

**POLITICAL INSTITUTIONS, CORRUPTION AND ECONOMIC
GROWTH:
EMPIRICAL EVIDENCE FROM MENA COUNTRIES**

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ABSTRACT

The purpose of this paper is to prove that corruption has a damaging effect on economic performance in the developing countries, by using the GMM estimator system for linear dynamic panel data models on a sample covering up 16 countries from 1984 to 2014. The empirical analysis is divided into three parts. First, we have tested the hypothesis that the instability of political institutions has a negative effect on economic growth. Throughout the second part of paper, we have studied the channels through which the instability of political institutions affects economic growth. Finally, in the third part, we have explained the impact of democratic institutions on corruption. The conducted results have shown that the type of political institutions is the base of the most important game in determining the reform of the country's economic behavior. Thus, we can conclude that in MENA countries, the driving force of the most interesting economic growth is human resource. Identically, corruption is among the major institutional failures.

Keywords— Economic growth; Political instability; corruption; GMM system estimator and MENA countries.

RESUME

Le but de cet article est de prouver que la corruption a un effet néfaste sur la performance économique dans les pays en développement, en utilisant le système d'estimation GMM pour les modèles de données de panel dynamique linéaire sur un échantillon couvrant 16 pays de 1984 à 2014. L'analyse empirique est divisée en trois parties. Tout d'abord, nous avons testé l'hypothèse selon laquelle l'instabilité des institutions politiques a un effet négatif sur la croissance économique. Tout au long de la deuxième partie du document, nous avons étudié les canaux par lesquels l'instabilité des institutions politiques affecte la croissance économique. Enfin, dans la troisième partie, nous avons expliqué l'impact des institutions démocratiques sur la corruption. Les résultats menés ont montré que le type d'institutions politiques est la base du jeu le plus important dans la détermination de la réforme du comportement économique du pays. Ainsi, nous pouvons conclure que dans les pays MENA, la force motrice de la croissance économique la plus intéressante est la ressource humaine. De manière identique, la corruption fait partie des principaux échecs institutionnels.

Les mots clés: Croissance économique; L'instabilité politique; la corruption; Estimateur du système GMM et pays MENA.

1. Introduction

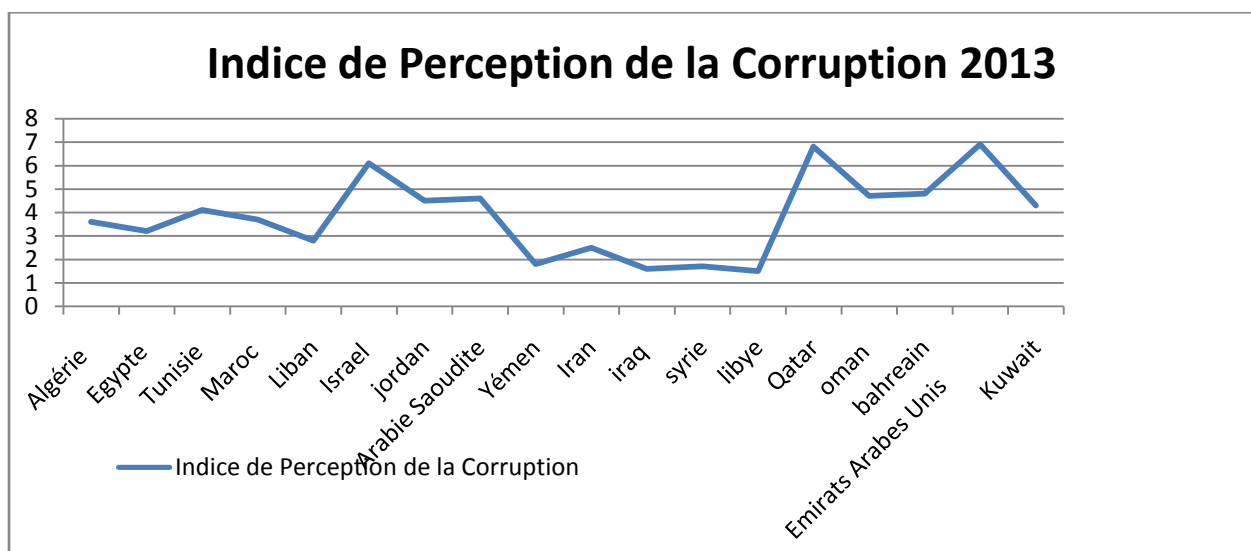
In recent years, corruption was the subject of many theoretical and empirical studies for the detection of its harmful effects and the establishment of mechanisms to fight against this scourge. Analysis of corruption is of several disciplines: sociology, law, economics, political science, hence a problem of definition that is required. Moreover, corruption can be seen as a structural problem from the political or economic system or as a socio-cultural or individual problem (Rose-Ackerman, 1999). Commonly, corruption is defined as the abuse of public office for the purpose of personal gain. According to Eigen¹, (2002) Corruption is a major cause of poverty and a barrier against it. Other economists (Meny 1997; Mbaku, 1996. Amundsen and al, 2000) defines corruption as deviations by state agents in relation to standards or formal rules that govern their behavior. According to the legal definition, corruption is materialized by a deed of tangible resources between public officials and private agents in return for a service or a service promise. Furthermore corruption can exist not only at the interface of public and private sectors but outside it (Rose-Ackerman, 1978). A broad definition of corruption can be formulated in terms of "use of public assets for private gain" (Amundsen, 2000; Bardhan, 1997; Rose-Ackerman, 1996). It seems important to emphasize the separation between the private sector (private property) and public sector (public goods). This conception of corruption is at the same time the issue of organizational models of the State or of the bureaucracy. This leads to consider corruption as an institutional disease (Groenendijk, 1997).

Two direct effects result from the difficulty of defining corruption: First, it is a problem of its measurement. It is a phenomenon dissimilated and unobservable (Schleifer et al., 1998; Kaufman, Kraay and Mastruzzi (KKM), 2003; 2003). The second implication stemming from the difficulties of definition and hence extent of corruption concerning data collection methods, which may not correspond to the perception that local agents of corruption. The political shock that shook the Middle East and North Africa (MENA) in 2011 detected a pervasive corruption, especially in the political sector. Hence the world is characterized by an evolution of corruption. Generally, this phenomenon is amplified is reached very high levels in developing countries.

¹ Eigen P., (2002): « Corruption in a Globalized World », SAIS Review, vol 22, N°1, pp45-59.

The main indices measuring corruption, the Corruption Perceptions Index of Transparency International, the transformation index of the Bertelsmann Foundation, Global Integrity reports, the study on freedom in the world of Freedom House and World Bank governance indicators verify the level of corruption is very high in many countries in the region in comparison with the world average. This answer focuses specifically on Egypt, Jordan, Libya, Morocco and Tunisia.² Since 1995, "Transparency International" publishes an annual Corruption Perceptions Index (CPI) ranking country according to the perceived level of corruption in a country. This index considers the level of corruption among politicians and governments of each country. This institution has selected this index because of its ability to include all aspects of corruption. L'IPC composite basons sur several enquêtes et études exécutées par des Organismes Indépendants. CET indice composite resulte de 17 sources various Provenant de 10 institutions Indépendantes. Il Est Fonde Sur la perception D'experts (homme de osée de d'Affaires et paie Spécialistes) de la corruption. Il classe les paie SELON juin échelle de 0 Allant (haut degré de corruption percu) à 10 (Faible degré de corruption perçue).

Graph 1: Perception Index Corruption (CPI) for the MENA region



Source : Transparency International, (2013).

² Trend of corruption in the MENA region (Middle East and North Africa), Transparency International (2011).

2. Une revue de littérature

The effects of corruption on economic growth performance as institutional variable are a topic of discussion over the past 40 years. On the one hand, there is a point of view, illustrated by Myrdal (1989) and Shleifer and Vishny (1993), that corruption is detrimental to investment and economic growth. On the other hand, Lui (1985) has clearly considered that corruption can be beneficial for economic growth at certain levels. In fact, he has demonstrated that corruption can be a transaction facilitating and therefore growth enhancing. However, empirical evidence has supported the presence of a linear and negative correlation between corruption level and per capita income growth rate average (Mauro, 1995; Hall and Jones, 1999). Empirically, economists such as Tanzi and Davoodi (1998), Mauro (1998) and Gupta et al. (2001) have revealed that corruption alters the composition of public expenditure towards less productive activities and, therefore, the more of government spendings are, the more negative effects of corruption would be. Guetat (2006) has proved (for a panel of 90 studied countries during the period 1960-2000) that corruption is an important part of developmental climate, particularly by affecting investment and human resources.

As a matter of fact, corruption has not only a positive effect on economic growth (Huntington, 1968; Lui, 1985 and Leff, 1964), but also has a negative impact. Indeed, a plethora of analyses, such as those by Mauro (1995), Keefer and Knack (1997), Gyimah-Brempong (2002), Aidt (2009), and Bhattacharyya and Hodler (2010), have revealed different mechanisms through which various manifestations of corruption are serious impediments to the long-term prospects of developing economies. It is for this reason that the World Bank has identified corruption as “the single greatest obstacle to economic and social development”. Alesina and Angeletos (2005) have shown that corruption increases income inequality because wealthier agents have better access to illegal rent seeking activities. Billger and Goel (2009), who have concluded that richer countries have consistently, lower levels of corruption. Researches on political, economic and social instabilities are now accumulating. The relationship between political instability and growth derives from Grossman (1991) analysis of insurrection. In countries where rulers are relatively weak, i.e. more easily overthrown, the probability of revolutions is higher and the citizens have higher incentives to engage in revolutionary activities.

In addition, low corruption would improve the performance of shares of the state. The latter can create an economic environment conducive to investment, increase the amount of

infrastructure (roads, health, education, etc.) and improve their quality. these policies require in return mobilization of additional resources. Vis-à-dependence on foreign aid in developing countries, particularly in Africa, not only has only advantages: it can notably increase the external public debt of these countries (see Toussaint and Millet, 2005) but also worsen their already precarious institutional situation (Knack, 2001; Svensson, 1998).

Barro (1991) has found that measures of political unrest, such as assassinations number, revolutions occurrence and sudden or violent government change, significantly affect the cross-sectional growth rates. A similar result is found in Alesina et al. (1996). In contrast to this, Campos and Nugent (2002) do not find a causal effect from political instability to economic growth (only a marginally significant one for the sub-Sahara African subsample). Alesina and Tabellini (1989) have examined political uncertainty effect on investment and capital flight. Other studies on corruption, including Uslaner (2004) who has regressed trust to corruption, found a negative correlation between openness and corruption (Ades and Di Tella, 1999; Baksi et al., 2009; Treisman, 2000), or coordinated rent-seeking behavior and corruption (Blackburn and Forgues-Puccio, 2009). Political instability has considerably reduced economic growth (Aisen, Veiga, 2013). Similar studies have reported a significant negative correlation between political instability and economic growth (Gupta, 1990; Alesina et al, 1996; Perotti, 1996; Ades and Chua, 1997).

Various economists (Alesina et al., 1996; Mauro, 1995; Özler and Rodrik, 1992; Alesina and Perotti, 1996) have shown that GDP growth is much less in countries where there is a significant tendency to government collapse. Tang and Abosedra (2014) found that political instability hinders the growth process and economic development in the MENA region (use of 24 countries in the MENA region). The purpose of this article is to prove that corruption among the main representative institutional failures in MENA countries. At this level, we treat an empirical study (given panel) for a group of 16 countries in the MENA region during the period covering 1984 to 2014. Various studies have shown that corruption directly discourages economic growth and development (Keefer et Knack, 1997 ; Keefer et Knack, 1995 ; Li, Xu, et Zou, 2000 ; Méon et Sekkat, 2005). The negative relationship between growth and corruption occur only in countries where there is a high level of financial transparency (Neeman, Paserman, et Simhon (2008)).Aidt, Dutta et Sena (2008) prove that the quality of institutions significantly affect the impact of corruption on economic growth. Similar results were observed that corruption is less harmful to the effectiveness in countries or institutions are less effective. According to Welsch (2004), which proves that any reduction

in corruption leads to an acceleration of economic growth and improved environmental quality. Studies on the determination of causality between the corruption index and the level of economic growth argue that the correlation is not always negative [Del Monte and Pagagni (2001)]. They show that corruption can be seen sometimes as a stimulating measure of production and labor. Leff (1964), Huntington (1968), Summers and Heston (1988), Acemoglu and Verdier (1998) have shown that corruption can promote efficiency since it helps entrepreneurs avoid burdensome bureaucratic regulations or policies ineffective during officials bribes. Rock and Bonnet (2004) analyzed the link between growth, corruption and investment. They found that corruption significantly promotes economic growth in the case of China, Indonesia, Thailand and Japan. Other studies exposed the corruption prevents economic growth increasing uncertainty in the process of decision making and the business costs (Murphy and al. (1993), Goud and Amaro-Reyes (1983), Mauro (1995), Mo (2000) and Monte).

The remainder of the paper is organized as follows: Section 2 describes the data used; Section 3 provides a description of cross-countries dynamic panel GMM system estimator analysis; Section 4 presents empirical results; Section 5 concludes the paper.

3. Data

Annual data on economic variables over the period 1984-2014 were collected for 16 countries, covering the MENA region (Middle East and North Africa). Economic data sources were World Development Indicators of the World Bank Development Indicators (WDI, 2007). Data institutional variables were obtained from the International Country Risk Guide (ICRG, 2014) and Polity IV database (Marshall and Jaggers, 2009). The following work will focus on determining the impact of institutional variables on economic growth.

Used variables, their definitions and sources are summarized in Table 2.

Table 2: List of variables, definitions and sources

Indicator	Définition	Source
Foreign direct investment, net inflows (% of GDP)	Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10% or more of the shares with voting rights) in an enterprise operating in an economy other than that of the investor.	World Bank's World Development Indicators (WDI)
School enrollment, tertiary (% gross)	Total is the total enrollment in tertiary education (ISCED 5 and 6), regardless of age, expressed as a percentage of the total population of the five-year age group following on from secondary school leaving.	World Bank's World Development Indicators (WDI)

GDP per capita (current US\$)	GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars.	World Bank's World Development Indicators (WDI)
General government final consumption expenditure (% of GDP)	The final consumption expenditure of government (formerly general government consumption) includes all government current expenditures for purchases of goods and services (including compensation of employees). These expenditures also include most of the expenses for defense and national security, but does not include military expenditures that are part of government capital formation of government.	World Bank's World Development Indicators (WDI)
Ethnic tension	Risk assessment of government foreign equity holder through an external pressure state of non- violence in a state of violent outsider, war, border conflicts, foreign pressure.	ICRG (2014)
political risk	The measure of political constraints employed in this paper estimates the feasibility of policy change (the extent to which a change in the preferences of any one actor may lead to a change in government policy).	Henisz, W. J. (2002)
democracy (polity IV)	From strongly autocratic (-10) to strongly democratic (10). This variable is our proxy for democracy according to Barro (1996) and Tavares and Wacziarg (2001), a negative coefficient is expected.	Marshall and Jaggers, (2009)
Corruption	Measuring the abuse of public office for personal gain. Low scores mean that officials are corruptible and that corruption is distributed to all of the administration.	ICRG (2014)
Rule of law (law and order tradition)	It represents one side the degree of compliance with the law by representing the power of the legal system and respect for order, on the other hand. This indicator reflects the strength and impartiality of the country's judicial system.	ICRG (2014)
Bureaucratic quality	It expresses the independence and autonomy of the administration from political power and changes the exclusive power. A high score indicates better bureaucratic quality.	ICRG (1997)

Table 2 shows the mean and variance equality tests regarding the relevant variables in our sample. The results indicate that the average corruption rate of studied countries was around 2.623. On the other hand the average of political risk was at a level of 0.134, which indicates that the change in government policy frequency was prominent. In addition, the democracy level was too low since it did not exceed the rate of -5.

Table 3 : Descriptive statistics

Variable	Obs	Mean	Std.Dev	Min	Max
Corruption	490	2.623	0.808	1	5
Rule of law	490	3.896	1.239	1	6
Bureaucratic quality	490	2.044	0.687	0	4
Ethnic tensions	473	4.109	1.337	0	6
Growth of GDP per capita	473	0.593	0.177	-0.778	0.778
Foreign direct investment, net inflows (% of GDP)	496	2.340	3.677	-5.288	33.566
School enrollment tertiary (% gross)	345	22.268	13.834	0.080	67.891

Political risk	496	0.134	0.207	0	0.647
Size of government	443	18.798	7.028	5.745	76.222
Democracy (polity IV)	480	-4.976	5.345	-10	10

4. Econometric methods

We have used a panel data evidence for 16 MENA countries selected according to the available data for the period from 1984 to 2014. The empirical analysis is divided into three parts. First, we test the hypothesis that political institutions instability has negative effects on economic growth. Throughout the second part of the empirical analysis, we have studied the channels through which political institutions instability affects economic growth. In the third part, we have focused on democratic institutions impact on corruption. The baseline model which we have estimated is an augmented version of Islam's model (1995), which derives an estimable panel regression specification from the Solow growth model (1956).

We have used the generalized method of moments (GMM) to assess the relationship between political institutions and economic growth, which is developed for dynamic panel models by Arellano and Bond (1991), and Arellano and Bover (1995). The traditional regression of the growth model is as follows:

$$y_{i,t} - y_{i,t-1} = \alpha y_{i,t-1} + \beta' x_{i,t} + \mu_i + \varepsilon_{i,t} \quad (1)$$

Where y is the logarithm of GDP per capita, x represents the explanatory variables other than the lagged dependent variable, μ_i is a specific effect of the unobserved country, $\varepsilon_{i,t}$ is the error term and the indices (i, t) respectively represent the country and time. We have included variables of time dummies to represent the specific time effect $\varepsilon_{i,t}$.

In order to differentiate equation (1), Arellano and Bond (1991) propose:

$$(y_{i,t} - y_{i,t-1}) - (y_{i,t-1} - y_{i,t-2}) = \alpha (y_{i,t-1} - y_{i,t-2}) + \beta' (x_{i,t} - x_{i,t-1}) + (\varepsilon_{i,t} - \varepsilon_{i,t-1}) \quad (2)$$

Although differentiation eliminates countries specific effect, it offers a new way for construction of the new error term, $(\varepsilon_{i,t} - \varepsilon_{i,t-1})$, which is correlated with the lagged dependent variable $(y_{i,t-1} - y_{i,t-2})$. As a result, the explanatory variables are strongly exogenous. Arellano and Bond (1991) have proposed the following moment conditions:

$$E[y_{i,t-s}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \text{ to } s \geq 2 \text{ and } t = 3, \dots, T. \quad (3)$$

$$E[x_{i,t-s}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \text{ to } s \geq 2 \text{ and } t = 3, \dots, T. \quad (4)$$

Using the moment conditions, Arellano and Bond (1991) have proposed a two-step GMM estimator. Concerning the first step (3), the error term is assumed to be independent and homoscedastic across countries and over time. In the second step, the reached residues from the previous step are used to construct a regular estimation of the variance-covariance matrix. As a result, we have obtained the assumptions of homoscedasticity and independence. In fact, we obtained an asymptotically efficient estimator in the first step.

Regarding explanatory variables persistence case, Blundell and Bond (1998) together with Alonso-Borrego and Arellano (1999), have verified that delayed levels of these variables are weak instruments for the regression of the equation in difference. Asymptotically, it will have an increase in the variance of the coefficients. Monte Carlo simulations for small sample sizes, have verified that the weaknesses of the instruments can establish biased coefficients. Arellano and Bover (1995) as well as Blundell and Bond (1998) have proposed an estimator system to reduce the potential bias and imprecision associated to the difference estimator. Instruments for the regression system are delaying differences of the corresponding variables. However, the following moment conditions are available:

$$E [(y_{i,t-s} - y_{i,t-s-1})(\mu_i - \varepsilon_{i,t})] = 0 \quad \text{to } S=1$$

$$E [(x_{i,t-s} - x_{i,t-s-1})(\mu_i - \varepsilon_{i,t-1})] = 0 \quad \text{to } S=1$$

The consistency of the GMM estimator depends on the validity of hypotheses of autocorrelation absence of error terms and instruments. For the validity of these assumptions, we use two tests proposed by Arellano and Bond (1991), Blundell and Bond (1998) together with Arellano and Bover (1995). The first Sargan test of over-identification tests the complete validity of the instruments and the second test verifies the assumption that the error ($\varepsilon_{i,t}$) is not correlated in series. The failure to reject the primary hypotheses of two tests gives support to our model. Both difference estimator and system estimator found some problems with small samples. For two-step estimators, asymptotic standard errors are biased (Arellano and Bond (1991); Blundell and Bond (1998)).

5. Empirical results

To explain political institutions impact on economic growth, government size and political instability are represented by proxy variables which are respectively the final consumption expenditure of general government as a percentage of GDP and political risk (Henisz, WJ (2002)). Specifically, we have used the dynamic panel GMM system estimator of Blundell

and Bond (1998). This choice is motivated by the fact that this estimator allows us to model both the lagged dependent variable and fixed country effects.

a. The direct effect of political institutions on economic growth

Our primary interest is to determine the tests of the validity of instruments (Sargan) and the lack of serial autocorrelation of residuals (Arellano and Bond, 1991). As shown in Table 3, we accept the presence of an AR (1) for residues and the absence of an AR (2) effect. This is in accordance with the formulated hypotheses. Besides, Sargan and Hansen tests have validated the choices of instruments. For macroeconomic variables, the results of the different models are similar to those which are provided in. The assumption that political instability negatively affects economic growth gets a clear empirical support. The estimated coefficient has implied that the rising volatility of the government is due to the low rate of economic growth.

Consequently, the low economic growth may increase the volatility of government (Alesina et al., 1996). The initial GDP per capita has a negative coefficient, which is compatible with the conditional convergence income across countries. Investment (Mankiw et al., 1992) and tertiary enrollment rates have positive and statistically significant coefficients, indicating that more investment and education promote the growth. The size of government has a positive and significant effect on economic growth. By integrating each time one of the four institutional variables based on data from the ICRG, the results confirm the existence of a positive correlation between the quality of political institutions and economic growth. All coefficients are positive and significant at 5%, except for the case of the indicator of corruption in government has a negative and significant effect at 5%. Democracy (Polity IV) has a positive and not significant coefficients. We can conclude that the bureaucratic quality, state, laws and ethnic tensions have a direct and positive impact on economic growth, while democracy has no effect because it does not manage to take root in these countries with low income levels. This implies that the institutional environment improves economic growth.

Table 3: Economic Growth and institutional variables

Dependant Variable : real GDP growth per capita							
	1	2	3	4	5	6	7
Lagged real GDP growth per capita	(-0.730) 0.000**	(-0.572) 0.000**	(-0.717) 0.000**	(-0.889) 0.000**	(-0.365) 0.000**	(-1.015) 0.000**	(-1.110) 0.000**

Investment Share of GDP(%)	(0.005) 0.043**	(0.005) 0.000**	(0.007) 0.046**	(0.008) 0.018**	(0.004) 0.000**	(0.006) 0.003**	(0.006) 0.000**
School enrollment tertiary (% gross)	(0.005) 0.026**	(0.002) 0.058*	(0.008) 0.000**	(0.001) 0.001**	(0.004) 0.000**	(0.005) 0.097*	(0.009) 0.004**
Political risk	(-0.051) 0.072*						
Corruption in government		(-0.020) 0.001**					
Rule of law			(0.014) 0.000**				
Bureaucratic quality				(0.075) 0.000**			
Ethnic tensions					(0.071) 0.000**		
Democracy (polity IV)						(0.016) 0.239	
Size of government							(0.001) 0.030**
constants	0.164 0.000**	0.309 0.000**	0.137 0.000**	-0.053 0.093*	0.088 0.000**	0.012 0.220	-0.053 0.082*
Number of observations	325	325	325	325	325	316	302
Number of countries	16	16	16	16	16	16	15
AR(1) (p-value)	0.038	0.044	0.033	0.038	0.072	0.016	0.077
AR(2) (p-value)	0.561	0.617	0.590	0.541	0.356	0.917	0.530
Sargan (p-value)	0.849	0.893	0.830	0.872	0.217	0.390	0.905
Hansen (p-value)	0.896	0.911	0.996	0.949	0.984	0.998	0.996

Notes: - System-GMM estimations for dynamics panel-data models. Sample period: 1984-2014. -t-Statistics are in parentheses. Significance levels at which the null hypothesis is rejected:1%***;5%**;10%*.

Source: estimated by the author using STATA 13

b. Transmissional channels

The second impact of political institutions on economic growth which has an indirect effect via the accumulation of human capital is the most privileged transmission channel. The results of the estimation are shown in Table (4). The relationship between political institutions and the accumulation of human capital is more real. By adding the interaction terms between political variables and human capital, we find that the interaction term between the rule of law and human capital, the interaction term between Bureaucratic quality and human capital, the term interaction between Ethnic tensions and human resources and the interaction term between democracy and human capital are significant and positive at 5%.

In contrast, the interaction between corruption and human resources and the interaction between Political risk and human resources have a significant and negative 5%. At this level, we can conclude that the quality of institutions can influence economic growth, through the indirect effects of these via human capital. Therefore, a better quality of political institutions will have an effect on economic growth if these countries are characterized by a more productive human capital.

Table 4: interaction between political institutions, human resources and economic growth

Dependant Variable : real GDP growth per capita						
	1	2	3	4	5	6
Lagged real GDP growth per capita	(-0.824) 0.000**	(-0.561) 0.001**	(-1.028) 0.000**	(-0.843) 0.000**	(-0.809) 0.000**	(-0.828) 0.000**
School enrollment tertiary (% gross)* Rule of law	(0.006) 0.005*					
School enrollment tertiary (% gross)* Bureaucratic quality		(-0.001) 0.004**				
School enrollment tertiary (% gross)* Ethnic tensions			(0.005) 0.004**			
School enrollment tertiary (% gross)* Democracy (polity IV)				(0.005) 0.000**		
School enrollment tertiary (% gross)* Political risk					(-0.008) 0.000**	
School enrollment tertiary (% gross)* Corruption in government						(-0.001) 0.000**
constants	(0.12) 0.000**	(0.227) 0.007**	(0.118) 0.000**	(0.103) 0.000**	(0.125) 0.000**	(0.122) 0.000**
Number of observations	456	456	456	456	456	456
Number of countries	16	16	16	16	16	16
AR(1) (p-value)	0.082	0.027	0.093	0.094	0.094	0.098
AR(2) (p-value)	0.695	0.262	0.642	0.768	0.588	0.568
Sargan (p-value)	0.242	0.460	0.345	0.999	0.385	0.443
Hansen (p-value)	0.975	0.422	0.946	0.516	0.921	0.967

Notes: - System-GMM estimations for dynamics panel-data models. Sample period: 1984-2014. -t-Statistics are in parentheses.

Significance levels at which the null hypothesis is rejected:1%***;5%**;10%*.

Source: estimated by the author using STATA 13

c. political institutions effect on corruption

Generally, the above results have shown that corruption has a negative direct and indirect impact on economic growth. Several studies have shown that various factors have an effect on corruption. The results of the estimation are shown in Table 5.

Table 5: Institutional variables and corruption variables

Dependent Variable: index of corruption					
	1	2	3	4	5
School enrollment tertiary (% gross)	(-0.034) 0.000**	(-0.034) 0.000**	(-0.029) 0.000**	(-0.036) 0.000**	(-0.032) 0.000**

Rule of law		(0.042) 0.045**			
Bureaucratic quality			(0.246) 0.000**		
Ethnic tensions				(0.785) 0.007**	
Democracy (polity IV)					(0.004) 0.037**
constants	(3.357) 0.000**	(3.164) 0.000**	(2.712) 0.000**	(3.082) 0.000**	(3.322) 0.000**
Number of observations	345	345	345	345	336
Number of countries	16	16	16	16	16
t-Haus (P-values)	0.000	0.086	0.000	0.000	0.000

Notes: - t-Statistics are in parentheses. Significance levels at which the null hypothesis is rejected: 1%***; 5%**; 10%*.

Source: estimated by the author using STATA 13

The estimated results showed (model 1, 3, 4 and 5) the existence of a correlation between the individual effects and the explanatory variables which leads us to reject the null hypothesis and retain the estimating model for individual fixed effects (p-values of t-hausman <5%). We chose to make estimates with ordinary least squares (OLS). In contrast, in the model 2, we have chosen to perform the estimation with the method of generalized least squares (GLS). Integrating each time one of the four institutional variables, the results have confirmed the existence of a positive and significant correlation at 5% between institutional variables and corruption. This means that in these countries, high levels of corruption, less democratic political institutions and low living together form a vicious circle. Therefore, among the reasons for the high level of corruption which is subsequently causing poor economic performance of developing countries is the presence of less democratic political institutions or sometimes non-democratic developing countries. In other words, the relationship between corruption and democracy is bidirectional: High levels of corruption threaten democracy, both direct and indirect.

Similarly, Amundsen (1999) has shown that corruption weakens political institutions and citizen participation, on one side, and it delays and slows economic growth which is a basis for the conservation of democracy, on the other side. The worsening of the corruption is due to a lack of democracy and poor distribution of public expenditure in education. We can conclude that the poorest democratic institutions increase the level of corruption. As a result, these states usually suffer from critical economic difficulties. Thus, the solution of this phenomenon is not only an anti-corruption strategy, but we must apply the best reforms and the most appropriate institutional policies in developing countries.

Conclusion

The quality of political institutions proves a rule of the most important game in the determination of the reform of the economic behavior of countries. Indeed, these studies have empirically examined and investigated the effect between the quality of political institutions, economic growth and human resources for a group of 16 countries in the MENA region during the period 1984-1997. We can conclude that the poor quality of institutions that characterize the MENA region leading to destabilize economic growth. Indeed, democracy has a significant effect on economic growth. Thus, we can conclude that in the MENA countries, the driving force of the most interesting economic growth is human resources. Identically, corruption is among the major institutional failures. As a result, corruption has a damaging impact on economic performance. Therefore, it is clear that corruption has a worse impact on low-income levels which are thus less integrated in the countries of the world economy. Generally, in the MENA countries, corruption represents a higher level with a weak legal system and poor quality of bureaucrats who receive low wages.

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