International Journal of Economics and Financial Issues

ISSN: 2146-4138

available at http: www.econjournals.com

International Journal of Economics and Financial Issues, 2024, 14(4), 34-43.

A Spatial Exploration of Political Stability, Investment, and Economic Prosperity in Africa

Mohamed Karim[1], Mohamed Simoh[2], Hamza El Baraka[1]*, Mohammed El Yazidi[1], Ismail Mouhil[1]

[1]Macro Economics and Public Policy Research Team, Faculty of Law, Economics and Social Sciences Salé, Mohammed V University, Rabat, Morocco, [2]Abdelmalek Essaâdi University, Morocco. *Email: hamzaelbaraka@gmail.com

Received: 25 January 2024 **Accepted:** 09 May 2024 **DOI:** https://doi.org/10.32479/ijefi.15936

ABSTRACT

The intricate dynamics between political stability and economic growth have emerged as a central focus of scholarly inquiry and policy consideration. This study delves into the nuanced relationship between political stability, investment, and economic prosperity within the unique context of African nations. Theoretical perspectives on this relationship range from negative to positive, reflecting the complexity of the interplay between political environments and economic trajectories. Drawing on a panel of 48 African countries spanning the years 2000-2020, this study employs a sophisticated generalized method of moments-type estimator for linear dynamic panel data models. Unlike many previous studies, we explicitly address the significance of institutional structures and their role in shaping economic growth dynamics. Our findings reveal that political stability is a key determinant with a structurally significant impact on economic growth. Moreover, the study highlights the catalyzing effect of investment, demonstrating a significantly positive influence on economic growth in politically stable environments.

Keywords: Political Stability, Economic Growth, Investment, Africa, Spatial Analysis, Generalized Method of Moments Estimator

JEL Classification: O10, O55, C33, E22, H11, P16

1. INTRODUCTION

In the aftermath of the Second World War, the intricate interplay between political stability and economic growth has emerged as a focal point of academic, political, and societal discourse. The multifaceted nature of this relationship has spurred extensive investigation, prompting scholars and policymakers alike to unravel its nuances and implications. The theoretical landscape presents a spectrum of perspectives, with existing scholarship suggesting that the correlation between political stability and economic growth can be negative, positive, or even inconclusive. At the empirical level, a myriad of studies has diligently probed the determinants of economic growth, often categorized into two broad types.

The first category delves into the microcosm of individual nations, diligently dissecting growth factors intricately linked to the quantity and quality of production factors. Regrettably, in many of these single-country studies, the institutional structure is frequently taken for granted, with limited acknowledgment of its pivotal role in shaping economic growth dynamics. On the flip side, the second category of studies focuses on unraveling disparities in economic growth across countries, attributing variations to differences in factors of production. Often, international institutional disparities find themselves relegated to the error term within econometric specifications, overshadowed by other determinants (Acemoglu, 2001,2003).

It's noteworthy that within the existing empirical landscape, studies have frequently probed the link between political instability-rather than stability-and its impact on economic growth. This divergence sets the stage for our present endeavor, where we embark on an empirical exploration of the profound ramifications of political stability on economic growth within the unique context of African nations (Fosu, 1992).

Our investigation employs a sophisticated generalized method of moments (GMM)-type estimator designed for linear dynamic panel data models. This analytical approach scrutinizes a comprehensive panel of 48 African countries over the expansive period from 2000 to 2020. The distinctive contours of our study reveal compelling insights. Notably, political stability emerges as a pivotal variable exerting a structural impact on economic growth, its influence statistically significant. Furthermore, our findings underscore the catalyzing effect of investment in politically stable environments, with a discernibly positive and statistically significant impact on economic growth.

In essence, our study embarks on an odyssey to untangle the intricate relationship between political stability and economic growth, weaving together theoretical insights and empirical evidence. As we navigate the complexities of this relationship, our aim is to contribute to a nuanced understanding that transcends conventional dichotomies, shedding light on the dynamics that underpin economic prosperity in the diverse and dynamic landscape of African nations.

2. LITERATURE REVIEW

This section reviews some previous studies on the relationship between political stability and economic growth. Most existing empirical studies establish a link between political instability and economic growth, rather than between stability and economic growth. Earlier work includes studies by Venieris and Gupta (1986); Gupta (1991). Barro (1997), in his cross-sectional analysis, found that economic growth is negatively affected by political instability because it is difficult to enforce property rights in an unstable political situation. Edwards and Tabellini (1991) showed that heavy borrowing due to short-term fiscal policies pursued by unstable political leaders discourages long-term economic growth. Devereux and Wen (1998) assert that an unstable political situation discourages private investment, with negative repercussions for the economy. Alesina and Perroti (1996) used three different variables to represent political instability and found that it led to lower economic growth.

In Edward's (1998) report, a negative relationship is found between political instability and productivity growth for a panel of 93 countries for the period 1960-1990, although the relationship is relatively weak. Drazen (2000) identified two reasons why political instability affects economic performance. Firstly, it creates uncertainty about the future return on investment for firms and private agents, which prevents society as a whole from accumulating physical capital. Again, political instability has a direct effect on productivity, as it distorts market functions. Lower economic growth due to lower human capital accumulation as a result of endemic political instability is Maloney's (2002) conclusion from his study of Latin American countries. Campos and Karanasos (2007) used the ARCH power framework with annual data for Argentina for the period 1896-2000 and came to the conclusion that informal political stability (assassinations and strikes) and formal political stability (constitutional and legislative changes) have a direct negative effect on economic performance. The effect of formal instability was stronger in the long term, while the effect of informal instability was stronger in the short term in their study.

Younis et al. (2008) studied the effects of various factors of political instability on economic growth in selected Asian countries between 1990 and 2005. The study found a close relationship between political stability and economic growth, and the results showed that the role of political stability is more important than economic freedom. Aisen and Veiga (2010) used the GMM estimator for linear dynamic panel data models on a sample of 169 countries, and 5-year periods from 1960 to 2004 to investigate the link between political instability and economic growth, and found that lower growth is associated with a higher degree of political instability.

3. METHODOLOGICAL FRAMEWORK

3.1. Data, Variables and Descriptive Statistics

In this section, a description of the selected variables is given. This explanation will help us choose the appropriate methodology for analyzing the relationship between political stability and economic growth.

3.1.1. Database and statistical variables

To study this relationship, we use panel data which comprise multiple occurrence observations obtained for different entities over several time periods. The data used in this study were obtained from the World Bank. However, some countries do not have sufficient data for certain variables and years. Consequently, some countries have been removed from the primary database in order to improve data reliability.

The dependent variable: Economic growth presented by gross domestic product (GDP) per capita

The explanatory variables: Political stability index (PSI) presented by the index of political stability and absence of violence/terrorism, investment gross fixed capital formation (GFCF) presented by gross fixed capital formation, labor market participation rate (LMPR).

3.1.2. Descriptive statistical analysis

Descriptive statistics for independent variables are shown in the Table 1. Summary statistics show the number of observations, mean, median, minimum and maximum values for each variable over the entire 2000-2020 period.

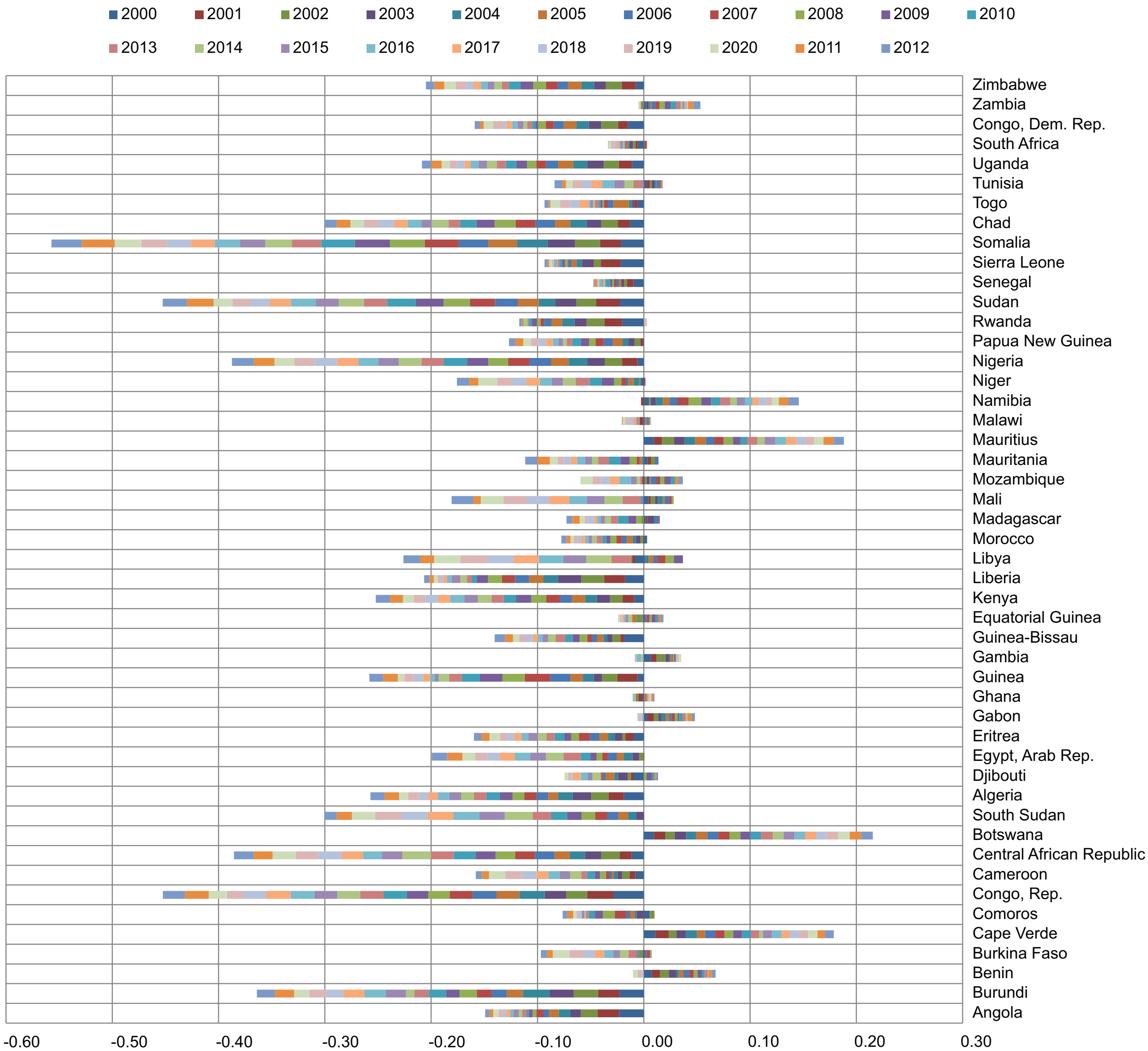
From the Table 2, it is clear that there are some missing observations, particularly for the variable gross fixed capital formation, due to the absence of data for certain countries

Table 1: Descriptive statistics

Statistics	FBCF	ISP	PIB/h	TPMT
Mean	22.30883	−0.619485	2091.104	64.40874
Median	20.85848	−0.506201	932.1681	65.95500
Maximum	81.02102	1.219244	22942.61	89.05000
Minimum	1.096810	−3.314937	113.5673	40.30000
Observations	950	1005	999	1008

Source 1: Authors findings

Figure 1: Political stapility index in Africa



Source 2: World Bank data

(Zambia, Somalia, Malawi, Liberia and southern Sudan) for certain periods. Starting with the PSI for African countries, it appears that Africa has a negative average value. Here, it is very important to remember that the governance score, according to the World Bank, ranges from the lowest (−2.5) to the highest (+2.5) for each country. This means that any country with a score below zero is considered to be below the 50th percentile rank in relation to the rest of the world.

On the other hand, the graph below shows that most of the political stability scores are negative, which explains the negative average of the PSI, which stands at −0.62. We can also see that some countries have experienced a major decline, These include Somalia in 2012, which experienced political changes due to consecutive civil wars and conflicts caused by the food crisis in 2011; Congo Brazzaville in 2012, which also experienced attacks and explosions, notably the explosion of March 04, 2012; and Libya, Egypt and Tunisia, which experienced largely negative scores during the Arab Spring period.

3.2. Methodology

Political stability seems to be an indispensable component of economic emergence, which will certainly influence growth.

To analyze the role that political stability can play in maintaining output, it would be wise to apply the simplified neoclassical growth model as a theoretical reference (Solow, 1957). Indeed, output Y is expressed by the factors of production, capital K and labor L, under a Cobb Douglas-type production function, as follows:

$$Y = AK^{\alpha}L^{1-\alpha}$$

With: Y = Real gross domestic product
L = Population
K = Physical capital
A = Hicks' neutral productivity term
α = Physical capital's share of output
α-1 = Labor's share of output

In terms of productivity per worker (GDP per capita), Our function becomes:

$$\frac{Y}{L} = \frac{AK^{\alpha}L^{1-\alpha}}{L}$$

$$y = AK^{\alpha} L^{-\alpha} \text{ (with } y = \frac{Y}{L}\text{)}$$

Assuming that: $-\alpha = \gamma$ and introducing the logarithm our equation is as follows:

$$\log(y) = \log(A) + \alpha \log(K) + \gamma \log(L)$$

Now let's incorporate political stability into the above specification:

North (1990) asserted that a country's institutions determine its long-term economic performance. Here, institutions refer to political stability, the quality of government, an independent judiciary, political rights, property rights, and so on. Political stability can directly affect growth by affecting the country's total factor productivity. We consider that political stability affects economic growth by increasing or reducing the B term of total factor productivity, and we will reformulate productivity A as a function of political stability:

$$A(S_p) = Ae^{\beta Sp}$$

With S_P = political stability
And A= $A_0e^{\beta Sp}$
The equation can therefore be written as follows:
$\log(y) = \log(A_0) + \beta S_p + \alpha\log(K) + \gamma \log(L)$
With $\log(A_0)$ constant, our theoretical model is as follows:
$\log(y) = C + \alpha \log(K) + \beta S_p + \gamma \log(L)$

This study uses panel data for the period 2000-2020 to investigate the impact of political stability and other determinants of economic growth on economic growth in 48 African countries, using the GMM developed by Arellano and Bond (1991); Arellano and Bover (1995) for dynamic panel models.

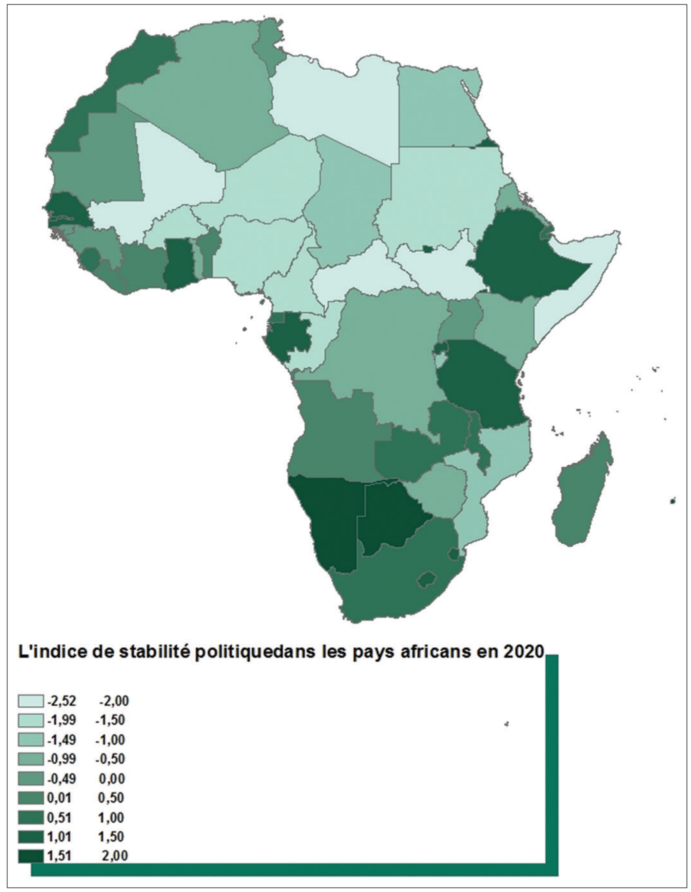
In this study, we use the following equation:

$$\log(GDPh_{it}) = C + \alpha \log(GFCF_{it}) + \beta Sp_{it} + \gamma \log(LMPR_{it}) + \varepsilon_{it}$$

With: GDPh = Gross domestic product per capita

GFCF = Gross fixed capital formation

Figure 2: Polotical stability index in 2020



Source 3: Autors elaboration

SP = Political stability index

LMPR = Labor market participation rate

4. EXPLORATORY DATA ANALYSIS AT SPATIAL LEVEL

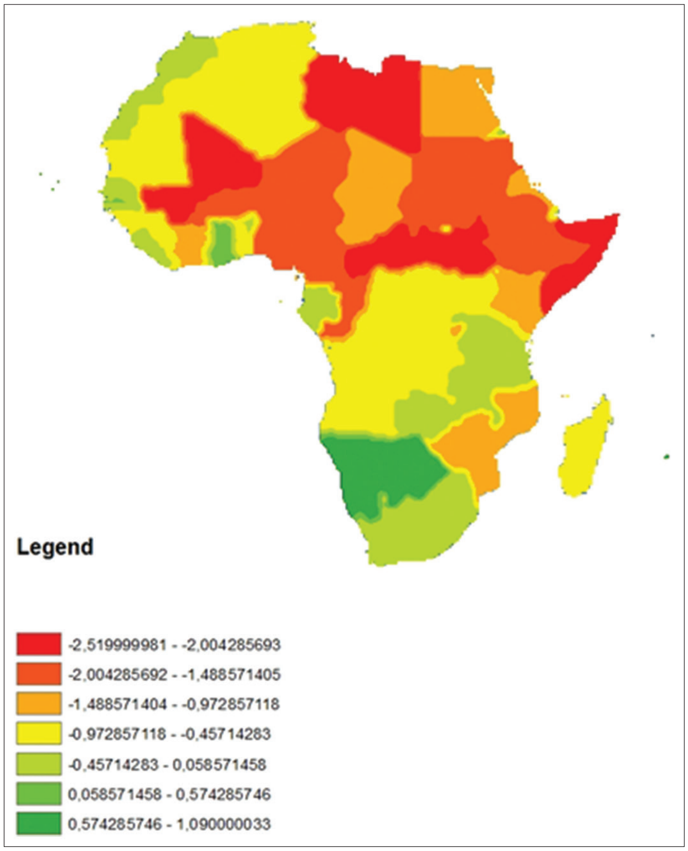
4.1. Mapping Analysis

Geographic information systems (GIS) are now considered essential tools for the analysis of multidisciplinary phenomena. Not only can they be used to map georeferenced data sets, but also to study their statistical interaction in space and time.

Figure 2 shows the distribution of the PSI on the African continent in 2020. Cartographic analysis enables us to detect intra/inter-regional spatial disparities, and also to analyze whether there is a neighborhood effect between countries. On this figure, we can see that most African countries have negative values, precisely 41 out of 54 countries have negative values, but to varying degrees, so we have divided these values into 9 intervals (Figure 2).

The previous figure shows the need to analyze whether the PSI is concentrated in certain regions, and whether political instability in one country has an impact on neighboring countries (Figure 3). We can see that the countries with the lowest values are located in the center of the continent, and the further away from the center, the more stable countries are found.

Figure 3: Kringing analysis



Source 4: Authors elaboration

4.2. Spatial Autocorrelation

Spatial autocorrelation in GIS enables us to understand how similar an object is to other nearby objects. The Moran index measures spatial autocorrelation.

Spatial autocorrelation is a statistical method that answers the following question: Are the values of close spatial entities more similar than the values of distant entities?

In our case, are countries with the same level of political stability grouped together? To answer this question, we use the Moran index.

The Moran index is an index that uses a positive interaction term (ε_{ij} to quantify the proximity between two entities i and j).

$$I = \frac{n}{\sum_i \sum_j \varepsilon_{ij}} \frac{\sum_i \sum_j \varepsilon_{ij}(X_i - \bar{X})(X_j - \bar{X})}{\sum_i (X_i - \bar{X})^2}$$

With: n the number of spatial entities

Ɛ a square matrix of dimension n, such that ε_{ij} measures the proximity and influence of j on i

The Moran index results are as follows:

A neighborhood effect is said to exist when nearby locations are more similar than distant ones. More generally, we speak of spatial autocorrelation when there is a relationship between the spatial proximity of locations and their degree of similarity or dissimilarity (Figure 4). Three typical situations can be distinguished:

Geographer Waldo R. Tobler stated the first law of geography:

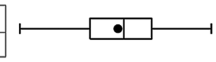
"Everything is related to everything else, but things close together are more related than things far apart."

Spatial autocorrelation measures the proximity of objects to other nearby objects. The Moran index can be classified as positive, negative and without spatial autocorrelation.

Moran's index (Table 3) is 0.16. The z-score of 2.46 indicates that there is <1% probability that this model is the result of random choice. These results indicate that there is a significantly positive spatial autocorrelation.

Based on the above results on Figure 5, we can say that there is a positively significant spatial autocorrelation, i.e. similar values are grouped together on the map. To confirm this finding, we can use the grouping method to divide countries into 2 groups: One containing relatively stable countries, the other containing unstable countries:

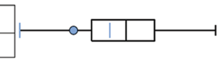
Variable	Mean	Min	Max
ISP	−0.6698	−2.5200	1.0900



Global variable statistics**:**

Count = 58; Std. Distance = 0,8491; SSD = 19,0471

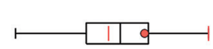
Variable	Mean	Min	Max
ISP	−1.5283	−2.5200	−0.8600



Groupe 1: Count = 23; Std. Distance = 0,5114; SSD = 8,3417

Groupe 2: Count = 35; Std. Distance = 0,4696; SSD = 10,7054

Variable	Mean	Min	Max
ISP	−0.1057	−0.7800	1.0900



Based on the grouping results, we have divided the countries of the African continent into two groups according to their PSI scores as shown in Figure (6).

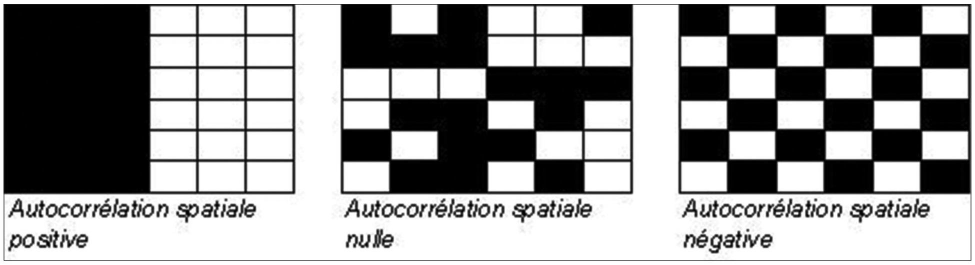
The first group includes countries with an index between −2.52 and −0.86, which are considered unstable, and the second group includes countries with a score between −0.78 and 1.09, which are considered relatively stable:

4.3. Specification Tests

4.3.1. Stationarity analysis

A process is said to be stationary when the probability laws for each instant/are identical, and when the joint probability law for two instants t_1 and t_2 is invariant for any time translation. The moments of a strictly stationary process are therefore invariant to any change in time.

Figure 4: Spatial autocorrelation types



Source 6: Spatial analysis and modeling of geographic phenomena, Claude Grasland

Table 3: Moran index

Moran index	Z score	P-value
0.165163	2.464805	0.013709

Source 5: Authors findings

We can see from the stationarity test in Table 4 that two variables are stationary at the level, namely per capita GDP and the PSI, but the other two variables are non-stationary at the level, but become stationary at the first level.

4.3.2. Cointegration test

A cointegration test is used to establish whether a correlation exists between several time series over the long term. Cointegration tests identify scenarios in which two or more non-stationary time series are integrated together in such a way that they cannot deviate from the long-term equilibrium. Of the seven tests proposed by pedroni and used below, four are based on the within dimension and three on the between dimension. Both types of test are based on the null hypothesis of no cointegration.

Alternative hypothesis: Common AR coefs. (within-dimension)

Statistic element	Statistique	Prob.	Statistique	Prob.
Panel v-statistic	0.404441	0.6571	1.508319	0.0657
Panel rho-statistic	3.724343	0.9999	2.726073	0.9968
Panel PP-statistic	3.698263	0.9999	2.690581	0.9964
Panel ADF-statistic	4.639901	1.0000	4.275924	1.0000
Alternative hypothesis: individual AR coefs. (Between-dimension)				
Group rho-statistic	4.986466	1.0000		
Group PP-statistic	3.590865	0.9998		
Group ADF-statistic	4.375952	1.0000		

Source 10: Authors findings

Within-dimension tests: The results indicate that there is no significant evidence against the hypothesis of common AR coefficients within each dimension.

Between-dimension tests: The results suggest that there is no significant evidence against the hypothesis of individual AR coefficients between dimensions (across groups).

In both cases, the high probabilities suggest that the null hypotheses are not rejected.

4.3.3. Correlation test

Pearson correlation analysis was performed between all variables and control variables to examine the bivariate relationship between dependent and independent variables and its significance. The Table 5 shows the correlation statistics between the variables. The table shows the correlations of the three variables, GDP per capita growth and the independent variables (Sp, GFCF, TPMT).

The aim of correlation analysis is to determine the strength and direction of the relationship between the dependent and independent variables. According to the results, the dependent variable (GDP) has a positive relationship with all the independent variables.

4.3.4. Hausman test

In this work, we use economic reasons and statistical knowledge to choose the right model.

The Hausman test is a statistical test used in econometrics to assess the consistency of estimators. Specifically, it helps determine whether the estimates from two different models are significantly different. The test is often used in the context of panel data analysis or when comparing the efficiency of two different estimators, such as fixed effects (FE) and random effects (RE) estimators. The results of the Hausman Test can provide insights into the appropriate choice of the econometric model.

After using the Hausman test, the following Table 6 shows the results:

After using the Hausman test, our results suggest that the fixed-effects model outperforms the random-effects model.

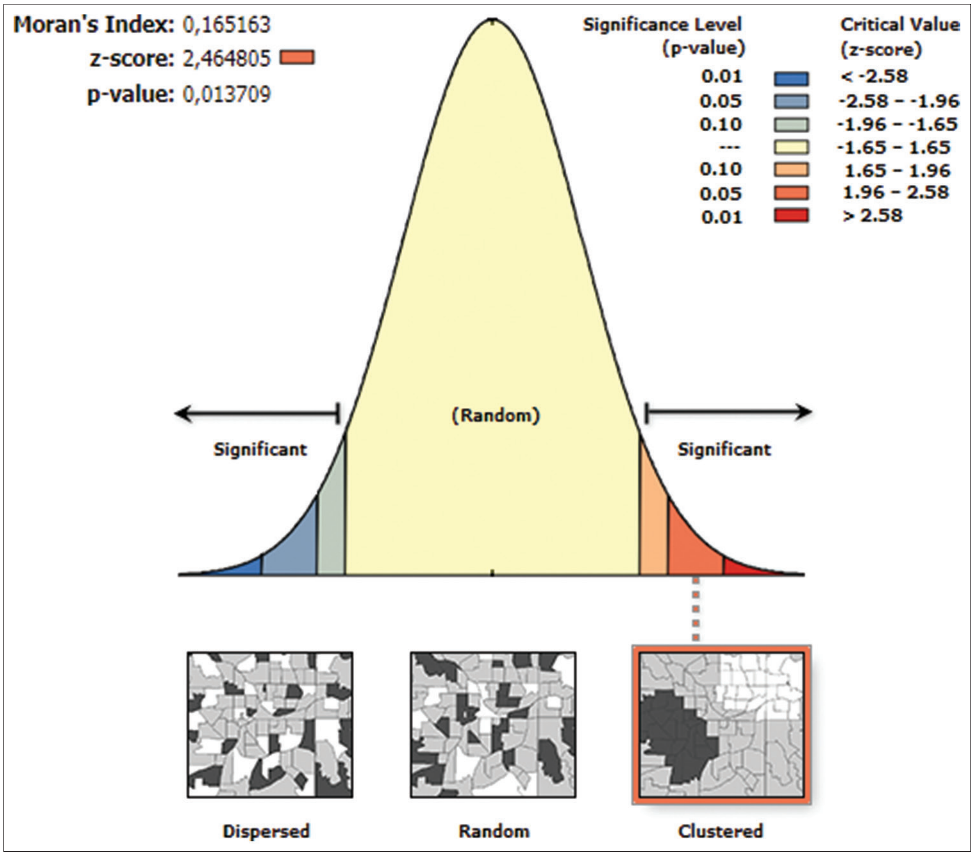
The Hausman test compares the efficiency of the FE and RE estimators. The null hypothesis is that the RE are not correlated with the regressors, which implies that the RE and FE estimators are consistent and efficient. The alternative hypothesis is that the RE are correlated with the regressors, suggesting that the FE estimator is more efficient.

The Chi-square statistic of 2.997876 is compared to a Chi-square distribution with 3° of freedom. The P-value associated with the Chi-square statistic is 0.3920.

If the P> the chosen significance level (commonly 0.05), you fail to reject the null hypothesis. This suggests that the RE and FE estimators are consistent and efficient.

If the P< the significance level, you reject the null hypothesis in favor of the alternative, indicating that there is evidence of

Figure 5: Results of spatial autocorrelation analysis



Source 7: Authos findings (Python)

Table 4: Stationarity test

Variable (probabilite)	Lev, Lin and Chu t	Im, Pesaran, S W-stat	ADF	PP-Fisher	Stationnarity
GDP	−10.0440 (0.0000)	−4.22822 (0.0000)	156.257 (0.0001)	231.793 (0.0000)	I (0)
GFCG	−0.21336 (0.4155)	−0.14106 (0.4439)	98.3684 (0.4139)	118.792 (0.0573)	I (1)
Sp	−6.78451 (0.0000)	−4.82993 (0.0000)	200.141 (0.0000)	331.821 (0.0000)	I (0)
LMPR	1.42534 (0.9230)	7.80239 (1.0000)	46.6238 (1.0000)	61.5555 (0.9976)	I (1)

Source 9: Authors findings. GDP: Gross domestic product, LMPR: Labor market participation rate GFCF: Gross fixed capital formation

Table 5: Correlation analysis

Covariance Correlation Probability	LNLMPR	SP	LNGFCF	LNPIB
LNLMPR	0.040259 1.000000 -----			
SP	−0.006263 −0.035045 0.2811	0.793411 1.000000 -----		
LNGFCF	−0.019890 −0.216338 0.0000	0.069748 0.170889 0.0000	0.209960 1.000000 -----	
LNGDP	−0.103074 −0.483225 0.0000	0.404790 0.427476 0.0000	0.150979 0.309941 0.0000	1.130157 1.000000 -----

Source 11: Authors findings

correlation between the RE and the regressors.

In this case, with a P = 0.3920, there is insufficient evidence to reject the null hypothesis at a conventional significance level of 0.05. Therefore, the RE and FE estimators are not significantly different in efficiency, and the assumption of no correlation between the RE and regressors cannot be rejected.

Table 6: Hausman test

Correlated random effects - Hausman test			
Test Summary	Chi-square statistic	Chi-square d.f.	Prob.
Period random	2.997876	3	0.3920

Source 12: Authors findings

4.4. Model Estimation

As previously indicated, panel data analysis is used to analyze the relationship between the dependent variable and the explanatory variables over the period 2000-2020 for African countries. We employ a method that deepens the analysis by using a dynamic panel model of the GMM to examine the contributions of political stability on development performance across countries and over time.

Table 7: Model estimations

Variable	Coefficient	SE	t-Statistic	Prob.
LNGDP (-1)	0.978330	0.004225	231.5586	0.0000
LMPR	−0.000471	0.000344	−1.367714	0.1717
LNGFCF	0.022885	0.011681	1.959226	0.0504
SP	0.008715	0.006247	1.395070	0.1633
C	0.163118	0.069860	2.334923	0.0198
R-squared	0.984157		Mean dependent var	2.301459
Adjusted R-squared	0.984087		S.D. dependent var	1.013276
SE. of regression	0.127955		Sum squared resid	14.73534
Durbin-Watson stat	1.891650		J-statistic	1.57E-22
Instrument rank	5			

Source 13: Authors findings. SE: Standard error, LMPR: Labor market participation rate

The essential principle of the GMM, or GMM, is that conditions that deal with moments can be used not only to test the specification of a model but also to determine model parameters, in the sense that they provide a parameter-defining application for a model (Bond, et al. 2001).

We use Eviews software to estimate our GMM model with the random effect, and the results on Table 7 below present the results of this estimation:

LNGDP (-1): Coefficient (0.978330): The variable LNGDP (-1) has a positive coefficient of 0.978330.

A one-unit increase in the natural logarithm of GDP (lagged by one period) is associated with an approximate 0.978330 unit increase in the dependent variable.

LMPR: Coefficient (−0.000471): The variable TPMT has a coefficient of −0.000471.

A one-unit increase in TPMT is associated with a decrease of approximately 0.000471 units in the dependent variable. However, this coefficient is not statistically significant at the conventional 0.05 significance level (P = 0.1717).

LNGFCF: Coefficient (0.022885): The variable LNFBCF has a positive coefficient of 0.022885.

A one-unit increase in the natural logarithm of fixed capital formation is associated with an increase of approximately 0.022885 units in the dependent variable. This coefficient is marginally significant at the 0.05 significance level (P = 0.0504).

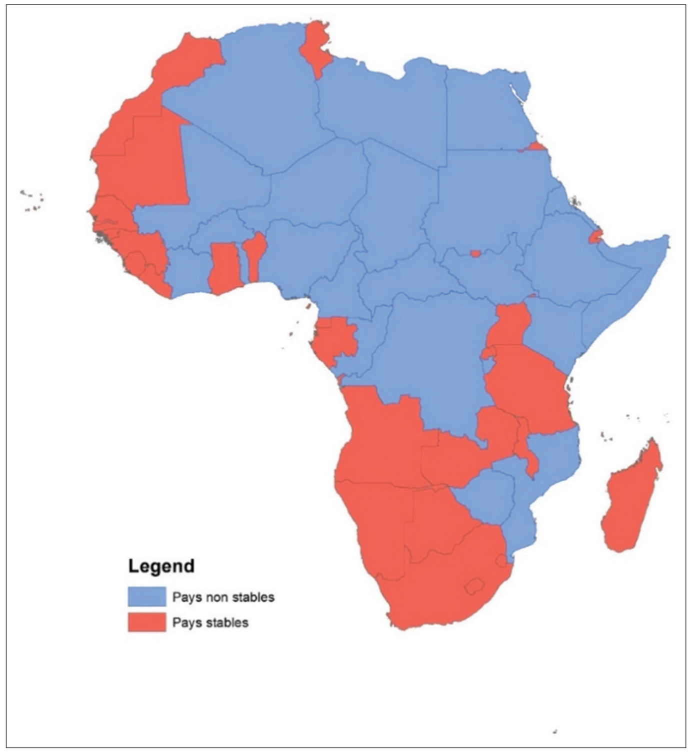
SP: Coefficient (0.008715): The variable ISP has a positive coefficient of 0.008715.

Interpretation: A one-unit increase in SP is associated with an increase of approximately 0.008715 units in the dependent variable. However, like LMPR, this coefficient is not statistically significant at the conventional 0.05 significance level (P = 0.1633).

C (Constant): Coefficient (0.163118): The constant term C has a positive coefficient of 0.163118.

Intercept represents the estimated value of the dependent variable when all independent variables are zero. In this case, it suggests that when all other variables are zero, the dependent variable is estimated to be approximately 0.163118.

Figure 6: Grouping analysis results



Source 8: Authors findings

Model Fit:

R-squared (0.984157): The R-squared value indicates that approximately 98.4% of the variability in the dependent variable is explained by the independent variables in the model.

Adjusted R-squared (0.984087): The adjusted R-squared accounts for the number of predictors in the model and is slightly lower than the R-squared, reflecting the adjustment for the number of variables in the model.

S.E. of regression (0.127955): This is the standard error of the regression, indicating the average deviation of the observed values from the predicted values.

Durbin-Watson statistic (1.891650): This statistic tests for the presence of autocorrelation in the residuals. A value close to 2 suggests no autocorrelation. Here, 1.891650 indicates a mild positive autocorrelation.

J-statistic (1.57E-22): The J-statistic is associated with the Hansen test for over-identifying restrictions. A very low P-value (1.57E-22) suggests that the instruments used in the GMM estimation are valid.

Instrument rank (5): The number of instruments used in the GMM estimation is 5.

5. RESULTS AND DISCUSSION

5.1. Spatial Exploratory Data Analysis (SEDA)

The identification of two distinct groups of countries, namely stable and unstable, serves as a crucial outcome of the SEDA. The stable group, comprising nations like Morocco, Tunisia, Cape Verde, Botswana, and Ghana, exhibits consistent political stability. In contrast, the unstable group, encompassing countries such as Somalia, Nigeria, Niger, Libya, and Mali, faces greater political volatility.

The positive spatial autocorrelation, as evidenced by the Moran's index, underscores the interconnectedness of neighboring countries. This finding implies that political stability is not randomly distributed but exhibits geographical patterns. The visualization of stable countries clustering together on the map, as opposed to the clustering of unstable countries, vividly illustrates the spatial dynamics at play.

The intriguing correlation between the size of countries and political stability suggests a potential geographical dimension to political resilience. Further investigation is needed to understand whether certain geographical factors, such as proximity to resources or geopolitical positioning, influence a country's ability to maintain political stability.

5.2. Panel Data Analysis using GMM Estimator

The GMM estimator's application to panel data highlights a noteworthy positive correlation between political stability and economic growth. This implies that improvements in the political stability of a country can have tangible positive effects on its economic performance. The estimated 0.87% increase in economic growth for every enhancement in political stability provides a quantifiable insight into this relationship.

GDP lag effect: The non-significant negative impact of the lagged GDP variable on economic growth suggests that historical economic performance may not be a robust predictor of future growth. Other dynamic factors might exert more influence on the economic trajectory.

Positive impact of investment: The positive and statistically significant impact of investment on economic growth aligns with economic theory. This finding underscores the importance of strategic investments in infrastructure, technology, and human capital for fostering sustainable economic development.

The findings of this study carry significant implications for policymakers. Strengthening political stability emerges as a crucial factor for promoting economic growth. The observed correlation between country size and political stability prompts further questions about the geopolitical dimensions influencing stability, inviting in-depth exploration.

Geopolitical analysis: Investigating how geopolitical factors, such as regional alliances or global positioning, contribute to or hinder political stability.

Policy interventions: Assessing the effectiveness of specific policy interventions in enhancing political stability and, subsequently, economic growth.

Longitudinal studies: Conducting longitudinal studies to track changes in political stability and economic growth over time, providing a more nuanced understanding of causality.

In conclusion, this study not only provides valuable empirical insights but also serves as a catalyst for more profound explorations into the intricate interplay of geography, politics, and economics within the context of African countries.

6. CONCLUSION

In the course of our research, the amalgamation of SEDA and panel data analysis, utilizing the robust GMM estimator, has yielded a wealth of nuanced insights into the intricate interconnection between political stability and economic growth in the diverse landscape of African nations.

Our investigation has led to the identification of distinct groups based on political stability, shedding light on the spatial patterns that shape the resilience of nations. The positive spatial autocorrelation underscores the non-random distribution of political stability, emphasizing the influence of neighboring countries on each other. The visualization of these stable and unstable clusters on the geographical map further underscores the importance of understanding how geographical factors contribute to or detract from political stability, prompting a compelling call for deeper inquiry.

The application of the GMM estimator has unearthed a substantial positive correlation between political stability and economic growth. The quantifiable insight revealing an approximate 0.87% increase in economic growth for every improvement in political stability underscores the pivotal role that stability plays in fostering economic prosperity. Furthermore, our nuanced findings regarding the lagged GDP variable and the positive impact of investment highlight the intricate dynamics at play within the economic landscape, emphasizing the multifaceted nature of these relationships.

The implications of these findings resonate deeply with policymakers. The centrality of strengthening political stability emerges as a linchpin for fostering sustainable economic growth in African nations. The observed correlation between country size and stability serves as a catalyst for essential questions about the geopolitical dimensions influencing stability, urging a comprehensive exploration into these factors.

As our study acts as a catalyst for further exploration, we recommend several avenues for future research. Geopolitical analysis, focusing on how regional alliances or global positioning contribute to or hinder political stability, presents a rich area for investigation. Assessing the effectiveness of specific policy interventions in enhancing political stability and, subsequently, economic growth provides a practical direction for policymakers. Additionally, longitudinal studies, tracking changes over time, promise a more nuanced understanding of the causality between political stability and economic growth.

In conclusion, our study not only contributes valuable empirical insights but also sets the stage for more profound explorations into the intricate interplay of geography, politics, and economics within the dynamic context of African nations. Beyond empirical scrutiny, the nexus between political stability and economic growth issues a compelling call to action, urging policymakers and researchers alike to embrace a holistic understanding of the multifaceted factors shaping the development trajectory of African countries.

REFERENCES

Acemoglu, D., Johnson, S., Robinson, J., Thaicharoen, Y. (2003), Institutional causes, macroeconomic symptoms: Volatility, crises and growth. Journal of Monetary Economics, 50, 49-123.

Aisen, A., Veiga, F.J. (2010), How Does Political Instability Affect Economic Growth? Central Bank of Chile Working Papers, No 568.

Alesina, A., Perotti, R. (1996), Income distribution, political instability, and investment. European Economic Review, 40, 1203-1228.

Arellano, M., Bond, S. (1991), Some tests of specification for panel data: Monte carlo evidence and an application to employment equations. The Review of Economic Studies, 58, 277-297.

Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. Journal of econometrics, 68(1), 29-51.

Barro, R. (1997), Determinants of Economic Growth: A Cross-Country Empirical Studies. Cambridge, Mass: MIT Press.

Bond, S., Hoeffler, A., Temple, J. (2001), GMM Estimation of Empirical Growth Models. Center for Economic Policy Research Discussion Paper, No. 3048.

Campos, N., Karanasos, M. (2007), Growth, Volatility and Political Instability: Non-Linear Time-Series Evidence for Argentina, 1896-2000. William Davidson Institute Working Paper Number 891.

Campos, N., Nugent, J. (2002), Who is afraid of political instability?" Journal of Development Economics, 67, 157-172.

Devereux, M.B., Wen, J.F. (1998), Political instability, capital taxation, and growth. European Economic Review, 42(9), 1635-1651.

Drazen, A. (2000), Political Economy in Macroeconomics. Princeton: Princeton University Press.

Edwards, S. (1998), Openness, productivity and growth: what do we really know? The Economic Journal, 108(447), 383-398.

Edwards, S., Tabellini, G. (1991), Political Instability, Political Weakness and Inflation: An Empirical Analysis. NBER Working Paper 3721.

Fosu, A.K. (1992), Political instability and economic growth: Evidence from Sub Saharan Africa. Economic Development and Cultural Change, 40(4), 829-841.

Gupta, D.K. (1991), On the methodology of constructing a composite indicator for political instability: A cross national study. In: Frantz, R., Singh, H., Gerber, J. Handbook of Behavioral Economics. Vol. 2A. Stamford, CT: JAI Press. p151-178.

Maloney, W.F., Manzano, O., Warner, A. (2002), Missed opportunities: Innovation and resource-based growth in Latin America. Economía, 3(1), 111-167.

North, D.C. (1990). Institutions, Institutional Change and Economic Performance. Cambridge:c Cambridge University Press.

Solow, R.M. (1957), Technical change and the aggregate production function. The Review of Economics and Statistics, 39(3), 312-320.

Venieris, Y.P., Gupta, D.K. (1986), Income distribution and sociopolitical instability as determinants of savings: A cross-sectional model. Journal of Political Economy, 94(4), 873-883.

Younis, M., Lin, X.X., Sharahili, Y., Selvarathinam, S. (2008), Political stability and economic growth in Asia. American Journal of Applied Sciences, 5(3), 203-208.