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Political Instability, Industry and Economic Growth in ECOWAS

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Abstract:

According to the economic literature, the influence of political instability on economic activity is ambiguous. In the case of ECOWAS, we attempt to verify whether political instability conditions the effect of industrial performance on growth. The aim of our study is to verify the relationship between industrial performance and economic growth in ECOWAS under the influence of political instability over the period 1990-2018. To this end, we estimate a non-linear model using the Pool Mean Group (PMG) method. Our results show that political instability negatively influences the effect of industry performance on GDP growth in ECOWAS. However, there is a threshold level below which the political atmosphere does not significantly deteriorate the contribution of industrial performance to the ECOWAS economy. This threshold is 0.84% in our study.

Keywords: political instability, industry, economic growth, ECOWAS.

JEL Classification: O43, L25, F43, C23, O55.

Introduction

Industrialization has been a relevant subject of analysis for economists since the pioneering work of Marshall (1920). Today, the focus is on its effects on the economic growth of all nations, especially developing countries, given the differences in development between them. Many schools of thought, such as the neoclassicals, Third Wordlists and Marxists, have refocused the problem of industrialization on market failures, economic assets and trade relations between developed and Third World countries. Over time, taking institutions into account to explain differences in performance between countries is undeniable progress, since the experience of countries that have succeeded in their economic development also proves that governments often play a decisive facilitating role in the process of transforming the industrial environment (Lin, 2013).

According to some authors, the low level of industrialization and the limited capacity of the industrial sector are due in part to a lack of physical infrastructure and an unattractive macroeconomic environment but are much more to the underdevelopment of institutional infrastructure (Mauro, 1995; Acemoglu & Johnson, 2005). When the latter fail, they render activities unproductive, thus compromising industrial development, which in turn weakens long run growth.

Moreover, in ECOWAS, despite the proliferation of stability policies in the sub-region, the evidence does not conceal the state of the political atmosphere undermining industrial activity in this sub-region. The years 1996 to 2002 and 2013 to 2017 were marked by political instability, which led to a drop in the industrial weight of the ECOWAS economy, especially in the West African Monetary Zone (WAMZ) sub-region. As for growth in the same wake as industrial development, it is almost holding its own, because even though political instability is influencing economic activity, related activities are developing and, above all, the informal sector is becoming increasingly important. Thus, as the statistics show, over the 1991-2001 period, ECOWAS member states recorded annual economic growth of 2.8%, associated with a modest 0.3% rise in GDP per capita and low industrial growth rates (-1.5% to 2.0%), well below the region's demographic growth. GDP growth in the region continued to fall, from 6.7% in 2003, to 6% in 2005, 5.7% in 2006, 5.6% in 2007 and 5.1% in 2008. Average GDP growth in West Africa stagnated at 0.5% in 2016, then rose to 2.5% in 2017 (AfDB, 2018). Still according to the report of African Development Bank (AfDB, 2018), industry's contribution to economic growth in West Africa remains the lowest and is recording a downward trend. For example, the industrial sector contributed an average of 35.5% to GDP in 2001, 30.3% in 2006 and 20% of GDP in 2018.

The industrial sector's limited capacity to increase the economy's productivity is leading to underdevelopment in West Africa. Indeed, poor physical infrastructure and a macroeconomic environment that offers few incentives (AfDB, 2018), are partly responsible for the economy's under-industrialization and low competitiveness. However, the environment in which companies operate has a strong influence on their competitiveness, and this environment can only allow industrial activities to develop in an increasingly stable political climate. That's why such a study is a necessity and a major challenge for West Africa. We know from Mauro (1995) and Acemoglu & Johnson (2005) that weak industrialization and the limited capacity of the industrial sector are due much more to the underdevelopment of institutional infrastructures than to the failure of physical infrastructures and a macroeconomic environment with few incentives.

Unlike other papers that have analysed the effect of political instability or industrial performance on economic growth in the ECOWAS zone, we will use an interaction mechanism by crossing the industrial variable and the political instability variable to check whether political instability conditions the effect of industrial performance on economic growth in the zone. The aim of this paper is to investigate the nature of the relationship between industrial performance and economic growth in ECOWAS under the influence of political instability during the period 1990-2018. Does political instability condition the effect of industrial performance on economic growth in ECOWAS countries? What is the threshold level below which the political atmosphere does not significantly deteriorate the contribution of industrial performance to the ECOWAS economy?

To address this concern, we use a non-linear model based on the Pool Mean Group (PMG) method. Our results show that, in the long run, the performance of industry (*IndVa*) and foreign direct investment (*Fdi*) positively and significantly affect the ECOWAS GDP growth rate at the 5% threshold, as well as the population in the 15 to 64 age group at the 1% threshold. However, when we proceed to the interaction between industrial performance and political instability formalized by crossing the two variables (*Vaind* x *Instabpo*), their effect on the GDP growth rate is significantly negative at the 5% threshold in the long run. These results show that in ECOWAS, political instability negatively influences the effect of industrial performance on countries' economic growth. The political atmosphere is inadequate for industrial performance and therefore undermines economic development in this sub-region. The more unstable the political environment, the less the industrial sector develops. In our study, the results of the threshold level below which the political atmosphere does not significantly deteriorate the contribution of industrial performance to economic growth in ECOWAS is 0.84%. Above this threshold level, political instability worsens the effect of industrial performance in the ECOWAS economy. As for population, its effect on the GDP growth rate is ambiguous: while in the short run it has a significant negative impact on the GDP growth rate at the 1% threshold, in the long run its effect on growth is significantly positive at the 1% threshold. This result could mean that, in the long run, the population in the 15 to 64 age brackets in ECOWAS zone countries constitutes a powerful growth factor. However, these countries need to control this demographic growth so as to create a matching between it and the zone's wealth.

1. Literature Review

The modern theories of growth emphasize that constant growth can only be achieved in a country if it is part of a permanent process of technological innovation, modernization and diversification of its industry, which in turn enables the improvement of various types of infrastructure and institutional arrangements (Cameron, 1996; Duyen & Tinh, 2024). On the other hand, the literature does not fail to insist that institutions can cause an increase or decrease in productivity. For stable economic performance, countries need institutions that will encourage organizations to engage in productive activities (Mokrani et al., 2020).

In recent decades, the political atmosphere has been singled out in the literature as a remarkable factor in the destruction of states and the degradation of the business environment; whereas institutions were designed to establish order and reduce uncertainty in the exchange of goods and services. The functioning of productive economic activities has identified political instability and conflict as a powerful trap of poverty and underdevelopment, leading to lower economic development (Williams & Vorley, 2017; Nelson & Sampat, 2001; Collier, 2007). The influence of the institutional environment on company performance has been studied by Williams & Vorley (2017). Looking at political stability and conflict in Kosovo, the two authors found that the alignment of institutional arrangements defines the point at which entrepreneurial activity is productive. Still in the political sphere, Commander & Nikoloski (2010) also attest to the idea that political instability and an unhealthy business environment work to the detriment of business development. For these authors, constraints on the business climate predict relatively low and unstable firm performance. This is why, according to Hausmann et al. (2007), for industrial promotion policy to be successful, for example, industrial development policy must be designed in line with the country's institutions. Thus, referring to the Soviet industrialization process, Allen (2003) argues that Stalinist industrialization policy is optimal in the case of a poor country with poor grassroots institutions.

On the other hand, Ravaillion & Chen (2003) and Dollar & Kraay (2000) agree that, in an environment of sound institutional policy, growth can reduce poverty. However, poor-quality institutions are detrimental to growth, thereby reducing the system's ability to alleviate poverty, and conversely. Knack & Keefer (1997) share this view in poor countries. They suggest that the situation in poor countries is exacerbated by institutional failures. As a result, these countries are unable to achieve advanced technologies because of their weak[1] institutional environment. Economic growth, and more importantly sustainable development, is only possible in a market economy if the private sector finds the right conditions for its full development.

The relationship between political instability and economic growth has been much studied in academic circles in recent years, although the debate is an old one. We cannot therefore present an exhaustive list of all the empirical studies that have been carried out on the subject. For example, Dirks & Schmidt (2023) have analysed the relationship between political instability and economic growth in advanced economies using a panel of 34 advanced economies from 1996 to 2020. They first use a panel VAR estimated via a GMM system, which enabled them to explore the endogenous relationship between economic growth and political instability and identify potential transmission channels. Next, they use an instrumental variable approach that exploits median temperature variation and political instability spillover effects from culturally close countries to establish causality. Empirical results suggest that political instability reduces GDP by 4-7% five years after the shock, mainly due to lower investment and consumption. A one-standard-deviation increase in economic growth reduces political instability by half a standard deviation, five years after the shock. Similarly, Hosny (2016) for his part found adverse effects of political instability on firm performance. The author examined the relationship between political instability and these characteristics and the performance of over 6,000 private companies in the Middle East and North Africa. Using an endogenous OLS model and linear regression, his analyses show that political instability has a negative impact on firm performance and employment growth. For Wong (2010), the link between political institutions and Hong Kong firms improves their performance. Olbrecht (2016), also found a positive effect of the political and legal framework and franchise of the economy on the performance of EU firms.

Moreover, Mokrani et al. (2020), in a study carried out in Tunisia on the role of institutions in improving productivity in the country's olive-growing sector, found, using a methodology that included a qualitative analysis based on cross-sequencing with the “Three I's” and a quantitative analysis based on an economic model for estimating added value, that in the Tunisian field, policy instruments do not meet the interests of the majority of producers. Political stability is therefore a guarantee of industrial performance and economic growth. This idea is corroborated by the studies of Sorfina (2023), who studied the relationship between democracy and economic growth in thirty-three countries from 2010 to 2020, using cointegration tests and the panel vector error correction model (VECM) methodology associated with Wald testing approaches. The results of his study show that democracy has a positive effect on growth. Moreover, a long-run causality runs from democracy to real GDP, and the two variables are cointegrated. The results conclude that a well-functioning political system that enhances democratic accountability can contribute positively to a higher rate of economic growth.

[1] Several other works have studied the effect of institutional quality on technological innovation and adoption. We cite the work of Acemoglu and Robinson (2006), who show that the introduction of technological innovations depends on the nature of political institutions in a country, the stability of power of the political leaders in power, and the way in which these leaders perceive technological innovations. In a country with unstable rulers, they may see technological innovations as a threat to their hold on power. These leaders would then block technological innovations.

Similarly, Hussen (2023) analysed the effect of different dimensions of institutional quality indices on economic growth in 31 sub-Saharan African countries using a generalized method of moments over the period 1991-2015. Their results show that institutional quality, by promoting investment, has a positive and significant effect on countries' economic growth. According to the author, countries in the region need to pursue institutional reform in order to improve economic growth. Rekurd et al. (2024) using a DataStream database and an estimation method for the linear and moderation effects in Pakistan and the Kurdistan Region of Iraq over the period 1996 to 2021 found that political stability has a significant positive relationship with stock market performance and growth in Pakistan and the Kurdistan Region of Iraq. All these results suggest that a stable political environment is conducive to more sustained economic growth.

The experience of several countries that have undergone a change of political regime, notably the Arab Spring countries (Tunisia, Libya and Egypt) and some in sub-Saharan Africa, shows that a process of transition to democracy can be accompanied by political instability that undoubtedly threatens growth. This also suggests that the effect of democracy on growth depends on political stability.

2. Research Methodology

To analyse the direct and indirect influence of political instability and industry on economic growth, several authors have proposed various theoretical and empirical models that rival each other in relevance. Our main objective is to analyse the industrial contribution to economic growth in ECOWAS under the influence of political instability. To do so, we draw on the work and models of Kos à Mougnol & Kamajou (2016). In the neoclassical production function, the sources of growth are the accumulation of factors of production and improvements in total factor productivity. Drawing on the model of Kos à Mougnol & Kamajou (2016) and Gocer et al. (2016), we use the following functional form:

$$Y_{it} = f(IndVa_{it}, Institution_{it}, X_{it}) \quad i = 1, 2, \ldots N \; ; \; t = 1, 2, \ldots T \tag{1}$$

where: Y_{it} - rate of economic growth represented by GDP per capita, $IndVa_{it}$ - industrial value added as a percentage of GDP, $Institution_{it}$ - institutional variable and X_{it} - the vector of macroeconomic explicative variables designating a set of control variables.

In the following section, given the importance of political instability on economic activity, we will attempt to determine the threshold level at which it could worsen the effect of industrial performance on growth. So, to capture the fact that political instability conditions the effect of industrial performance on growth, we will proceed via an interaction mechanism that we have formalized by crossing the industrial variable and the political instability variable as follows: ($IndVa_{it}$ X $PoInstab_{it}$). Introducing this expression into equation (1) gives us:

$$Y_{it} = \alpha_0 + \alpha_1 Y_{it-1} + \alpha_2 IndVa_{it} + \alpha_3 PoInstab_{it} + \alpha_4 IndVa_{it} \times PoInstab_{it} + \alpha_5 X_{it} + \mu_{it} \tag{2}$$

where: $Instabpo_{it}$ represents political instability as measured by the totality of social and institutional unrest.

In our study, the vector of macroeconomic explicative variables X_{it} designating a set of control variables derived from the synthesis of theoretical and empirical literature likely to have an influence on the explained variable is composed of: Foreign direct investment as a percentage of GDP represented by Fdi_{it}, trade openness represented by $Tradop_{it}$, inflation represented by $Infl_{it}$ and the population of the age group 15 to 64 years, represented by Pop_{it}. Finally, by introducing these different variables into equation (2), our model to be estimated will take the following form:

$$\begin{aligned} Gdppc_{it} = {} & \beta_0 + \beta_1 Gdppc_{it-1} + \beta_2 IndVa_{it} + \beta_3 Fdi_{it} + \beta_4 Tradop_{it} + \beta_5 Infl_{it} + \beta_6 Pop_{it} \\ & + \beta_7 PoInstab_{it} + \beta_8 IndVa_{it} \times PoInstab_{it} + \mu_{it} \end{aligned} \tag{3}$$

Many different techniques are used to estimate panel data. Recent contributions on the determinants of industrial performance have been based on dynamic models. These models impose the homogeneity of coefficients, with the exception of the constant, which is supposed to capture specific effects. Following Kos à Mougnol & Kamajou (2016), these approaches are open to criticism. According to the latter, if a variable has a positive effect in one sub-sample of countries and a negative effect in the other sub-sample, forcing a single coefficient for the whole panel could result in a non-significant coefficient (flip-flop effect). It is reasonable to assume that the influence of political instability on industrial performance may differ from country to country. In this case, the estimation of a single coefficient for each explanatory variable will be affected by a serious heterogeneity bias (Pesaran & Smith, 1995). Since all these problems can affect the results, this study uses recent estimation methods

that allow for heterogeneity in the adjustment dynamics of variables towards the long run relationship. The estimators used in this method are Pooled Mean Group (PMG) estimator (Pesaran et al., 1999) and Mean Group (MG) estimator (Pesaran & Smith, 1995). The PMG estimator also makes it possible to take account of the dynamic nature of the phenomena studied, in the event of stationarity or non-stationarity of the series. It offers alternative specifications that remain robust in the event of variable stationarity. PMG estimator also has the advantage over the MG estimator of having good properties even when the sample size is small relative to time dimension (Hsiao et al., 1999). Following Pesaran et al. (1999), our eq. (3) can be estimated as an ARDL model as follows:

$$Gdppc_{it} = \sum_{j=1}^{p} \theta_{ij} Gdppc_{i,t-j} + \sum_{j=0}^{l} \delta_{ij}^{'} Z_{i,t-j} + \mu_i + \varepsilon_{it} \quad (4)$$

where, Z_i represents the explicative variables and μ_i country-specific effect. If the variables are cointegrated, then the error term is a stationary process.

A key feature of cointegrated variables is their responsiveness to any deviation from the long run equilibrium. This feature involves an error-correction model in which the short-term dynamics of system variables are influenced by the deviation from equilibrium. The model is re-specified as follows:

$$\Delta Gdppc_{it} = \phi_i Gdppc_{i,t-1} + \beta_i^{'} Z_{i,t} + \sum_{j=1}^{p-1} \theta_{ij} \Delta Gdppc_{i,t-j} + \sum_{j=0}^{l-1} \delta_{ij}^{'} \Delta Z_{i,t-j} + \mu_i + \varepsilon_{it} \quad (5)$$

The parameter ϕ_i is the error correction term. If $\phi_i = 0$, there is no long run relationship between the variables studied. We expect the parameter ϕ_i to be significant and negative. Equation (5) will be estimated from the above estimators. Estimation of equation (5) by the PMG model requires the long run coefficients to be identical for all countries under the assumption of long run convergence; $\forall i, \beta_i = \beta$. This condition is verified using a Hausman statistic measuring the difference between the constrained model estimator named Pooled Mean Group "PMG" and the unconstrained estimator Mean Group "MG". When the null hypothesis H0 is accepted, it is concluded that there is long-term convergence, and the PMG estimator is preferred to the MG estimator.

In our study of ECOWAS, we use a panel of 14 countries. To build our model, the different variables used are those deemed relevant for our various econometric and statistical analyses. These choices are also guided by data availability. We have limited ourselves to the period 1990-2018 because when we collected our data on political instability, for some countries it was limited to 2018. This study uses annual data from 14 ECOWAS countries (Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea Conakry, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo). For gross domestic product per capital (*Gdppc*), industrial value added as a percentage of GDP (*IndVa*), foreign direct investment as a percentage of GDP (*Fdi*), population aged 15-64 (*Pop*), inflation (*Infl*) and trade openness[2] (*PoInstab*), the data come directly from the World Bank Development Indicator (WDI, 2019). Data on political instability (*PoInstab*) are taken from the Heritage Foundation database and *Journal of Wall Street* (2019). The software used for the estimates is Stata 15.

The empirical analysis begins with unit root and cointegration tests. These tests are used to determine the order of integration of the variables, and then to assess the existence of a possible long-term relationship between them. Following these tests, we estimate the long run and short run coefficients using the PMG and MG estimators in a non-linear model and conclude by interpreting these results.

This test provides reassurance as to whether or not individuals (countries) are dependent. If there is dependence, then we go straight to the second-generation stationarity tests of Breitung & Das (2005), Pesaran (2007). Otherwise, we use the first-generation Fisher-type stationarity tests of Maddala & Wu (1999), Choi (2001).

Table 1. Independence test

Independence test of Breusch-Pagan	
chi2(91) = 198.683	p-value = 0.0000

Source: The authors based on data from WDI (2019), Heritage Foundation and *Journal of Wall Street* (2019).

[2] Author's calculation: this variable is determined by dividing the sum of exports and imports by the country's GDP; $Tradop_{it} = \frac{(X_{it} + M_{it})}{PIB_{it}} \times 100$

The *p-value* is less than 5%, so our series are dependent. We therefore proceed to second-generation tests to study the stationarity of our series.

There are several tests available for studying the stationarity of variables in panel data. In our study, we use the second-generation stationarity tests of Breitung & Das (2005) and Pesaran (2007). These results are summarized in Table 2 below.

Table 2. Stationarity test results

Variables	Breitung et Das (2005)		Pesaran (2007)	
	Level	First-difference	Level	First-difference
IndVa	0.0508 (0.5203)	-2.7625***	-1.830**	—
GDPs	-1.1441 (0.1263)	-6.7906***	-8.197***	—
Fdi	-2.6735***	—	-3.392***	—
Tradop	-0.5295 (0.2982)	-3.7039***	-0.571 (0.284)	-12.618***
Infl	-1.1550 (0.1240)	-6.6878***	-7.293***	—
Pop	6.9169 (1.0000)	-1.4513*	-3.535***	—
PoInstab	1.0057 (0.8427)	-5.3713***	1.930 (0.973)	-8.664***

Source: The authors based on data from WDI (2019), Heritage Foundation and Journal of Wall Street (2019). ***, **, *: denote degree of significance at 1%, 5% and 10% respectively.

In the Breitung & Das (2005) tests, only the variable *Fdi* is stationary in level. All other variables are stationary in first difference. On the other hand, for the Pesaran (2007) tests, it is the and variables *Tradop* and *PoInstab* that are stationary in first difference and the other variables stationary in level. Thus, in first difference, the null hypothesis of no unit root could be rejected for all the series in the analysis. The 2 (two) tests used confirm that the series are stationary (at 1%, 5% or 10%) from the first differentiation onwards. Consequently, the panel series are all integrated of order 1. Verification of the non-stationarity properties for all the panel variables then leads us to study the existence of a long run relationship between them, using cointegration tests. In effect, cointegration can be defined as a systematic long run co-movement between two or more economic variables (Yoo, 2006). In order to demonstrate this relationship and based on the results of the panel unit root test, it is important to carry out Westerlund's (2008) panel cointegration test.

The test of Westerlund (2008) is based on the error-correction model. It is assumed a priori that the data-generating process is an error-correction model. The test is performed on the parameter representing the speed of adjustment, i.e., the speed at which the system returns to equilibrium after a shock. If the parameter is less than zero, then there is an error correction, so the variables are cointegrated. However, if the speed of adjustment is zero, then we conclude that the variables are not cointegrated. The null hypothesis of no cointegration is evaluated by two groups of tests. On the one hand, there are the “group-mean tests” and the “panel tests”. Westerlund (2008) calculates four cointegration test statistics (*Ga*, *Gt*, *Pa*, *Pt*) based on the error-correction model.

The “group-mean test” is calculated from the weighted average of the estimated speed of adjustment for each country. The “panel test” is calculated using the estimated speed of adjustment of the entire panel. Note that these four statistics are normally distributed. Statistics *Gt* and *Pt* are calculated using standard deviations. *Ga* and *Pa* are calculated using the variance-covariance estimator of Newey & West (1994). The estimated standard deviation is calculated by correcting for heteroscedasticity and autocorrelation. The results of the Westerlund (2008) cointegration tests are shown in Table 3 below.

Table 3. Westerlund cointegration test results

Variables	Statistics			
	Gt	Ga	Pt	Pa
Gdppc and IndVa	-3.481 (0.000)***	-21.741 (0.000)***	-11.139 (0.000)***	-20.378 (0.000)***
Gdppc and Fdi	-3.738 (0.000)***	-21.906 (0.000)***	-12.145 (0.000)***	-21.571 (0.000)***
Gdppc and Tradop	-3.616 (0.000)***	-20.838 (0.000)** *	-14.067 (0.000)***	-19.937 (0.000)***

Variables	Statistics			
	Gt	Ga	Pt	Pa
Gdppc and Infl	-3.727 (0.000)***	-18.528 (0.000)***	-14.378 (0.000)***	-22.002 (0.000)***
Gdppc and Pop	-4.237 (0.000)***	-19.398 (0.000)***	-13.877 (0.017)***	-20.581 (0.000)***
Gdppc and PoInstab	-3.953 (0.000)***	-22.712 (0.000)***	-14.096 (0.000)***	-20.501 (0.000)***

Source: The authors based on data from WDI (2019), Heritage Foundation and Journal of Wall Street (2019).

The four statistics of the Westerlund (2008) cointegration test result reject the absence of cointegration at the 5% threshold. We therefore conclude that the variables are cointegrated.

3.Results and Discussion

We first present the estimation results, then the threshold level at which political instability alters industrial influence on growth, before concluding with an interpretation of the results.

In Table 5 below, we present the results of estimating the long run and short run effect of our explanatory variables. First and foremost, we perform the Hausman test, which will guide us in our choice of models based on the PMG or MG estimators. Analysis of the results of the Hausman test (Table 4) shows that the probability is greater than 5%, which leads us to interpret the results of the estimates based on the PMG estimators.

Table 4. Hausman test results

Hausman test	
chi2(8) = 6.27	Prob>chi2 = 0.5090

Source: The authors based on data from WDI (2019), Heritage Foundation and Journal of Wall Street (2019).

Table 5. Model estimation results

Variables *Gdppc*	PMG					
	Long run			Short run		
	Coef,	Std.Error	P>|z|	Coef,	Std.Error	P>|z|
IndVa	0.0195**	0.0080	0.015	0.0172	0.0188	0.360
Fdi	0.0103**	0.0042	0.015	0.0000	0.0007	0.923
Tradop	-0.0007	0.0018	0.698	-0.0004	0.0005	0.449
Infl	-0.0018	0.0011	0.125	0.0001	0.0002	0.455
Pop	0.1587***	0.0169	0.000	-0.0658***	0.0242	0.007
PoInstab	0.0428	0.0614	0.486	0.1578	0.1312	0.229
IndVa×PoInstab	-0.0052**	0.0025	0.036	-0.0096	0.0088	0.278

Source: The authors based on data from WDI (2019), Heritage Foundation and Journal of Wall Street (2019). ***, **: denote degree of significance at 1% and 5% respectively.

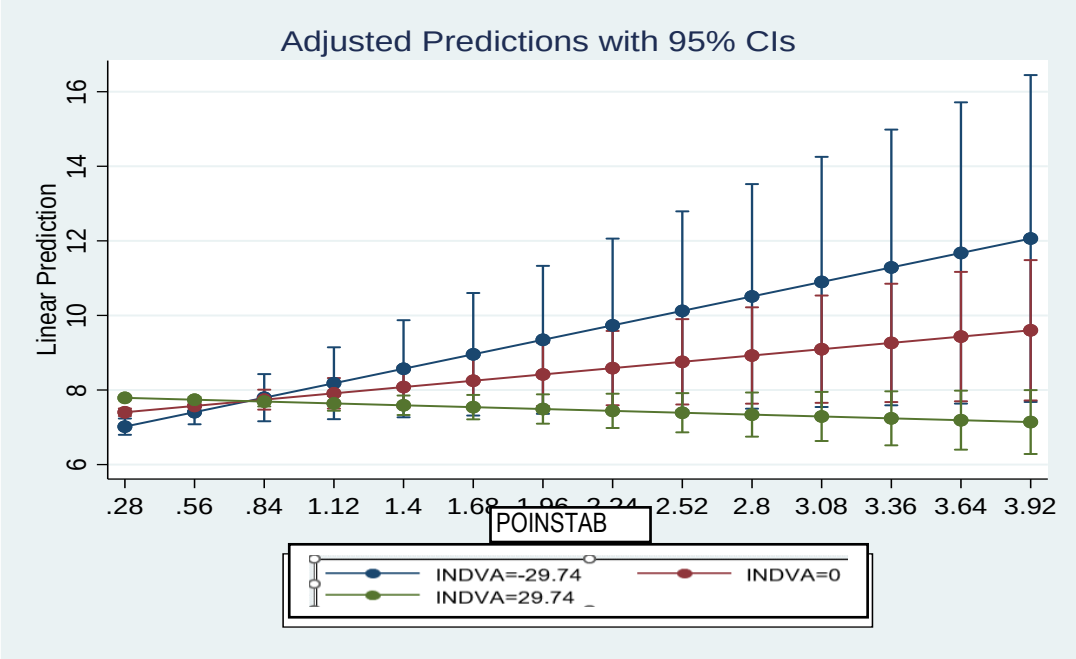
The results of our estimation, summarized in Table 5, show that in the long run, the *IndVa* and *Fdi* variables are significantly positive at the 5% level, while the crossover variable *IndVa x PoInstab* is significantly negative at the 5% level. The variable *Pop* is significantly negative at the 1% threshold in the short run and significantly positive at the 1% threshold in the long run. The positive and significant effect of industrial value added on GDP growth in ECOWAS countries means that industry would be a powerful growth lever in this zone.

The same observation is made for foreign direct investment, which would also be a powerful growth lever (Iritié & Tiémélé, 2023). The negative and significant influence at the 5% threshold that the cross *IndVa x PoInstab* variable has on GDP growth in the zone's countries, following the example of the work of Hosny (2016), shows that political instability negatively influences the effect of industry performance on GDP growth in ECOWAS.

The political atmosphere is unsuitable for industrial performance in ECOWAS and therefore undermines the sub-region's economic growth. The more unstable the political environment, the less the industrial sector develops.

Indeed, industrial activity flourishes best in a peaceful environment. However, the unstable political atmosphere in ECOWAS prevents multinationals and other international investors from choosing this destination. The effect of the variable *Pop* representing the population aged 15 to 64 being significantly negative at the 1% threshold in the short run and significantly positive at the 1% threshold in the long run means that the ECOWAS population could be a powerful factor for economic growth in the long run if the political atmosphere remains stable. Indeed, an unstable and unhealthy political atmosphere where populations are often driven to make demands or go on strike, accompanied by violence, destruction of infrastructure and work stoppages, has a negative impact on growth. Results in line with those of Doucouliagos & Ulubaşoğlu (2008).

Figure 1. Threshold level presentation



Source: The authors based on data from WDI (2019), Heritage Foundation and Journal of Wall Street (2019)

The graph above shows the threshold level below which political instability does not significantly deteriorate the contribution of industrial performance to the ECOWAS economy. Below this value, the political environment tends to stabilize, better favouring industrial activity. This threshold is 0.84% in our study. Above this threshold level, political instability worsens the effect of industrial performance in the ECOWAS economy.

Conclusion

In this study, we examined the effects of industrial activity on economic growth via political instability. This analysis enabled us to understand how political instability influences the contribution of industry to the ECOWAS economy. To do this, we used an endogenous growth model, drawing on the work of Kos à Mougnol & Kamajou (2016). We estimated a non-linear model in panel data with an interaction variable by crossing the industrial variable and the political instability variable. The study covers a sample of 14 ECOWAS countries, data estimated from PMG estimators covering the period 1990-2018. The results of our estimation show that political instability has a significant negative influence on the contribution of industry to growth in ECOWAS countries. Indeed, the more political instability increases and persists, the more detrimental it becomes to the performance of industrial activities in ECOWAS. However, there is a threshold level below which political instability does not significantly impair the contribution of industrial performance to the ECOWAS economy. This threshold is 0.84% in our study. These results suggest the need for decision-makers in ECOWAS countries to commit to strengthening the quality of their institutions in order to best accelerate the industrial development process of their economies. This study shows that the economic stakes remain high, but the responses that institutions provide to them must enlighten and respect social and environmental constraints, if they are to be part of the long term and contribute to a growth in current wealth that does not obliterate the choices of future generations. We therefore support the idea that for a region to develop, it needs both to improve its institutions, and that these are interrelated and function in a similar way in all the countries in the zone.

Our results are valid for the period 1990-2018. But under current conditions, if strong measures are not taken to ensure political stability in the West African region, political instability will continue to have a negative impact on the effect of industrial performance on GDP growth in the countries of this zone, even beyond 2018. The various military coups in Burkina Faso on September 30, 2022, in Guinea on September 5, 2021, in Mali on May 24, 2021, and in Niger on July 26 and 28, 2023 are examples of this.

Credit Authorship Contribution Statement

Tiemele Jean Baptiste, Ake Mathieu Adou and Kone Djakaridja contributed to all aspects of this research. Specifically, the conceptualization, design of the study, methodology selection, data collection, and formal analysis were carried out by the three authors. The research was conducted independently with no external funding.

Conflict of Interest Statement

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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