

Proposal for an article

Economic diversification in Africa: is political instability an obstacle?

by

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Abstract

Economic diversification remains a priority for many resource-rich developing countries, as it strengthens economic resilience. However, most of these developing countries, particularly the countries of the Central African Economic and Monetary Community (CEMAC), experience periods of political instability, which jeopardise their economic diversification process. The aim of this study is to assess the effects of political instability on the diversification of CEMAC economies. The results of the Dynamic Least Squares (DOLS) estimation, on annual data covering the period 1996 to 2020, reveal that political stability has a positive effect on economic diversification. In view of this result, we have suggested that policymakers should improve the business climate and strengthen governance.

Keywords: Economic diversification, political instability, DOLS.

JEL codes : P49, D74, C13.

Introduction

Economic diversification¹ remains a challenge for developing countries in general, and in particular for those whose economies are dependent on primary products (Brenton and al., 2019). For more than two decades, it has been considered an important issue for both national and regional trade and industrial policies (Berthélemy, 2005).

However, the failure of the import-substitution industrial policies implemented by these countries, particularly those of the Central African Economic and Monetary Community (CEMAC), has led to a strong concentration of their economies around the oil, mining and agricultural sectors. However, due to downward fluctuations in raw material prices and other shocks, these economies are exposed to a high degree of economic vulnerability. International organizations (the International Monetary

¹ Here, we are referring to the diversification of production and exports.

Fund and the World Bank) therefore recommend that resource-rich countries diversify their economies to improve their resilience.

To this end, economic diversification has attracted a great deal of interest in the economic literature. A review of this literature highlights income (Imbs and Wacziarg, 2003; Swathi and Sridharan, 2022), human capital (Lashitew and al., 2021), investment (Jolo and al., 2022), foreign direct investment (Espoir, 2020) and the exchange rate (Diop, 2019) as factors likely to initiate the diversification process. Mattalah (2020) shows that poor governance, lack of economic incentives, structural rigidities, misguided macroeconomic policies and inward-looking trade strategies are obstacles to economic diversification.

At the same time, some authors have observed that the most diversified economies are those with strong institutions, democratic regimes and a stable political climate. These elements have the advantage of attracting more of the investment needed for diversification. In resource-rich developing countries, however, the process of economic diversification is likely to fail because of political instability. Indeed, political instability, by affecting economic activity, could compromise the implementation of a policy of economic diversification due, on the one hand, to the pursuit of rents to ensure the survival of the political elite. This rent, which only benefits the self-interested political elite, jeopardizes the well-being of the population. On the other hand, political instability creates uncertainty, the consequence of which is the crowding out of potential investors for the success of a policy of economic diversification.

Thus, the low level of diversification in resource-rich countries may be due to political instability, suggesting a relationship between economic diversification and political instability. However, in the literature, this relationship is not really documented (Ross, 2017, Ríos, 2016 and Dunning, 2005). With this in mind, we attempt to shed some light on the issue. For, it seems, political instability, while contributing to the poor performance of economies, can nonetheless explain the low level of diversification in resource-rich countries.

Theoretically, the relationship between political instability and diversification can be viewed from two perspectives. The first point of view, which brings together the theories of public choice (Buchanan and Tullock, 1962) and the curse of natural resources (Le Billon, 2001; Collier and Hoeffler, 2005), shows that the pursuit of rents compromises the process of economic diversification (Brenton and al., 2019). As for the second point of view, based on analyses relating to uncertainty, economic diversification fails due to the uncertainty created by political instability, which leads to an investment crowding-out effect. On the other hand, diversification depends on private domestic and foreign investment.

However, empirical work on the relationship between diversification and political instability is almost non-existent. Existing works, notably those by Hammouda and al. (2006) and Clark and al. (2016), show that political instability, in the form of violence and civil conflict, hinders economic diversification. To this end, the paucity of work shows that there is a gap in the literature around the relationship between political instability and economic diversification both theoretically and empirically.

This void constitutes an important element for investigations in developing countries such as the CEMAC countries. This work, which aims to fill this gap, will provide an answer to the failures of diversification policies implemented by CEMAC countries. It therefore seeks to answer the following question: what are the effects of political instability on the diversification of the economies of CEMAC countries?

The CEMAC countries, rich in natural resources but subject to political instability that delays their development, appear to be an interesting field of investigation for at least three reasons. Firstly, most CEMAC countries, with the exception of Cameroon, have poorly diversified economies, heavily dependent on primary products such as oil. According to data from the United Nations Conference on Trade and Development (UNCTAD, 2023), the concentration indices of these countries will tend towards 1 in 2022 (0.60 for Congo; 0.56 for Gabon; 0.58 for Equatorial Guinea and 0.66 for Chad). The indices for Cameroon and the Central African Republic are around 0.36 and 0.31 respectively.

Over the years, this concentration of economies has prompted some countries to diversify their economies by drawing up diversification strategies included in the regional economic program (2015-2019) and in their various national development plans. Examples include Cameroon's Growth and Employment Strategy Paper (DSCE); Congo's national development plans (PND 2012-2016; 2018-2022; 2022-2026); Gabon's Plan Stratégique Gabon Emergent; Equatorial Guinea's national economic and social development plan (PNDES 2008-2020) and Chad's national development plan (PND 2017-2021), the fundamental aim of which is to build a diversified economy in each country. However, despite these diversification initiatives, these policies have not provided these countries with a solid economic base. In other words, they have failed to build diversified economies in CEMAC.

Secondly, the low level of foreign direct investment attractiveness of CEMAC countries is an obstacle to the success of the diversification policy. In this respect, data from UNCTAD (2021) show the volatile nature of CEMAC's share of global FDI. We note that its share of global FDI flows was 0.51% in 2018, 0.46% in 2019 and 0.73% in 2020. The majority of this FDI is channeled into the natural resources sector. This contributes to the low level of diversification in some CEMAC countries.

Finally, CEMAC is particularly marked by political instability and a volatile security environment. In the post-independence period, these countries witnessed a series of ethnic conflicts and coups d'état, which led to severe economic consequences. According to data published by the Center for Systemic Peace (CSP, 2021), from 1960 to 2020, CEMAC countries suffered 58 coups d'état with a frequency of 0.43. The most troubled countries were Chad, Congo, Central African Republic, Equatorial Guinea, Cameroon and Gabon, with 18, 13, 11, 8, 6 and 2 coups d'état. Cameroon has only experienced one attempted coup d'état, and is facing tensions in its English-speaking area. These various coups d'état are said to have had an impact on the process of economic diversification in these countries.

The current situation of political instability is largely due to the activities of terrorist groups in the Lake Chad Basin (which includes northern Cameroon, western Chad, southeastern Niger and northeastern Nigeria), as well as several conflicts over the

control of natural resources and post-election unrest. These various conflicts have led to massive population displacements and an influx of refugees. Insecurity is therefore an obstacle to the development of the CEMAC countries, and is only increasing in certain parts of the sub-region.

The aim of this article is to assess the effects of political instability on the diversification of the economies of CEMAC countries. It is argued that political instability has a negative effect on economic diversification. In addition to the introduction, the paper is structured around a literature review, methodology, results and conclusion.

1. Brief review of the literature on the relationship between political instability and economic diversification

In this section, a number of theories, theoretical arguments and empirical works have been identified to demonstrate the link between political instability and economic diversification.

1.1. Political instability and economic diversification: the quest for income

The relationship between political instability and diversification can be understood in terms of rent-seeking. In this context, two theories show how rent-seeking is the channel through which political instability affects economic diversification. Firstly, based on public choice theory (Buchanan and Tullock, 1962), which states that politicians prioritize political benefits over social ones, it can be argued that by seeking to maximize their chances of being re-elected to power, political decision-makers have less chance of implementing development plans such as economic diversification. Indeed, economic diversification may well pose a threat to certain actors who maximize their income through rents from natural resources such as oil (Matallah, 2020).

However, in rentier economies, diversification is paramount, as natural resource wealth is often concentrated in the hands of relatively small groups who seek to preserve their own privileges by obstructing economic diversification (Gylfason, 2005). These small groups, which can be described as pressure groups, act to ensure that investments are only directed into sectors that reinforce concentration rather than diversification. The elites will therefore be obliged to fight to retain their power while abusing political power for personal gain, and to block the diversification process that could prevent them from benefiting from oil revenues.

Secondly, if we accept that the abundance of natural resources leads to rent-seeking by armed groups (Basedau and Lacher, 2006), the natural resource curse theory (Le Billon, 2001) can account for the effect of political instability on economic diversification. Indeed, the abundance of natural resources provides an incentive for rebels to finance their activities, as oil revenues are easy to capture. Capturing rents from the sale of raw materials leads to power struggles that destabilize economic activity in resource-rich countries. The destabilization of economic activity leads to a fall in growth and, consequently, a reinforcement of specialization. This assertion can be supported by the argument put forward by Hammouda and al. (2006), who show that political violence and civil conflict, by slowing economic growth, are detrimental

to diversification. Similarly, Le Billon (2001) argues that the relationship between lack of diversification and the occurrence of war is endogenous, in the sense that in commodity-exporting countries, the risk of war is increasingly recurrent. This can be explained by the fact that ruling elites are faced with a dilemma that requires them to choose between economic efficiency and political survival.

By choosing economic efficiency, leaders increase the probability of being ousted from power by their own supporters, especially when they refrain from excessive public spending, distribute natural resource rents more equitably and save for future generations (Ahmadov, 2012). On the other hand, the choice of political survival, i.e. distributing rents among supporters, enables political leaders to strengthen and prolong their reign by establishing a regime organized by a system of clientelism that penalizes economic development. In this respect, the short-term rents derived from resources and their allocation to consolidate political survival provide little incentive for leaders to develop a diversified economy that could lead to alternative sources of economic power that reinforce the politics of competitors. Likewise, they can dissuade political decision-makers from supporting long-term growth by diverting necessary investment, and are often linked to increased internal conflict. All this has a negative impact on diversification.

With this in mind, and with the aim of testing the impact of oil rents on economic growth by examining the main causes of the resource curse phenomenon in oil-rich MENA² countries, on the one hand, and studying the role of governance in transforming oil rents into a tool for economic diversification, on the other, Matallah (2020) uses four estimators, including ordinary least squares (OLS), fixed effects, random effects and the method of generalized moments over a period from 1996 to 2017. In his first estimate, he finds that growth is strongly and positively influenced by oil rents. In his second estimate, the results show that governance is a key ingredient in diversification. Whereas oil rents hinder diversification by favoring rent-seeking activities. Thus, he concludes that these countries need to improve good governance capabilities to escape the natural resource curse, as this offers more opportunities for diversification.

Furthermore, focusing on the sectoral orientation of foreign direct investment during periods of political instability covering quarterly data from 2003 to 2012, MENA countries, Burger and al. (2015) find, using four estimation methods (ordinary least squares, method of generalized moments, Han-Phillips estimator, least squares dummy variable bias-corrected estimation method), that political shocks are associated with a reduction in investment in non-resource sectors but increase dependence in resource-related sectors. This dependence leads to a concentration of the economy in natural resources, resulting in low diversification.

Similarly, Ríos (2016), using a subnational data panel of thirteen criminal organisations in Mexico, shows that the increase in criminal presence and violent crime reduces economic diversification, increases sectoral concentration and

² Algeria, Bahrain, Iran, Iraq, Kuwait, Libya, Oman, Qatar, Saudi Arabia, United Arab Emirates and Yemen.

decreases economic complexity. These results were obtained using the double least squares method over a period from 1991 to 2010.

1.2. Political instability and economic diversification: uncertainty in decision-making

Economic agents' uncertainty in decision-making may explain the relationship between political instability and diversification. Political instability has negative effects on productive economic decisions such as investment, production or labor supply (Alesina and al., 1992). The increase in uncertainty brought about by this instability has a strong impact on the future evolution of economic policies, the security of property rights, the productivity of capital inflows and the flow of financial funds from abroad (Carmignagni, 2003). Similarly, the risk aversion of economic agents can prevent them from making important economic decisions or encourage them to invest abroad. This can reduce investment and delay the pace of economic development, as foreign investors prefer to invest in a stable political environment with less uncertainty over property rights. Reducing such investment is detrimental to economic diversification, since the latter depends on both domestic and foreign private investment, which requires good quality institutions (Karshenas and Hakimian, 2005).

Moreover, following the same logic as Alesina and al. (1992), when political instability is seen as a change of government, it is clear that an increase in the propensity to change government reduces uncertainty. This reduction in uncertainty can be seen as an opportunity for economic agents, particularly foreign investors. This can be explained by the fact that potential successors to the current government are seen as individuals capable of improving the economic situation. This improvement is made possible through the development of sound policies conducive to the attraction of foreign direct investment (FDI), and thus to economic diversification.

However, it should be pointed out that there is very little research showing how political instability, through uncertainty, affects economic diversification. To make up for this shortcoming, the results of work on governance and the quality of institutions in relation to diversification are presented. For, to a certain extent, governance and the quality of institutions can be indicative of the economic and political environment prevailing in a country.

To this end, Hammouda and al. (2006), based on an analysis of factual data from 1996 to 2001 from a sample of 18 African countries, find that governance has a strong influence on diversification in that good governance enables economies to enhance diversification, while conflict leads to a reduction in diversification capacity. In the same vein, Clark and al. (2016), in assessing the role of governance indicators in the different stages of diversification, argue that political stability, regulatory quality and control of corruption are very important at all stages of economic diversification. On the other hand, they confirm that political instability, poor regulatory quality and corruption are obstacles to economic diversification. To arrive at these results, the authors used the Ordinary Least Squares (OLS) method for the period 1963 to 2009, covering 29 African countries.

With a view to providing an answer to the lagging economic diversification of some resource-rich countries, Ahmadov (2012), using data from 1962 to 2010 from 58 developing countries, tests several hypotheses on the political and institutional rather than purely economic and geographical factors that promote or hinder export diversification. Using random-effects regression and generalized least squares (GLS) estimators, he finds that ethnic fractionalization, whether accompanied by conflict or not, has a significant negative impact on diversification. He then deduces that the international institutions set up to enable these countries to escape the resource curse through diversification are only effective if they take account of the political and institutional framework.

Finally, analyzing the effects of institutional quality on economic diversification in CEMAC countries, Loubassou Nganga (2021), using data covering the period 1995 to 2019 and the Pooled Mean Group (PMG) technique, finds that in the short term, corruption control and political stability significantly affect diversification in Congo and Equatorial Guinea respectively. In the long term, however, corruption control has a positive impact on diversification, while political stability has a negative effect on diversification.

2. Some lessons learned

A review of the supra-mobilized literature leads to three comments. First, the relationship between political instability and diversification has not been the subject of an abundant theoretical literature. To fill this gap, we transpose the theories of public choice and the curse of natural resources into this framework, on the assumption that the pursuit of rents by both political elites and armed groups obliterates the success of a policy of economic diversification. This can be explained by the investment crowding-out effect created, for example, by the uncertainty resulting from political instability.

Secondly, from an empirical point of view, the works cited use different methodologies and arrive at different results. However, they all admit that political instability and conflict are an obstacle to diversification. On the other hand, political stability accompanied by good governance is conducive to diversification.

Finally, the above two lessons show that the relationship between political instability and economic diversification is still relevant in the context of the resource-rich CEMAC countries. And only empirical analysis can provide the answers. We therefore propose to assess the effects of political instability on economic diversification in the case of CEMAC countries, where no study has ever been carried out on this theme.

3. Methodology

The effects of political instability on economic diversification will be assessed using a statistical and econometric approach. Thus, this section is subdivided into two points: the first presents the theoretical model and the second is devoted to the presentation of the variables used in this research as well as their description.

3.1. Presentation of the theoretical model

The theoretical model is based on the Ndinga and al. (2017) model, which is an extension of the Rajkumar and Swaroop (2002) model. This model states the idea that a good investment policy leads to diversification. The model is presented as follows:

$$div_{it} = [e^{X_{it}}][CH_{it}]^{\alpha} \left[\left(\frac{inv}{pib} \right)_{it} \right]^{\beta} \quad (1)$$

where $\alpha > 0$; $\beta \geq 0$

With div_{it} : the level of diversification of country i in period t ;

inv_{it} : the level of investment made by country i in period t ;

CH_{it} : the level of knowledge in country i at period t ;

X_{it} : all factors specific to country i in period t.

The first relationship is that the diversification of an economy increases as the level of knowledge increases, increases with the proportion of resources devoted to diversification activities, and depends on other specific factors.

By linearizing equation (1), we obtain the following:

$$\begin{aligned} \ln(div_{it}) &= \ln[e^{X_{it}}] + \ln[CH_{it}]^{\alpha} + \ln\left[\left(\frac{inv}{pib}\right)_{it}\right]^{\beta} \\ \ln(div_{it}) &= X_{it} + \alpha \ln(CH)_{it} + \beta \ln\left(\frac{inv}{pib}\right)_{it} \end{aligned} \quad (2)$$

We assume that X_{it} is determined by the political stability indicator (Polstab) and the degree of openness of the economy (DOE). We pose :

$$X_{it} = \omega_0 + \omega_1 Polstab_{it} + \omega_4 DOE_{it} + \varepsilon_{it} \quad (3)$$

Replacing (3) in (2), the model is written :

$$\ln(div_{it}) = \omega_0 + \omega_1 Polstab_{it} + \omega_2 (CH)_{it} + \omega_3 \left(\frac{inv}{pib}\right)_{it} + \omega_4 DOE_{it} + \varepsilon_{it} \quad (4)$$

Given the availability of data on the variables that determine diversification, we will replace CH by value added in the extractive industries (VAIEX) et $\frac{inv}{pib}$ by FDI. Also, $\ln(div_{it})$ is replaced by the export concentration index (CI). Thus, the model for estimation purposes is written as follows :

$$CI_{it} = \omega_0 + \omega_1 Polstab_{it} + \omega_2 VAIEX_{it} + \omega_3 IDE_{it} + \omega_4 DOE_{it} + \varepsilon_{it} \quad (5)$$

Drawing on the work of Loubassou Nganga (2021) on the CEMAC zone, we will estimate two models. The first model will use the Kaufmann et al. (2010) indicator as a measure of political stability, in order to verify the results of Loubassou Nganga (2021). This model is translated by equation 5 above. In the second model, we replace the political stability indicator with that of coups d'état (CE). This model is as follows:

$$CI_{it} = \omega_0 + \omega_1 CE_{it} + \omega_2 VAIEX_{it} + \omega_3 IDE_{it} + \omega_4 DOE_{it} + \varepsilon_{it} \quad (6)$$

3.2. Variable presentation and data description

The data used in this work were collected from the World Bank database, notably the World Development Indicators (WDI, 2022) and the Worldwide Governance Indicators (WGI, 2021), as well as from UNCTAD (2021) and CSP/INSCR (2021). These data cover the period from 1996 to 2020 for the first estimate, and from 1995 to 2020 for the second estimate.

The variables used in our estimates were chosen on the basis of the literature. The export concentration index (CI) variable, our explained variable in both models, measures the sectoral concentration of a country's exports. This is the Herfindahl-Hirschman index. This variable has been used as a measure of diversification by a number of authors, such as Ahmadov (2012).

Our variables of interest are the indicator of political stability and absence of violence (Polstab) and the indicator of coups d'état. The political stability indicator was chosen as a measure of political instability because it is derived from the most widely used work developed by Kaufmann and al. (2010). It measures the perceived likelihood of political instability and/or politically motivated violence, including terrorism. It takes into account several instability events, such as government stability, internal and external conflicts, ethnic tensions, demonstrations, riots and the threat of terrorism. Indeed, when there is political instability, the result is a reduction in investment or an orientation of FDI towards the natural resources sector; this increases concentration, and therefore low diversification. On the other hand, a more stable country favors the entry of investment into its territory, which could stimulate diversification. This indicator was used in the work of Loubassou Nganga (2021).

The coup d'état (CE) indicator, on the other hand, measures the probability of a government in power being overthrown or replaced by force. This indicator is a binary variable which takes the value 1 if there has been a coup d'état and 0 if there has been none.

The control variables are the value added of the extractive industries (VAIEX), FDI and the degree of openness of the economy (DOE). The value added of extractive industries measures the share of extractive activities in GDP. Natural resources have been assimilated as an element that is not favorable to diversification, since according to the literature, they provide less incentive for elites to diversify their economies, especially if the country has large reserves of natural resources. This variable was used by Matallah (2020).

FDI represents foreign direct investment inflows expressed as a percentage of GDP. FDI provides the impetus for a country to diversify its economy in the form of spin-offs, while modifying its export basket. This variable was incorporated into the equation used by Moussir and Tabit (2016) in their work on economic diversification.

The degree of openness of the economy, approximated by the ratio of the sum of exports and imports to GDP, is a measure of foreign trade that indicates external dependence. Trade openness can play an important role in the diversification process, provided that governments set aside the main obstacles to business development. This variable was used as a control variable by Clark and al. (2016).

As a preliminary to estimating our models, we urgently need to carry out a descriptive analysis of the selected variables. The results of this analysis, recorded in Table 1, show that the average concentration index for all CEMAC countries is 0.64, or 64%. This average proves that these countries are poorly diversified, as it is close to 1. And the difference between countries is around 0.18, with a maximum (corresponding to the highest value achieved during the period) and minimum (lowest level achieved during the period) of 0.92 and 0.29 respectively. In addition, the level of political instability averages -0.757, and is below zero for most countries, such as Cameroon, Congo, Central African Republic and Chad.

With an average of 37.949%, value added in the extractive industries varies between 7.514% and 77.881%, with a difference of 18.647% between countries. Average FDI is 6.214%, fluctuating between -7.867% and 72.792%. Lastly, the CEMAC countries have an average degree of economic openness of 41.455%. The minimum value of 14.369% is attributed to the Central African Republic, while the maximum value of 90.282% is attributed to the Congo, as it imports a large quantity of manufactured goods as well as foodstuffs.

Table 1: Descriptive statistics

Variables	Observations	Means	Standard deviations	Minimum	Maximum
CI	150	0.6414611	0.1803021	0.2865642	0.9231956
Polstab	150	-0.7577741	0.7607084	-2.699193	0.6365217
VAIEX	150	37.9497	18.64746	7.514898	77.88149
FDI	150	6.214659	10.88683	-7.867775	72.79253
DOE	150	41.45545	19.17695	14.36928	90.2829

Source: Authors based on data from WDI (2022), WGI (2021), UNCTAD (2021) and CSP/INSCR (2021)

4. Presentation, interpretation and discussion of results

As a prelude to interpreting and discussing the results, it is urgently necessary to present the results of our estimates.

4.1. Model estimation and results presentation

Estimation of our two models requires an analysis of the stationarity of the variables, in order to justify the estimation method and verify the existence of a cointegrating relationship. Among existing stationarity tests, we have selected those of Levin, Lin and Chu (2002), Im, Pesaran and Shin (2003) and Hadri (2000).

Indeed, the test of Levin, Lin and Chu (2002) allows us to verify the null hypothesis of the presence of the unit root by not taking into account the problem of autocorrelation of the residuals. However, the limitation of this test lies in the non-

validation of the alternative hypothesis of a homogeneous autoregressive root in the event that the null hypothesis is not accepted.

However, to overcome this shortcoming, the tests of Im, Pesaran and Shin (2003) and Hadri (2000) are justified. Under the alternative hypothesis, these two tests allow not only heterogeneity in the autoregressive root, but also heterogeneity in the presence of a unit root in the panel (Hurlin and Mignon, 2005). However, in the presence of breaks in the data, the Im, Pesaran and Shin (2003) test is no longer appropriate. In this case, we refer to Hadri's test (2000). This differs from the first two tests in that it is based on the null hypothesis of stationarity.

The results of these different tests, presented in Table 2, show that all the variables (CI, Polstab, VAIEX, FDI DOE) are stationary in first difference, whatever the test considered.

Table 2: Stationarity of variables

Variables	Test	Statistics in level	P-value	Statistics in first difference	P-value	Integration degree
CI	LLC	-0.2121	0.4160	-4.8269	0.0000	I(1)
	IPS	-0.6783	0.2488	-6.0850	0.0000	I(1)
	Hadri	9.0086	0.0000	-1.2262	0.8899	I(1)
Polstab	LLC	-0.1686	0.4331	-7.4263	0.0000	I(1)
	IPS	0.1488	0.5592	-7.3825	0.0000	I(1)
	Hadri	18.3684	0.0000	-0.7239	0.7655	I(1)
VAIEX	LLC	0.1056	0.5421	-6.6719	0.0000	I(1)
	IPS	-0.0929	0.4630	-7.1288	0.0000	I(1)
	Hadri	12.2641	0.0000	-0.0460	0.5183	I(1)
FDI	LLC	-1.6092	0.0538	-5.1943	0.0000	I(1)
	IPS	-1.4025	0.0804	-8.0248	0.0000	I(1)
	Hadri	12.3300	0.0000	-1.2894	0.9014	I(1)
DOE	LLC	-1.3059	0.0958	-4.8508	0.0000	I(1)
	IPS	-1.0114	0.1559	-5.8349	0.0000	I(1)
	Hadri	15.0584	0.0000	-1.1654	0.8781	I(1)

Source: Authors based on data from WDI (2022), WGI (2021), UNCTAD (2021) and CSP/INSCR (2021).

To verify the existence of a cointegrating relationship, we referred to the cointegration tests proposed by Pedroni (1999, 2004). These take heterogeneity into account in the cointegration relationship. The results of these tests reveal that the statistics of four tests, two of which are for the within dimension and two for the between dimension, are significant, since their respective probabilities are less than 5%. By deduction, we can conclude that there is a long-term relationship between the dependent variable and its explanatory variables.

Table 3: Pedroni's cointegration test results

Panel refers to the within dimension				
	Statistics	Probability	Statistics	Probability
Panel v-Statistic	-0.3824	0.6489	-0.2315	0.5915
Panel rho-Statistic	-0.4442	0.3284	-0.2461	0.4028
Panel PP-Statistic	-3.3626	0.0004	-3.1752	0.0007
Panel ADF-Statistic	-1.9663	0.0246	-2.3739	0.0088
Group refers to the dimension between				
	Statisticss	Probability		
Group rho-Statistic	0.3398	0.6330		
Group PP-Statistic	-4.0448	0.0000		
Group ADF-Statistic	-2.2703	0.0116		

Source: Authors based on data from WDI (2022), WGI (2021), UNCTAD (2021) and CSP/INSCR (2021).

The various tests carried out show that estimating our models requires an efficient estimation technique in order to avoid obtaining prohibited results. This is because, when using the OLS technique, there is the possibility of obtaining non-convergent estimators that can be explained by the asymptotically skewed distribution associated with the presence of serial autocorrelation in the data (Kao and Chen, 1995; Pedroni, 1996 and Kao and Chiang, 2000). These existing problems are also observed in panel data and, in the presence of heterogeneity, are even more pronounced (Kao and Chen, 1995).

The correction of these bias problems involves the use of various estimation techniques, notably the FM-OLS (Fully Modified Ordinary Least Squares) method of Phillips and Hansen (1990), the Dynamic Ordinary Least Squares (DOLS) method of Saikkonen (1991) and that of Stock and Watson (1993). But, in the presence of small finite samples, Kao and Chiang (2000) have shown that OLS estimation presents a significant bias problem. Nevertheless, FM-OLS estimators do not lead to substantial improvements. Thus, the DOLS estimator turns out to be the most efficient technique for estimating cointegrating relationships on panel data (Kao and Chiang, 2000).

The DOLS approach, adapted by Kao and Chiang (2000) and Mark and Sul (2003) in the case of panel data, is a technique that involves including leading and lagging values of the explanatory variables in the model in order to eliminate the correlation between the explanatory variables and the error term. This approach is appropriate for this article, given the relatively small number of individuals (6 countries) and observations (26 years). Estimation of the model using the DOLS approach yielded results that are summarized in Table 4 below.

The results show that the coefficient of determination, i.e. the R², is 0.5394, implying that the exogenous variables explain 53.94% of the variability in the level of diversification. The variable of interest, political stability (Polstab), has a negative and significant coefficient at the 1% threshold. This means that when we move from instability to stability, the concentration index falls and, consequently, the economy diversifies. This result confirms that obtained by Clark and al. (2016), who show that political stability is important at all stages of diversification. On the other hand, it contradicts the results of Hammouda and al. (2006), who found that conflict reduces a country's ability to diversify its economy. Similarly, this result runs counter to the findings of Loubassou Nganga (2021), who revealed that political stability has a negative effect on diversification in the CEMAC.

Of the control variables (value added of extractive industries, FDI and degree of openness of the economy), only the variable value added of extractive industries (VAIEX) has a significant coefficient at the 1% threshold. This avoids a carry-over effect on the variable of interest. The results suggest that the extractive industries reinforce the concentration of the CEMAC economies and, therefore, reinforce their low level of diversification.

Table 4: Estimation results for the first model

Variables	Coefficients	Standard deviations	Statistical tests	Probability
Polstab	-0.228449	0.040656	-5.619043	0.0000***
VAIEX	0.012036	0.002774	4.338993	0.0001***
FDI	0.002029	0.005810	0.349240	0.7282
DOE	0.000720	0.003262	0.220790	0.8261

Lead=1, lag=1, R²=0,539408

Source: Authors based on data from WDI (2022), WGI (2021), UNCTAD (2021) and CSP/INSCR (2021).

Note: ***, ** and * indicates significant coefficients at the 1%, 5% and 10% levels, respectively.

The second estimation consists in substituting the indicator of political stability with that of coups d'état, in order to confirm our initial results. After estimating this model, the results shown in Table 5 below show that variation in the independent variables explains 93.18% of the variation in diversification. We can therefore see that coups d'état have no influence on the ability of CEMAC countries to diversify their economies. This is because the coefficient is not significant. This can be justified insofar as coups d'état only take place over a short period of time. And, between the political stability indicator and the coup d'état indicator, the political stability indicator gives better results because it includes other aspects of political instability such as government stability, internal and external conflicts, ethnic tensions, demonstrations, riots and the threat of terrorism. Hence the economic interpretation to be made in the following section will be based on our initial results.

Table 5: Estimation results for the second model

Variables	Coefficients	Standard deviations	Statistical tests	Probability
CE	0.037288	0.100672	0.370388	0.7128
VAIEX	0.006380	0.002038	3.130595	0.0030**
FDI	-0.001428	0.002045	-0.698017	0.4887
DOE	0.000674	0.002227	0.302594	0.7636

Lead=1, lag=1, R²=0,931869

Source: Authors based on data from WDI (2022), WGI (2021), UNCTAD (2021) and CSP/INSCR (2021).

Note: ***, ** and * indicates significant coefficients at the 1%, 5% and 10% levels, respectively.

4.2. Interpretation and discussion of results

The estimation results, which show that political stability has a positive effect on the diversification of CEMAC economies, can be interpreted as follows: *"political stability is an important factor for the diversification of CEMAC economies"*.

This result can be justified on the basis of the following arguments. Firstly, political stability creates a favorable environment for attracting both domestic and foreign investment, which in turn stimulates the private sector. Secondly, it provides the impetus for a country to develop its business environment, and thirdly, to improve governance.

Both domestic and foreign investment make a major contribution to increasing the productivity of new economic sectors (Hammouda and al., 2006). However, the majority of investments in Africa, particularly in the CEMAC region, only take place in landlocked areas where sectors are concentrated (Ofa and al., 2012). For example, in most CEMAC countries such as Cameroon, Congo, Gabon, Equatorial Guinea and Chad, the bulk of investment is in the oil sector. In the Central African Republic, on the other hand, logging and mining are sectors that attract a large proportion of investment.

However, the remainder of investment in these countries has been in the telecoms and banking sectors, which have boosted the private sector. Despite some investment in sectors other than oil, and some improvements to stimulate the private sector, it remains underdeveloped. According to data from the Banque des Etats de l'Afrique Centrale, between 2008 and 2014, its contribution to real growth fell from -0.2% to 1.8%. This weak development of the private sector cannot effectively contribute to economic diversification, despite the presence of a stable political environment.

On the subject of the business climate, we note that sub-Saharan Africa is considered one of the worst-performing regions in terms of the ease of doing business. By way of illustration, the Doing Business (2020) report reveals that the cost of obtaining a permanent electricity connection to the grid is three times higher than the world average, and 52 times higher than in high-income OECD countries. Also, to complete export customs formalities for maritime transport in Cameroon, for example, takes over 200 hours. In addition, the same source shows that out of 190 countries, CEMAC countries rank lower in terms of business climate than other countries in the African region, such as Mauritius and Rwanda. Cameroon is in 167th place, followed by Gabon in 169th place, Equatorial Guinea in 178th place, Congo in 180th place, Chad in 182nd place and the Central African Republic in 184th place. This ranking shows that it is still difficult to do business in these countries. Such an environment is not conducive to the development of activities capable of reducing the concentration of economies. Improving the business climate therefore remains a challenge for CEMAC countries, to enable the private sector to fully play its role as an engine of growth and job creator.

The final explanation relates to improved governance. It should be stressed that political stability implies government stability. Good governance contributes favorably to a business environment where non-oil sectors have the capacity to develop, making a major contribution to export earnings and national economies (OECD/United Nations, 2011). In this respect, governments have a major role to play in the economy insofar as effective governance is likely to influence the business climate and investment attractiveness. According to Clark and al. (2016), governments have an obligation to collect information from the private sector in order to understand the constraints and business opportunities it faces. This will enable governments to engage in strategic coordination to better implement and monitor policy interventions. However, we note that CEMAC countries are characterized by weak governance, as the various indicators of Kaufmann and al. (2010) are below zero. A successful diversification policy therefore requires good governance, for example, in the fight against corruption. This improvement in governance could go hand in hand with a strengthening of democracy.

5. Conclusion

Economic resilience, which refers to a country's ability to adapt and survive in the face of unforeseen economic shocks or challenges, depends on the degree of diversification of its economies. To this end, economic diversification has become a priority for the CEMAC countries, which are rich in natural resources. However, this economic diversification risks being compromised by, among other things, the political climate prevailing in these countries. The aim of this research was therefore to assess the effects of political instability on economic diversification. To this end, using annual data covering the period 1996 to 2020, we estimated our models using the DOLS method.

Our results show that the transition from political instability to political stability considerably reduces concentration, and thus contributes to diversification. Although this result does not validate our hypothesis, it can be explained by the fact that political stability makes both domestic and foreign investment more attractive, and improves the business climate and governance necessary for diversification. In view of these results, it is imperative for CEMAC countries to develop the private sector by improving the business climate and strengthening governance.

However, for future research, this work could be improved by integrating, for example, the breakdown of FDI by sector, with a view to helping decision-makers decide which type of investment contributes effectively to improving economic diversification.

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