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Corruption, Investment and Economic Growth: The case of the MENA Countries**Amira Zaouali**

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Key words:Corruption, economic growth,
investment, institutions.**Abstract**

This paper analyzes the impact of corruption on economic growth and investment. Utilizing a dynamic panel data approach for 16 MENA countries over the period 2000-2011, the results demonstrate that corruption has a negative impact on investment and economic growth and that good institutional quality has a positive effect both on economic growth and investment.

JEL codes : O43, O47, C23.

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Introduction

The theme of the effects of corruption on economic activity has attracted the interest of many economists and a large theoretical and empirical literature dealing with the analysis of its fatal effects and the implementation of mechanisms susceptible to reduce these effects. The World Bank defines corruption as "the abuse of public power to obtain private advantage." This definition suggests that it is the only public sector employees that comes corruption. Another definition of corruption has been proposed by the Council of Europe: "corruption includes acts involving persons vested with public or private who violate their rights under their quality of public official, private employee, independent agent or other such relationship, to obtain illegal benefits either for themselves or for others". According to this definition, corruption comes from both the public and private sector. Some theoretical and empirical studies have suggested several explanations of the links between corruption and growth. In our study, we choose the domestic investment channel through which corruption undermines economic growth. Indeed, according to some studies corruption discourages private investment by increasing the cost of production.

The scope of our study covers 16 MENA countries (see appendix), during the period 2000-2011. Panel data techniques are used to study the impact of corruption on economic growth and investment.

The rest of the paper is organized as follows: section 2 exposes the literature review on the links between corruption, growth, and investment. Section 3 investigates empirically the impact of corruption on economic growth and investment. Section 4 concludes.

2. CORRUPTION, GROWTH AND INVESTMENT: A LITERATURE REVIEW

A large literature highlights the impact of corruption on economic growth and investment. The relationship between corruption and economic growth has been a source of debate for several years. And two schools of thought exist: there are economists who believe that corruption has a negative effect on economic growth while others economists argue that corruption can positively influence economic growth.

According to some authors, corruption has a negative effect on economic growth:

Mauro (1995) in his empirical analysis on the relationship between corruption and economic growth found that there is a strong negative correlation between corruption and rate of private investment. According to this author, there is evidence that institutional inefficiency causes low investment and resulting low growth: the main channel is through which bad institutions.

Knack and Keefer (1995), studying the impact of corruption on economic growth including other indicators such as the bureaucratic performance, voice and accountability and security of property rights. The authors use the variable in the institutional quality of services provided by the policy risk (political risk services) as a proxy for corruption. According to their results, this variable has a negative effect on economic growth.

Mo (2001) provided qualitative estimates of the impact of corruption on economic growth and the importance of the transmission channels. Increased corruption reduces economic growth. Among the most important channels through which corruption may affect economic growth is the political instability. This author also found that corruption reduces the level of human capital and the share of private investment.

Isse and Abdiweli (2003) found that corruption is significantly and negatively correlated with the growth rate of GDP, the level of education, the legal effectiveness and economic freedom.

Oludele and Rano (2008) studied the effect of corruption on economic growth in Nigeria from 1986 to 2007. They sought to show that corruption can affect economic growth through three channels: government investment spending, human capital development and employment. They showed that corruption has a negative and significant effect on the human capital and employment, but has a positive impact on government investment spending. The authors also tested directly the relationship between corruption and economic growth and found that the relationship is negative.

Other authors point out that corruption has a positive effect on economic growth: Corruption and essentially "speed money" increase the efficiency of the economic system. The government will work better or faster with the "speed money" that will help reduce transaction costs and avoid delays and bureaucratic delays. Leff (1964), Huntington (1968) and Lui (1985) defended this argument.

Leff (1964) and Huntington (1968) believe that corruption can enhance economic growth by allowing individuals to pay bribes to public officials to circumvent inefficient rules and bureaucratic delays. In some developing countries, "corruption is necessary to get things done." If reducing corruption is not associated with corresponding changes to eliminate inefficient rules, business activity and economic growth could slow.

Corruption acts as a "piece of compensation for bureaucrats which indicates a more efficient provision of government services and provides a margin of maneuver for entrepreneurs to bypass the ineffective regulations" which enhances the efficiency of an economy.

Lui (1985) shows that corruption can reduce the waiting time. Bureaucratic delays can hinder training business (business training). Corrupt officials who circumvent inefficient rules may actually increase growth. Some positive levels of corruption may even promote growth in countries with relatively effective rules.

Wedeman (1997) found that many corrupt countries have high growth rates. According to this author, the assumption that corruption systematically reduced growth is not entirely justified.

This study aims at explaining the effects of corruption on growth in the context of MENA countries. In this paper, in the light of the results obtained, we can suggest policies to promote growth by encouraging domestic investment in MENA countries.

3. EMPIRICAL ANALYSIS: METHODOLOGY AND ESTIMATION RESULTS

This section tries to explore the effects of corruption both on growth and investment in the context of MENA countries. It presents the model and outlines the measures and data used in this empirical study. It also interprets the estimation results.

3.1. Methodology and Model

In this subsection, we study first the impact of corruption on growth taking into account institutional environment. We conduct a dynamic panel data for 16 MENA countries over the period 2000-2011 by estimating the following model:

$$Y_{it} = C_0 + C_1.Y_{it-1} + C_2.corrupt_{it} + C_3.Invst_{it} + C_4.X_{it} + C_5.I_{it} + \sigma_i + \varepsilon_{it} \quad (1)$$

Where

Y_{it} is the per-capita real income growth rate of the country i at time t .

Inv_{it} is investment of the country i at time t proxied by gross capital formation as a percentage of gross domestic product (GDP).

$Corrupt_{it}$ is the index of corruption of the country i at time t .

X_{it} is a vector of control variables which are considered as determinants of economic growth in the literature.

- *Open* is the trade openness rate of the country i at time t .
- Human capital proxied by primary school enrollment (in logarithm) (Ln HC).

I_{it} is an institutional variable which is political stability and absence of violence (PS), taken from Kaufman Institute dataset.

σ_i is a country specific effect

ε_{it} is an error term.

Second, we explore the effects of corruption on investment by estimating the following investment equations:

$$INV_{it} = C_0 + C_1.INV_{it-1} + C_2.corrupt_{it} + C_3.Y_{it} + C_4.X_{it} + C_5.I_{it} + \sigma_i + \varepsilon_{it} \quad (2)$$

Where

Inv_{it} is investment of the country i at time t proxied by gross capital formation as a percentage of gross domestic product (GDP).

$Corrupt_{it}$ is the index of corruption of the country i at time t .

Y_{it} is the per-capita real income growth rate of the country i at time t .

X_{it} is a vector of control variables which are considered as determinants of economic growth in the literature.

I_{it} is political stability and absence of violence (PS).

σ_i is a country specific effect.

ε_{it} is an error term.

Data of per-capita real income growth rate, investment, primary school enrollment and open trade are taken from the World Development indicators (2012). Data of corruption index are obtained from transparency international (2012). This variable vary from 0 (highly corrupt) to 10 (highly clean). Data of the institutional variable (political stability and absence of violence) are obtained from the Worldwide Governance Indicators (2012). This variable vary from -2.5 to +2.5. (A value of -2.5 indicates that there's bad governance, and a value of +2.5 indicates that there's very good governance. Definition of this variable is exposed in the appendix.

The method of GMM (generalized method of moments) system will be used. Its consistency depends on the validity of the instruments. Two specification tests are considered to study this question. The first one is the test of overidentifying restrictions (Sargan/ Hansen tests). The second one is the AR(2) Arellano- Bond test of absence of second order serial correlation.

3.2. Estimation Results

In Table 1 we report estimation results for the regressions of per-capita real income growth rates for 16 MENA countries. We use Arellano- Bond GMM estimation technique. The results of over- identification restriction tests (Sargan and Hansen tests) accept in the two model equations the null hypothesis that instruments are valid. In addition, autocorrelation test show no evidence of second order serial correlation in the residuals.

Column 1 reports the results from the regressions of growth rates on corruption index. The coefficient of this last one has a negative and significant sign. This result is expected and is consistent with studies showing that corruption is a pandemic that causes massive damage to the economy and that the governors, policy makers, and the private sector must apply drastic measures to fight against corruption.

In column 2 we include a proxy for institutional quality, we choose the political stability and absence of violence index from the Kaufman dataset. This variable has a positive and statistically significant coefficient on economic growth.

In the two equations, investment has a positive and statistically significant coefficient; these results highlight the importance of investments in improving the long-term growth of economies in the MENA region. The results indicate also that the coefficient of trade openness is positive and significant showing its positive impact on economic growth. This confirms many theoretical and empirical studies showing the positive impact of openness and integration of the economies in world trade on economic growth. Indeed, trade liberalization has positive effects on economic growth as the transfer and development of technology. In addition, trade stimulates cross-border learning of production methods allowing a better allocation of domestic resources. Concerning human capital approximated by the primary school enrollment rate, this variable has positive and significant coefficient (in equation 2). This result confirms the theory of endogenous growth that provides a positive effect of human capital on economic growth in the long term.

Table 1. Impact of corruption on economic growth:

Variables	(1)	(2)
		PS
y_{it-1}	0.457^{***} (12.80)	0.389^{***} (6.11)
Corrupt _{it}	-1.251^{***} (-3.34)	-1.183^{**} (-2.30)
Ln open	1.219^{**} (2.79)	0.553 (0.96)
Ln Invst	1.244^{***} (3,33)	1.571^{**} (2.78)
Ln HC	0.085 (0.31)	1.788[*] (2.06)
PS		1.534^{**} (2.58)
Constant	-3.682 (-1.52)	-8.841^{***} (-2.95)
Observations	109	109
AR(2) P Value	0.433	0.466
Sargan Test P Value	0.803	0.278
Hansen Test P Value	0.581	0.706

Source: Author calculations,

*, **, *** significant at 10%, 5% and 1% level. Student's t-test in parentheses.

In Table 2 we report estimation results for total domestic investment. The results of over-identification restriction tests (Sargan and Hansen tests) accept in the two model equations the null hypothesis that instruments are valid. In addition, autocorrelation test show no evidence of second order serial correlation in the residuals. In the two columns, income has a robust positive effect, showing that more countries are rich more they have high rates of investment. The effect of trade openness on investment is positive and significant. Indeed, openness to trade encourages investors to invest more through offering new opportunities in wider markets. Corruption has a negative and significant effect on investment. This result is consistent with some empirical studies showing that it is through the negative impact of corruption on investment that economic growth is affected (Mauro (1995), Mo (2001)). The estimation results also show that good institutional quality (column 2), proxied by "political stability" has a positive effect on investment. The coefficient of this variable has a positive and significant sign.

Table 2: Impact of corruption on investment:

Variables	(1)	(2)
		PS
Ln Invest _{t-1}	0,162^{**} (0,057)	0,268^{***} (4.46)
Corrupt _{it}	-0,182^{***} (-6.08)	-0,145^{***} (-4.84)
Ln open	0,160^{**} (2.50)	-0,065 (-1.00)
Ln Y _{it}	0,022^{**} (2.59)	0,025^{***} (5.64)
Ln HC	0,41^{***} (10.74)	0,387^{**} (3.74)
PS		0,131^{**} (1.96)
Constant	0,708^{**} (2.02)	1,349^{**} (3.12)
Observations	128	115
AR(2) P Value	0.138	0.250
Sargan Test P Value	0.943	0.942
Hansen Test P Value	0.707	0.504

Source: Author calculations,

*, **, *** significant at 10%, 5% and 1% level. Student's t-test in parentheses.

4. CONCLUSION

The findings presented here suggest in first time that with the evidence in the empirical literature, corruption has a negative effect on economic growth, and the analysis in this paper established also a statistically positive and significant effect of investment on growth in a sample of 16 MENA countries. The empirical evidence confirms that the investment is one of the key driver for growth.

In addition, the results suggest that corruption affect negatively and significantly domestic investment and showing that it is one of the main channels through which corruption can affect economic growth. It is through the uncertainty and costs of production and transactions arising from the corruption that corruption has a negative effect on investment. To minimize the negative effects of corruption on public investment that would generate minimal gains in terms of long-term growth, significant measures must be taken to fight against corruption in order thus to achieve and maintain high growth rates .

The results also showed that the implementation of good governance has a positive effect both on economic growth and investment. Thus, given the importance of good governance and its positive effects on economic growth and investment, most MENA governments should undertake serious reforms at their institutions in order to achieve the path of strong and sustainable growth. Indeed, "the more there is an adaptation of reform programs to the context and situation of each country, the more these economies have chance of success" (Kaufman (2007)).

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APPENDIX

I. List of MENA countries

1. Lebanon
2. Iran
3. Soudan
4. Kuwait
5. Saudi Arabia
6. Bahrain
7. Yemen
8. Oman
9. Mauritania
10. Syria
11. Jordan
12. Egypt
13. Algeria
14. Morocco
15. Tunisia
16. United Arab Emirates

II. Institutional variable

Political Stability and Absence of Violence (PV) – measures the perception of the likelihood of government destabilization by unconstitutional or violent means.