education" in 2016 were provided in the amount of 557.8 bln RUB, which is below the level of 2015 - 579.36 bln RUB.

Below is a table that characterises the state expenditures of the Russian Federation on education at certain levels of the budget system (Gohberg *et al.* 2016).

Table 1. State Expenditures of the Russian Federation on Education for Individual Levels of the Budgetary System (bln RUB)

Federal budget:	2000	2005	2010	2013	2014	2015*	2016**
RUR bln	38.1	162.1	442.8	672.3	638.3	616.7	564.3
as a % of federal budget expenditures	3.7	4.6	4.4	5.0	4.3	3.9	...
Consolidated budgets of entities of the Russian Federation:							
RUR bln	176.6	628.6	1,450.9	2,333.8	2,474.3	2,563.0	...
as a % of expenditures of consolidated budgets of entities of the Russian Federation	17.4	21.4	21.9	26.5	26.5	25.1	...

Note: * Annual data is approved by the consolidated budget list taking into account the changes introduced (the report on the implementation of the consolidated budget of the Russian Federation and the budgets of state extra-budgetary funds as of December 01, 2015); ** In accordance with the Federal Law as of December 14, 2015, No. 359-FZ "On the Federal Budget for 2016".

Source: Gohberg, L.M., and others. Education in Figures: 2016: brief statistical compilation, 2016.

As can be seen from the data in Table 1, the dynamics of spending on education in the Russian Federation indicates that the main expenditure burden on the functioning of educational institutions as a whole lie on the budgets of the subjects of the federation. The figures indicate a significant increase in the costs of general education in absolute terms at the regional level, which confirms the existing and earlier tendency towards a smooth redistribution towards the subjects of the federation and an increase in their spending obligations. This fact, taking into account the existing negative situation in the Russian economy, causes a wide range of problems, the solution of which sometimes simply does not have resources for the regions.

Table 2. Expenditures of the Federal Budget of the Russian Federation in 2013-2016 (RUR ths.)

	2013	2014	2015	2016	Change (by 2015)
EDUCATION	605,667,539.40	547,728,956.50	579,359,019.7	557,792,280.7	- 3.72%
Professional training, retraining and further training	6,407,546.90	6,437,240.10	7,227,636.7	7,340,182.9	+1.56%
Higher and postgraduate vocational education	477,238,473.70	484,106,114.10	491,303,104.5	484,140,509.4	-1.46%
Applied scientific research in the field of education	12,521,722.20	9,426,335.00	13,060,351.1	13,669,922.5	+4.67%

Source: Gohberg, L.M., and others. Education in Figures: 2016: brief statistical compilation, 2016.

We note a significant reduction in the costs of preschool and general education. In many ways, this is due to the transfer of appropriate authority to the regions, as well as the "optimisation" of the network of budgetary institutions. In any case, the relevant segments of education cease to be a priority for the federal government.

However, it should be noted that, in general, the gradual reduction in spending on education corresponds to the worldwide trend that exists in a crisis. So, in 2010 in Switzerland, education expenses accounted for 5.2% of GDP (in 2009 - 5.6%), in Finland - 5.9% (in 2009 - 6.3%). But the reduction in the cost of education in these countries in a crisis is accompanied by an increase in health care costs. In Russia, however, the volume of allocations for the entire social sphere is declining.

The Russian Federation federal budget expenditures on education amounted to 0.91% of GDP in 2013, 0.74% of GDP in 2014, 0.69% of GDP in 2015 and 0.71% of GDP in 2016. Accordingly, there was a reduction in

the federal budget's spending on education as a share of gross domestic product: the share of GDP in these expenditures decreased by almost a quarter. The share of expenditures of the consolidated budget for education was also reduced in GDP: from 4.5% in 2013 to 3.6% in 2015 (in 2014 - 3.9%). This trend remained in force in 2016, which cannot but cause fear in the strategic perspective.

Starting in 2013, the federal budget of the Russian Federation also planned a change in the structure of expenditure by educational levels. So, by 2015, the spending on education of the federal budget has sharply decreased by more than 3 times the share of expenditures on general education - from 11.1% to 3.3%. In 2016, education expenses are expected at 3.46% of the expenditure side of the budget (or 0.71% of GDP). In general, the cost of education decreased by 3.72%, primarily for preschool (66.69%) and general education (24.28% (see Table 2). The share of expenditures for primary and secondary vocational education also decreased (by 6.20%). Financing of the article "Youth policy and health improvement of children" has been reduced by 29.14%. Expenses for vocational training, retraining and further training increased by 1.56%. Expenses for applied scientific research have been increased by 4.67%. As for "other issues in the sphere of education," their share increased by 47.51% (mainly due to the state program "Development of Education" for 2013-2020).

Higher and postgraduate education in 2016 is no longer the beneficiary of the change in the structure of expenditures for the formation of the federal budget. The share of expenses for it is reduced by 1.46% (against an increase of 10.9% in the previous period). In addition, it must be borne in mind that the previous increase in federal budget spending on higher and postgraduate education was below the planned level of inflation (for example, in 2014, expenditure growth in nominal terms amounted to 1.4% with inflation of 5.5%).

Thus, modernisation of the higher education system of the Russian Federation faces serious financial problems. For in conditions of the existence in the world of economies of different speeds, it is necessary to provide Russian education with priority development in order to anticipate the innovative development of the economy itself. In this sense, it can be argued that the economic and financial problems of the reconstruction of higher education are system-forming in the structure of the institutional problems of this sphere.

In response to the problems in the Russian Federation related to the functioning of the education economy at the federal level, it is necessary to pay attention to the development of a model for financing Russian universities so that, based on sound methods, norms and means of determining costs, it would be possible to plan and finance specific institutions and programmes. First of all, it is about the technology of financing on the basis of a programme-targeted approach, for example - at value centres, which is more in line with the financing of educational programmes. This suggests that the government should create reasonable cost standards for financing education in the context of the breakdown of Russia's regions in the social and economic situation.

Moreover, it is necessary to resolve the issues of financing science, on which the development of the scientific and educational complex also depends. It is known how much the country should spend as a percentage of GDP on science. In the world, we mean advanced countries in scientific and economic terms; this is an average of 2.7%. These are state expenditures and non-government expenditures. The Russian state spends about 1.3% of GDP on science.

A peculiar marker of the situation in the sphere of Russian science is the brain drain. Of course, the brain drain is an international phenomenon. It finds its expression in the outflow of researchers abroad and the scarcity of scientific personnel. For example, for the countries of the European Union, the deficit of qualified researchers is estimated at 700 thousand people (Mironin 2006). As for Russia, according to some estimates, at least 80,000 scientists left the country (Shalmanov 2008).

This export is not replenished, and has an economic dimension. According to calculations by the Russian Ministry of Education and Science, with the departure of a scientist, she loses on average 300 thousand dollars (Magarshak 2009). According to UNESCO, Russia already by the mid-90's. XX century, scientists lost more than \$ 30 billion from emigration, and according to estimates of the Russian Foundation for Basic Research, direct losses to Russia's budget in the 1990s of the twentieth century amounted to at least \$60 billion (Shalmanov 2008).

Of course, all these figures are rather arbitrary, because they are based on an approximate estimate of the costs of education and training of scientists, the lost profit from their exclusion from the economic life of the country, indirect losses from the decline in the level of research personnel, etc. Nevertheless, they are not unfounded. In

addition, the unregulated outflow of scientific data and information, including the results of research, development, know-how and other types of intellectual products, accompanying the drain of minds and knowledge, significantly increases the cost volumes of these losses. This gives grounds for the existence and more critical assessments. So, according to the expert, if those specialists who travelled abroad were trained in the universities of the United States and Western Europe, then their preparation would have to spend more than \$1 trillion (Shalmanov 2008). But in these circumstances, the drain of minds from the Russian Federation is becoming one of those latent factors that will sooner or later play a decisive role in reducing the competitiveness of Russian universities on the international market of educational services, in creating insurmountable obstacles for most graduates of Russian universities in the increasingly internationalised European labour market.

All this means that by changing the structure and content of higher professional education, it will be necessary to make adjustments to the technology of its reconstruction and management methods.

4. Discussion

The main directions of reconstruction, which are the essence of the formation of a European higher school as a unified system, are the following: wide dissemination of the same type of educational cycles (bachelor's – master's degree), a modular approach to teaching, the introduction of unified and easily recalculated systems of educational loans (a variant of credit assessments), uniformity of the forms fixing the qualifications obtained; provision of quality training of specialists, etc.

A module is a set of educational tasks, solved either on the basis of several types of work, or through several close, but different subjects. With the transition to it, the traditional subject system of education is changing. The transition is made from the subject to the educational module is carried out. If by 2010 in Russian higher education more than 70-80% of the total labor budget was compulsory courses, and about 30-20% were classified as elective disciplines, then in the West European system there were inverse ratios. The European approach proceeded from the fact that choosing a discipline, the learner consciously realises his interests and inclinations, deepens his specialisation in the chosen direction and, to a certain extent, he forms his own curriculum. In addition, the expansion of electivity allows you to combine a wide range of different disciplines of vocational training with a decrease in the weekly audience load.

For Russian universities, the transition to a modular system meant the rejection of substantive teaching and the introduction of purposefully expanded educational programs whose boundaries were treated differently than in the traditional for the Russian education system forms.

This was due to the structure of higher education standards, with load planning, staffing, budgeting, etc. So, increasing the time for independent work of students without changing planning procedures in universities led to a partial reduction of the teaching staff and an increase in the real pedagogical load for the remaining teachers. It did not happen in most universities and the fundamental change in the approach to stimulating the work of their faculty and teaching and support staff, which increased the problem of the outflow of young cadres from the system of higher education.

The structure of the academic load that developed in the classical domestic universities was not as bad as it was sometimes represented. Direct contact, work in classrooms, laboratories, fastening for the departments of students for the performance of course and final qualification research enabled both students and teachers to jointly participate in the process of knowledge production. At the heart of the still-existing educational design in Russian universities is the approach to the interaction of teachers and students as participants in the process of producing knowledge and skills, and not as agents operating in the sphere of consumption of services, where the teacher provides and the student uses knowledge. With real state support of fundamental research, classical universities would be able to maintain fundamental training of specialists that would contribute to the growth of competitive advantages in the labour market.

It turns out that the optimisation of the correlation of fundamental and applied knowledge is the most serious problem of Russian higher education. On the one hand, specialisation from the first years of training, the formation of specific skills for specific parameters of jobs or the nomenclature of positions gives short-term benefits: Specialists with such training are easier than specialists with a fundamental, less specific preparation to solve

employment issues, to undergo labour adaptation. On the other hand, the preparation of "narrow" specialists conceals in the long term a possible threat of unemployment for university graduates, as the demand for specialties is volatile, and the life cycle of many professions, specialties and positions is shorter than the period of professional activity of a person. The provision of basic knowledge, the fundamental nature of university training, the ability to constantly learn and absorb new knowledge make it possible to adapt to the changing needs of the labour market relatively easily, and the broad horizon provides, together with them, good opportunities for professional growth.

But the transition to a two-stage training system required the solution of at least several fundamentally important tasks, especially when it comes to the pan-European educational space.

The first task is the transition to fundamentally new standards. The serious difference of the situation in the sphere of higher education of modern Russia from the European situation lies in the fact that the principle of tripartism in the social partnership is being implemented in the European Community. The subjects and participants in this process operate in the conditions of a developed civil society. Not only the state and business participate in solving many economic and social issues, but also trade unions, whose allies are numerous public organisations, including professional communities. In the field of higher education, this is reflected in the existence of non-state standards, and the standards of professional communities (for example, MBA is the standard of business in common). But, if in Europe there is a fairly wide range and well-developed system of contacts between the main participants of social partnership, in Russia civil society is still being formed, its institutions are still weak and their influence is insignificant, and the relations between the participants in the social partnership are not completely built. Therefore, the strategy of transition to the new generation standards in the RF should include the involvement in the development of these standards and the rationale for their core - professional competences, primarily representatives of professional and expert communities.

The second task is retraining and further training of teachers. Unfortunately, the system of retraining of Russian teachers, adequate to the current educational situation, has not yet fully developed, and many actions in this area are only proactive. Meanwhile, in-service training should be based on continuity, incentives and motivation (including material ones), professional mobility (currently many teachers do not move through universities, they do not have a one-year annual creative vacation every five years, which is accepted abroad) and mandatory involvement in scientific work. The educational and methodological support of new educational programmes largely depends on this.

The third task is European Credit Transfer and Accumulation System (ECTS). ECTS is a European Credit Transfer and Accumulation System, a pan-European system for recording the academic work of students. ECTS provides comparability of the volume of the material studied; it now includes more than 1,100 universities and a network of ECTS Helplines. Loans are a kind of conditional unit that reflects the amount of work required to complete each course, including lectures, seminars, hands-on classes, independent work, exams and tests. Credits create the basis for international accreditation of educational programmes. At the same time, loans are directly related to the modular learning principle. And here again there is a problem of transition to new conditions of activity at preservation of old rules (standards, the established systems of the account of labour inputs, planning of loading and the staff schedule, budgeting, *etc.*).

The introduction of a credit system should be combined with the development of economic opportunities of Russian universities. For example, in some European countries the following form is used: if at the university about 50% of students are those who got into it under mobility programmes, and especially from another country, then this university receives additional benefits or funding from government structures. Mobility is especially stimulated, proceeding from the fact that the labour market is a pan-European one. In Russia, this system of economic incentives is still not envisaged. In addition, the underdevelopment of the system of Russian grants creates limited opportunities for international mobility programmes for Russian students, inadequate funds to pay necessary and additional costs for mobility programmes, differences in the organisation and content of educational programmes, and finally, the language barrier creates barriers to the participation of Russian students in mobility programmes.

As a participant in the Bologna Process, Russia is trying to solve problems in ensuring the attractiveness of its sphere of higher education. Thus, Russia ranks seventh in the world in terms of the number of foreign students (slightly more than 1% of the number of its own students). More than 24 thousand foreign citizens are trained at

the expense of the federal budget, but of them more than 16 thousand from the Commonwealth of Independent States in terms of quotas of receptions and the line of interstate agreements. The number of Russian universities receiving foreign students has increased (from 328 in 2000 to more than 600 in current conditions).

However, the mobility of European students in Russian universities is not too common and encounters the following problems: underdevelopment of the reception infrastructure and the conditions of their residence; The complexity of linguistic, cultural and information adaptation; Prevalence of language training proposals and philological education in the selection of programmes; Rather limited number of courses, read in foreign languages.

In addition, the patterns of economic mobility in Russia are different. Thus, the all-Russian and its regional labour markets are much less mobile than in Europe, because the Russian housing market is very different from European markets. It is very expensive for consumers' mortgage lending. In addition, a large proportion of Russian universities are concentrated in Moscow, St. Petersburg and some of the largest regional centers. Therefore, capital labour markets are winning, unlike most regional markets. Therefore, with a high degree of probability it can be argued that access to leading European universities will lead to the fact that Russian universities, especially peripheral ones, will lose. The main part of the financial resources will go to European universities-leaders, which in turn means the concentration of resources around them and, accordingly, the opportunity to become even more attractive to them.

So, the participation of the Russian Federation in the Bologna Process is not only and not so much a technical problem of education as an economic, social and political problem, which has national and international dimensions. This problem should be solved with the help of a "portfolio" of relevant management tools. At the same time, the creation of unified educational communications based on the unification of principles and priorities in the preparation of bachelors and masters should not mean a unification of the content of training courses and modules. During the reconstruction it is necessary to take into account both the needs of the Russian economy and the established national traditions in science and education. It is important to create a space for managerial manoeuvre and adequate social mechanisms for realising freedom of choice and recognised advantages of the Russian education system.

First of all, the political will is required to address the financing of education and science in the Russian Federation. Priority development of these industries to ensure the development of an innovative economy requires allocation of 4.5 - 5 % and 3% of GDP, respectively. This will allow ensuring the development of the material and technical basis of education, including higher education, and science, and also to guarantee more or less acceptable conditions for the reproduction of scientific and pedagogical personnel.

It is also important to develop mechanisms for social partnership in the field of education. The level of development of this mechanism and the range of application depends on the actual practice of interaction of its participants in solving various issues in different spheres. In the field of higher education, much depends on the prospects for moving to new educational standards. When moving to the standards of professional communities, it is necessary to develop feedback from these communities and institutionalise various forms of communication and interaction with them.

As a recommendation to university management, it is possible to propose a gradual transition to program-targeted management and financing technologies on the basis of a programme-targeted approach. It is also necessary to propose the development of special programmes aimed at establishing contacts with the Russian scientific diaspora abroad, developing relations and mutual trust with its representatives, expanding the range of professional interaction with them, and gradually improving the conditions for working in Russia, including:

- development at the federal and university levels of the institute of external expertise of various scientific projects and the expansion of the representation in it of representatives of the Russian scientific diaspora living and working outside of Russia;
- involvement of representatives of the foreign Russian scientific diaspora as invited lecturers at universities and leading scientists in scientific institutions, which would allow providing the latest scientific knowledge in a form convenient for students to understand, in Russian and at the highest level. Allocation special grants and use of economic incentives for inviting universities for this;

- development at the federal and university levels of the institute of joint research with other leading scientific countries (for example, mega grants, *etc.*) and scholarships for internships abroad and funding of follow-up work in Russian universities and scientific institutions for 1 to 3 years. Allocation special grants and the use of economic incentives for inviting scientific institutions and universities for this;
- use in universities of special individual contracts with conditions close to western conditions or superior to attracting famous Russian scientists working abroad;
- providing, at the federal and university levels, scientists returning to Russia real access to grant competitions and competitions for filling positions in higher educational institutions and scientific institutions.

The development of academic mobility requires:

- development and implementation of special projects at the federal and university levels aimed at developing the competence of the management and faculty of universities in the organisation of mobility and student exchanges, university cooperation programmes, as well as participation in international mobility programmes;
- development in universities of joint Russian-European programmes and international programmes, in which international contacts are tested, primarily at the level of individual educational institutions, in order to introduce international certification of diplomas;
- strengthening the language training of students;
- full transition to the credit-modular principle of the organisation of educational programmes;
- formation of special articles in the budgets of universities for the purpose of developing the mobility of students and teachers;
- development at the federal and university levels of the information and communication environment on academic mobility;
- expansion of the mobility practice at the federal and university levels through various courses and universities, the development of a system of transition courses for admission to the main educational programmes for magistracy, projects and programmes for improving knowledge of foreign languages, additional educational programmes, including continuing education programmes in priority areas and reference figures;
- development of an infrastructure of reception and adaptation of both foreign and Russian students, and also scientific and pedagogical shots.

Of course, these recommendations do not limit the general list of proposals for the modernisation of Russian higher education, and their rationale is linked to the real practice of transforming the education system in the Russian Federation. However, in conditions of insufficient financing of higher education and immaturity of civil society institutions with the help of manoeuvres of university management on the basis of a programme-targeted approach, it is possible to minimise the negative consequences of the influence of institutional problems of its modernisation.

Conclusion

The research carried out by us has certain limitations. This is due to the fact that some figures reflecting the economic losses from brain drain are rather arbitrary, because they are based on an approximate estimate of the costs of education and training of scientists, the lost profit from their exclusion from the economic life of the country, the indirect losses from the decline in the level of research Frames and so on. It is also necessary to note the lack of complete and up-to-date data that characterise academic mobility in higher education, *etc.*

Nevertheless, the research identified economic priorities for the modernisation of Russian higher education and characterised the financial situation in education. Then, in accordance with the main directions of this reconstruction, the institutional problems of its modernisation were revealed and disclosed. The recommendations to university management structures aimed at solving the problems of the development of higher education were also substantiated.

Institutional problems of modernisation of higher education in the Russian Federation were identified as institutional because their contradictory nature and content were formed in the process of social development; they are stable in the conditions of reproduction of the economy and education, penetrated all spheres of society and are interrelated with other phenomena of social life.

Systematisation of institutional problems was carried out. As a criterion for systematisation of these problems, the main directions for the reconstruction of higher education in the framework of the Bologna process were identified. These directions (the transition to a multi-stage system (or widespread distribution of the same type of educational cycles), a modular approach to teaching, the introduction of a system of educational loans, academic mobility, etc.) are the appropriate fields in which institutional problems are realised.

Despite the limitations of the research, it has been shown that insufficient financing of higher education and science, as well as lack of development of civil society institutions, social partnership, communication with professional communities, constitutes system-forming problems in their whole palette.

Practical recommendations to university management structures aimed at improving the quality of education and solving the problems of the development of higher education and the economy as a whole are offered.

References

- [1] Abankina, I., Domnenko, B., and Osovetskaya, N. 2006. Economic reforms in education: autonomy, independence, responsibility: the experience of foreign countries and the situation in the Russian Federation. *Narodnoye obrazovanie: Russian Public Educational Magazine*, 10: 68–78.
- [2] Adam, S. 2008. *Learning Outcomes, current developments in Europe: update on issues and the applications of learning outcomes associated with the Bologna Process*. The Scottish Government. Available at: http://www.ond.vlaanderen.be/hogeronderwijs/bologna/BolognaSeminars/documents/Edinburgh/Edinburgh_Feb08_Adams.pdf (accessed September 3, 2008).
- [3] Aghion, P., Dewatripont, M., Hoxby, C., Mas-Colell, A., and Sapir, A. 2008. *Higher Aspirations: an agenda for reforming European universities*. Bruegel blueprint 5, July 2008, Policy Paper, 70 pp. Available at: <http://aei.pitt.edu/8714/1/BPJULY2008University.pdf>
- [4] Altbach, P.G., Reisberg, L., Rumbley, L.E. 2009. *Trends in Global Higher Education: Tracking an Academic Revolution*. Paris: United Nations Educational, Scientific and Cultural Organization, 7. Available at: http://www.cep.edu.rs/public/Altbach_Reisberg_Rumbley_Tracking_an_Academic_Revolution_UNESCO_2009.pdf
- [5] Altbach, P.G., Reisberg, L., Yudkevich, M.M., Androuschak, G.V., and Kuzminov, Y.I. 2013. *The Global Future of Higher Education and the Academic Profession: The BRICs and the United States*. London: Palgrave Macmillan, ISBN: 0230369790, 9780230369795, 206 pp.
- [6] Anz, C. 2008 *Employability, the employers' perspective and its implications; recognition of degrees in the labor market across Europe*. Bologna conference on employability, Luxembourg. Available at: <http://www.ond.vlaanderen.be/hogeronderwijs/bologna/BolognaSeminars/Luxembourg2008.htm> (accessed January 25, 2009).
- [7] Azariieva, V.V., Kruglov, V.I., Kutuzov, V.M., Stepanov, S.A., and Yashchenko, V.V. 2012. *Quality assurance systems for education*. St. Petersburg: St. Petersburg State Electrotechnical University.
- [8] Baidenko, V.I. 2003. *The Bologna Process: structural reform of European higher education*. Moscow: Research Center for Studies of Academic Quality Issues.
- [9] Bermus, A.G. 2008. *Modernization of Education: philosophy, politics, culture*. Rostov-on-Don: Everest.
- [10] Bim-Bad, B.M. 2009. *Changes in education: reforms, innovations*. Moscow: Kirillitsa.
- [11] Bolotov, V.A. 2005. *Russian education quality assessment system*. Moscow. Available at: <http://www.den-zadnem.ru/page.php?article=150> (accessed July 10, 2016).

- [12] Byram, M. 2009. *Multicultural societies, pluricultural people and the project of intercultural education*. Strasbourg: Council of Europe Publishing. Available at: <http://www.dfpp.univr.it/documenti/Avviso/all/all384928.pdf>
- [13] Coleman, J. 2007. *Residence and Study Abroad: Research and Good Practices*. Clevedon: Multilingual Matters.
- [14] Davies, P. 2007. *The Bologna process and university lifelong learning – the state of play and future directions*. EUCEN. Available at: <http://www.eucen.org/BeFlex/FinalReports/BeFlexFullReportPD.pdf> (accessed January 26, 2009).
- [15] Denison, E.F. 1967. *Why Growth Rates Differ: Postwar Experiences in Nine Western Countries*. Washington: Brookings Institution, ISBN-10: 0815718055, 494 pp.
- [16] Gohberg, L.M., Zabaturina, I.Yu., Kovaleva, G.G., Kovaleva, N.V., Kuznetsova, V.I., et al. 2016. *Education in Figures: 2016: brief statistical compilation*. Moscow: NRU HSE.
- [17] Grebnev, L. 2006. The WTO and Russian universities: From fierce competition to mutually advantageous cooperation? *Higher Education in Russia*, 4: 28–32.
- [18] Jones, P., Penaluna, A., Pittaway, L. 2014. Entrepreneurship education: A recipe for change? *The International Journal of Management Education*, 12 (3): 304–306.
- [19] Kantorovich, G.G., Kuzminov, Ya.I., and Pisyakov, V.V. 2006. *University innovations: The experience of the High School of Economics*. Moscow: Moscow State University, High School of Economics.
- [20] Kasevich, V.B., Svetlov, R.V., Petrov, A.V., and Tsyb, A.V. 2004. *The Bologna Process*. St. Petersburg: St. Petersburg State University.
- [21] Kirkwood, J., Dwyer, K., and Gray, B. 2014. Students' reflections on the value of an entrepreneurship education. *The International Journal of Management Education*, 12 (3): 307–316.
- [22] Klyachko, T.L. 2012. *Creating incentives for innovative activity in the field of science and higher education*. Moscow: Publishing House "Delo".
- [23] Klyachko, T.L., and Belyakov, S.A. 2015. *Methodology for assessing the contribution of education to the socio-economic development of the Russian Federation and its subjects*. Moscow: Publishing House "Delo", 41 pp.
- [24] Klycheva, E.V., and Merkulova, O.P. 2009. *The system of assessing the quality of the educational process in European countries (Great Britain, Denmark, Netherlands, Norway, Finland, Sweden) and the USA*. Moscow. Available at: http://www.pssw.vspu.ru/other/science/publications/klicheva_merkulova/chaper1_quality.htm (accessed May 3, 2016).
- [25] Knight, J. 2003. Updating the definition of internationalization. *International Higher Education*, 33: 1–3. Available at: <https://ejournals.bc.edu/ojs/index.php/ihe/article/viewFile/7391/6588>
- [26] Kolesov, V. 2006. The market of educational services and values of education: (Between the WTO and the "Bologna process"). *Higher Education in Russia*, 2: 3–8.
- [27] Kuznetsova, M.D., Shadrikov, V.D., and Glebova, L.N. 2012. *Monitoring the quality of higher pedagogical education*. Moscow: Logos.
- [28] Lukichev, G.A. 2012. *The importance of the Lisbon Recognition Convention for International Integration in Education*. Moscow: Russian University of Friendship of Peoples.
- [29] Magarshak, Yu. *Rumors about the crisis of our science do not correspond to reality?* Available at: <http://www.inauka.ru/science/article30556.html> (accessed May 7, 2017).

- [30] Malysheva, E.V. 2014. Role of integrative entrepreneurial culture in the information society. *Contemporary Economic Issues*, 4: Available at: <http://economic-journal.net/index.php/CEI/article/view/117/100> (accessed July 1, 2017).
- [31] Maslova, L.D. 2012. On systems of quality assessment of higher education. *International Research Journal*, 3 (3): 4–9.
- [32] Mironin, S. 2006. *Brain drain: objective analysis*. Internet against TV screen. Available at: <http://www.contrtv.ru/common/1657/> (accessed May 7, 2017).
- [33] Morselli, D., Costa, M., and Margiotta, U. 2014. Entrepreneurship education based on the Change Laboratory. *The International Journal of Management Education*, 12 (3): 333–348.
- [34] North, D.C. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press. Available at: <https://tumania.econ.msu.ru/ftp/north.pdf> (accessed May 7, 2017).
- [35] Rubtcova, M., and Kaisarova, V. 2016. Language Integrated Learning (CLIL) programs in Public Administration: Russian students' and matriculants' opinion about their first CLIL experience. *Teaching Public Administration*, 34 (3): 229–246.
- [36] Rubtcova, M., Pavenkov, O., Pavenkov, V., Martianova, N., and Martyanov, D. 2015. Deprofessionalisation as a performance management dysfunction: The case of inclusive education teachers in Russia. *Asian Social Science*, 11 (18): 339–349.
- [37] Senashenko, V., and Volodina, N. 2006. The WTO and the problems of higher education. *Higher education in Russia*, 2: 8–13.
- [38] Shalmanov, S. 2003. *Russia lost USD 1 trln from the "brain drain"*. Available at: <http://www.silicontaiga.ru/home.asp?artId=1449> (accessed May 7, 2017).
- [39] Vasilieva, E., and Rubtcova, M. 2017. A self-awareness of public servant: An introduction in methodology. *International Journal of Public Sector Performance Management*, 3 (1): 103–118.
- [40] Vinogradova, N.A. 2015. Methods of evaluation of social development. *Contemporary Economic Issues*, 1: Available at: <http://economic-journal.net/index.php/CEI/article/view/123/106> (accessed July 1, 2017).
- [41] Yudkevich, M., Altbach, P.G., and Rumbley, L.E. 2015. *Academic Inbreeding and Mobility in Higher Education. Global Perspectives*. London: Palgrave Macmillan, 264 pp.
- [42] Zakharevich, V., Popov, V., and Tereshkov, V. 2006. Russian education and the accession of Russia to the WTO: possible consequences. *Higher education in Russia*, 4: 20–27.
- *** Bologna Declaration. 1999. Available at: <http://russia.edu.ru/information/legal/law/inter/bologna/> (accessed July 7, 2016).

Procedure for Efficiency Assessment of Financial - Budgetary Control System

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Abstract:

The author's methodology is proposed in the article for determining the integrated assessment of the efficiency of the system of financial control over public funds, which can be used to assess the resultative potential of the entire financial control system. The results of the study can be used by public authorities to improve the management of public financial resources and in the formulation of economic policy provisions.

Keywords: financial control; budget; efficiency; finance; economic analysis

JEL Classification: G28; G38; G39

Introduction

The strategy of reforming the budgeting process in any state presupposes the formation of a financial management system in the public sector that predetermines creating and functioning of an efficient and responsible public finance management system and the use of the conceptual framework for financial management in the commercial sector of the economy. Today, many countries are actively pursuing reforms in public finances aimed at increasing the effectiveness and transparency of the financial system, strengthening the responsibility of government authorities for the consequences of making managerial decisions based on the concept of managerialism. Budgetary funds management is of particular importance because of its significance; it is here that the largest financial flows of the state are concentrated.

Proceeding from the analysis of the provisions of the budgetary messages of a number of countries, one can make an unambiguous conclusion that at the first stages of introducing financial management into the practice of the public sector, the elements of financial management, such as budget planning, budgetary expenditures management (with emphasis on efficiency and effectiveness), and budgetary control, are of top priority. In turn, the content of control should consist rather in confirming its target expenditure and achieving the effect that was expected in making decisions on their allocation, than in stating the fact of allocation and spending of funds.

In this regard, the issues of interrelation and interaction of budget management and budgetary control, budget efficiency and effectiveness of the system under investigation become relevant. In turn, the urgency of the problem of reliable determination of budget efficiency is also determined by the absence of a unified methodology for its assessment in the modern theory of finance.

1. Literature review

Traditionally, budget efficiency was defined as excess of revenues over budgetary expenditures (Keynes 2007, Marshall 1993, Friedman 1957).

The essence of budgetary policy, according to J.M. Keynes, is reduced to the organization of investments: it is not so crucial, where the budgetary funds will be invested, it is essential that "... they will result in an increase in state revenue". Keynes (2007, 189) considered the change in the budgetary position, that is, the size of the deficit or surplus of the federal budget, to be the main indicator of fiscal policy. Friedman (1957) argued that the budgetary policy has no special significance (it is enough to consider only the revenue side of the budget). M. Friedman attributed the emergence of budget deficits and surpluses to a change in the level of net national product and fluctuations in the size of tax revenues

Some of the domestic researchers also adhere to this position (Abalkin 1997, Sukharev 2010). There is an approach that budget efficiency is measured through the pace of tax revenues in the budget in terms of individual types of taxes, as well as through the dynamics of the revenue ratio of the regional budget to GNP (Dokalskaya 2008).

Thus, the concept of budget efficiency can imply different meanings. However, in our opinion, the above approaches are simplistic and incomplete, they do not correspond to modern approaches to understanding efficiency in general and budget efficiency in particular, and also reflect only one indicator – the excess of the budget revenues over its expenditure and/or cost reductions (budgetary effect of the reporting period).

As a managerial category, the budgeting process reflects the direct and backward links between the managing subsystem (bodies with budgetary powers) and the managed subsystem (revenues, budget expenditures, extra-budgetary funds, inter-budgetary relations) in the performance of management functions (organization of financial flows management, financial forecasting and planning, financial leverage, and financial control), in order to improve the quality and efficiency of the budget services (Aliev 2010, Ermakova 2008, 220, Pridachuk 2006, 15). Accordingly, efficiency of budget management directly depends on the effectiveness of financial control. Stages of making managerial decisions in the process of budget management in the form of a sequence of certain stages can be grouped into three blocks: strategic budget management, operational budget management, and control of the budget management efficiency.

2. Methods

There is no denying that the complexity of assessing the efficiency of budget management is determined by the fact that budgetary funds are allocated to achieve numerous goals of the country's social and economic development, implemented by hundreds of ministries, agencies, services, governmental and other enterprises and organizations. Therefore, it is difficult to verify the results of achieving all the goals set, let alone to assess the profitability and effectiveness of the entire set of budgetary expenditures within the executed budget.

Financial control is intended to exclude errors in the budgetary sphere, and therefore, performs the function of ensuring the efficiency of budget management. In this regard, a level that characterizes the amount of funds used in violation of the financial and budget legislation (and vice versa) in relation to the budgetary expenditures can be used as one of the simplified criteria for assessing the efficiency of budget management.

It is most acceptable and convenient in use to calculate the level of budget management efficiency in terms of expenditures based on the amount of ineffective use of budgetary funds identified by the monitoring bodies and concerning the expenditure of funds of the accounting period:

$$L_{Bme} = 100\% - O_{ineff}/O_a \times 100\% \quad (1)$$

where: L_{Bme} is a level of budget management efficiency in terms of expenditures based on the amount of ineffective use of budgetary funds for the accounting period; O_{ineff} – amount of ineffective use of budgetary funds, identified by the monitoring bodies and concerning the expenditure of funds of the accounting period (RUB); O_a – amount of budgetary expenditures of the accounting period (RUB).

The higher the result, the greater part of budgetary funds is used efficiently, the higher the efficiency of budget management is. The nature of the change in efficiency of budget management depends on the efficiency of financial control in the public sector. This interdependence derives from the very nature of control as a function of managing public finances, as well as focusing of subjects of control to improve efficiency in checking the effectiveness and efficiency of the formation and use of budgetary funds.

The legitimacy of considering the relationship between the efficiency of budget management and the efficiency of the financial control system is also justified by the permissibility of the degree of inaccuracy resulting from the fact that financial control was exercised by a selective method (due to the impossibility and, maybe, the irrelevance of mass control), which is proved with the methods of mathematical statistics and probability theory.

Correlation between the indicators of budget management efficiency and financial control efficiency may reflect the impact of various external and internal factors on them. In the presence of such a correlation, subject to certain limitations, budget management efficiency can be predicted based on the efficiency of state and municipal financial control using a regression equation. Functional dependence of budget management efficiency on financial control efficiency is defined as:

$$f = a_0 + a_1x \quad (2)$$

where: a_0 and a_1 are correlation coefficients; f – budget management efficiency; x – efficiency of financial and budgetary control FBC.

This regression equation expresses the statistical relationship between the indicators of budget management efficiency and the performance indicators of state and municipal financial control. This does not mean that a certain indicator of control efficiency always determines uniquely the efficiency of budget management. This relationship is only observed on average. The level of correlation is largely determined by the volume and scattering of the analyzed statistical data – the selected qualitative and quantitative indicators of both investigated efficiencies underlying the equation. This regression equation also does not provide information about whether the reason for the variation in budget management efficiency is conditioned by the variation in control efficiency. The practical significance of this equation is that it allows evaluating the efficiency of a financial control system in terms of how it affects the dynamics of the indicators of budget management efficiency. At the same time, the high value of the correlation coefficient (0.95) indicates that the activities of the subjects of control really affect the budget management efficiency, and therefore it can be concluded allegedly that there is a directly proportional dependence (regularity) of the increase in budget management efficiency on the efficiency of the financial control system.

A method of identifying the isolated influence of factors may be another factor analysis method, which can be used to reflect (measure) the relationship between budget management and the FBC system.

The essence of modeling factor systems is that the relationship between the indicator being studied and the factor ones is transferred in the form of a specific mathematical equation. The main task of factor analysis in our case is formed as a task of assessing the influence of absolute change in financial control efficiency in the public sector on the absolute change in budget management efficiency.

The general formulation of this problem: let $Y = f(x_1, x_2, \dots, x_n)$ be a deterministic model characterizing the change in the effective indicator of budget management efficiency Y due to the factors (x_1) . Let the indicator of budget management efficiency Y obtained an increment ΔY for the accounting period. It is required to determine which part of this increment (increase/decrease in efficiency of budget management) is responsible for the increment (increase/decrease) of financial control efficiency, that is, to present it in the following form:

$$\Delta_{gen} Y = \Delta_{x1} Y + \Delta_{x2} Y + \dots + \Delta_{xn} Y \quad (3)$$

Let us designate the base period with index 0, and accounting period with – 1. The overall change in the effective indicator of budget management efficiency that took place during this time is:

$$\Delta_{\text{gen.}} Y = Y_1 - Y_2 \quad (4)$$

The change, related to the change of only one, x-th, performance indicator of financial control, thus will be:

$$\Delta x_1 = f(x_1^0, \dots, x_{i-1}^0, x_i^0, x_{i+1}, \dots, x_n^0) - f(x_1^0, \dots, x_n^0) \quad (5)$$

This model can reveal the isolated effect of financial control efficiency on budget management efficiency. It should be pointed out that this method does not apply to the methods of elimination and enables to partially remove the main shortcoming of the totality of these methods. When using elimination, the main hypothesis is that various factors affecting efficiency of budget management vary independently of each other, but in fact they vary interrelated. As a result of this interrelated change, some indecomposable residue is formed, which is added to the magnitude of the influence of one of the factors (usually the latter). In this regard, the value of influence of such a factor as financial control efficiency on the change in budget management efficiency will fluctuate depending on its place in the deterministic model.

Obviously, for this technique the isolated influence of financial control efficiency:

$$\Delta_{\text{gen}} Y \neq \sum \Delta x_i Y \quad (6)$$

since when using this method an indecomposable residue is discarded completely, is not added to any of the values of the influence of the factors. On the one hand, the degree of absolute impact of factors on the growth of the effective indicator of budget management efficiency is not distorted, on the other hand, the full decomposition of the change in the effective indicator of budget management efficiency is not achieved by changes in the factors: the sum of the influences of all factors is not equal to the overall increase in the effective indicator of budget management efficiency. This is the main drawback of this technique and the reason to use it in cases where high accuracy of impact assessment is not required, but it is enough only to estimate approximately the degrees of influence of financial control efficiency on budget management efficiency.

The advantages of this method are that it is the simplest of special methods of factor analysis and does not require establishing a sequence of factor changes that causes many difficulties, for example, when using the method of chain substitutions, and is able to greatly distort the result of factor analysis.

There is a causal relationship: 'management quality – quality of the control object operation – the result of the object management'. Therefore, the quality of public finance management can be inferred by on the basis of an assessment of the efficiency of budgets and the effectiveness of using budgetary funds.

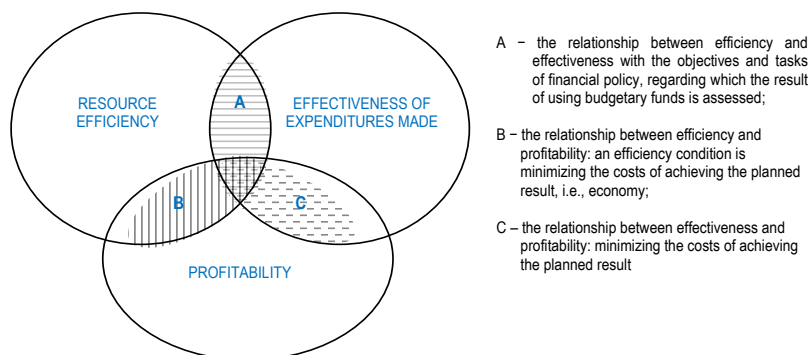
3. Results

The increase in efficiency of budgetary expenditures is recognized as an integral part of improving the quality of governmental (municipal) management, including the provision of governmental (municipal) services and the performance of the functions of the Government to increase the efficiency of budgetary expenditures.

To assess efficiency of budgetary expenditures is an important and indispensable tool of the modern budgetary policy of the state. Its role is repeatedly increased if it is necessary to ensure the transparency of the budgeting process and the implementation of the state financial policy. The requirement for a balanced budget sets the framework within which budgetary funds can be allocated and used.

Accordingly, improvement of the efficiency of using budgetary funds and profitability are the conditions for achieving the results defined in government plans and programs (see Figure 1).

Figure 1. Interrelation of indicators of efficiency of using budgetary funds



Since in the budget sphere, a significant part of the effects of programs and projects funded from the budget is not aimed at obtaining financial benefits, but is of a social nature, the assessment of the efficiency of using budgetary funds involves estimating not only the budgetary, but also the social and macroeconomic effects. Program budget planning is an important part of the result-based budgeting, along with the medium-term budget planning and auditing of the efficiency of budgetary expenditures.

However, planning of budgetary expenditures by programs should not be considered only from the point of achieving an optimal allocation of resources between priority directions. The program budget provides an opportunity not only to estimate the expenditures for a specific goal, but also to analyze their effectiveness within a single program or even a specific event, and compare the results achieved with the costs. In other words, the BOR concept solves the problems of achieving both allocative and economic efficiency of expenditures that arise from the non-market nature of the public services provision.

The categories on the basis of which indicators for estimating the efficiency of using budgetary funds are formed are the most important methodological element of the assessment.

The lack of attention to the formation of the conceptual apparatus of budget management has served as a reason that there is practically no difference between the concepts of 'effect' and 'efficiency' in many regulatory legal documents. Whereas the effect is an absolute indicator and characterizes the result, the efficiency is a relative indicator and characterizes the process which produced this result.

The criteria for the effectiveness and profitability of budget management and the set of indicators characterizing them are based on the efficiency of budgetary expenditures which is one of the partial indicators of budget management efficiency, in addition to the FBC performance indicators. Efficiency of budgetary expenditures, on the one hand, means their effectiveness as the degree of the planned result achievement, *i.e.* the degree of change in the target social indicator, which is one of the objects of state socio-economic policy and indicators of macroeconomic balance. On the other hand, efficiency of budgetary expenditures is the minimization of costs for the provision of budgetary services (profitability).

The indicators of effectiveness of budgetary expenditures may cover effectiveness of achieving the goal of the event (program) can be identified as an (which shows the degree of achievement of the goal set); effectiveness of solving problems (which reflects the degree of implementation of each of the tasks set to achieve the goal); effectiveness of performance (which indicates the implementation of planned values of the preset indicators that characterize the tasks) (Ermakova 2008, 245).

Researchers traditionally refer the following to the indicators of budgetary expenditures efficiency: economic efficiency (correlation of direct results of activities, results obtained and planned to achieve programs and program activities in the framework of tactical tasks with the costs of achieving them) (Ermakova 2008, 245); commercial efficiency (correlation of financial costs and results ensuring the required rate of return) (Pridachuk 2006, 123); socio-economic efficiency (correlation of the magnitude of the socially significant result achieved and planned as a result of solving a tactical problem and the magnitude of the costs of achieving it) or social rate of return (efficiency of budgetary expenditures aimed at solving a particular strategic task); budgetary efficiency (net budgetary effect)

(Pridachuk 2006, 123); efficiency of management (correlation of administrative costs and the total amount of allocated budgetary funds for the implementation of a specific goal (event) or program) (Ermakova 2008, 267).

In this regard, it should be noted that it is necessary to distinguish between concepts and indicators of budget efficiency, budgetary effect and efficiency of budgetary expenditures. It is advisable to estimate the budgetary efficiency precisely as the ratio of the result of the activities of the budget management subjects in the implementation of the functions and tasks of the budget system to the costs of its functioning. Efficiency of budgetary expenditure is the relationship between the results achieved and the costs of achieving them and reflects the nature of the impact of activities, measures developed by the authority (institution, etc.) on the state of society and economy.

Criteria for assessing the efficiency of spending budgetary funds should be developed for the stated purpose of efficiency assessment. One of the goals of expenditure budget management is to effectively use budgetary funds to provide basic services to the state and solve social problems, provided macroeconomic balance and positive economic growth. In this case, the assessment of the budget management quality should be carried out exclusively from the positions of the society.

In order for the evaluation of the efficiency budgetary expenditures to be comprehensive and justified, it is necessary to use a set of criteria that have quantitative and qualitative, relative and dynamic values. In order for the efficiency assessment of the budgetary expenditures to be comprehensive and justified, it is necessary to use a set of criteria that have quantitative²⁸ and qualitative²⁹, relative³⁰ and dynamic³¹ values (see Notes).

The efficiency assessment of budgetary expenditures assumes an assessment of both public and macroeconomic efficiency. The specific composition of the indicators of budgetary expenditures efficiency, directions and criteria for their evaluation are systematized by the authors (Figure 2). To assess the macroeconomic efficiency of budget, one can use “an impeccable non-ideological criterion for the macroeconomic efficiency of the state budget (GDP)”. This criterion is calculated by the formula (Vladimirov 2006, 58):

$$\Omega_{FA(\pm)} = \pm 1 - \frac{|F_{A(-)}^{state}| + \Psi_A^{state}}{|F_{A(-)}^{ideal}| + \Psi_A^{ideal}} \quad (7)$$

where: $|F_{A(-)}^{state}|$ is the module of numerical value of the achieved (predicted) negative rate of economic growth; $|F_{A(-)}^{ideal}|$ is the module of numerical value of the ‘ideal’ negative rate of economic growth; Ψ_A^{state} – the generalized indicator of the structural efficiency of the current state of a particular economy; Ψ_A^{ideal} the generalized indicator of the structural efficiency of the ideal state of a particular economy.

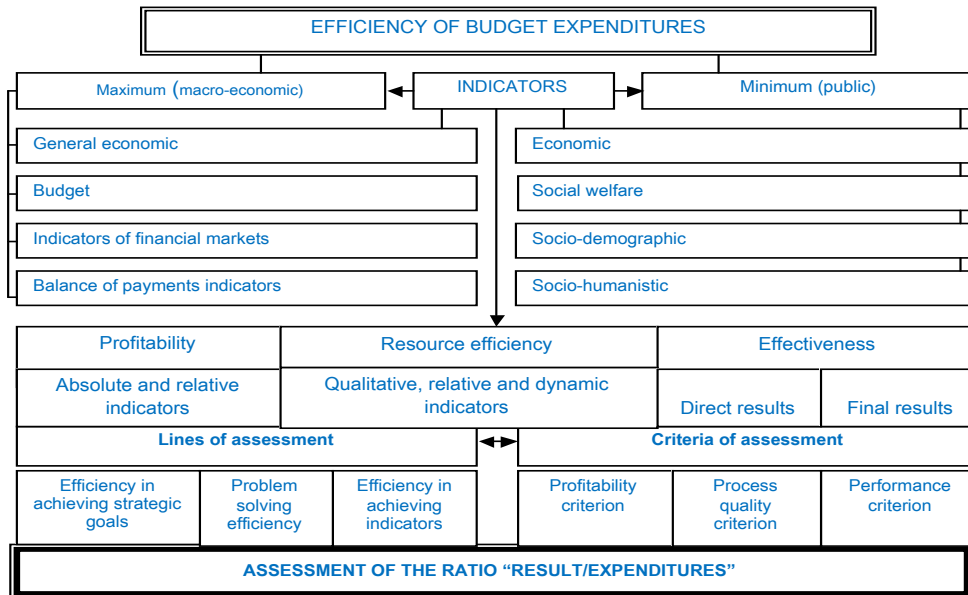
²⁸ The quantitative values of the criteria are expressed both in physical and value terms that characterize the results achieved using public funds or the activity of the evaluated object.

²⁹ The qualitative values of the criteria include characteristics of various aspects of the use of public funds or the activities of state bodies, such as, for example, the compliance of these activities with the provisions of regulatory legal documents; the required quality of operation of control and monitoring systems; the execution of established rules and procedures; the implementation of the developed measures.

³⁰ Relative values of the criteria are expressed in the correlations between the various results achieved in the activities of government agencies or in the audited sphere of using public funds, and characterize their state. *E.g.*, this is the level of cost effectiveness and profitability, the share of university graduates who received a diploma with honors, the unemployment rate.

³¹ Dynamic values of the criteria reflect changes in both quantitative and relative values for certain periods of time. For example, this is the rate of increase (decrease) in products and services, profit and return, fertility and mortality.

Figure 2. Lines of assessing efficiency of budgetary expenditures



The basic property of the proposed criterion of macroeconomic efficiency of the planned or actually achieved GDP is the rigid ‘geometrically transparent’ qualitative dependence of its positive and negative numerical values on the actually achieved and planned (predicted) rates of economic growth. *E.g.*, in case of positive rates of economic growth, the values of the criterion Ω will range from zero to plus one, rigidly and visually fixing the degree of deviation of the achieved state of macroeconomic efficiency of GDP (state budget) of the corresponding country of cumulatively positive value of Ω with respect to the ideal one, *i.e.*, not really achievable, but, possibly, as close as possible to zero.

In our opinion, the evaluation of the budgetary expenditures efficiency in the context of strategic budget management assumes a wide use of methods of deterministic integrated assessment. An integrated index can be constructed for a generalizing integrated assessment by the methods of sums³², geometric mean³³, coefficients³⁴, sum of places³⁵, distances, *etc.*³⁶ In the process of implementing budget management, state bodies and local authorities tend to approach the target indicator. It is possible to assess the degree of the result achievement in the process of using public finance by one of the rapid methods of comparative integrated assessment, in particular,

³² The sum method is based on the summation of the actual absolute changes in the indicators. The disadvantage of the sum method is the possibility of a high evaluation of the results by the integrated index with a significant lag in some particular indicator, which is covered by high achievements in other particular indicators.

³³ The geometric mean method is based on the determination of the coefficients by partial indicators, when the highest value of this indicator is taken as a unit. It is advisable to apply this method with a relatively small number of indicators to be evaluated, and if most of their values are close to unity.

³⁴ The assessment is obtained by multiplying the corresponding relative indices.

³⁵ The sum-of-places method assumes preliminary ranging of each object of the analysis depending on a level of the investigated indicators. The number of places should be equal to the number of organizations analyzed. The smaller the sum of places, the higher rank is assigned to the analyzed object.

³⁶ The use of methods of sums, sums of places, geometric mean is possible only in the case of unidirectional influence of all the estimated parameters on efficiency, *i.e.*, the increase (decrease) in the value of any particular indicator is regarded as an improvement in the results of economic activity (and vice versa). Otherwise, when calculating the indicator of integrated assessment, the indicators that are reverse to the original values are taken as criteria.

the distance method, which is based on the mathematical apparatus of assessing public finance management, proposed by Baranova (2008).

Calculation of the integrated index using the distance method is carried out by the formula³⁷:

$$R_j = \sqrt{\sum_{i=1}^n (1 - x_{ij})^2}, \quad (8)$$

where: R_j is an integrated index of the subject of budget management evaluated by expenditures that characterizes efficiency of using budgetary funds; x_{ij} is a formalized indicator of efficiency obtained by comparing each indicator with the best one among those compared in dynamics or as broken down (if the indicator growth in dynamics indicates an increase in the efficiency of using budgetary funds, for example, improving the quality of medical care or increasing life expectancy) or the best indicator among those compared with each value of the indicator (if the quantitative decrease in the indicator indicates an increase in the efficiency of using budgetary funds, for example, the crime rate falls); j – compared subjects of budget management or periods; i – indicators of efficiency of using budgetary funds; n – number of indicators accepted in the range from $n_{\min} = 1$, required to assess efficiency of the quantity of formalized indicators.

The integrated index calculated by this formula can be used for monitoring purposes to make inter-subject comparison and estimate the change in the efficiency of using budgetary funds in dynamics in a particular public-territorial formation or in the country as a whole.

Having calculated the integrated index characterizing the quality of budget management with the help of the proposed method, it is possible to achieve the following goals: 1) to reveal the effects of budget management (public, budgetary, macroeconomic, depending on the purpose of the assessment and, accordingly, the selected indicators), which predetermines the possibility of its use to identify the organizational effect of FBC and a certain social effect from the activities of the control body, since the social effect achieved by the control bodies is part of the overall (cumulative) social effect. However, the conclusions obtained on the basis of the integrated index presented above are of an indicative nature, they serve as an auxiliary (albeit important) role in determining the character of changes in the indicators of the efficiency of using budgetary funds as a whole for all indicators (without reference to the results and expenditures of the budget to achieve them).

In our opinion, the algorithm for assessing the efficiency of budgetary expenditures (depending on the direction of evaluation – public (minimum) or macroeconomic (maximum) efficiency) within the program direction implies:

- the determination of target values of the studied indicators;
- calculation of changes in the selected performance indicators in the period under study (taking into account the time lag in relation to the costs incurred);
- determination of the coefficient reflecting the dependence of the change in the investigated indicators due to the implementation of budgetary expenditures (established expertly).

Then the efficiency of budgetary expenditures in a certain direction (E) can be determined by the following formula:

$$E = \left(\sum \frac{\Delta x_m \times Y}{\Delta w_m} \right) \times K, \quad (9)$$

where: Δx_m is a ratio between the formalized indicator obtained by comparing each performance indicator and its target value in the period under study; Δw_m – a ratio between the planned appropriations to achieve the

³⁷ The prerequisite for using the comparison technique is to ensure comparability of data, which is very important for budgetary expenditures, when the result of a measure can be expressed in physical terms. It can be based on: 1) normative values of indicators, achievement of which indicates the efficiency of using budgetary funds; 2) similar indicators of previous periods, obtained, for example, in the neighboring regions, at related facilities, in similar processes and in foreign practice.

selected formalized indicators with the actual costs incurred; i – a group of selected performance indicators; k is the coefficient reflecting dependence of the change in the investigated indicators on the implementation of budgetary expenditures³⁸; y – the value (in fractions) of a particular group of indicators in assessing the effectiveness of achieving a strategic goal (established by an expert way); n is the number of selected indicators.

For each problem being solved, priority of obtaining the overall budgetary effect is assessed:

$$BE = \frac{E_{ec} + \Delta R_b + B_s}{\Delta G} \times C_d, \quad (10)$$

where: BE is budgetary effect in the accounting period; E_{ec} – economic effect; ΔR_b – budget revenue gain in the accounting period (including at the expense of funds returned to the budget (on personal accounts) as a result of control); B_s – budget savings through decreased expenditures in the accounting period; ΔG – a gain in results of budget financing in the accounting period expressed in qualitative (quantitative) terms, it is determined as the difference between the planned results and the results achieved due to spending of the saved budgetary funds; C_d is discounting coefficient.

Development of methodological bases for assessing the efficiency of the financial control system in the conditions of institutional transformations in the financial system is the most important direction in the formation of an information and analytical support system for the activities of control bodies, public authorities at all levels of the budget system and the implementation of the ongoing budget reform.

A certain difficulty in assessing the efficiency of the system under study is associated with the fact that today, as already indicated, the control authorities themselves develop and establish methodologies for assessing the efficiency of their activities; they do not attempt to combine efforts for the purpose of a comprehensive evaluation of the efficiency of the system (subsystem, integrated component) of the FBC at its level; therefore, there is a high probability of subjectivity and non-stressed criteria of efficiency. Hence, it is necessary to use methods that increase the objectivity of the assessment.

Assessment of the efficiency of the FBC system creates prerequisites for systemic monitoring of the effectiveness of the control bodies' activities, making decisions and taking measures for the further development of the system, improving its organization, and encouraging control authorities (auditors) that ensure a high level of efficiency. This task can be solved also in case of applying a synergetic approach³⁹ and systemic analysis⁴⁰ in the course of assessing tools. Systemic analysis of efficiency is based on the assumption that in the FBC sphere at any level, every decision in the process of exercising control activity is the result of searching for the best option from the set of possible ones. In this case the best options are those that provide increased effectiveness, profitability, operability of control, as well as efficiency of budget management.

Let us consider the possibilities of analytical methods of systemic analysis using a retrospective when evaluating the efficiency of the FBC system. The basis for analytical methods of systemic analysis is formed by the

³⁸ The criterion for selecting 'sufficiently strong' correlations can be both the absolute value of the correlation coefficient itself (from 0.7 to 1), and the relative value of this coefficient, determined by the level of statistical significance (from 0.01 to 0.1), depending on the sample size. In small samples, for further interpretation, it is more correct to select strong correlations based on the level of statistical significance. For studies that are carried out on large samples, it is better to use absolute values of the correlation coefficients

³⁹ The conceptual apparatus of synergetics allows explaining consistently the dynamics of endo- and exogenous factors in the development of system processes and, in particular, explaining the cyclical nature of development processes, phase transitions in dynamics, the periodic dominance of internal (necessary) forces and external (random) growth factors. Synergetics and the theory of self-organization give a new methodological basis for solving the problems of sustainable development of economic processes.

⁴⁰ Systemic analysis in the narrow sense is a set of methodological tools used to prepare and substantiate decisions on complex problems of political, military, social, economic, scientific, technical nature; in the broad sense, the term 'systemic analysis' is sometimes used (especially in the English-language literature) as a synonym for the systemic approach.

theory of potentials, according to Shalanov (2008). Potential (from Latin *potentia* – force) is sources, possibilities, means, reserves that can be used to solve a task, achieve a certain goal. Shalanov (2008) believes that “the potential of a dynamic object is a quantitative measure of the level of its development, assessed by the totality of indicators describing it” (Drogobytsky 2011, Medvedeva 2010, Rusak 2010).

The results of the FBC system activities, as we have already pointed out, are described by different criteria and indicators. When studying the development processes of the system under study (a subsystem, an integrated component), the tasks of determining the level of its development, estimated by a set of indicators, and the construction of a scale for measuring the potential of an object acquire special urgency. The methodology for determining the integrated assessment of the FBC system efficiency and the extent of significance of the selected indicators in the overall integrated assessment of the system can be used to estimate the effective potential of the system under study if it is calculated for one structural level in the dynamics over the period under study. If the integrated assessment is calculated for a number of subsystems (integrated components), then it can be used to rank them according to the level of the resultative potential.

The algorithm for calculating the integrated assessment of system efficiency is given below. In developing this algorithm, the authors used the results of Aletdinova, Kurtcheeva and Shalanov (2010) on the problem of assessing the innovative potential of the enterprise, as follows:

- the dynamics of the values of the j -th indicator in the period under study is determined by formula:

$$x_j = (x_1, x_2, x_3, \dots, x_n), \quad (11)$$

where: x_j is the indicator of the dynamics of the values of the j -th indicator of the system efficiency in the period under study.

- reference values of the performance indicators of the studied system \tilde{x}_j are established by expert means.
- the achieved system reference value by the j -th indicator in the k -th block is assessed as follows:

$$\beta_j = X_j^0 / \tilde{X}_j, \quad (12)$$

where: β_j is the efficiency level achieved by the j -th indicator for system reference value; X_j^0 – actual value of the j -th indicator of the studied system efficiency; \tilde{X}_j – reference value of the j -th indicator of the studied system efficiency.

- the sum of the obtained assessments is calculated by formula:

$$\sum_{j=1}^n \beta_j, \quad (13)$$

- significance of the j -th performance indicator in the integrated assessment is calculated by formula:

$$\alpha_j = \beta_j / \sum_{j=1}^n \beta_j, \quad (14)$$

where: β_j is the efficiency level achieved by the j -th indicator for system reference value; n – number of indicators. The indicator of relative importance reflects the degree of participation of the indicator in achieving the overall goal of the system in the course of managing it.

- the integrated assessment of the system is derived by the formula:

$$C = 1/n \sum_{j=1}^n \beta_j, \quad (15)$$

where: β_j is the efficiency level achieved by the j -th indicator for system reference value; n – number of indicators.

Self-organization, as defined by German physicist Herman Haken, the founder of synergetics as the science, is the spontaneous formation of highly ordered structures from embryos or even from chaos, a spontaneous transition from an unordered state to an orderly system due to the cooperative synchronous action of many subsystems (Haken 1991). The essence of the synergetic approach is as follows: the chaotic state of any system (including public finance) contains uncertainty – probability and randomness, which are described by the concepts of information and entropy. The embryo of self-organization is the probability; ordering arises through fluctuations (oscillations), stability – through instability. The transition of the system to a new stable state is ambiguous. The system that reached the critical parameters is as if ‘dumped’ from the state of strong instability into one of many possible new stable states. At this point (the point of bifurcation) the evolutionary path of the system seems to branch out and the case decides which branch of development will be chosen. There is a synergistic connection between the activities of the control authorities and the state of the system under investigation; under cooperated (joint) actions of the independent elements of the system this connection ensures an increase in the overall effect up to a magnitude greater than the sum of the effects of the same elements acting independently (Lopatnikov 2003): effective activity of control bodies is manifested in increasing the effectiveness and efficiency of the system itself. Entropy is a quantitative measure that reflects the correlation of chaos and order, randomness and regularity, uncertainty and determinism, within the framework of the synergetic approach.

The entropy simulation of the system under consideration represents a poorly appraised area. Any attempts at such simulation are not known to the authors. Here one can note certain efforts to model different systems (finance, healthcare, etc.), undertaken by Baranova (2008), Shalanov (2008).

The present study aims to evaluate the efficiency of the FBC system with regard to the entropy criterion (Byk and Kituhin 2009).

The structural state of any system should strive for such that the production of entropy is minimal. Entropy in the aspect of the system under study shows the degree of risk, which can be interpreted as the probability of failure to reach targets by the FBC system.

From the standpoint of information theory, the system is stable, when the growth of increasing orderliness, accumulation of diversity (organization) of internal factors results in preponderance of the organization factors over the processes of destruction. Information (organizational) stability is the ability to maintain and restore a certain level of internal entropic insufficiency, *i.e.*, the ability to withstand the growth of entropy.

Economic systemic stability is the ability of the system to maintain and restore its systemic efficiency through directed interaction with the external environment, improving the organization and management. Hence, the task of management ultimately is limited to reducing the level of risk of a random process.

The main direction of the evolution of synergetics is to study phase transitions of systems from one stable state to another, therefore a synergetic approach can be used in the evaluation of the efficiency of the FBC system.

The entropy of the system in the t -th period (year) as the probability of failure to achieve its goals is determined as follows:

$$S_t = - \sum_{i=1}^N x_{it} \ln(x_{it}), \quad (16)$$

where: S_t is the entropy level of the studied system in the t -th period; x_i is a fraction of the selected parameter in

the i -th state; N is the indicator number with $\sum_{i=1}^N x_{it} = 1$

It is assumed that the main parameters that determine the state of the studied system are: the degree of the control objective achievement, the level of synchronization, the level of using interdepartmental resources; the level of control coverage of budgetary expenditures; the degree of implementation of control and audit activities; the level of budget management efficiency.

Then the entropy of the considered system is defined as:

$$S_t = S_{1t} + S_{2t} + S_{3t} + S_{4t} + S_{5t} + S_{6t} \quad (17)$$

where: S_{1t} is the entropy determined by the first parameter; S_{2t} is determined by the second; S_{3t} – by the third; S_{4t} – by the fourth; S_{5t} – by the fifth; S_{6t} – by the sixth parameter.

Conclusion

The transition from the paradigm of 'cost management' to the paradigm of 'result management', the expanded use of the managerial approach in the sphere of public finance management, the new targets in this area have made it necessary to change the generally accepted approach to determining the content of budgetary efficiency as a budgetary effect, efficiency of budgetary expenditures. Today, budget efficiency should be understood as the systemic efficiency of financial management in the budgetary sphere (efficiency of the budgetary process management system), or, in other words, budget management.

Budget management efficiency as a coherent set of interrelated and interdependent elements, forms and methods that function purposefully as the integral whole to optimize budget revenues and expenditures for ensuring the effective solution of the tasks of social and economic development, directly depends on the efficiency of financial control.

The nature of the change in budget management efficiency depends on the efficiency of financial control. This interdependence derives from the very nature of control as a function of managing public finances, as well as the setting of subjects of control to improve performance in monitoring the effectiveness and efficiency of the formation and use of budgetary funds. The analytical tools used to reflect (measure) the relationship between budget management and the financial control system can include both formalized and non-formalized methods.

Consideration of the interrelationships of budget management and financial control of the economic and mathematical model of linear programming that determines the static equilibrium of budget management as a system makes it possible to calculate the optimal effectiveness of the FBC system at a certain level of the budget system.

The advantages of the method for detecting the isolated influence of factors are that it is the simplest of special techniques of factor analysis and does not require establishing a sequence of factor changes which causes many difficulties, for example, when using the chain substitution method, and is capable of greatly distorting the result of factor analysis.

The BOR concept solves the problems of achieving both allocative and economic efficiency of the budget expenditures that arise from the non-market nature of the provision of public services. Effective setting of the use of budgetary funds – improving the quality of life of the population, which involves assessment of both the minimum (social) and maximum (macroeconomic) efficiency while estimating the efficiency of budgetary expenditures; wide use of methods of deterministic integrated assessment. The construction of an integrated index for a generalizing comprehensive estimation can be carried out by methods of sums, geometric mean, coefficients, sum of places, distances, and others.

The task of assessing the efficiency of the GFC system from the standpoint of institutional efficiency can be solved provided both a synergetic approach and system analysis are used in the instrument evaluation process.

The desire to approach the target indicator in the process of implementing budget management by public authorities and local governments makes it possible to use one of the methods of comparative comprehensive assessment, in particular, the distance method, which is based on the mathematical apparatus for evaluating the management of public funds

The methodology for determining the integrated assessment of FC system efficiency and the indicators of the significance of the selected parameters in the overall integrated assessment of the system (subsystems, integrated components), supplemented with the analysis of the indicator entropy level, can be used to assess the resultative potential of the FC system and the ranking of the studied systems (subsystems, integrated components) by the level of resultative potential.

References

[1] Abalkin, L.I. (Ed.) 1997. *The course of the transition economy: A textbook*. Moscow: Finstatinform. [in Russian]

- [2] Aletdinova, A.A., Kursheva, G.I., Shalanov, N.V. 2010. Determining an Integral Assessment of the Innovation Potential of an Enterprise. *Economic Sciences*, 1(62): 245-248. Available at: <http://ecsocman.hse.ru/data/2011/08/02/1267428917/49.pdf>. [in Russian]
- [3] Aliev, T.T. 2010. Institute of interbudgetary transfers in the system of budgetary law. *Contemporary Law*, 1: 44-50. [in Russian]
- [4] Baranova, I.V. 2008. An Indicative Approach to the Assessment of the Efficiency of Public Finance Management. *Bulletin of Tomsk State University*, 313: 142-147. [in Russian]
- [5] Byk, F.L., and Kituhin, V.G. 2009. Conceptual model of development management. *Management in Russia and Abroad*, 4: 3-9. [in Russian]
- [6] Dokalskaya, V.K. 2008. Analysis of the effectiveness of using budgetary funds in the region. *Finance*, 8: 71-72. [in Russian]
- [7] Drogobytsky, I.N. 2011. *Systemic Analysis in Economics*, Moscow: UNITY-DANA. [in Russian]
- [8] Ermakova, E.A. 2008. *Methodology of formation and strategy of development of the state financial management system in Russia*. PHD Thesis. Saratov. [in Russian]
- [9] Friedman, M. 1957. *A Theory of the Consumption Function*. Moscow. [in Russian]
- [10] Haken, H. 2005. *Information and Self-Organization. A Macroscopic Approach to Complex Systems*. Moscow: Mir. ISBN: 5-484-00189-7, 3-540-66286-3. [in Russian]
- [11] Keynes, J.M. 2007. *The General Theory of Employment, Interest and Money*. Moscow: Ecsmo. [in Russian], 463 pp. Available at: <https://cas2.umkc.edu/economics/people/facultypages/kregel/courses/econ645/winter2011/generaltheory.pdf>
- [12] Lopatnikov, L.I. 2003. *Economic and Mathematical Dictionary. A dictionary of modern economic science*. 5th Ed., Moscow: DELO. [in Russian]
- [13] Marshall, A. 1993. *Principles of Economics: In 3 vols. Vol. 1*. Moscow: Progress. [in Russian]
- [14] Medvedeva, O.V. 2010. *Integrated economic analysis of the enterprise activity*. Moscow: Phoenix. Rusak, E.G. 2010. *Economic analysis*. Moscow: Popuri. [in Russian]
- [15] Pridachuk, M.P. 2006. *Budgeting process in the Russian Federation: the evolution of management development and quality*. PHD Thesis. Volgograd. [in Russian]
- [16] Shalanov, N.V. 2008. *Systemic Analysis. Cybernetics. Synergetics: Mathematical Methods and Models. Economic Aspects*, Novosibirsk: NSTU press). [in Russian]
- [17] Sukharev, O.S. 2010. *Budget u budget efficiency: structure planning method*. Available at: <http://www.kapital-rus.ru/articles/article/178740> [in Russian]
- [18] Vladimirov, S.A. 2006. On the impeccable non-ideological criterion (indicator) of macroeconomic efficiency of the state budget (GDP). *Finance and Credit*, 18 (222): 54-60. [in Russian]

*** World Health Organization (WHO). Global status report on alcohol and health 2014. Geneva.

Economic Processes in the Structure of Economic Exchange as a Domain of Hidden Economy

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Abstract

The article deals with overcoming of a number of objective and subjective obstacles in order to realize man's desire to maximize the degree of satisfaction of his growing needs is usually complicated because of the need to overcome a number of objective and subjective obstacles. The choice of one or another way to achieve the desired goal (concealment of income, theft and the like) depends primarily on the motives of the individual, capabilities, social status, authority) and individual characteristics (personal qualities, value orientations, interests). Violating to some ways the existing legal and social norms, the individual thus prefers the illegal type of behavior. In this case, almost always to the end of an uncertain probability of exposure of such an act and the prosecution of its members. Since their own "fear" (inherent limitations) often are weaker personal desires, so, especially if the weakness of the external (from the state and public) control and the softness of the punishment, not an introduction to the subjects of the shadow economy - economic processes that have proliferated because of the state inability to ensure the effective and equitable operation of economic entities, have a certain degree of illegality, through which hides by its participants, and therefore are not reflected in official statistics. Accordingly, the paper shows the formation of the identification of economic processes, which are affected by the shadow economy and movement of the financial assets in the shadow.

Keywords: shadow economy, economic turnover, financial assets, participants in economic exchange, withdrawal of funds.

JEL Classification: O 170

Introduction

It is characteristically that with the development of society, there has been an improvement not only of ways to combat the manifestations of the shadow economy, but also of forms of such activity. Moreover, there has been a tendency to extension of public relations' shadow economy - a large-scale process of the shadow economy penetration into all spheres of social and economic activity, which proves the existence of a logical relationship between a legal and an illegal economy. The shadow economy has a significant impact on all socio-economic processes that occur in society. In fact, it has become one of the organic components of the economic system, performing certain system functions:

- partially resolves a number of current problems that legal economic relations can solve;
- enters into a systemic contradiction with the interests of long-term socio-economic development, adversely affecting it in the strategic dimension.

The phenomenon of the shadow economy accompanies humanity throughout the history of its existence, but for the first time at an official level it was mentioned in 1972 when the International Labor Organization Commission found in Kenya the presence of a large contingent of the working poor people, who are working under very difficult conditions, producing goods and services, but not are recognized and not registered by public authorities.

The state policy of the national economy unshadowing should contain two mutually agreed components: administrative and motivational, as well as rely on the existing regulatory and legal framework. However, despite the sufficient organizational and legal support for the activities of government bodies in this sphere, it remains unsuccessful. Under these conditions, the problem of the state policy' of national economy unshadowing improving remains urgent.

1. Literature review

The problem of the national economy unshadowing became the cornerstone of the research of a number of scientists, some of their names should be noted, for example Guo, Y. Liu & Y. Liu (2017), applied a systematic approach to the analytical evaluation of the shadow industrial activities of industrial firms; Abramov (2015, 2016) - studied the specifics of the economy's unshadowing in transformational societies; Nicolai and Zamorano (2016) - evaluated the impact of the shadowing of coal mine activities on their financial performance; Halevi and Kriesler (2016) - improved the concept of state regulation of tourism unshadowing; Sabbatini (2016) - he elucidated the methodological foundations of the economic and criminological theory of the economy's unshadowing; Zhou (2016) - substantiated the socio-economic concept of using the state mechanism to counteract the shadow economy; Lahyani, Khemakhem and Semet (2016) - highlighted the financial dominants of the shadow economy.

However, the level of the shadow economy remains high, and the state policy in this sphere is mostly declarative, and therefore, flawed. That is why among the scientific community there is a significant interest in this problem, as result some numerous publications in professional press of different directions. So, McMillan and McMillan (2016) identified the reasons that make offshore zones attractive for money laundering, as well as possible ways of preventing this negative phenomenon. Gan *et al.* (2017) highlighted the regulatory policy of restraining illegal entrepreneurship. Lessambo (2016a) determined the possibilities of systemic counteraction to the development of the shadow economy and the legalization of funds obtained by criminal means with the aim of raising the level of national economic security. Matrigne, (2017) explored the scope and role of the shadow business in the economy. Fanti and Buccella (2017) analyzed the main reasons that cause the increase in the shadow sector during the crisis, determined its volumes and, using the experience of the other countries, formulated ways of economic unshadowing. Bhattacharya, Li and Sonaer (2017) showed no positive trends in overcoming corruption, even during the growth of the educational level. Pilkington (2016) investigated the peculiarities of the exploitation of hired labor as a factor in the distribution of shadow wages and shadow incomes. Lessambo (2016b) highlighted the use of tax policy as a factor in the legalization of shadow wages.

2. Materials and methods

However, recognizing the undoubted achievements of the above-mentioned scientists, it is necessary to emphasize the need to specify approaches to improving the state policy of the economy unshadowing, taking into account the specifics of its components.

The legalization of criminal activities (criminal proceeds) is inadmissible according to existing legal and social norms. However, individuals who occupy key positions in the "black" segment of the shadow economy are unlikely to voluntarily give up their own super profits. But the structural subdivisions of the Ministry of Internal Affairs show moderate activity to stop such illegal actions, which can be an indirect confirmation of their links with criminal structures. The reason for this is considered to be corruption, which can not be eradicated completely, but it is quite possible to reduce its negative impact on social processes (Wright 2017).

The unshadowing of population incomes should be carried out according to the degree of shadow activity illegality of each type. And also it should be aimed at preventing the depletion of large sections of the population. So, it is relatively easy to legalize the incomes that are received in the "dark gray" segment (in particular, due to the legalization of those economic entities who carried out their activities without state registration). But because of their criminality, legalization of the "black" segment income of the shadow economy is impossible (Roeder 2016). An exception can be income from human organs and stem cells trade, and then only if the existing legislation changes and strict state control over this process by the state, which will allow not only to channel some of the shadow financial flows to the needs of society (including the development of the domestic health system), to reduce the level of criminality in the country, but also to improve life and improve the health of many people (Liu 2017).

Taking into account the specifics of the illegal economy components, it seems promising to outline the following directions for improving the state policy of the economy's unshadowing (Amrouche and Yan 2016):

- ensuring equal responsibility of all for offenses;
- the possibility of using funds received illegally, including through the declaration of expenses;

- assistance in increasing legal incomes of the population;
- simplification of the licensing system and taxation system;
- responsibility intensification of economic entities and officials for the implementation, facilitation or non-interference in "shadow" activities;
- stimulation of the public to participate in the prevention and detection of violations of the law in the economic sphere.

So, unshadowing of economy is a complex of interrelated and complementary measures that will not only legalize the "shadow" activities of enterprises without reducing production and the loss of their production capacities and sales markets, but also provide a significant reduction in the scale of criminal components of the shadow economy, which, in the final as a result, will contribute to improving the social and economic situation in the country (Wang, Wang & Wang, 2016). According to the legal criterion, it is necessary to allocate such components of the national economy: legal ("white"), semi-legal ("light gray"), illegal ("dark gray"), criminal ("black") economy. "Gray" components of the illegal economy can be relatively quickly and easily unshadowing, but most "black" components, especially taking into consideration their public danger, are subject to urgent liquidation. Continuing scientific research on this issue will help create the necessary tools for the unshadowing of the national economy and further improvement of the social and economic situation in the country (Ness and Cope 2016).

3. Results and discussion

The phenomenon of corruption leads to the appearance in the economy of enterprises of shadow intermediaries with unprofitable conditions for the supply of resources and the sale of products that have a shadow profit in common with top management. The main difference between shadow mediators and classical intermediaries is that the rates of profit of intermediaries and enterprises due to corruption do not tend to equalize. The main assumptions of the model are:

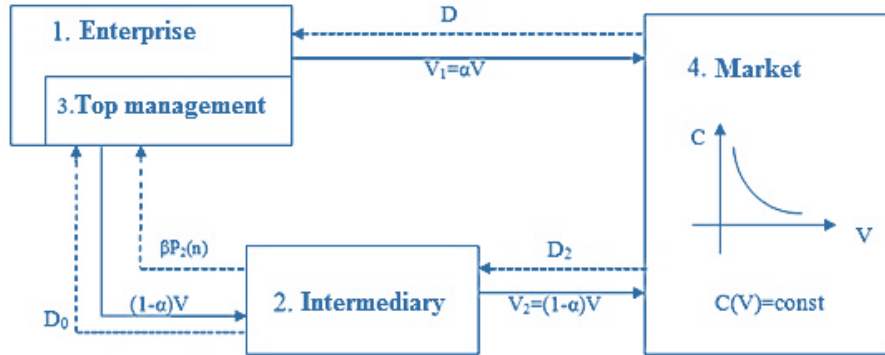
- Demand for the company's products is constant;
- The enterprise uses a single intermediary and sells products independently (outsourcing, insourcing). When insourcing, the enterprise sets prices for its products C , and when outsourcing - supplies part of its production αV ($0 < \alpha < 1$) at a price equal to the average cost of its products S ;
- The intermediary (possibly in the form of a trading house in the enterprise) resells products with a volume of αV in the market also at a price of C , emerging in the market, competing with the enterprise;
- The company pays legal taxes (tax burden) in total amount from the proceeds of D_1 , at a rate of i_1 .
- The intermediary pays legal taxes on the proceeds of D_2 at the rate of i_2 and the "shadow" tax at the rate of β from its profit;
- The top management of the enterprise is interested both in the profit of the enterprise, and in the profit of the intermediary, which is achieved by the participation of top managers in getting a "shadow" reward; where β is the coefficient of interest, which, as a rule, is 1, *i.e.* The intermediary gives all its profits to the top management either through "black cash" or through dividends ($\beta = 1$).

The structure of the model for the interaction of the enterprise, intermediary, market and top management is shown in Table 1 and Figure 1.

Table 1. The main activities of participants

Participants	Direction of activity
Enterprise	<ul style="list-style-type: none"> ▪ Increasing of the enterprise profit
Intermediary	<ul style="list-style-type: none"> ▪ Decreasing of the average cost price
Top management	<ul style="list-style-type: none"> ▪ Increasing of the enterprise profit ▪ Increasing of the "gray income"

Figure 1. Structure of material and financial interactions of the system "Enterprise - Intermediary - Market - Top Management"



Note: D - revenue, V - the total volume of sold products, S - the average cost price in the market, the enterprise, ω is the average cost price of the intermediary; - commodity flows, --- financial flows.

According to the presented structural model of the production volumes flows and financial flows, taking into account made assumptions, one can obtain an expression for the incomes, costs, profits of each participant.

The income of the enterprise is formed due to the sales of products of volume αV in the market at the market price of C and the sale of products in volume $(1-\alpha)V$ to the intermediary at the average cost of S of the enterprise, minus the "tax burden" of total revenue $(1-i_1)$:

$$D(1) = \{\alpha VC + (1-\alpha)VS\}(1-i_1).$$

The costs of the enterprise are formed due to the manufacturing of products of volume V at an average cost of S:

$$3(1) = VS$$

The profit of the enterprise is:

$$P2(1) = \{\alpha VC + (1-\alpha)VS\}(1-i_1) - VS = V(\alpha E1 + \gamma1),$$

The income of the intermediary is formed due to the sale of products in volume $(1-\alpha)V$ in the market at the market price C:

$$D(2) = (1-\alpha)VC(1-i_2).$$

The costs of the intermediary are formed at the expense of the cost of production and purchase of products in volume $(1-\alpha)V$ at an average cost of ω:

$$3(2) = (1-\alpha)V\omega + (1-\alpha)VS.$$

Part of the profit of the intermediary, which is "transferred" to the top management of the enterprise, will be:

$$P2(2) = (1-\alpha)V\{C(1-i_2) - S - \omega\} = (1-\alpha)V\gamma2\mu, \quad \text{where } \gamma2 = C(1-i_2) - \omega - S, \mu - \text{share of the intermediary's profit.}$$

The income of top management is formed at the expense of wages and rewards:

$$D1(3) = \alpha VC\zeta, \quad \text{где } 0 < \zeta < 1$$

And "gray" income from the intermediary:

$$D2(3) = (1-\alpha)V\gamma2$$

So:

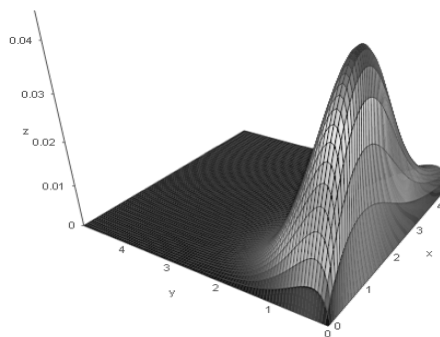
$$D(3) = \alpha V\gamma3 - V\gamma2, \quad \text{где } \gamma3 = (\zeta - \gamma2).$$

So the profit of the enterprise and the income of top management depend simultaneously on the volume of products sold in the market and on the share of the production volume transferred to the intermediary. From the last condition it follows that the control variables are α and μ , between which there is a relation:

$$\alpha \leq \frac{1}{1 + \frac{\zeta C}{\mu\{C(1-i_2)-S-\omega\}}}$$

Thus, the conclusion follows that with an increase in the share of transferred profits, the share of the volume of the enterprise's sales decreases. So for the conditional example $\{C = 1, \zeta = 0,1, \omega = 0,1, S = 0,7 \text{ and } \mu = 0,7\}$ we get that $\alpha = 0,58$, i.e. 58% of the enterprise should sell on the market independently, but with 70% share of the profit of the intermediary of the given / transferred top management (see Figure 2). Thus, a simple methodology for estimating "gray" income is presented.

Figure 2. Dependence of the share of the transferred profit of the intermediary and the share of the volume of output transferred to the intermediary.



Conclusion

It is already worth mentioning here how we could overcome the existing type of shadow economy. If we talk about the possibility of using prohibitive measures or restrictive measures, then in a global economy such measures can not be implemented, because at any time all capital can be withdrawn from the country and that's mean that investment would be not received. If you legalize all the capital with the manifestation of an amnesty for taxes, then this can raise questions already from other participants of the global market. It is necessary to show clearly the boundaries for the formation of an average impact for the market cleaning processes.

References

- [1] Abramov, R.A. 2015. Management Functions of Integrative Formations of Differentiated Nature. *Biosci Biotech Res Asia*, 12(1): 991-997.
- [2] Abramov, R.A. 2016. Regional economic policy based on industrial sector clustering in the context of sustainable development. *Research Journal of Pharmaceutical, Biological and Chemical Sciences*, (2): 2100-2106.
- [3] Amrouche, N., Yan, R. 2016. A manufacturer distribution issue: how to manage an online and a traditional retailer. *Annals of Operations Research*, 244(2): 257-294.
- [4] Bhattacharya, D., W.-H., Li, Sonaer, G. 2017. Has momentum lost its momentum? *Review of Quantitative Finance and Accounting*, 48(1): 191-218.
- [5] Fanti, L., Buccella, D. 2017. Corporate social responsibility, profits and welfare with managerial firms. *International Review of Economics*, 1-16. DOI: 10.1007/s12232-017-0276-5
- [6] Gan, W., Lin, J. C.-W., Fournier-Viger, P., Chao, H.-C., Tseng, V. S. (2017). Mining High-Utility Itemsets with

- Both Positive and Negative Unit Profits from Uncertain Databases. In: *Advances in Knowledge Discovery and Data Mining: 21st Pacific-Asia Conference, PAKDD 2017* (434-446). Jeju, South Korea, May 23-26, 2017, Proceedings, Part I. Cham: Springer International Publishing.
- [7] Guo, Z., Liu, Y., Liu, Y. 2017. Coordinating a three level supply chain under generalized parametric interval-valued distribution of uncertain demand. *Journal of Ambient Intelligence and Humanized Computing*, 1-18. DOI: 10.1007/s12652-017-0472-x
- [8] Halevi, J., Kriesler, P. 2016. Kalecki, Classical Economics and the Surplus Approach. In: *Post-Keynesian Essays from Down Under Volume I: Essays on Keynes, Harrod and Kalecki: Theory and Policy in an Historical Context* (177-190). London: Palgrave Macmillan UK.
- [9] Lahyani, R., Khemakhem, M., Semet, F. 2016. A unified matheuristic for solving multi-constrained traveling salesman problems with profits. *EURO Journal on Computational Optimization*, 1-30. DOI: 10.1007/s13675-016-0071-1
- [10] Lessambo, F. I. 2016a. Base Erosion and Profit Shifting. In: *International Aspects of the US Taxation System* (335-369). New York: Palgrave Macmillan US.
- [11] Lessambo, F. I. 2016b. The Branch Profits Tax. In: *International Aspects of the US Taxation System* (71-80). New York: Palgrave Macmillan US.
- [12] Liu, D. 2017. When Do Investments in the Supplier–Buyer Relationship Generate Optimal Profits? From the Relationship Life Cycle Perspective. In: *Creating Marketing Magic and Innovative Future Marketing Trends: Proceedings of the 2016 Academy of Marketing Science (AMS) Annual Conference* (785-797). Cham: Springer International Publishing.
- [13] Matringe, N. 2017. Social Capital Versus Commercial Profits: The Impact of Networks on Decision-Making in Early Modern Banks. In: *Decision Taking, Confidence and Risk Management in Banks from Early Modernity to the 20th Century* (211-234). Cham: Springer International Publishing.
- [14] McMillan, D. G. McMillan, F. J. 2016. US Bank Market Structure: Evolving Nature and Implications. *Journal of Financial Services Research*, 50(2): 187-210.
- [15] Ness, I. Cope, Z. 2016. Political Economy. In: *The Palgrave Encyclopedia of Imperialism and Anti-Imperialism* (975-1190). London: Palgrave Macmillan UK.
- [16] Nicolai, J.-P. Zamorano, J. 2016. Windfall Profits under Pollution Permits and Output-Based Allocation. *Environmental and Resource Economics*, 1-31.
- [17] Pilkington, P. 2016. Profits, Prices, Distribution and Demand the Reformation in Economics. In: *A Deconstruction and Reconstruction of Economic Theory* (191-220). Cham: Springer International Publishing.
- [18] Roeder, R. W. 2016. Distribution of Profits Foreign Mining Investment Law. In: *The Cases of Australia, South Africa and Colombia* (109-122). Cham: Springer International Publishing.
- [19] Sabbatini, P. 2016. The Coordinated Effect of a Merger with Balanced Sharing of Collusive Profits. *Journal of Industry, Competition and Trade*, 16(3): 345-371.
- [20] Wang, Z.-B., Wang, Y.-Y. Wang, J.-C. 2016. Optimal distribution channel strategy for new and remanufactured products. *Electronic Commerce Research*, 16(2): 269-295.
- [21] Wright, R. E. 2017. That Which Is Seen: Enslavers' Profits The Poverty of Slavery. In: *How Unfree Labor Pollutes the Economy* (117-141). Cham: Springer International Publishing.
- [22] Zhou, M. 2016. Research Development of Theories and Empirics of Factor Income Distribution Labor's Share of Income. In: *Another Key to Understand China's Income Inequality* (11-58) Springer Singapore.

Projection of Logistic Schemes in Intermodal Communications

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Abstract

This article reviews the question connected with determination of a carriage duty in the multimodal transportation system. In the following calculations is given the comparison between methodic of Rail – Tariff and methodic of United Transit Tariff (ETT). In terms of the research, through shoulder scheme of carriage duty based on the supranational currency EuroNur protected by certificate of the authorship is proposed.

Keywords: route, intermodal transportations, carriage duty, scheme with a tariff change, through shoulder scheme, freight container, tariff, software packages Rail-Tariff, Rail-Atlas, United Transit Tariff (ETT).

JEL Classification: F 150, F 310, L 920.

Introduction

Since gaining the independence development and strengthening of transport infrastructure field is one of the foreground aims for Kazakhstan. Nowadays creation of logistical centers is considered to be the most important basis for transportation infrastructure progress. In Kazakhstan logistical centers are on the primary step of development. Logistical centers include not only foundation of modernized infrastructure of railway, automobile water and air routes, but also forming of complete systems for management and services of transport (Kuanishbaev *et al.* 2014).

Besides, it is crucial to select optimal logistics of international transport transshipment and to solve row of large problems preventing reinforcement of international transportations. In 2015 Republic of Kazakhstan entered World Trade Organization, but the assessment treaty came into force only in 2016. This should contribute to the development of international trade. However According to international experts' opinion level of transportation infrastructure in Kazakhstan remains quite low, as transportation systems' management, generally, is still a monopoly. This prevents creation of competition and forming of real tariffs, moreover, time of cargo's delivery in the field of export stays sufficiently low (Jensen, Training and Tarr 2007, Rafsendjani and Stempfle 2007).

Elaboration and projection of logistics schemes is a long and difficult process that includes complex calculations and planning of material and human resources (Kuanishbaev, Suleimenov and Eshimbay 2015). In the 21st century projection of logistics schemes cannot be effective without intermodal communication. Intermodal communication is applying of several modes of transport in carriage transportation and is one of the most contemporary and effective methods in projection of logistics schemes. This is extremely topical for Kazakhstan due to the fact that it doesn't have an exit to seas and oceans. Intermodal communication has a widespread application because of its growing significance. For Kazakhstan, intermodal transportation has such advantages as an ability to use new alternative routes and modification of already existed routes. Meanwhile, use of intermodal communications has several problems. Main of them is that it is hard to make effective and profitable system of coordination that can provide smooth work on the route (Limao and Venables 1999).

Therefore, it is crucial to make a deep analysis of infrastructure on the whole route of transportation. In conditions of tough competition among all modes of transport on the stage of the projection next factors should be taken into consideration: cost, speed and safety of transportation. Tariffs – system of rates according to which

transportation services are paid. They form incomes from transport and present the contribution cost of the consumer (Kuanishbaev 2014).

2. Methodological framework

Literature review

The research is conducted on the basis of the book "Transportation logistics in transportation process" Zh.M. Kuanyshbayev, T.B. Suleimenov and M.I. Arpabekov, an article published in the Russian scientific journal Science and World titled "Projection of logistics schemes in railway transportations" and work on new supranational currency EuroNur. First part of calculations was made in the software packages Rail-Atlas and Rail-Tariff, and the rest using Unified Transit Tariff. For the economic justification was made analyses of several resources such as work "The impact of Kazakhstan accession to the World Trade organization: a quantitative assessment" by World Bank experts, "Managing for development results rail infrastructure tariffs enabling private sector development in Mongolia's railway sector" by Asian Development Bank and "Analysis of Kazakhstan external trade for the first half of 2015" by KAZNEX INVEST agency. Also in the research data is contributed from a variety of internet websites including interviews of experts and widespread analysis.

Methods

In international communication transportation route and tariffs are interdependent factors, correct determination of which makes the basis of profitable shipment for the consigner. Joint-stock National company Kazakhstan Temir Zholy (further KTZ) is the main provider of transportation services in Kazakhstan, what makes the company a monopolist in this field. Consequently, transportation tariffs in Kazakhstan are formed not by market conditions, but by the parameters given by company-monopolist and regulatory agency. Of course, tariffs are regulated by Committee on Regulation of Natural Monopolies and Protection of Competition under the Ministry of National Economy of the Republic of Kazakhstan (further Antitrust Agency). Process of tariffs determination can be presented like this: KTZH, Joint stock companies "Lokomotiv" and "Kaztemirtrans" – owners of wagons give forecasts for volumes and cost of transportations and investment expectations for listed companies. If by virtue of these calculations big gap between expected income and price is observed, KTZH appeals to Antitrust Agency of Kazakhstan for the permission for the increase of tariff rates (Managing for Development Results Rail Infrastructure Tariffs Enabling Private Sector Development in Mongolia's Railway Sector, 2014). This process allows KTZH set one year tariffs for all consignors. Thus, tariffs should cover the expenses of KTZH and its affiliated companies. Also system of tariff decrease is used while transporting big amounts of cargo what is profitable for industrial goods. In purpose of attraction and promotion enlargement of volumes of goods produced in Kazakhstan is used a practice of reduction factors: for backbone railway networks services and locomotive traction. For the consignors of Kazakhstan implementing intermodal transportations may allow use routes of international transportations more efficiently and choose optimal tariff terms insignificantly influencing conditions of transportation.

Nowadays, two methods of carriage duty determination have the widest application: method of a change tariff and method of a through shoulder. The main point of the change tariff is that carriage duty is evaluated from the departure station to the frontier station. Main disadvantage of calculation of a carriage duty with a tariff change is its low economic efficiency. During the transition to the railways of another country the distance is set to zero and the carriage duty is evaluated in the national currency of another country. General principle of the through shoulder scheme method is that the distance is not set to zero on the frontier stations, but is calculated as the whole route from the departure station to the station of the destination.

Main principle of transportation logistics, as well as logistics on the whole, is optimization of the expenses. On transport it is achieved through economy of expenses cargo transportation's scale and distance (Brashares 2013). Kazakhstan had large territory and wide international commercial connections what makes international transportation most favorable. However, presently, there is a row of unsolved problems basically connected with international tariffs and difference in exchange rates what considerably raises transportation cost.

Largest part of international transport organizations and commonwealths realize all financial operations in such national currencies as American dollar, euro and Swiss franc. Using national currencies in payment for

international transportation services is economically inefficient due to the fact that because of the exchange rate differences government or carrier company loses huge amounts of money. Moreover, it becomes economically dependent on the stability of this or that national currency.

As the most optimal solution of this problem introduction of new supranational currency *EuroNur* is suggested. Supranational currency *EuroNur* is protected by the authorship certificate and is recommended for implementation in the determination of carriage duty on the freight transportation in the intermodal communications. Supranational currency *EuroNur* is protected by the authorship certificate and is recommended for implementation in the determination of carriage duty on the freight transportation in the intermodal communications (Kuanishbaev 2014). In purpose of creation unified model of logistics schemes projection it is necessary to choose the most effective method for tariff calculation for the given route and cargo, and substantiate implementation of new supranational currency.

Thus, at the initial stage it is important to determine the route and the cargo, the study of which will be relevant in the real world. Kazakhstan has extensive international connections, which allows considerable freedom in choosing the route. Therefore, choosing a route must be based on the cargo. Kazakhstan's export mainly consists of raw material export: crude oil, ores and concentrates, metals and grains. However, in export significant role has export of wheat flour (Hummels 2007). Compared with raw materials and industrial products of wheat flour transport conditions most suitable for the study. A few years Kazakhstan has held a leading position in the supply of flour all over the world. Nevertheless, a significant reduction in exports of wheat flour is observed over the past two years. This trend is unfavorable, especially due to the fact that this production is the only production of Kazakhstan is focused not only on domestic but also on external consumer market (Analysis of the state of Kazakhstan's foreign trade for the first half of 2015). According to data provided by the Agency in 2013 KAZNEXINVEST flour export reduction is observed by an average of 12.2%.

Before proceeding to the causes of this downturn is necessary to identify the main importing countries of Kazakh flour. At the moment, vast part of export goes to Uzbekistan, which is 636,5tys. tones and Afghanistan - 562,9 thous. tons. However, if you make a comparison with the export of wheat flour for the previous years, in 2012 the volume of deliveries of wheat flour was about 75%, and these deliveries were only declining every year. A similar situation occurs with almost all other importing countries: only for 2015 deliveries of flour decreased by almost 70% of Kyrgyzstan in Turkmenistan by 40.6% and in Tajikistan by 18.2%. The only country in which there is an increase of imports of Kazakh flour is Afghanistan (Korabayeva 2014).

There are the following groups of factors that affect the exports of Kazakh flour. The main factor in the decline in exports is the introduction of excise tax on import of flour in Uzbekistan, and Tajikistan Kyrzystal - the largest importers of Kazakh flour. Since 2010, Uzbekistan, and after him, and other countries have begun to raise the tax on the importation of flour from Kazakhstan. Such taxation did not extend to Kazakh grain that will positively affect the milling industry of the importing countries.

However, in the summer of 2015 it was to ratify the accession of Kyrgyzstan to the Eurasian Economic Community. Therefore, by 2020, it is expected to increase exports to Kyrgyzstan, but the overall situation remains rather unclear. So, among the countries importing flour Afghanistan remains virtually the only state that preserves the favorable international trade conditions. Moreover, in 2015, Kazakhstan and Afghanistan signed a number of agreements that contribute to the development of international trade relations, that is, an increase in mutually beneficial trade (Analysis of the state of Kazakhstan's foreign trade for the first half of 2015). Another factor reducing the export of flour can be called the devaluation of the ruble in 2015. After the collapse of the Russian currency is not only Kazakhstan, but also foreign consumers have switched to Russian products. At that time, the quality of Russian flour was an order of magnitude higher than the Kazakhstan, together with the prices differ so much that Uzbekistan was more profitable to buy Russian flour production. This is directly related to the following factors reduce the consumption of Kazakh flour. It should be noticed that devaluation factor was the temporary action, because after the devaluation of the national currency, the cost of domestic and Russian flour became equal. Low level of logistics infrastructure allows making transportation and storage of grain and flour in large scales.

Today is a matter of logistics one of the main in the Kazakhstan grain market. Prospects for the development of Kazakhstan's exports will expand simultaneously with the creation and improvement of infrastructure, including

construction of grain terminals in the promising export directions, the launch of new railways and the development of new transport routes.

In 2012 JSC NC Kaztemirtrans (further Kaztemirtrans) has become one of the largest operators of rolling stock. So, Kaztemirtrans became a monopoly among domestic flour transporter rent and the cost of transportation has increased. This led to the fact that the company raised the price of transportation is approximately 2 times. This prompted Kazakh flour millers to switch to part of the car parks. Kaztemirtrans repeatedly tried to use its monopolistic right to limit or prohibit the use of other rolling stock under the pretext of protecting national service provider. These attempts were successfully thwarted by the Antimonopoly Agency of Kazakhstan (Korabayeva 2014). Despite the measures of the Antimonopoly Agency, Kazakhstani companies are much too high and uncompetitive, so domestic manufacturers are forced to either use private transport providers, or to pass on the use of vehicles. Only in mid-2013 losses from the transition in heavy road transport amounted to 100 million tenge per year. Nevertheless, the company Kaztemirtrans still does not change the tariff rates and calculus, to maintain and increase their own profits. Thus, due to the high tariffs and poor development of logistics infrastructure (problems with the storage and loading of grain) is heavily influenced by the export of Kazakh flour (Ayyp, 2015). This makes wheat flour cargo current during the comparison determining the fare. Among the states, importing Kazakh flour, Afghanistan is the most promising avenue for research. Furthermore, Afghanistan's infrastructure does not allow transporting goods by rail, so there is the use of intermodal, including the use of two modes of transport: road and rail. Thus, for this study defined the goods - wheat flour and destination country - Afghanistan.

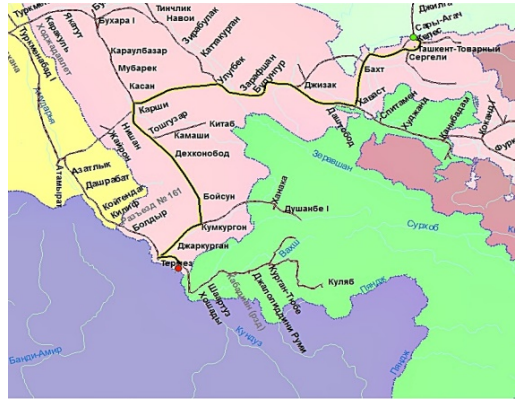
3. Results

For conducting effective and accurate research in the technologies' development century exist several software packages responsible for the performance of separate operations. Presently, software package Rail Atlas is one of the most useful tools for railway route creation. Rail Atlas is an electronic collection of atlases for railways of Russia, countries of Commonwealth Independent States, Latvia, Lithuania, `Estonia and Georgia. This package permits creation and adjustment of railway routes. The most optimal route of freight train is determined according to the software package Rail Atlas (Figure 1 and Figure 2). The total length of the route makes up 3041, of which: on the territory of the Republic of Kazakhstan – 2159 km; on the territory of the Republic of Uzbekistan– 882 km (Software package Rail - Tarif, Rail-Atlas, 2015).

Figure 1 - Scheme of flour's transportation route through the railroads of the Republic of Kazakhstan (Petropavlovsk st. – Chimkent st.)



Figure 2 - Scheme of flour's transportation route through the railroads of the Republic of Uzbekistan (Keles st. –Galaba st.)



Along with using software package for route creation, software packages for automatic tariff taxes determination are widely utilized. As well as Rail Atlas, Rail tariff is very precise tool for the railway tariff's calculation and can be applied for the same countries. Determination of tariff distance, tariff group and position, calculations depending on station and departure/destination country, transition points, taking into account plan of formation of wagons and containers, additional decreasing or increasing coefficients, exceptional tariffs, special rates and some other collections.

After choosing an optimal route of freight transportation the carriage duty is calculated with the Rail – Tariff software package with a change tariff method on the route Petropavlovsk – Galaba. The Figures 3 to 8 present calculations of a carriage duty on the given route. Calculations are represented in three different currencies: tenge – national currency of the Republic of Kazakhstan, sum – national currency of the Republic of Uzbekistan, euro and Swiss franc – currency of international freight transportations.

Figure 3 - Determination of freight transportation's carriage duty through the railroads of the Republic of Kazakhstan in the Rail – Tariff software package, Petropavlovsk – Chimkent route (CHF)

Страна	Испр.	Расстояние	ВМД	Пров. пл.	Согр.	Оплата	Доп. сборы	Итого без НДС	НДС	Итого	Валюта
Казанстан	1398	Пр. КЗХ	28956,00	0	0	0	0	28956,00	0	28956,00	KZT
	3898		367462,00	0	0	0	0	367462,00	0	367462,00	KZT
Итого	3898		367462,00	0	0	0	0	367462,00	0	367462,00	KZT

Описание	Сборы	НДС автоматически	Значение	Вал.
Внимание! В связи с изменениями в СМГС с 01.07.2015 г. срок доставки исчисляется за общее расстояние перевозки по всем странам.				
13 сут. (на 1398 км). Суточный пробег 130 км				
Итого. Срок доставки за общее расстояние перевозки по всем странам 13 сут.				
МКС-Э 103-Перевозка грузов в прицепных универсальных контейнерах		130,70	130,70	KZT
374,00 Коэффициент на перевозку грузов контейнерными и контейнерными отправлениями		48881,80	48881,80	KZT
Итого		48882,00	48882,00	KZT
Сумма за все контейнеры		97764,00	97764,00	KZT
ЛТ 103-Перевозка грузов в прицепных универсальных контейнерах		109,18	109,18	KZT
495,00 Коэффициент на контейнерные и контейнерные отправки		54044,10	54044,10	KZT

Figure 4 - Determination of freight transportation's carriage duty through the railroads of the Republic of Kazakhstan in the Rail – Tariff software package, Petropavlovsk – Chimkent route (KZT).

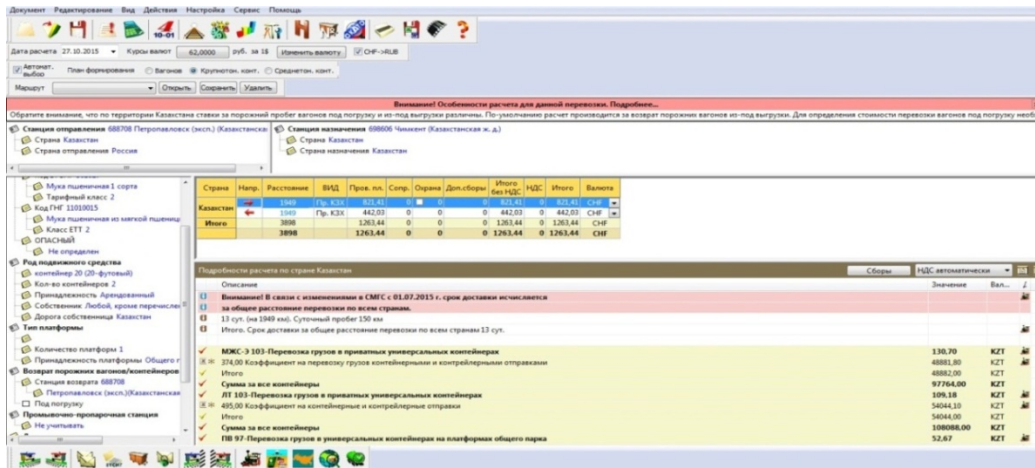


Figure 5 - Determination of freight transportation's carriage duty through the railroads of the Republic of Kazakhstan in the Rail – Tariff software package, Petropavlovsk – Chimkent route (EUR)

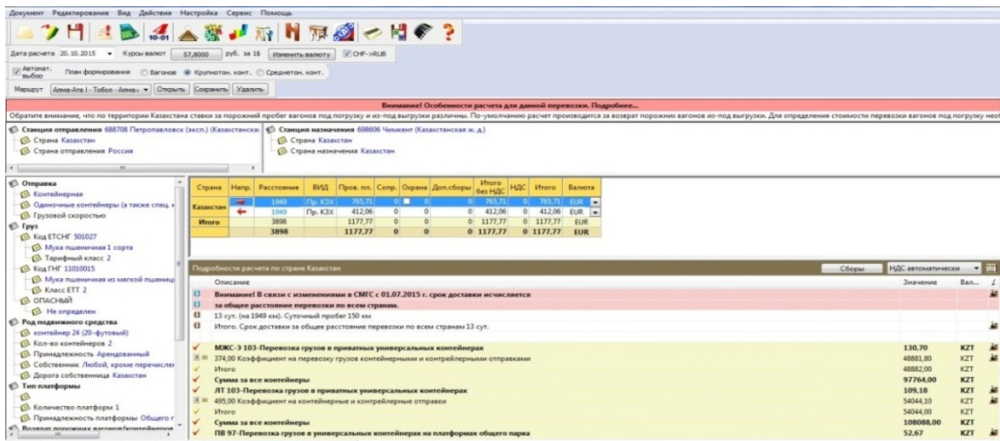


Figure 6 - Determination of freight transportation's carriage duty through the railroads of the Republic of Uzbekistan in the Rail – Tariff software package, Chimkent – Galaba route (CHF)

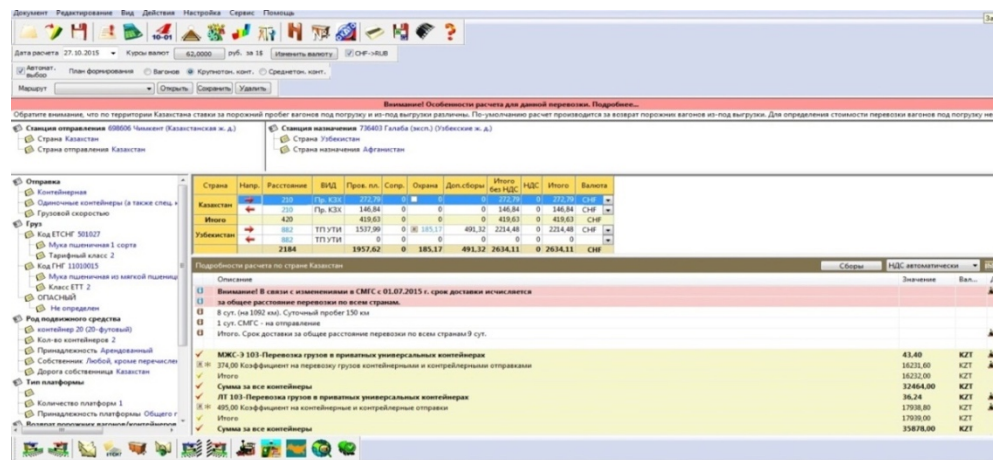


Figure 7 - Determination of freight transportation's carriage duty through the railroads of the Republic of Uzbekistan in the Rail – Tariff software package, Chimkent – Galaba route (UZS)

Страна	Напр.	Расстояние	ВНД	Прок. пл.	Сопр.	Страна	Доп. сборы	Итого без НДС	НДС	Итого	Валюта
Казахстан	←→	200	Пр. КЗК	79340,00	0	0	0	79340,00	0	79340,00	KZT
Казахстан	←→	200	Пр. КЗК	42298,00	0	0	0	42298,00	0	42298,00	KZT
Итого		400		122048,00	0	0	0	122048,00	0	122048,00	KZT
Узбекистан	←→	882	ТТ1 УТ14	233081,58	0	88	25000,00	68073,34	306834,61	306834,61	UZS
Узбекистан	←→	882	ТТ1 УТ14	0	0	0	0	0	0	0	UZS
Итого		2184		122048,00	0	0	0	122048,00	0	122048,00	KZT

Figure 8 - Determination of freight transportation's carriage duty through the railroads of the Republic of Uzbekistan in the Rail – Tariff software package, Chimkent – Galaba route (EUR)

Страна	Напр.	Расстояние	ВНД	Прок. пл.	Сопр.	Страна	Доп. сборы	Итого без НДС	НДС	Итого	Валюта
Казахстан	←→	200	Пр. КЗК	251,87	0	0	0	251,87	0	251,87	EUR
Казахстан	←→	200	Пр. КЗК	135,58	0	0	0	135,58	0	135,58	EUR
Итого		400		387,45	0	0	0	387,45	0	387,45	EUR
Узбекистан	←→	882	ТТ1 УТ14	14300,00	0	0	0	14300,00	0	14300,00	EUR
Узбекистан	←→	882	ТТ1 УТ14	0	0	0	0	0	0	0	EUR
Итого		2184		1820,14	0	172,50	457,88	2450,52	0	2450,52	EUR

Tariffs – system of payment for transportation services. Tariffs create transportation income and providing of freight services is a transportation expense of consumer. Amount of payment for railway transportations depends on factors listed below. The following parameters were used in calculations in the Rail Tariff software package.

Mode of shipment. Freight shipment is a consignment of freight offered to the transportation with separate way bill. On the railways goods are transported in small, low-tonnage, wagonload, container, route or group shipments. Wagonload shipment requires a distinct wagon for transportation. Small shipments are limited by mass and volume; it shouldn't be more than 10 tones or 1/3 of wagon's capacity. Low-tonnage shipment includes parcel of goods from 10 to 20 tones and taking the half of wagon's volume capacity. Route shipments are formed in the districts of mass loading of goods to the districts of mass unloading. Shipment of groups of wagons with a one way bill is called group shipment.

Speed of shipment. On the railways goods can be transported on a freight, high or passenger speed. Type of speed sets how many kilometers per twenty for hours should the cargo pass.

Distance of shipment. Freight charge can be collected for the shortest distance or so called tariff distance while transporting goods on high or freight speed. Besides freight charge can be collected for really passed distance

in case of outsize freight transportation or shipment of cargo on a passenger speed. Particular qualities of making freight tariffs are, above all, rely on type of cargo. That is why for all types of transport exist classes of transport rates.

The purpose of the research is to compare freight transportation's carriage duty of the following route calculated in the Rail – Tariff with the one calculated with Unified Transit Tariff method (further ETT). Unified Transit tariff was elaborated by Organization for Co-operation between railways (OSJD) because of emergence of sharp necessity for creation of unified legal and economical standards for providing freight and passenger transportations in international communications. ETT is valid in more than ten countries, including Kazakhstan and Uzbekistan. Calculations of tariff rates and additional collections should be made in Swiss franc. Conversion of freight charges, calculated according to ETT should proceed according to national legislation of country, where the payment is made. Carriage duty is defined for the given tariff distance for loaded containers and their return to the departure station. Initial data for calculations are tariff route distance and weight rate of container shipment. Tariff route distance is defined by software packages Rail Atlas and Rail Tariff. Tariff rates of the ETT are given in the Table 1. Values of the carriage duty are given in the table 2 (United Transit Tariff (ETT), 2014).

Table 1 - United Transit Tariff rates

Distance, km	Loaded - Container category				Empty - Container category			
	10 foot	20 foot	30 foot	40 foot	10 foot	20 foot	30 foot	40 foot
	CHF container	CHF container	CHF container	CHF container	CHF container	CHF container	CHF container	CHF container
2550-2649	898	1796	2694	3592	449	898	1347	1796
2650-2749	934	1868	2802	3736	467	934	1401	1868
2750-2849	968	1935	2903	3870	484	968	1451	1935
2850-2949	1003	2006	3009	4012	502	1003	1505	2006
2950-3049	1037	2073	3110	4146	518	1037	1555	2073

Table 2 - Determination of carriage duty with Unified Transit Tariff method (ETT)

Direction	Distance, km	Cost for 1 container, CHF	Number of containers	Cargo-carrying capacity, t	Total cost, CHF	Total cost, €
Petropavlovsk - Galaba	3.041	3.110	2	18-22	6.220	5.722,4
Return	3.041	1.555	2	18-22	3.110	2.861,2
TOTAL:	6.082	4.665	2	-	9.330	8.583,60

Calculations show that comparing freight charges, freight charge calculated by the Rail Tariff method is approximately six thousand Swiss francs less than charge, calculated by ETT method.

4. Discussions

Formation of customs union makes a provision for creation of unified economic space, in the borders of which customs duties and restrictions are not applied. Exceptions are special protective, antidumping and compensatory norms. In frames of unified economic space is implemented unified tariff and over unified customs trade regulations' methods with third party countries (Salykzhanova 2015). Therefore, theme of implementation new unified currency is in the center of attention. So, in Russia Dmitry Medvedev supported "creation of unified currency area in the borders of the Trade Union" and furthermore, minister of the finances, Aleksey Kudrin called for introduction direct currency rates of CIS to each other. President of the Republic of Kazakhstan also supports implementation of the unified currency but not on the basis of ruble as "it won't differ from dollar". It should be noticed that theme of the implementation of unified currency on the territory of CIS regularly appears on the international forums and summits; however, it doesn't go further than words. Presently, there isn't any signified document or declaration for the transition to the new currency. Another thing to be recognized is that in 2003,

Nursultan Nazarbayev took an initiative of introduction new unified supranational currency called 'altyn' (Kuanishbaev 2014).

After that, especially in connection with the global financial crisis there were a lot of opinions and suggestions. For instance, the creation of a new world currency to replace "unjust dollar" either the transition to a new billing unit in the framework of the SCO and the Eurasian Economic Community or the creation of new Asian currency as "a prototype for a new global currency of new quality". Not so long ago, speaking to reporters in Minsk, Union State Secretary Pavel Borodin has swung to the introduction of the single currency on the territory of CIS. "We have everything to make the idea of unified currency could be implemented," - optimistically declared the state secretary of the Union State. Moreover, he expressed confidence that "we will definitely introduce unified currency". At the same time, he proposed to create a unified currency guided by the experience of the European Union in the creation of the euro. Taking into consideration problems of the euro, the experience seems not the best. But however, let us return to the present day. During bilateral talks with Nursultan Nazarbayev, Dmitry Medvedev said that "In future there is European and Eurasian cooperation under the Common Economic Space, but in fact, this is a common market. Anyway this is the foundation for a joint currency area. You have been repeatedly proposing this and the Russian side have always supported the hottest way". Literally on the eve of talks in the capital of Kazakhstan - Astana Economic Forum was held, where President Nursultan Nazarbayev was actively participating. He continues to insist that "the new global economy needs a new global currency." According to him, the root of the problem, the route of the global financial crisis is "defectiveness of world currency, which is not controlled by anyone." Therefore, this should be a supranational currency, and the Russian ruble and the Chinese Yuan will not work, because "they won't be different" from the dollar. Generally, we got an answer from Astana to Russian Ministry of Finance and its consultant Alexei Kudrin as during the speech of Nursultan Nazarbayev, Alexei Kudrin made a speech at the International Investment Forum in Yalta. Where specifically invited countries - participants of the CIS to abandon the dollar and the euro in favor of the Russian ruble. At the forum in Yalta he proposed such a way to "promote the ruble to world markets" (Kuanishbaev 2014).

It should be noted that a similar idea two years ago was proposed by Vladimir Putin, when in Davos he said about a possibility to move to the model of multiple reserve currencies, with the understanding that such "into the convertible, a regional reserve currency" should be - the ruble. In Yalta, he promised to Belarus and Ukraine to support the government and banks, if these countries would decide to enter the market with ruble funds. But there is a large disadvantage connected with using of ruble as a basis. Let's start with the fact that even in the friendliest country to Russia - Kazakhstan, even a hypothetical transition or abandonment of its currency in the direction of "imperial ruble" causes a storm of indignation. For its part, introduction of a new supranational currency, what, perhaps, will not become a stumbling block for countries - participants of the Common Economic Space. Completely independent currency called EuroNur is offered as new currency, which will not be connected to the dollar or any other currency. Symbol of the proposed exchange is as follows: €^N . EuroNur (Figure 9) is an optimal solution of disputes in the choice of exchange between Europe and Asia (Kuanishbaev 2014).

Figure 9 - Supranational currency of Custom's Union EuroNur



For introduction of a supranational currency Euro Nur (EuroNur) is accepted the assumption that the bank exchange rate EuroNur (EuroNur) assumed equal to euro €. The exchange rate of the Swiss franc against the euro on the 20th of November was 1CHF = 0,92€. Table 4 shows the results of determination of freight rates, convert to supranational valyutu *EvroNur* (*EuroNur*) on the specified routes in the intermodal transport system.

Conclusion

Determination of freight charge by a through shoulder scheme is given on Figures 3 to 8. The main idea of this method is that in the system of international freight communication freight charge for railway freight transportations is calculated for the tariff distance passed by the cargo on the territory of participating countries. During the transition of cargo to the territory of another country tariff distance is zeroed and freight charge is again taken for the distance passed on the territory of the last country. Given route passes through the railways of Kazakhstan and Uzbekistan. That is way in the system of international freight communication occurs a necessity to lead all currencies to one index. In this case calculations represented in the Table 3 are made in Euro – uniform currency of European Union.

In the through shoulder method transportation distance is taken from departure station to the arrival station and freight charge is made in Swiss francs. In the table 3 are given the results of freight charge for each method.

Table 3 - Comparative characteristics of freight charges

Name of the indicators	Carriage duty, CHF	
	Rail – Tarif method	UTT (ETT) method
Petropavlovsk – Chimkent	1.263,44	-
Chimkent – Galaba	2.634,11	-
Petropavlovsk – Galaba	3.897,55	9.330,00
Economic benefit	-	5.432,45

Taking everything into account, calculations through the Unified Transit Tariff (ETT) method increases the flow of funds into the budget almost 2,3 times. Moreover, it is supposed to use new supranational currency EuroNur in the frames of Customs Union to provide the stability of national currencies in Russia, Kazakhstan, Belarus, Armenia and Kyrgyzstan and decrease deflationary risks.

For implementation of supranational currency should be taken the following assumption – an exchange rate of *EuroNur* should be equal to the European Currency, Euro. Exchange rate of Swiss franc to Euro is 1CHF=0,92EUR for the 20th of November 2015. Table 4 represents the results of freight charge determination converted into supranational currency EuroNur on the given routes in the system of intermodal communications.

Table 4 - Comparative characteristics of carriage duties.

Name of the indicators	Carriage duty, € ^N	
	Rail - Tarif method	ETT method
Petropavlovsk – Chimkent	1.162,36	-
Chimkent – Galaba	2.423,38	-
Petropavlovsk – Galaba	3.585,75	8.583,60
Economic benefit	-	4.997,85

References

- [1] Kuanishbaev, Zh. M., Suleymenov, T. B., Arpabekov, M. I., Aydikenova, N. K. 2014. Transportation logistics in transportation process. Publ. house of L.N. Gumilyov Eurasian National University. Astana.
- [2] Kuanishbaev, Zh. M. 2014. Supranational currency EuroNur. In: Committee of Intellectual Property Rights. Ministry of Justice of the Republic of Kazakhstan. Recording registry for №1928.
- [3] Kuanishbaev, Zh. M., Suleimenov, T. B., Eshimbay, E. S. 2015. Projection of Logistic schemes by transit freights on railway transport (st. Nizhniy Tagil – st. Zhezkazgan). Science and World, International Scientific Journal: Volgograd, 3(19): 50-55.
- [4] Rafsendjani, M. P., Stempfle, C.-T. 2007. Study of compliance regarding EU-Railway law and OSJD-Railway law. European Commission Directorate – General for Energy and Transport Directorate. Available at: https://ec.europa.eu/transport/sites/transport/files/modes/rail/studies/doc/2007_03_compliance_railway

[_law.pdf](#)

- [5] Jensen, J., Training, T., Tarr, D. 2007. The impact of Kazakhstan accession to the World Trade Organization: A quantitative assessment. Copenhagen and World Bank.
- [6] Limao, N., Venables, A.J. 1999. Infrastructure, Geographical Disadvantage and Transport Costs. The World Bank, Development Research Group M Trade. Available at: http://siteresources.worldbank.org/EXTXPCOMNET/Resources/2463593-1213975515123/09_Limao.pdf
- [7] Brashares, J. R. 2013. Intermodal Transportation Strategic Advantage.
- [8] Hummels, D. 2007. Transportation costs and international trade in the second era of globalization. *Journal of Economic Perspectives*, 21(3): 131-154.
- [9] Salykzhanova, N. 2015. Kazakhstan's flour mills risk to lose export market. Kazakh-Zerno. Available at: <http://www.kazakh-zerno.kz/novosti/obzory-pressy-agronovosti/216435-mukomoly-kazakhstana-riskuyut-poteryat-eksportnyj-rynok>.
- [10] Ayyp, N. 2015. EAEC: Supranational currency can be introduced much earlier than we think. Ivest.kz. Available at: <http://news.invest.kz/96857225-eaes-nadnacionalnyu-valyutu-mogut-vvesti-gorazdo-ranshe-chem-my-dumaem---n-ayyp>
- [11] Korabayeva, E. 2014. Competition of Logistics instead of Countries and Routes. And.kz. Available at: <http://and.kz/site/article/878>
- *** Analysis of the state of Kazakhstan's foreign trade for the first half of 2015. KAZNEXINVEST, Available at: <http://export.gov.kz/storage/d8/d882b7856ed56e3059a7e4c5cd8ca1ce.pdf>
- *** Managing for Development Results Rail Infrastructure Tariffs Enabling Private Sector Development in Mongolia's Railway Sector. 2014. Asian Development Bank.
- *** Software package Rail - Tarif, Rail-Atlas. 2015. Astana.
- *** United Transit Tariff (ETT) with changes and adjunctions. 2014. Official edition. Organisation for Co-operation between Railways (OSJD). Warsaw.

General Trends in the Development of the Organizational Culture of Russian Companies

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Abstract

In this article, features of organizational culture of Russian organizations, functions, forms of its manifestation are determined on the basis of methods of system analysis, statistical methods, interview methods, scientific articles and publications. The criteria for diagnosing the organizational culture of Russian organizations in the Nizhny Novgorod region have been developed and proposed. The authors note that there are significant changes occurring in the structure and nature of institutions in Russia. Decentralization processes, the emergence of self-directed directives at different coordination levels have minimized the importance and need for day-to-day management of the firm and have increased the importance of organizational culture. People in the company share common values and norms of behavior.

During the research, the following parameters were evaluated: project activity in the organization; value orientations, ordinances existing in the organization, personal qualities of employees, contributing and hindering the building of relations with colleagues. The authors of the article noted that regardless of the sphere of activity of organizations, in the presence of common goals and involvement of employees, positive and negative qualities of employees are activated, the adoption of which by company management can have a much greater effect in internal motivation than in external motivation. The system of compensations in reinforcing behavioral reactions is associated with the nature of observances and rituals in the organization. Such interconnection between the three elements of the system will allow revealing the internal potential of workers, stimulating a creative approach to work and increasing the effectiveness of group work.

Keywords: organizational culture, project activity, personal qualities of employees

JEL Classification: J 210

Introduction

Dynamic changes in the system of social and political relations, the emergence of diverse organizations in Russia are prerequisites for studying the understanding and development of organizational culture in the context of international management.

Innovative management practices, as well as researches in the field of organizational theory lead to a new image of a man and a change in the view of management as a cultural process, the essence of which is manifested in the humanistic and participative ways of interaction of its employees.

Statement of the problem

Firstly, there have been changes in the structure and nature of institutions in Russia. Decentralization processes, the emergence of self-directed directives at different coordination levels have minimized the importance and need for day-to-day management of the firm and have increased the importance of organizational culture. People in the company share common values and norms of behavior.

Secondly, there was an experimental confirmation of the relationship between the culture of the firm and its production characteristics. Of course, culture is not the only part of the success of the company. However, it is considered one of the main components on the way to achieving the goals until the last period of the life cycle of the organization and the leading factor of competitiveness.

The authors of the article believe that in order for the organization to successfully achieve its goals, it is necessary to realize those opportunities that are already available in the organizational culture of the company. Culture should represent the real forms of its manifestation. Ethnocentrism, as one of the forms of manifestation, has a national component as a subject of its study, but this form does not exhaust all the features of the manifestation of culture as such, because it is necessary to study organizational processes as well which are based on the study of norms and values carriers of which are people with positive and negative personal qualities in a single culture of the organization.

The complexity of analyzing the problem of interaction and building functional ties within the organization is determined by the fact that "organizational culture" is considered as one of the main psychological categories and is an ambiguously interpreted concept. This complexity, according to Zimnyaya (2001), is also caused by the multifunctional nature of this concept.

1. Literature review

In the 2000s the interest of researchers in the development of the problem of studying the concept of "culture" has significantly increased in Russia. It became the subject of a comprehensive study of philosophers such as: Kagan (1997), Oreshnikov (1992), Losev (1991); psychologists and teachers as: Andreeva (2003), Bodalev (2001), Zimnyaya (2001), Kolominsky (2000), Petrovsky and Yaroshesky (2002), Shkunova (2004a, 2004b) *etc.*; economists – managers as: Akhmetshin and Vasilev (2016), Naumov (2010), Bogdan, Masilova and Parfyonova (2014), Mullakhmetov, Nazmiev and Akhmetshin (2015), Groshev and Krasnoslobodtsev (2015), Tikhomirova (2011) and others. This interest is not accidental. Organizational culture is the socio-spiritual field of the company, formed under the influence of material and non-material, explicit and hidden, perceived and unconscious processes and phenomena that determine the unity of philosophy, ideology, values, approaches to solving problems and the behavior of company personnel, in aggregate allowing the organization to move forward to success (Csikzentmihalyi 1988).

Traditionally, there are three main interpretations of culture - axiological, ethno-sociological and spiritual. The axiological conception considers culture as the aggregate of material and spiritual values accumulated by people. Culture is an objective world filled with values that are important to human beings.

Supporters of the ethno-sociological approach see in culture the set of all that makes a person a person. Culture is everything humane in people, "a degree, a measure of the formation, development and realization of a person's social (essential) forces in his diverse social activities" (Shkunova 2004a).

The spiritual concept limits culture to the sphere of the spiritual life of society. Spiritual culture is considered to be intellectual, moral, legal, and artistic.

However, large-scale studies of the state of organizations operating in different spheres of human activity show that significant efforts, both intellectual and material, are in most cases (about 70%) unsuccessful by the above typology. An analysis of the reasons for this situation clearly demonstrates that the lack of results is unambiguously determined by the lack of necessary changes in the existing organizational culture (Sineva 2016, Sineva and Yashkova 2016).

2. Purpose of the study

The purpose of the research is to reveal the general trends in the development of the organizational culture of Russian companies in the context of comparing organizations in various fields of activity.

In management theory as synonyms, the concepts of "organizational culture", "corporate culture", "organizational culture" (Bogdan, Masilova and Parfyonova 2014) are used. Organizational or corporate culture is a system of common actions, values and beliefs that are developed in the organization and by which members of the organization are guided in their behavior. The use of the term "corporate culture" is associated with the development of the organization. The broad meaning of this term implies the upbringing of culture in the unity of material and spiritual values and interrelations, in a narrow sense this concept encompasses the rules of people's behavior, norms, traditions, corporate legends and leisure that are regulators of the behavior of workers (Shkunova and Koloda, 2014).

The organizational culture includes the following system elements: common views, mission, values, beliefs and expectations, policy norms, methods and procedures, motivation and reward systems, risk tolerance, leadership perspective, hierarchy and leadership relationships, code of conduct, work ethic and business hours, business environment (Shkunova and Koloda 2014).

Methods of research

There are many methods for studying and measuring organizational culture, among which there are:

- Method of system analysis (including morphological and functional-parametric description);
- Statistical methods (normative, comparative, method of random assessment, method of tracking changes, constructive-critical method, *etc.*);
- Methods of interview: interview, questionnaire, socio-metric method.

Organization as a set of multiple elements is a complex system, for the study of which the methodology of *system analysis* can be used. The use of the system approach allows considering the interaction of a multitude of elements of a different nature that determine the organizational culture, identify those that have the greatest influence on the object, and find ways to effectively influence them (Bogdan, Masilova and Parfyonova 2014, Csikzentmihalyi 1988).

The system approach allows constructing a descriptive model of the corporation's culture for observing the features of its functioning and explaining the conditions for its effectiveness. And based on this model, it is possible to build a normal model describing its recommended state.

Statistical methods, such as normative, comparative, random assessment method, a method of tracking changes, a constructive-critical method are also necessary in measuring the culture of a corporation.

A common evaluation method for a particular type and kind of organizational culture is the *normative* one. It involves the use of a prescriptive base such as "how to perform this and that," "how a certain subsystem or system should be like", "how to formalize certain documents," *etc.* This base should be contained in laws, by-laws (regulations, instructions), standards, codes of communication and behavior, partnership, company philosophy, the charter of rights of corporation participants, corporate governance codes, and others (Yashkova *et al.* 2016, Shkunova 2004b, Betz 2003).

Inherently, the regulatory framework specifies certain models, images, stamps (in a good sense of the word), in accordance with which the actual level of organizational culture is assessed.

There are also so-called "independent" methods, since their use does not depend on managers, management consultants, analysts: the method of random assessment and constructive-critical method. For the method of *random assessment*, "free", "fragmentary", "impulsive" and the like statements of staff, visitors, workers of other organizations are characteristic. Arrangement of such "random" information and comparison with information obtained using other methods, allows using it in the analysis and taking appropriate measures.

The *constructive-critical* method has two variations. The first one is a destructive criticism that hits administrators who are forced to take practical measures "to improve ..." The second - balanced-periodic criticism. It is distinguished by calmer assessments and suggestions.

The experience of consultants and organizational culture experts shows that the use of indirect methods allows employees to better understand the established culture and how it affects the work and performance of staff (Sineva and Yashkova 2016, Shkunova 2004b, Bodalev 2001).

When studying the organizational culture of any organization, it is important to ensure the reliability of the information received. This is facilitated by the use of a whole range of methods, where *questioning* of employees can play a crucial role.

3. Results and discussion

The sociological research was carried out on the basis of the Department of Innovative Technologies of Management FSFEI HE (Federal State-Funded Educational Institution of Higher Education) of the K. Minin Nizhny Novgorod State Pedagogical University. The study involved 250 respondents working in organizations of different spheres of activity, figuratively divided into three groups according to their professional affiliation (production, education, service).

The production sphere is represented by such organizations as GAZ Group, Stalker LLC, Sokol JSCB, and others. The educational sphere was presented by respondents working in schools, colleges, educational business incubators, as well as in pre-school institutions. The services sector organizations are represented by advertising, consulting and cleaning companies. The sample of respondents was 80 people, which corresponds to the criterion of small sample. At the preparatory stage, the authors of this article developed a questionnaire, proven on a pilot sample of 5 people, and carried out its correction taking into account the results obtained. Questions were asked in an open and closed form, a five-point scale was used. The questions were structured according to the logic of the research and were the same for the organization of all spheres of activity.

Based on the comparison of monitoring data, the results of this study were formed. The parameters that were evaluated in the study were identified:

- project activities of the organization;
- -value orientations, rituals existing in the organization;
- -personal qualities of employees, contributing and inhibiting the building of relations with colleagues.

Let us consider in more detail the results obtained in the course of the study.

The project activity of the organization

Organizational culture becomes a critical factor in determining the success of a project. Employees of the organization should be, if not direct participants of the projects, then indirectly may be aware of their existence. The success of project management largely depends on the effective style of organizational communication (Sineva and Yashkova 2016).

The conducted research showed that to the question "*What projects does your organization implement?*" most often the following answers were received:

- "*Production organizations implement projects aimed at improving the quality of personnel*" (over 36.4% of respondents), while similar projects are implemented in educational organizations (35% of respondents);
- "*There are projects in our organization, but I do not know anything about them*" (the range of answers is 10% - 15% of respondents);
- "*There are no projects in our organization*" (the largest number of respondents working in the service sector, 26%). Since 26% of respondents did not reach the target audience being analyzed, the remaining number of respondents was accepted for 100%, who answered yes about the existence of the organization's projects which is reflected in the next Table.

Table 1. Analysis of respondents' answers to the question "What projects does your organization implement?"

Project type	Type of the organization	Production organization	Educational organization	Service sector organizations
Projects related to various innovations, pers. (%)		9,1	50,0	47,4
Projects related to personnel policy, pers. (%)		36,4	35,0	9,0
Projects related to natural resources, pers. (%)		9,1	16,7	9,0

Note: the remaining percentage of respondents not included in the table accounted for the answers "Other" and "No projects in the organization."

According to the authors, these answers indicate that respondents perceive the project activity as a factor of the cultural environment of the organization. An additional survey showed that employees can take part in projects, influence decisions, cooperate with project managers to increase the chance of project success.

To the question "Did you have to carry out various projects in your organization (under your leader's direction) while working in a group?" the largest percentage of affirmative answers (62%) was given by respondents working in educational organizations. Slightly less than 50% of the respondents answered that group work as a performance of different roles is common to the project work.

Respondents of educational organizations indicate that they can directly influence the implementation of the project and determine the following roles for this: scheduling, budget development, reporting and control, communications, administrative support.

Respondents of production organizations in the project activity act as representatives or intermediaries to ensure proper coordination, advice on requirements, or to confirm the acceptability of project results.

Regardless of the type of organization, the existence of group interaction is common to organizations of different spheres, and therefore, is the existence of a certain "cultural field" of the company or organization.

Another interesting fact for the authors is the fact that representatives of organizations of all three spheres of activity indicate personal initiative and the ability to make creative decisions as factors hampering group work. According to the authors, the desire to combine independence in decision-making with homogeneity and unanimity in group work is common to most Russian organizations in general.

Value orientations, rituals existing in the organization

The culture of the organization consists of separate elements. These elements are subjective and objective, reflecting the material side of its activities. Elements of changes in the cultural field of the company may include pronounced manifestations of various symbols, which is combined with various rituals in the organization. There is a huge number of organizations that have long used simple and straightforward rituals. With the advent and strengthening of competitors' activities in the external environment, the focus of attention to these rites in the internal environment of the organization has changed. Different areas of the organization's activities show a different degree of reaction to the external environment, and consequently, a different speed of feedback. Table 2 shows the most popular rituals in organizations of different spheres and the nature of their manifestation.

Table 2. Analysis of respondents' answers to the question "The most popular rituals in the organization"

Ritual	Type of the organization	Production organization	Educational organization	Service sector organizations
Rite of worker's employment, pers. (%)		36,4	47,1	26,3
Rite of introducing a new employee, pers. (%)		18,2	25,0	26,3
Rite of firing an employee, pers. (%)		9,1	16,7	26,3
Rite of an open awarding of the best employee, pers. (%)		36,4	16,7	21,1

To the question "What kind of rituals do you observe in your organization?" the largest percentage (47.1%) of respondents indicated that in educational and manufacturing organizations (36%) the most popular is the

workers' employment rite, and less popular (9,1%) is considered a rite of firing an employee (organization of the production sphere). Another interesting fact for the authors is the fact that the percentage of indicators distribution by service sector organizations was evenly distributed (26.3%).

The focus of respondents' perception of the rite of hiring, and firing an employee is the same for all respondents. This, according to the authors, is associated with a high speed of information exchange with the external environment, where the risk of making a decision is moderate, but the degree of feedback is quite high.

Subjectivism and participation in rituals is the consolidation of values and beliefs that constitute a deeper level of organizational culture. Organizational values are emotionally attractive patterns of personnel behavior that manifest themselves in vital situations in the organization.

The data in the Table 3 show that the percentage of indicators distribution of the most popular values in organizations of different spheres is significantly different within each organization.

Table 3. Analysis of respondents' answers to the question "Popular values in the organization"

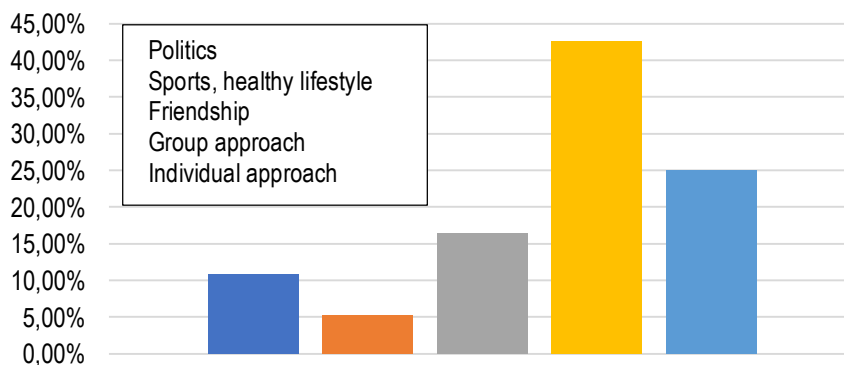
Ritual	Type of the organization	Production organization	Educational organization	Service sector organizations
Attitude to politics, pers. (%)		2,0	25,0	5,4
Attitude to sports, healthy lifestyle, pers. (%)		2,0	8,3	5,3
Attitude to friendship, pers. (%)		1,0	16,7	31,6
Attitude to group work, pers. (%)		90,4	16,7	21,1
Individual approach in work, pers. (%)		5,0	33,3	36,8

For example, in organizations of the production sector, the most valuable is the ability to work in a group (90%), the other values are least important for members of production organizations. As shown by additional interviews of employees, many performance indicators are determined precisely on the basis of group interaction and are presented in the remuneration system.

In educational organizations, the most preferable values are attitudes toward politics (25%) and individual approach in work (33.3%). The study of additional documentation showed that the content of the works of such employees is less focused on group and/or team work. The organizational form of such work is hobby groups, scientific sections, additional educational programs, etc. This orientation is largely determined by the organizational structure of management.

In service sector organizations, the most popular values are attitudes toward friendship (31.6%), as well as individual approach in work (36.8%). It can be seen from Figure 1 that in the Nizhny Novgorod organizations of various spheres of activity the group and individual approach in work, attitude to friendship remains popular. The less popular is the desire for a healthy lifestyle.

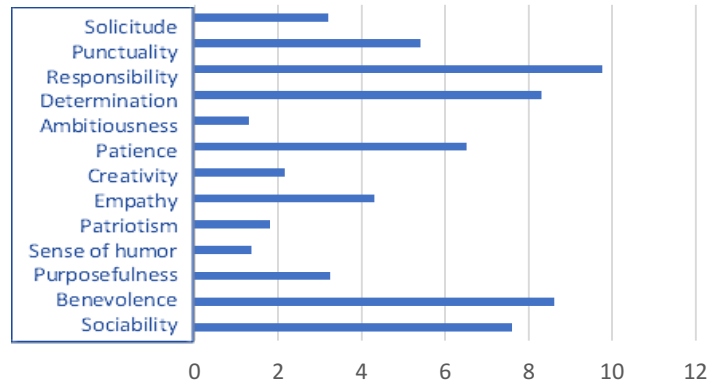
Figure 1. The most popular values in the Nizhny Novgorod organizations of various fields of activity



Personal qualities of employees, contributing and impeding the building of relations with colleagues

Assessing the qualities that respondents value to build relations with colleagues, it should be noted that, half of the answers of the thirteen listed options was showed on the average, the range of answers was from two to all of the listed options. As shown in Figure 2, the most important qualities employees consider: responsibility (about 10%), benevolence (9%), sociability (8%), determination (less than 8%), punctuality (6%), caring, creativity (4-5%, respectively), and purposefulness (less than 4%).

Figure 2. Analysis of respondents' answers about popular personal qualities that promote relations with colleagues (in Nizhny Novgorod organizations of different spheres).



At the same time, most respondents note that in order to build relations with colleagues, qualities such as responsibility and determination are needed; about a third of the respondents believe that they need benevolence and sociability; about 20% believe that it is important to develop the ability to listen and hear, to become more communicative and open to cooperation.

Thus, the diagnostic data make it possible to speak about the stable dynamics of the development of the personal qualities of the respondents, which ensure the formation of relations with themselves and with surrounding people, which undoubtedly strengthens the integration of the employees of each of the organizations and gives a fundamentally new quality to the team interaction.

Figure 3. Analysis of respondents' answers about popular personal qualities that impede relations with colleagues (in Nizhny Novgorod organizations of different spheres).

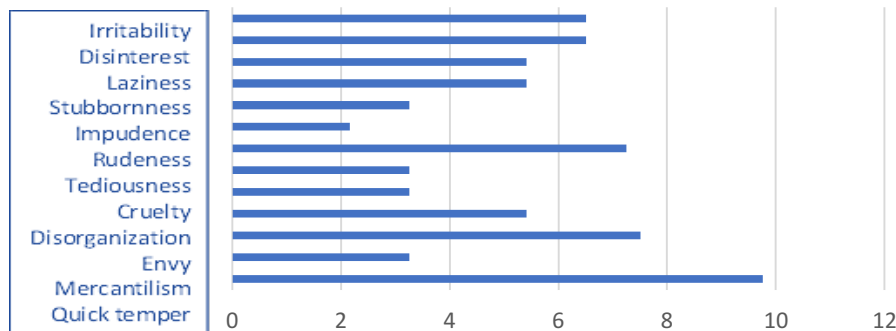


Figure 3 clearly shows the respondents' answers about the negative qualities that hinder the formation of relations with colleagues at work. Regardless of the sphere of the organization's activity, respondents indicated such qualities as quick temper (10%), rudeness (6%), laziness and stubbornness (5%). The rest of the answer options were less common, with almost all respondents indicating the above qualities, regardless of the field of work in the organization.

Conclusion

This research does not exhaust all aspects of the problem, but, based on what has been achieved, it is possible to identify currently relevant conclusions.

First, the majority of respondents have a sense of community and involvement in the common cause, which indicates the existence of the project activity of the organization of any field of activity (more than 50%). Innovative and personnel projects are realized most of all in production and educational organizations. According to the authors, this is due, first of all, to the consistency of staffing and low turnover of staff, which allows the realization of project activities for a longer period.

Secondly, the majority of respondents show a stable set of values, which, according to the authors, can be purposefully influenced. Particularly important for the organization's employees are such values as group or individual approach in work; less important is the low interest to a healthy lifestyle.

Thirdly, the conducted research has determined the personal qualities that contribute to / inhibit the building of relationships with colleagues in the workplace.

So, these parameters of the study were determined by the authors on the basis of a common understanding of this concept and on the basis of various approaches and scientific schools. Regardless of the sphere of activities of organizations, with common goals and involvement of employees, positive and negative qualities of employees are activated, the adoption of which by company management can have a much greater effect in internal motivation than in external. The system of compensations in reinforcing behavioral reactions is associated with the nature of observances and rituals in the organization. Such interconnection between the three elements of the system will allow revealing the internal potential of workers, stimulating a creative approach to work and increasing the effectiveness of group work.

References

- [1] Akhmetshin, E. M., Vasilev, V. L. 2016. Control as an instrument of management and institution of economic security. *Academy of Strategic Management Journal*, 15(1): 1-7.
- [2] Andreeva, G.M. 2003. The legacy of AN Leontiev and the modern psychology of social cognition. *The World of Psychology*, 2: 124-139. (In Russ.)
- [3] Betz, F. 2003. *Managing Technological Innovation: Competitive Advantage from Change*. New York: J. Willey and Sons.
- [4] Bodalev, A.A. 2001. Understanding the other as the opening up of the space of own "I". *The world of psychology*, 3: 12-16. (In Russ.)
- [5] Bogdan, N.N., Masilova, M.G. Parfyonova, I. Yu. 2014. *Organizational culture: theory, research, practice: monograph*. Vladivostok: Publishing house of VSUES.
- [6] Csikzentmihalyi, M. 1988. Society, culture, and person: A system view of creativity. In: *The Nature of Creativity: Contemporary Psychological Perspectives* (325-338). New York: Cambridge University Press.
- [7] Groshev, I.V. Krasnoslobodtsev, A.A. 2015. *Organizational culture: textbook*. Moscow: Unity-Dana. (In Russ.)
- [8] Kagan, M.S. 1997. *Philosophical theory of values*. St. Petersburg: LLP TK Petropolis. (In Russ.)
- [9] Kolominsky, Ya. L. 2000. *Psychology of relationships in small groups*. Minsk: TetraSystems. (In Russ.)
- [10] Losev, A.F. 1991. *Philosophy. Mythology. Culture*. Moscow: Politizdat. (In Russ.)
- [11] Mullakhmetov, K. S., Nazmiev, E. F., Akhmetshin, E. M. 2015. Control in the system of public administration in Russia. *International Business Management*, 9(7): 1732-1736.
- [12] Naumov, N.V. 2010. *Organizational culture*. Moscow: Laboratory of the book.
- [13] Oreshnikov, I.M. 1992. *What is a humanitarian culture?* Saransk: Mordovia University Press. (In Russ.)

- [14] Petrovsky, A.V. & Yaroshesky, M.G. 2002. *Psychology: Textbook for high schools*. Moscow: Academy. (In Russ.)
- [15] Shkunova, A.A. 2004a. *Formation of ethico-cognitive relations in pupils of professional lyceum*. PhD thesis abstract. Nizhny Novgorod. (In Russ.)
- [16] Shkunova, A.A. 2004b. *Formation of ethico-cognitive relations in pupils of professional lyceum*. PhD thesis. Nizhny Novgorod. (In Russ.)
- [17] Shkunova, A.A. & Koloda, S.A. 2014. Levels of relations in the corporate management culture. *Bulletin of the University of Minin*, 4(8). Available at: <http://vestnik.mininuniver.ru/reader/search/urovni-otnosheniy-v-korporativnoy-kulture-upravlen/> (In Russ.)
- [18] Sineva, N.L. 2016. Reasons for the ineffectiveness of strategic initiatives of efficient companies in the conditions of rapid changes. Collection of articles on the materials of the *III All-Russian Scientific and Practical Conference: Innovative management technologies* (161-163). Nizhny Novgorod. (In Russ.)
- [19] Sineva, N.L. & Yashkova, E.V. 2016. Innovative Approaches to Personnel Development in the Context of Knowledge Management. *International Journal of Applied and Fundamental Research*, 7(4): 648-651.
- [20] Tikhomirova, O.G. 2011. *Organizational culture: formation, development and evaluation: Textbook. Allowance for students*. Moscow: INFRA-M. (In Russ.)
- [21] Yashkova, E. V., Sineva, N.L., Shkunova, A.A., Bystrova, N. V., Smirnova, Z.V. & Kolosova, T.V. 2016. Development of Innovative Business Model of Modern Manager's Qualities. *International Journal of Environmental and Science Education*, 11(11): 4650-4659.
- [22] Zimnyaya, I.A. 2001. *Personality-activity approach as the basis of the organization of the educational process*. Moscow: Research Center for Quality Problems in Training Specialists. (In Russ.)

Tangible and Intangible Rewards in Service Industries: Problems and Prospects

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Abstract

Willingness and readiness of people to do their jobs are among the key factors of a successful enterprise. In XXI century intellectual human labour is gaining unprecedented value and is being developed actively. The demand for intellectual labour calls forth an increasing number of jobs and professions that require an extensive preparation, a large number of working places, high level of integration of joint human efforts, growth of social welfare. These trends are becoming ever more pervasive and are spreading widely in service industries, and that explains the rapid development of the latter when compared to the traditional areas of human activity. In its turn, it heightens the need for staff in service companies, supported by significant personnel turnover and a certain shortage of skilled professionals. These circumstances determine the need for developing a new concept of fostering staff motivation at the enterprises in the sphere of services. In order to reach the stated purpose while conducting our research into tourism and hospitality industry, as well as retail chains, we have examined the problems that arise in the process of staff motivation, and studied the foreign practice of motivating staff in hotels. The obtained analysis results enabled us to work out practical recommendations on improvement of the mechanism of tangible and intangible rewards in service companies, which are based on external and internal motivational factors. Additional attention in the article is paid to the statement that financial incentives should be based on key performance indicators (KPI). We give a detailed consideration to the classification of internal motivation incentives of the staff according to the terms of their realization, and give a schematic representation of the performance dynamics of the internal motivation model in service businesses.

Keywords: Staff turnover, staff motivation, service industries, internal incentives, management.

JEL Classification: J 320, O 150, M 120.

Introduction

In every country, service industries represent the level of civilization on the nation, so that the higher the level of services is, the more civilized the country is considered. And it is service industries that make the largest part of the national economy in more economically developed countries (over 60%).

The rapid development of the service sphere, and its gaining of the status of one of the key sectors of the economy calls forth the need for an increasing number of personnel, which in its turn causes significant staff turnover. This trend is clearly observed in respect of the low-wage employees, and the demand for them is growing exponentially.

Staff turnover negatively affects the work of service companies, it is an obstacle to team formation and, consequently, to fostering of the corporate spirit, and this invariably entails a lowering of the overall performance indicators. In addition, the turnover impedes the raising of the staff competence and professionalism level, as well

as makes it difficult to get payback of investment in retraining. All this reduces the possibilities of high-quality workforce training: it is provided mainly in the workplace. Although the profession of service sector specialist is gaining popularity among the younger generation, recruiters note the obvious shortage of personnel that complies with the requirements laid down in service companies.

Multiple reasons explain for staff turnover – starting from disruptive enterprise management style and ending with selection of non-professional applicants to fill in the vacant positions. However, there is no doubt that the path to the effective management of employees lies through understanding of their motivation. Knowing of the factors that stimulate employees and motivate them to their activities should be of the principal consideration while building the effective labour motivation system.

All this said, the investigation of the problems and prospects of use of tangible and non-tangible motivation tools in service companies is of particular relevance today and requires additional in-depth research.

1. Theoretical and conceptual aspects

The questions of staff motivation are studied by scientists and practitioners from the point of view of theoretical justification of the need for various means of boosting the zeal of employees. An important contribution to the development of the research area was made by such well-known international and Ukrainian scientists as Ansoff (1989), Cole (2004), Meskon, Albert and Khedouri (2004), Balabanova and Stelmashenko (2010), Shulha (2008) *et al.*

In numerous works, the Ukrainian researchers, for example Alekseeva and Prykhodko (2012), Dolzhanskyi (2010), Zhyvko (2010), Izyumtseva and Myronchuk (2012), Nemchenko, Yurchenko and IZhyrova (2011) study the mechanisms of establishing interconnections between motivation and work performance through the use of motivational factors and formation of a motivational environment in companies, which stimulates employees to develop their abilities, improve the psychological climate in the team and raise their performance indicators.

Such authors as Vedernikov (2013), Hryvkvivska (2010), Hubenko (2010), Kovalenko (2010), Kovalchuk and Sytnik (2013), Mohsin, Lengler and Aguzzoli (2015), Leigh (2005) are engaged in research of global experience in the development of motivational systems and their evaluation.

However, in spite of a significant number of studies, as well as the currently existing achievements, problems associated with the formation of a practical mechanism of managing staff motivation in services companies have no definite solution. Just the same way, there is no accepted formula for motivation, which would explain the behaviour of an employee, regardless of the circumstances. The methods for managing motivational process call for understanding of the basics of control, with due regard paid to their stochastic ambiguous nature.

2. Study Case

Purpose of the study

Through the analysis of companies that represent tourism and hospitality industry, as well as retail chains, the author strives to explore the problems that came up in the process of motivation, to examine the motivational programmes for the personnel in service industries in the different countries, and then, by using the obtained results, to work out practical recommendations of how to overcome the difficulties and create a new concept of building motivation by personnel in the sphere of services.

Results of the study

The problems that came up in the process of motivation in service industries

First of all, it seems appropriate to mention the problems that exist at the macrolevel and hamper the introduction of any incentive schemes for employees of service industries. These problems seem to be inherent to the countries with national economies under transformation. So, these problems are:

- Lack of clear standards for requirements to personnel in service companies, as well as lack of qualification standards.
- Fragmentation and lack of a single standard list of professions related to the service sector.
- Scarcity of differentiated methods of specialist training for work in the service sector.

- Lack of standards of educational programmes and a common approach to assessment of service quality and service technologies.
- Underdevelopment of the labour market.
- Low level of professional culture of the staff.
- High staff turnover.

Of special note is one of the key problems in the sector of services of any type and orientation. It lies in the fact that the greatest difficulties are related to the motivation of staff employed in so-called "non-prestigious" service sector jobs (cleaners of the premises, maids, nurses, technicians, repairmen, *etc.*).

The problems are explained by unattractiveness, not prestigious of the professions that form the very basis of the infrastructure of the service-rendering process; low wages; poor working conditions, and others. Ever more people in modern society are no longer satisfied with "any" work. People want the work process to give them an opportunity for self-development, self-affirmation and self-realization, they want to feel the importance and necessity of the performed work (Dwivedula and Bredillet 2010). More and more often employees try to evaluate the innovation potential of the job, its creative constituent, which plays a significant part in self-identification of a personality (Hrynko 2010).

At the level of a separate enterprise, there are other problems, which hinder the effective implementation of modern concepts of motivation:

- lack of a clearly defined policy and specifically worded objectives in work with the staff;
- fragmentation in personnel management and planning;
- lack of integrated educational framework;
- insufficient competence of HR personnel;
- low degree of realization of the whole complex of staffing social goals.

Of course, there are much more problems at each level; besides, in each individual case they are quite particular and depend on both objective and subjective factors. Low level of motivation, imperfect programmes and systems of stimulation of employees are one of the most crucial factors, which causes a significant personnel turnover in service companies.

The annual research conducted by BenchmarkPro that analyses information about 30,000 organizations around the world testifies that the average personnel turnover in the services sector is more than twice as high as that in the industrial sector (see Figure 1 and Figure 2). As is clearly shown in the Figure 1 and Figure 2, the first place for turnover among service industries holds the industry of tourism and hospitality, and the second one – retail networks. High staff turnover in the tourism and hospitality industry has brought about the crisis of productivity, which costs to the sector \$ 272 million per year. According to expert data, 1% increase in labour productivity can provide an additional \$ 1.43 billion of revenue in the year. At the same time, labour productivity in the tourism and hospitality industry per employee makes \$ 21,600 per year, in retail networks – \$ 46,000, and in the industrial sector – \$ 52,000 (Brien *et al.* 2015).

Figure 1 - Voluntary discharge

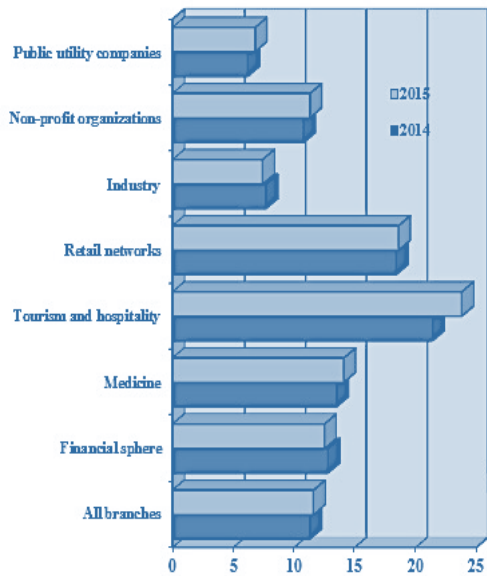
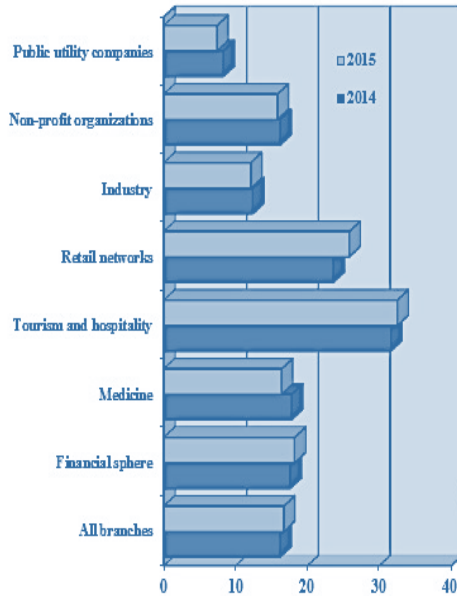


Figure 2 - General personnel turnover

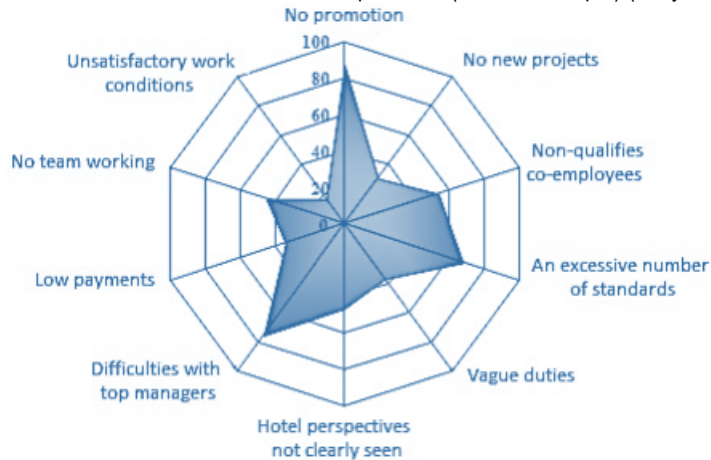


Source: CompData Surveys

Antal International company experts in the course of their studies found out that employees of the tourism and hospitality industry leave their positions in search of more interesting work in 67% of cases, and in 65% of cases in search of a better work / life balance (Eisele *et al.* 2013).

In this context, of considerable interest is the gradation of the reasons of dismissals from hotel positions, established by Kelly Services, Inc., the world leader in providing solutions for personnel, as a result of their study of more than 4000 hotels in the USA and Europe (see Figure 3). So, in the first place - lack of career development, on the second - the difficulty with management and management of the hotel circuit and the third - too many standards and requirements for operation. This material component is only in seventh place.

Figure 3 - Rating of the reasons of dismissals from hotel positions (% of the sample) (Kelly Services)



The generalization of the results of various investigations and surveys has enabled the author to formalize the reasons that account for the hospitality industry employees being not loyal to their work, and that led to their leave (the reasons are enumerated in a free list without regard to priority). Accordingly, these reasons are the prime guidelines of motivational mechanism, which will allow its adjusting according to the needs, wishes and aspirations of the staff, as follows:

- *A significant level of bureaucracy or inadmissible tolerance in the company.* There are often quite an excessive number of formulated rules that employees do not understand and do not accept. Once an employee disagrees overtly with these rules and gets disappointed with them, it is the direct reason for his rejection of further cooperation.
- *Lack of transparency.* Employees should have the possibility to share their thoughts, concerns and suggestions with the company management.
- *Lack of accountability / responsibility.* Good employees want to be responsible for their projects, for the results of their activities and, what is more important, they do not mind being guilty and suffer due punishment, in case of mistakes. Also, they do not object to the control of the management, they are ready to discuss conclusions and comments and listen to advices.
- *The lack of vision and prospects of the enterprise development.* Employees need to see and understand where the company is moving, what is their future.
- *Inattention to the talents of employees,* lack of appropriate projects that can ignite a passion for work. The head which has a team of talented employees and does not make use of their potential will soon be deprived of this opportunity. It is well known that talented people are driven by not money, but the opportunity to become a part of something huge, and when having such an opportunity, they can increase the cost and competitiveness of the enterprise many times.
- *Lack of discussion on career development.* It is very important to conduct a dialogue face to face with an employee about his career path. When management takes part in the debate and demonstrates that there is space for promotion, employees tend to be more loyal to their work.
- *Irregular analysis of performance or its total lack.* It entails irregular evaluation of quality and effectiveness of personal efforts, which consequently has a negative impact on remuneration, both material and moral.

In order to work out specific recommendations for overcoming the difficulties and forming a new concept of building motivation in this area, the next stage seems to be to explore the usual practice of motivating personnel in the tourism and hospitality industry.

World experience of personnel motivation in service industries (evidence for hotels)

Table 1 Provides an overview of motivational programmes for staff that are used in hotels around the world.

Table 1 - Motivational programmes for hotel staff

Country	The content of the motivational programme
USA	<ul style="list-style-type: none"> ▪ discount card for hotel services; ▪ payment of newly-employed workers and junior staff is at the level of the minimum wage, but there is an opportunity to earn an increase of 20 to 40 cents per hour due to the additional actions (Association International Hotels and Restaurants Associations); ▪ high productivity entails a salary increase of up to 60% per year, depending on the personnel policy of each hotel; ▪ hourly workers are entitled to receive quarterly bonuses if their performance exceeds the planned expectations; ▪ middle and high managers are offered reduced-price medical care.
China	<ul style="list-style-type: none"> ▪ employment contracts are concluded for a period of 3 to 5 years; ▪ there is a possibility of promotion to senior manager in 6 years; ▪ one extra payment of the salary every year; ▪ two free medical examinations a year; ▪ annual guided tour organized by the hotel for the best employees; ▪ rewards such as extra credit programme for the outstanding employees; ▪ regular training programmes aimed at improving skills and creating a sense of community in the team.
India	<ul style="list-style-type: none"> ▪ a good salary; ▪ promotion and growth;

Country	The content of the motivational programme
	<ul style="list-style-type: none"> ▪ an annual bonus; ▪ employee discount cards; ▪ partial payment for medical services; ▪ on the results of the award; ▪ discounts on medical care and life insurance; ▪ competitions and team building exercises to bring together employees and encourage interaction. ▪ at least 22 days of vacation.
England	<ul style="list-style-type: none"> ▪ bonuses according to the performance; ▪ discounts on medical care and life insurance; ▪ competitions and team building exercise for bringing employees and encouraging interaction; ▪ at least 22 days of vacation.

As is shown in Table 1, about 80% of motivational programmes for hotel staff in all the countries employ financial incentives, which, in fact, are external motivational factors. When comparing the information contained in Table 1 and shown in Figure 3, it is easy to see the non-conformity of motivational programmes and expectations of the employees.

Practical recommendations for the formation of a new concept of building personnel motivation in service industries

In general, one can observe that external stimuli (material component) are used to compensate for repetitive tasks or those tasks that require additional motivation. Various studies have shown that money as an incentive works effectively on the short distance, and when a person reaches a certain level of comfort, the quality of his work deteriorates gradually. People work better when they feel an emotional or personal connection with the work, and when their aspirations and target settings coincide with the aims and objectives of the enterprise. These factors increase their motivation much better than money (Tabassi *et al.* 2012).

Of course, we do not suggest rejecting material incentives, but it seems that its role should be reconsidered, and compilation of monetary compensation programmes should take into account current market trends, aims of the personnel and the latest achievements of scientific thought. Besides, due attention must be paid to gender segregation of labour in service industries.

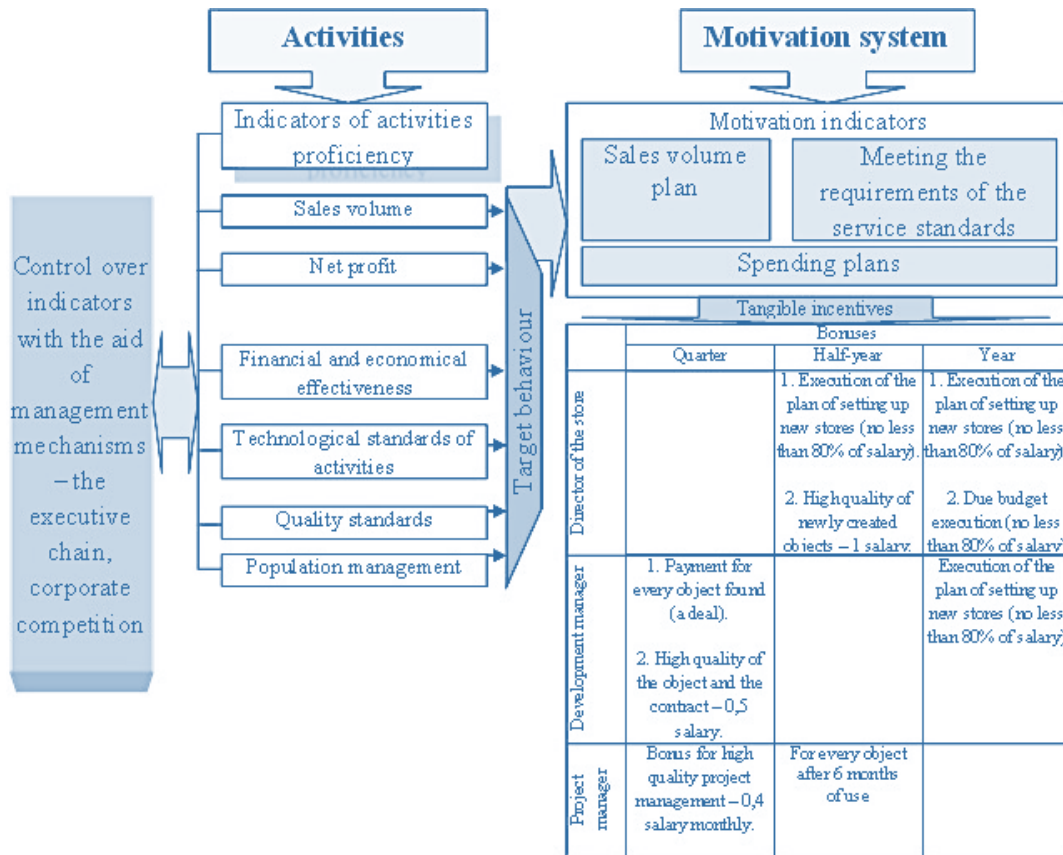
Thus the author holds that the programme of material motivation should be based on proven key performance indicators (KPI) of the enterprise, the choice of which, in turn, should be carried out with compliance with SMART principles.

KPI is an efficient tool that helps to coordinate harmonize the values of workers and the enterprise. KPI represent benchmarks for evaluating employees and, on the other hand, enables the employees to monitor the compliance with their own aims and achievement of goals (Mohsin *et al.* 2015). When developing a system of incentives based on the KPI, first of all it is necessary to identify the key performance indicators of the company and, on that basis, to formulate strategic goals and objectives with their subsequent transfer to the staff level.

Though a list and immediate content of the tangible rewards for staff accompanies each goal statement, for certain tasks it is difficult to determine and establish an objective and adequate remuneration for a particular employee. Therefore, there is no doubt that such objectives as "involvement of employees" or "fostering of future leadership qualities" require an additional, internal motivation.

On the evidence of retail networks, the correlation of KPI of a company and indicators of material staff stimulation is shown in Figure 4.

Figure 4 - Correlation of KPI of a company and indicators of material staff stimulation (Retail)

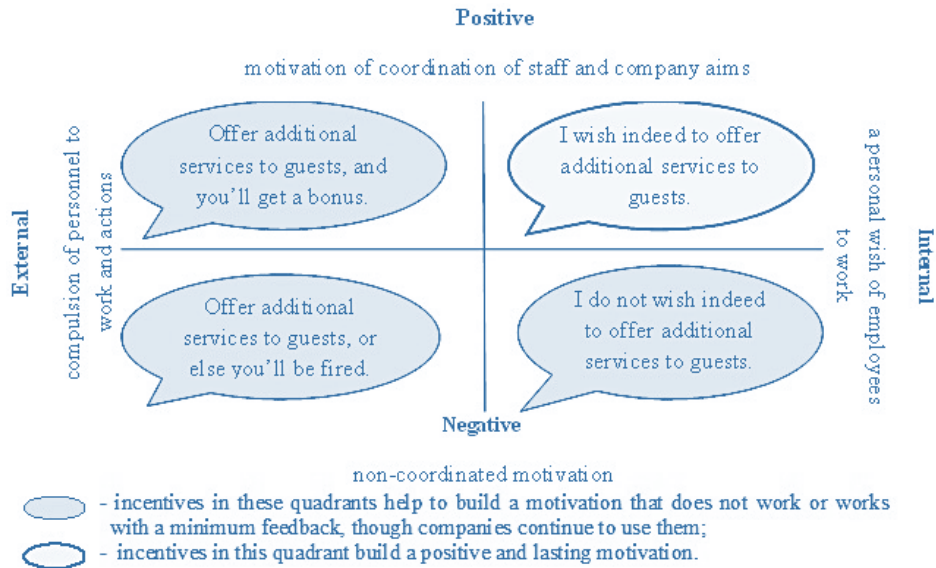


Considering the system of non-material incentives in the modern concept of motivation for enterprises of tourism and hospitality industry and retailers, we note that, according to the author, it must be based on self-determination theory, which features three variable predictors – autonomy, competence and cohesion with the company. These variables allow employees to form internal incentives to work, to increase efficiency and to develop a wish to remain in the company for a long time, as well as to participate in its development. According to this theory, instead of being a source of motivation, the manager must help employees to find their own internal motivation.

Internal incentives suggest certain relieve of financial burden on the company, when compared with external incentives, which include bonuses, commissions, salary increase, etc. Expenses on these stimuli may exceed their feedback and lead to a yield decrease. Empirical observations and calculations show that job satisfaction in the service sector is but slightly correlated with material rewards.

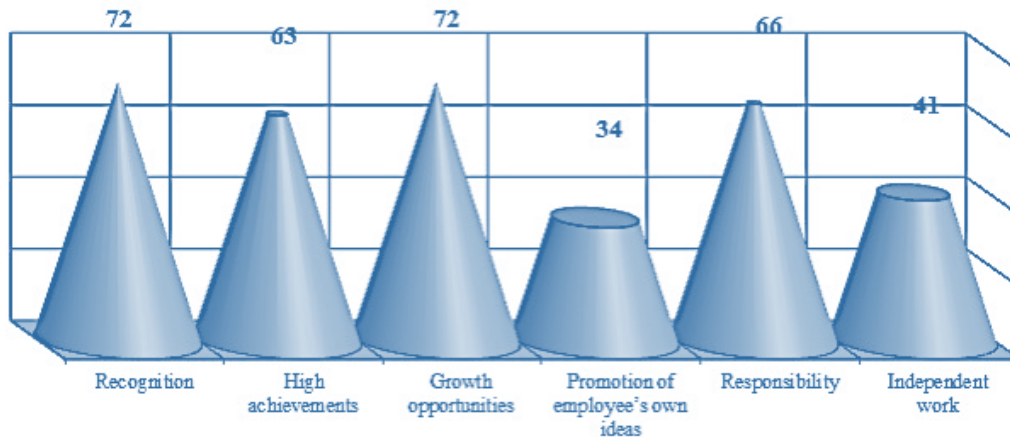
Thus, basing on these results we can offer the quadrant of motivation types for tourism and hospitality companies and retail networks (Figure 5). If the employee likes what he is doing, then the combination of autonomy, competence (skills), or cohesion with the work and achievements of the company will encourage him to be active, and the efficiency and productivity of his work will be a result of his activity.

Figure 5 - Quadrant of incentives and motivations for tourism and hospitality companies and retail networks



According to a survey carried out among the employees of Park Inn hotel network in 2014, the first place among the internal motivators shared recognition and growth opportunities (see Figure 6). The greatest effect is, of course, gives a combination of internal motivators, which excites the feelings that lead to effective customer service and efficient behaviour of employees.

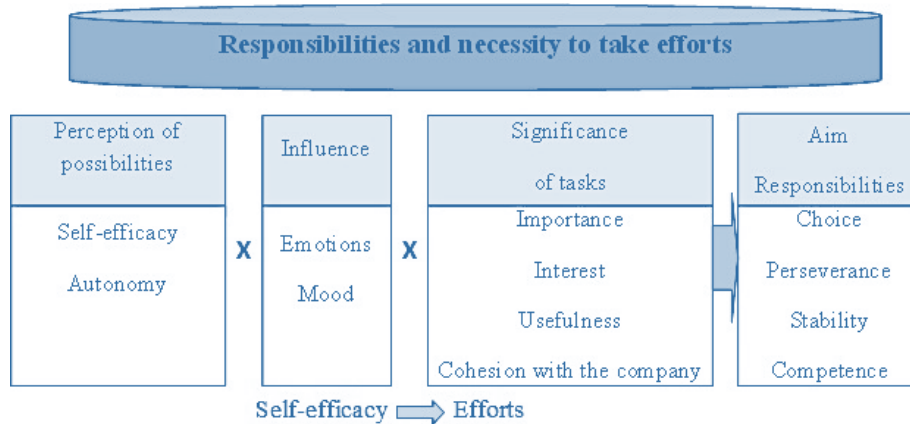
Figure 6 - Popularity of internal incentives in Park Inn hotel network (% of the sample)



Source: Sampaio *et al.* (2014)

Basing on the concepts of self-determination theory, we suggest expanding variable predictors to service businesses, by adding self-efficacy, strength, emotions, mood, values, interest, utility, choice, persistence and effort to their number. In this case, the model of internal motivation for service companies, in particular for those who work in the tourism and hospitality industry and trade, will look and work as follows (see Figure 7).

Figure 7 - Dynamics of performance of internal motivation model for service companies



This model demonstrates that a certain type of behaviour has a very different effect on the efficiency of the enterprise, achieved in various ways, and employers should take these differences into account in order to reduce turnover. In addition, in order to effectively use internal incentives of employees as motivational factors, it would be reasonable for businesses to differentiate them, depending on the timing of implementation (see Table 2).

Table 2 - Classification of internal incentives as to terms of their implementation

Short-term incentives – “quick victories”	Long-term incentives – “long victories”
<p>Competitions:</p> <ul style="list-style-type: none"> ▪ competitions between teams of employees/shifts/crews for goal achievement, e. g., the largest number of clients fin a week, the least number of complaints, the quickest service etc.; ▪ rewards, e.g., gift cards, cinema tickets, free lunch etc. 	<p>Offers for proficiency enhancement and change of profile, e.g., training courses. They help employees to feel that their part in the company is not just doing everyday routine work. With the aid of the studies they can build their careers and increase their value for the company.</p>
<p>Social recognition:</p> <p>E. g., most effective worker of the month. The reward can take the form of a poster with a photo on a corporate stand, congratulations of a team gathering – bestowing a certificate, expressing gratitude.</p>	<p>Development of talents:</p> <ul style="list-style-type: none"> ▪ structured education, theoretical and practical training for coping with new tasks; ▪ creation of a reserve for switching employees to other tasks, when needed; in its turn, it makes them feel incorporated into the functioning of the company and performing of new tasks; ▪ the personnel is conscious of the meaning of the performed tasks and commissions; ▪ employees that are qualified for various jobs are aware of their possibilities of career promotion, which inspires them and lets them understand the sense of their work and work of the whole enterprise.
<p>Internal notices on vacant positions on the informational stand:</p> <p>Such notices gives employees a possibility to consider different roles in the company that they might play, to shape their own sensations and aspirations, which encourages them to work harder and perfect themselves.</p>	<p>Flexibility that allows working in a series of company areas:</p> <ul style="list-style-type: none"> ▪ a possibility to work in various environments, with various clients and in the various areas; ▪ skills improving, which makes the employees quick to adapt to the various groups of clients and their requests; ▪ flexible work conditions, including proximity to home, university, school, if they are interested in studying new areas.
<p>Team building: common monthly lunches; New Year and Christmas parties; monthly teambuilding events, such as picnics, film viewings, visits to clubs; participation in group meetings etc.</p>	

Conclusions

The most complicated situation with personnel and their motivation in service industries is observed in the tourism and hospitality industry, as well as in retail networks.

Identification of the problems that arise in the process of motivation in service industries, helped to clarify the basic requirements for the modern concept of tangible and intangible rewards for work in service companies. A detailed analysis is given to the problems and factors causing the highest level of staff turnover, as a result of imperfect motivation programmes in the companies within tourism and hospitality industry, as well as in retail chains. A study of the positive experience of staff motivation in different hotels around the world was performed.

Basing on the findings, the article provides practical recommendations that help to overcome the difficulties and create a new concept of building motivation in this area. Special attention is paid to the motivational programmes of material incentives; particular emphasis is placed on internal motivation factors, their classification and model of their implementation are offered.

References

- [1] Ansoff, I. 1989. *Strategic Management*. Ekonomika. Moskow.
- [2] Alekseeva, N., Prykhodko, I. 2012. Improving work motivation by machine building employees. *Management, Marketing and Personnel Administration: Mykhailo Ostrohradsky Kremenchuk National University Herald*, 3:174-178.
- [3] Balabanova, L. V., Stelmashenko, O. V., Tuhan-Baranovsky, M. 2010. *Strategic personnel management in market economy*. Donetsk National Economy and Trade University. Donetsk.
- [4] Brien, A., Thomas, N., Hussein, A. S. 2015. Turnover Intention and Commitment as Part of Organizational Social Capital in the Hotel Industry. *Journal of Human Resources in Hospitality & Tourism*, 14(4): 357-381.
- [5] Branham, Leigh. 2005. *The 7 hidden reasons employees leave: How to recognize the subtle signs and act before it's too late* [online]. American Management Association. New York. Available at: <http://site.ebrary.com/lib/natl/Doc?id=10075612>
- [6] Cole, J. 2004. *Managing Personnel in Modern Organizations*. OOO Vershyna. Moskow.
- [7] Dolzhanskyi, A. N. 2010. Organization of workflow on registration of direct expenses in responsibilities centres in printing enterprises. *Scientific Herald of National University of Forest Engineering of Ukraine*, 188-193.
- [8] Dwivedula, R., Bredillet, C. N. 2010. Profiling work motivation of project workers. *International Journal of Project Management*, 28(2):158-165.
- [9] Eisele, L., Grohnert, T., Beausaert, S., Segers, M. 2013. Employee motivation for personal development plan effectiveness. *European Journal of Training and Development*, 37(6): 527-543.
- [10] Hrynko, T. 2010. On innovation potential as a constituent of innovation activities of businesses. *The Economist*, 2: 56-58.
- [11] Hryukivska, O. V. 2010. Staff motivation in foreign companies. *Topical Problems of Economy*, 9: 86-91.
- [12] Hubenko, A. V. 2010. Importance of labour potential for economic development of a company. *Economy and Marketing in XXI Century*, 1:78 -80.
- [13] Izyumtseva, N. V., Myronchuk, H. V. 2012. Organization of system of motivation of bank personnel under conditions of post-crisis development of economy. *Personnel Management: Herald of University of Banking of National Bank of Ukraine*, 1: 279-283.
- [14] Kovalchuk, O. A. 2013. Economical and mathematical modeling of managing the process of personnel motivation. *Dnipropetrovsk university Herald. Series Economy* 21. 7(4): 268-273.

- [15] Kovalenko, T. L. 2010. *Factors of social and economical motivation of personnel of communications service provider*. Author's abstract of a thesis of PhD in economy: 08.00.04. O. S. Popov Odesa National Academy of Communications.
- [16] Meskon, M. Kh., Albert, M., Khedouri, F. 2004. *Basic Management*. Delo. Moskow.
- [17] Mohsin, A., Lengler, J. F. B., Aguzzoli, R.L. 2015. Staff Turnover in Hotels: exploring the quadratic and linear relationships. *Tourism Management*, 51: 35-48, *Forthcoming*.
- [18] Nemchenko, A. S., Yurchenko, H. M., Zhyrova, I. V. 2011. Analysis of motivational principles of personnel management. *Management, Economy and Quality Assurance in Pharmacy*, 1:18-23.
- [19] Sampaio, S., Simoni, V., Isnart, C. 2014. Tourism and Transformation: Negotiating Metaphors, Experiencing Change. *Journal of Tourism and Cultural Change*, 12(2):93-101.
- [20] Shulha, M. A. 2008. *Social and Political Management*. Tsentr uchbovoi literatury. Kyiv.
- [21] Tabassi, A.A., Ramli, M., Bakar, H.A. 2010. Effects of training and motivation practices on teamwork improvement and task efficiency: the case of construction firms. *International Journal of Project Management*, 30(2): 213-224.
- [22] Vedernikov, M. D., Zelena, M. I. 2013. Is it reasonable to use foreign experience in Ukrainian companies. *Khmelnitskyi National University Gerald*, 5(1):18-21.
- [23] Zhyvko, Z. B. 2010. Mechanism and models of personnel motivation in call producing companies. *Management and Marketing. Science and Economy*, 1: 86-91.
- *** Association International Hotels and Restaurants Associations (IHRA). URL: <http://ih-ra.com/>
- *** CompData Surveys URL: <http://www.compdatasurveys.com/>
- *** Kelly Services. *Inc. Business Services & Solutions*. URL: <http://www.kellyservices.us/US/Business-Services/>

