

Full Length Research Paper

Interaction between political instability and investment

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The aim of this paper is to identify the effect of political instability on investment and economic growth. By using a dynamic balanced panel data model applied on annual data from 11 countries from the Middle East and North Africa (MENA) region over the period of 2000 to 2009. The political instability' effect on the contribution of investment to economic growth has been the subject of a second empirical study within the framework of this research paper. The main outcomes drawn by these two empirical tests prove that there is no effect of political instability on investment and economic growth and a negative interaction between political instability and investment.

Key words: Political instability, investment, economic growth, dynamic panel.

INTRODUCTION

How does political instability affect economic growth? This question has been the topic of a continuous debate among economists, political scientists and politicians. The findings of previous studies suggest that economic growth and political instability are strongly linked. Indeed, the uncertainty associated with an unstable political environment may reduce investment or cause high levels of inflation and as a result lower national growth rate.

In addition, political instability is likely to shorten policymakers' horizons leading to suboptimal short term macroeconomic policies. It may also lead to more frequent switch of policies, creating volatility and thus, negatively affecting macroeconomic performance.

To study the effect of institutions on investment and economic growth, we shall carry out within the framework of this study a dynamic panel data model relating to a sample of 11 countries from the Middle East and North Africa (MENA) region over the period of 2000 to 2009. The effect of institutions on the contribution of investment to the economic growth will be the subject of a second empirical study relating to the same sample. Before

starting the econometric studies, first, it should begin with a review of the empirical literature on the relationship of institutions and economic performance. Secondly, the choice of variables, the determination of their sources, the interpretations of results and the study of the interaction between political instability and investment.

REVIEW OF THE EMPIRICAL LITERATURE

The widespread phenomenon of political instability in several countries across time and its negative effects on their economic performance has raised the interest of several economists. As such, the profession produced an ample literature documenting the negative effects of political instability on a wide range of macroeconomic variables including among others, gross domestic product (GDP) growth, private investment and inflation.

The classic study of the determinants of growth of Barro (1997) tested the effect of indicators of political instability, which it considers detrimental to property rights. The two measures of violence used by Barro are: the average number of revolutions (or coups) and political assassinations. The result which led this work is that these two variables are negatively and significantly related to the growth rate and the share of private investment in GDP between 1960 and 1985. Alesina and Perotti (1996)

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also found that political instability weakens the share of investment in GDP.

Generally, empirical studies have been conducted to test that the said relationship agrees, despite the diversity of samples and indicators on the adverse effects of sociopolitical instability on economic performance of the country concerned. Thus, studies of Barro (1996) and Azam et al. (1996) showed a direct negative impact of political instability on economic growth. Guillaumont et al. (1999) have shown that socio-political instability (the instability associated with commercial) is a key variable to explain the systematic underperformance of African countries over the period of 1970 to 1990. De Haan and Siermann (1996) do not contest the effect of instability on growth, but state that this happens mainly by the investment variable they take off and add successively to their regressions to determine the influence. Fosu (1992) emphasizes the variable of human capital as a channel of influence. The addition of interactive variables allows us to deduce that it is through the fall of the latter factor productivity (human capital), that growth is permanently affected by political instability.

However, in addition to the heterogeneity of sources of impact, there are some dissenting voices in this empirical consensus. If the study of Londregan and Poole (1990) is the only one that finds a non-negative effect of instability on the level of economic growth, Levine and Renelt (1992), on their part, emphasize the small robust aspect of the results concerning the impact of institutional variables on the economic performances.

In a more recent paper, Jong-a-Pin (2009) also finds that higher degrees of political instability lead to lower economic growth. Political instability also leads to higher inflation and reduces growth rates significantly as shown in Asien and Veiga (2006, 2011).

CHOICE OF VARIABLES

The studies which have attempted to examine the relationship between political instability and economic growth highlight the existence of a negative link, whether direct or indirect, between unstable political regimes and economic growth. However, the analyses differ regarding the channels through which political instability translates into slower economic growth.

In fact, political instability reduces local and foreign investments, though increase in poverty level may affect the inequality of incomes and poverty through its effect on growth, in addition to its effect on human capital formation and incertitude in the accumulation of the factors of production. Furthermore, political instability is likely to shorten policymakers' horizons leading to sub-optimal short term macroeconomic policies. It may also lead to more frequent switch of policies, creating volatility and thus, negatively affecting macroeconomic performance.

Our model incorporates several measures used to control variables. Previous studies have shown that they account for a significant share of national differences in growth rates in recent decades. Thus, the variables employed in this study are as follows:

- Y: The growth rate of real GDP per capita.
- INV: Statement of the raw formation of capital by the GDP
- OPEN: Statement of the volume of commerce by the GDP: (X/M)
- GY: The public expenditures, approximated by the portion of governmental consumption in the GDP.
- Financial development: Measured by money and quasi money as portion of GDP (M2/GDP).
- Political instability (PI): It includes the following elements: military coups, political tension, civil wars, social problems, ethnic tensions, political violence, unpredictable change of institutions and rules.

This indicator is evaluated on a scale of -2.5 to 2.5, 2.5 being the highest degree of political stability.

All the economic variables are drawn from the report about development in the world [2010] and the "political instability" is taken from the Kaufmann (2009) database of governance indicators.

ESTIMATION METHODOLOGY

In what follows, we propose a dynamic study of the relationship institutions, economic growth.

Before proceeding to the estimation of the model and interpretations of results, it is necessary to define the dynamic models and present the model to estimate.

Definition of dynamic models

Dynamic models are characterized by the presence of one or more lagged endogenous variables among the explanatory variables. As part of our model, the introduction of past growth rates among the explanatory variables allows us to test the persistence of economic growth of countries in the sample under study since the previous economic growth can influence current economic growth.

We take as an example of the case where there is only one lagged endogenous variable.

Let's consider for instance the case where there is a single endogenous variable:

$$y_{it} = \alpha y_{it-1} + \beta X_{it} + \varepsilon_{i,t} \quad (\text{With } i=1\dots N \quad t=1\dots T) \quad (1)$$

where y is the endogenous variable, X is the exogenous variables, (α, β) are the parameters to be estimated and $\varepsilon_{i,t}$ is the error term.

Presentation of the model to estimate

According to the aforementioned analysis, institutions can influence economic growth through productivity or capital accumulation. Our study therefore uses the following two equations to test the importance of institutions:

Table 1. Estimation results of political instability and economic performances: Dependent variables: Economic growth and Investment (Arellano-Bond dynamic panel data (two step) estimator).

Variable	Economic growth		Investment		Interaction: political instability and investment
	1	2	3	4	5
L GDP	0.28 (0.67)	0.16 (0.37)	-	-	-0.19 (-0.45)
INV-1	-	-	-0.29 (-2.39)*	-0.3 (-2.2)	-
INV	0.10 (1.66)**	0.11 (1.96)**	-	-	0.11 (2.39)
OPEN	0.02 (1.01)	0.0014 (0.04)	0.25 (7.18)	0.23 (8.49)	0.001 (0.07)
G	-0.008 (-0.04)	0.05 (0.2)	0.006 (0.02)	0.0057 (0.05)	-0.015 (-0.06)
M2/PIB	-0.023 (-1.01)	-0.05 (-0.48)	0.13 (1.86)**	0.085 (1.48)	-0.11 (-2.07)
PI	-	-5.71 (-0.39)	-	-0.14 (-0.10)	-
PI*INV	-	-	-	-	-0.07 (-2.16)
T- Sargan	9.03 (43)	9.56 (43)	4.25 (43)	3.51 (43)	6.16 (43)
AR(2)	0.91	0.78	0.91	0.9	0.56

**Significant at 10%. *Significant at 5%. t-student in parentheses. LGDP: real GDP per capita growth on t-1. INV_{i,t-1}: Investment on (t-1).

$$y_{i,t} = \alpha_1 y_{i,t-1} + \beta_i X_{i,t} + \mu_i INST_{i,t} + \varepsilon_{i,t} \quad (2)$$

$$INV_{i,t} = \alpha_1 INV_{i,t-1} + \beta_i X_{i,t} + \mu_i INST_{i,t} + \varepsilon_{i,t} \quad (3)$$

where y_{it} is the growth rate of real GDP per capita of the country i for the year t . $y_{i,t-1}$ is the growth rate of GDP per capita for the previous year ($t-1$). $INV_{i,t}$ is the investment rate of the country (i) in the year (t). $INST$ is the political instability and X a number of control variables, these two types of variable have already been defined earlier; $\varepsilon_{i,t}$ is the error term.

THE INTERPRETATION OF RESULTS

The estimate presented here is the generalized method of moments (GMM) estimation of Arellano and Bond (1998). We prefer to refer to the results of this estimate because it eliminates any bias rigorously related to unobserved individual heterogeneity and provides therefore a better efficiency of the estimation results. The estimation results¹ of our model in table 1 are more or less satisfactory both econometrically and in terms of economic interpretation.

Note that the coefficients are elasticities that are interpreted as relative changes that provide information on the variation in the growth rate of real GDP per capita following a unit change in the variable in question. The estimation results of different equations are more or less expected given the theoretical and empirical considerations already mentioned:

1. The earlier economic growth does not seem to affect subsequent economic growth.
2. Investment positively influences economic growth in

these countries, because its coefficient is always positive and statistically significant indicating a predominant effect on economic growth.

3. The coefficient of the variable "trade openness" is sometimes positive, sometimes negative, but still not statistically significant indicating a disconnection between this variable and economic growth in these countries.

4. Public spending does not affect the economic growth of countries considered, since the coefficients of this variable are not statistically significant.

5. The coefficients associated with the variable "financial development" are negative and statistically significant in most cases, indicating a negative effect of this variable on economic growth.

In practice, the effects of financial development on growth is far from obvious and may even be negative, especially for developing countries. Thus, Bhatia and Khatkhate (1975), using a sample of 11 African countries over the period of 1960 to 1970, found a positive correlation for some countries, negative (or no correlation) for others. Measurement errors, the small sample and the potential endogeneity of financial development could be, in theory, the cause of this result.

6. "Political instability" does not appear to be correlated with economic growth in these countries. Result, which can find an explanation which states that political institutions will have an indirect effect on economic growth, an effect that goes through the investment and human capital in particular. Equation 3 checks whether the institutions have also an indirect influence on economic growth through capital accumulation.

7. Trade openness has a predominant effect on investment in these countries that the coefficient of this variable is always positive and statistically significant. This can be justified by the fact that openness to trade encourages investors to invest more through the provision of new

¹ See appendix 1 and 2

opportunities in larger markets.

8. "Public spending" has a positive effect not robust investment. This is explained by the fact that governments can encourage private investment through the provision of adequate basic infrastructure, institutional environment healthy and skilled human capital.

9. The same observation is valid for "financial development", which is expected given that the availability and diversity of funding are able to induce economic agents to invest more, hence positively affect financial development on investment.

This result is comparable to that found by King and Levine (1993) who studied the impact of financial development on economic growth, capital accumulation and total factor productivity for a sample of 80 countries during the period of 1960 to 1989. The main result to what has led these authors is that financial development has a positive effect on economic growth, capital accumulation and total factor productivity.

Interaction between political instability and Investment

The theoretical analysis proves the existence of a positive interaction between the institutional environment and the productivity of investment. Thus, the latter proves to ameliorate with the amelioration of this environment.

This hypothesis implicates that the coefficient of investment, in the specific equation to estimate, is influenced by the country's institutions. So, we are going to examine the effect of political instability on the contribution of investment to economic growth. For this reason, we introduce an interactive term into the equation to estimate:

$$Y_{i,t} = \alpha_1 Y_{i,t-1} + \lambda_i X_{i,t} + \gamma_i (INV * INST_{i,t}) + \varepsilon_{i,t} \quad (4)$$

X_i is a vector of control variables already defined, $INV \times INST$ is the interactive variable, $INST$ is the vector of institutional variables defined earlier.

The result of estimating this equation state:

A negative interaction between the "political instability" and investment. Logical result, since the theoretical and empirical studies have been conducted to examine the relationship between political instability, investment and economic growth agreed, despite the diversity of samples and indicators on the adverse effects of instability on economic performance of the country concerned. Thus, studies of Barro (1996) and Azam et al. (1996) showed a direct negative impact of political instability on economic growth.

Guillaumont et al. (1999) have shown that political instability (the instability associated with commercial) is a key variable to explain the systematic underperformance of African countries over the period of 1970 to 1990. De

Haan and Siermann (1996) do not contest the effect of instability on growth, but state that this happens mainly by the variable investment they take off and add successively to their regressions to determine the influence.

Fosu (1992) points and in the presence of political instability, the risk of loss of capital increases, which lowers the level of investment actually undertaken. For the unstable country, the domestic and foreign investors are turning away from opportunities offered by the national economy because, among other things, uncertainty and risk of expropriation. The impact on growth can be serious: declining investment, deteriorating export performance, difficulties in financing private and public projects. Fosu (1992) hypothesized a balanced human capital flight under similar conditions.

These effects are accompanied certainly by lower productivity factors, related either to a decline in returns to labor or more directly to a variable return based factors of the environment. Secondly, political instability significantly reduces the time horizon of not just the investor only, but of the policymaker as well; and then makes the manager to wait for power, especially in the economic field.

A government can choose short-horizon forward flight and practice of the worst economic policies which he hopes to reap the medium term (failure of his successor). Models of this type have been developed by Alesina and Tabellini (1989), Cukierman et al. (1992) and Özler and Tabellini (1991).

Finally, in a context of political instability, government, democratically elected or not, may try to pursue a policy based on the establishment of clientelistic loyalties, corruption and the groups likely to support the conservation power (police, army, government and economic circles).

Conclusion

In this research project, we have tried to make a contribution to solve the fundamental question: how does political instability affect economic growth? To this end, we employed a dynamic panel data model covering a sample of 11 countries from the MENA region during the period 2000-2009.

After studying the relationship between political instability, investment and economic growth, an interactive variable was introduced to test the effect of political instability on the productivity of investment in these countries. The main findings derived from this empirical analysis reveal the following:

1. No effect exerted by political instability on investment and economic growth.
2. A negative interaction between "political instability" and investment.

We conclude, without confirmation, that these tests have

allowed us, even in part, to show the existence of a relationship between political instability and economic growth. It is important to note that despite the importance of empirical work which results, shortcomings may arise:

1. Other possible mechanisms of the relationship being studied were not considered.
2. There was lack of data since we did not use other institutional variables.
3. The problem of causality has not been treated.
4. The influence of the threshold level of economic and institutional development has not been tested.

This relationship could be better understood once its underlying mechanisms are still being analyzed and the techniques used to quantify them are improved. In light of the current debate on good governance in general, these fields of investigation could be the subject of several subsequent works.

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Appendix 1. List of countries.

S/N	Countries
1	Algeria
2	Bahrain
3	Egypt
4	Iran
5	Jordan
6	Kuwait
7	Lebanon
8	Morocco
9	Oman
10	Saudi Arabia
11	Tunisia

Table 2. Descriptive statistics.

Variable	Obs	Mean	Standard deviation	Minimum	Maximum
Growth rate	110	3.066198	2.684678	-3.034476	14.30931
Investment	110	23.24029	8.163949	0	41.18223
Financial development	110	76.33797	49.28124	0	228.407
Open	110	82.35905	36.54123	0	175.9588
GY	110	16.47599	5.553236	0	27.4947
Political instability	110	-.3392633	.6755006	-2.121353	.8857427