

DEMOCRACY, POLITICAL STABILITY AND ECONOMIC GROWTH: EVIDENCE FROM MENA COUNTRIES

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Abstract

This paper examines the nexus between democracy and economic growth, while taking into account the role of political stability, using dynamic panel data model estimated by means of the Generalized Method of Moments (GMM) over the period 1998–2011 for 17 MENA countries. Our empirical results show that there is a bidirectional causal relationship between democracy and economic growth. In addition, political stability is a key determinant variable of economic growth, and eventually democracy and political stability, taken together, have a positive and statistically significant effect on growth.

Keywords: Political stability, democracy, economic growth, MENA countries

JEL: C33, F68, O11, O43, P16, P26

1. Introduction

Democracy is a fundamental factor for sustainable economic development and, therefore, can lead a country to a situation where it is not, only possible to have more democracy, but also is even so necessary that economic development will continue. The spread of democracy has not reached the Middle East and authoritarianism survived the third wave of democracy and maintained its resistance to the challenge of democratization for many reasons beyond the scope of this document (Heydemann, 2007). This challenge has continued until the events of the Arab Spring exploded at the end of 2010. However, as this series of events is still ongoing, it is unclear whether the Arab Spring has brought democracy to the Middle East or

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not. If we take the Arab Spring as evidence, one can say that there is a great popular support for democracy in this region. In addition, the popular movements in the Arab world show that transition to democracy may be accompanied by political instability that can probably hurt growth. This suggests that the effect of democracy on growth depends on political stability. In this paper, we propose this hypothesis to be tested empirically.

The impact of democracy depends on the development and inter-reacts with other institutions the most important ones are the quality of the State institutions and the prevalence of the rule of law.

Until today, interactions between stability, the nature of the political regime, and economic growth have been enigmatic. According to Rostow (1990), the economic takeoff would require the existence of a strong regime or political stability, which is a prerequisite for economic growth. However, it turned out that the presence of political instability and poor governance causes sustainable decline in the savings which are originally developed and deemed that political stability does not appear to be systematically related to democracy such as the countries with high levels of growth in the presence of the stability and the absence of political democracy.

Political stability is the respect of the political system, whatever it is, the rule of law, and the respect of private property. Without this, the expected economic results of political stability will probably not be realized. However, if a non-democratic political system is willing to really observe this rule of the law, this means that it is ready to take the first step which will undoubtedly lead to a system increasingly democratic. In this sense, the non-democratic regime (called authoritarian usual) would be a temporary step on the way to real democracy. This stability becomes productive when the regime, as was the case of, "Asian dragons" at the beginning of their economic takeoff, invests this stability to reassure investors and encourage their economic commitments in long-term projects, including the country's needs.

This article contributes to the literature through the relationship between democracy and economic growth, and the role that political stability can play in this relationship. This study is intended to provide a modest contribution to the exiting literature by highlighting three major aspects of the relationship. Firstly, most of the scientific papers have sounded to treat this relationship from an exclusive theoretical perspective.

Secondly, to our knowledge, none of the empirical studies have appeared to focus on investigating the two-way association binding democracy and growth through applying the simultaneous-equation modeling with a “growth model” framework. Finally, treating this type of relationship within the MENA region context constitutes a contribution for our analysis, in itself.

Therefore, we will attempt to answer the following question: under what conditions could democratization prevent or stimulate economic growth? To do this, we will try to explore the effect of political stability on the relationship between democracy and economic growth of the MENA countries.

The procedure is to present, the relation between political stability and economic growth, then to treat the literature of the theoretical and the empirical studies. In the next section, we study the importance of political (in) stability as a framework for democracy based on lessons we learned from the Arab Spring which prove that the transition to a more democratic political regime may be accompanied by political instability while affecting the economic growth. Afterwards, we will investigate through the instrumental method GMM, a two-step relationship between democracy and economic growth while taking into account the effect of institutional quality, including the political stability of countries in the MENA region. Finally, we draw some general conclusions and offer recommendations.

2. Political stability, democracy and economic growth

2.1. Role of institutions in economic growth

The concept of governance finds its origins in the New Institutional Economics (NIE), which took the political and the institutional factors in explaining development and growth.

North (1990) defined institutions as the set of game rules of a society, or more formally, "designed the human constraints that shape human interaction" The game rules can either be formal, such as laws and regulations whose implementation should be ensured by the State or its directors, or informal, such as social capital and culture (Persson and Tabellini, 2005).

During the last two decades, many studies have explored the role of institutions. They can be regarded as an inter-temporary contract that determines behavior. Aoki (2000) found that the institution is a system of shared beliefs; therefore, good institutions are those which stimulate the activities of agents with high

social returns.

Thus, Greif (2006) states that institutions can be defined as a set of social, rules, beliefs, values and organizations which encourage the regularity of the individual and social behavior.

In general, the recent work by Economides and Egger (2009) on the determinants of economic development, provided that institutional quality is a determinant of economic growth.

A good institutional quality is one that ensures property rights and minimizes transaction costs, creating a favorable investment environment, to the stimulation of entrepreneurial activities, creativity, growth and development.

It also reduces uncertainty for economic policymakers and offers incentives for productive and innovative behavior. A high degree of certainty implies lower transaction costs, making more profitable economic projects and therefore more likely to be undertaken. By affecting agents' economic expectations, good governance enables them to use a longer time horizon, while providing incentives for productive behavior of high and efficient.

The emerging consensus in the literature is that institutional factors are the major components of economic growth; the most remarkable is political instability.

Measuring governance is carried out by the World Bank through six different indicators for 212 countries, which include; the degree of empowerment of the citizens, political stability, effectiveness of the public power, the regulatory burden, the rule of law and the control of corruption.

To study the impact of the policy of institutional quality, we have taken the political stability index with a value between -2.5 and 2.5.

2.2. Defining political (in) stability

Political stability is the perceived risk of destabilization or overthrow of a regime by unconstitutional means and the likelihood of the violent threats against governments that include the following elements: military coups, political tensions, civil wars, social unrest, ethnic tensions, political violence, unpredictable changes in institutions and rules, including violence by national groups.

The same political situation in a country can be considered as stable or unstable, depending on the

definition of political instability. There is no consensus in the literature on a precise definition of political instability greater than these alternatives. Historically, the widely accepted definition of political instability in political science was that of Lipset (1959), which defined it as the persistence or continuity of certain types of political systems.

According to Lipset (1959), a country is politically stable if there is either a liberal democracy or a dictatorship for 25 years. This definition would lead to a conclusion that some countries (e.g. Italy, Belgium), which experienced very frequent changes of government in the period after World War II, would be regarded as politically stable because they remained democratic for the entire period.

The second definition of political instability concerns the legitimacy of the political system. According to Sanders (1981), a political system can be considered exactly as "more" or "less" stable or compared with other systems or with itself over a different period. Sanders went on to suggest that revolutions are a sign of political instability as they may be caused by discontent and dissatisfied individuals.

The third reason for political instability is called social unrest (De Haan and Siermann 1996). According to this view, political instability is equivalent to socio-political tensions, civil disobedience protests that are considered a threat to the political power of the current government. Thus, political instability is measured with the number of violent political events, for example, riots, strikes, coups or political assassinations. Social unrest, in particular, is not only a challenge for the political regime but also can affect the property rights of individuals.

2.3. The effect of political (in) stability on economic growth

The relationship between economic growth and political stability is an object of interest for political scientists and economists. A positive link between political stability and economic growth is confirmed by Alesina and Perotti (1996) and Feng (1997).

On a sample of 113 countries analyzed over the period 1950 and 1982 period, Alesina and Perotti (1996) estimated the relationship between political stability and growth of GDP per capita. They consider political instability as a composite index based on a number of events, such as demonstrations, political murders, coups, civil wars and all violent political action as the propensity of the government to collapse.

Socio-political instability affects economic growth because it creates an uncertain political and economic environment, which raises the risks and reduces investments and also leads to higher inflation.

Several authors, as articulated political instability is a phenomenon that directly and adversely affects economic growth at least for two reasons.

First, it directly leads to breaks in the process of wealth creation and thus disrupts market activities and labor relations. It also has a direct negative effect on productivity (Landa and Kapstein, 2001).

Secondly, political instability does not allow the institutions to effectively guarantee the rights of private property, which increases transaction costs and subsequently negatively affects investment and reduces growth. This pathway of causation was underlined by several researchers. According to Aisen and Veiga (2013), political instability is likely to create volatility and frequent policy changes. This tension would be detrimental to macroeconomic performance of a country (see also Campos and Nugent, 1999).

In addition, political instability could indirectly affect economic growth via the accumulation of factors of production. Indeed, Dixit and Pindyck (1994) emphasize the impact of political instability on the accumulation of production factors, such as investment capital and human capital.

Political instability can cause the decrease of the investment volume by the increased risk of loss of capital and enable institutions to ensure property rights, resulting in lower investment earnings (Alesina and Perotti, 1996). Thus, human capital accumulation can also be affected by political instability because uncertainty about the future and the abandonment of skills can make people invest less in education.

Moreover, many previous studies indicated the importance of the negative relationship between economic growth and political instability. There are two common arguments in the literature about the impact of political instability on economic growth.

Firstly, political instability increases political uncertainty affecting the incentives of economic agents and therefore growth. Some studies have assumed that existing governments behave according to their own agenda in a political system that is both unstable and polarized because of a high probability of a change of government due to large differences in the political and economic preferences of the following government (Alesina and Tabellini 1990).

Second, the change of government is linked to economic, political, social and institutional circumstances. With a strong propensity to executive changes comes the political uncertainty and possible threats to property rights (Alesina and Perotti 1996) by the impact on growth.

It seems indisputable that the related studies, which had tried to provide new findings to the problems of political instability and its interaction with economic and social spheres, highlighted the fact that the political regimes aspiring to limit the negative effects of disturbances and fluctuations experienced by the institutions of the state, must bring the appropriate remedies to the root causes of political fragility to decline its consequences on the economy and support growth.

2.4. The empirical literature

2.4.1. The relationship between democracy and economic growth

The nexus between economic growth and democracy has made subject of several academic research works and studies elaborated over the past few decades. There studies can be categorized into two strands; the first of which has undertaken to examine the impact of democracy on GDP. As for the second strand, it has proposed to study the effect of economic growth on democracy. With respect to the first line of thought, proponents of this stand base their arguments on the important question of whether democracy does actually help in promoting economic development or not. In fact, controversial results have been reached as to the effects of democracy on economic performance.

Table1. Summary of the existing empirical studies on the democracy and economic growth relationships.

Study	Countries	Review periods	Applied Methodologies	Causality relationship
Yi Che et al. (2013)	The United States and Columbia (a comparative study)	1960–2000	GMM in system	G → D
Paldam and Gundlach (2012)	A cross-country	1972-2008	OLS	G → D
Rodrik and Wazciarg	154 countries	1950-2000	Fixed effect	D →

(2005)				G
Papaioannou and Siourounis (2008)	166 countries	1960-2003	Fixed effect	D → G
Feng (2003)	106 countries	1975-1995	Granger causality test	D → G
Persson and Tabellini (2006)	150 developed and developing countries	1960-2000	Fixed Effect	D → G
Benedikt Heid et al. (2012)	150 countries	Period after war	System GMM	G → D

NB: G and D indicate GDP and democratic index

→ indicates the unidirectional causality

We summarize some studies in table 1. As indicated on this table, economic growth appears to depend highly on democracy along with some other variables (Papaioannou and Siourounis, 2008; Rodrik and Wazciarg, 2005; Persson and Tabellini, 2006). However, it can also be argued that democracy seems to depend on the GDP, as well (Benedikt Heid et al 2012; Acemoglu et al. 2008; Yi Che et al 2013; Moral-Benito and Bartolucci, 2012; Benhabib et al. 2011). Overall, our literature review suggests that the empirical results of the previous studies are inconclusive. A potential reason is that the past studies have not considered the two-way linkages between democracy and economic growth, the joint dynamics of which can be simultaneously determined.

2.4.2. The relationship between political stability and economic growth

The link between political instability and economic growth has been one of the most important topics in empirical research in economics over the last decade. Several studies (Alesina et al. 1996; Fosu, 2001, 2003; Aisen and Veiga, 2008) suggest that political instability is detrimental to economic performance in

the developed as well as developing economies.

Sociologists and economists have tried to test if a stable political system is an essential prerequisite for economic growth or economic growth creates the foundation for political stability.

Alesina et al. (1996) used the GDP per capita growth rates and changes in government to measure the political instability as a dependent variable. They examined a sample of 113 countries and found that political instability has a negative impact on GDP growth, while there is no dependency in the opposite direction. In a similar research framework, Campos and Nugent (1999) found, for African countries, that political instability was the cause of slower economic growth. However, no relationship was found for any other group of countries.

Younis et al. (2008) studied the effects of different political instability factors on economic growth for selected Asian countries between 1990 and 2005. They found a close relationship between political stability and economic growth. Their results showed that the role of political stability is more important than economic freedom.

Aisen and Veiga (2010) used the GMM for dynamic panel data models on a sample of 169 countries over a period that stretches from 1960 to 2004 to study the link between political instability and economic growth. They found that a lower growth is associated with a higher degree of political instability.

Specific country studies include the study of Munoz (2009) and Asteriou and Price (2001). Munoz (2009) used the Autoregressive Distributed Lag Model (ARDL) to study the link between political instability and economic growth for Venezuela for the period from 1983 to 2000. Munoz found that political instability negatively affects growth through investment. In the same vein, Asteriou and Price (2001) studied this relationship in the UK for the 1961 to 1997 period using the GARCH model that showed a negative effect of political instability on economic growth.

In another article, Aisen and Veiga (2013) have empirically determined the effects of political instability on economic growth. By using the GMM system for dynamic panel data models on a sample of 169 countries from 1960 to 2004, they found that the highest levels of political instability were associated with a lower growth rate of GDP per inhabitant. Regarding the transmission channels, they also found that

political instability negatively affects growth by lowering productivity growth through the accumulation of the physical and the human capital. Finally, economic freedom and ethnic homogeneity are beneficial to economic growth, while democracy may have a small negative effect.

Moreover, Kirmanoglu (2003) studied the causal link between political instability and economic growth using Granger causality test for a sample of 19 countries. He concluded that there was no empirically significant relationship between political instability and economic growth in 14 out of the 19 examined countries. Kirmanoglu (2003) reports that only for two countries political stability actually increases economic growth while for the 3 remaining countries; he reports that the causality runs the other way.

Therefore, the literature seems to agree on the importance of political stability of economic growth. Political stability though has lead to the creation of the desired structure, to attract private investors and multilateral companies that can set the stage of the growth environment, and would also lead to the implementation of optimal long term macroeconomic policies.

3. Political (in) stability as a framework of democracy

The theoretical examination of the concepts of democracy and economic growth detects many studies that compete on the nature of the positive or negative relationship between the two phenomena. This proves the nonexistence of a consensus on the issue. This lack of empirical consensus answers a multitude of theoretical issued arguments. This proves the existence of a consensus on the issue. In fact, if several arguments are in favor of the positive role that democracy would play in the process of economic growth, others highlighted the limitations of such a system compared to the stabilizing "merits" of an authoritarian state. Actually, the success of economies and accelerated economic growth without pre requisite democratic of the Asian countries, such as China and Singapore, proves that our empirical results support the hypothesis of a positive contribution of authoritarianism.

So with an autocratic rule, economic development can be achieved as already shown and proved empirically by Baklouti and Boujelbene (2015). The question that arises here is how and by what means democracy stimulates growth. In fact, this study differs from previous studies by setting focus on the role

that can play the political stability on the nature of such a relationship.

Moreover, democracy would have the effect of ensuring investors against the existence of discretionary behavior and predators, and minimizing the risk of political instability. Thus, the existence of a set of rules, laws, and counter powers would help to avoid the risk of arbitrary decisions, so that democracy would be synonymous of long time horizon and optimal economic choices. Clague et al. (1996) emphasize the fact that, statistically, democracy - provided that it is politically and socially properly "rooted" - offers better guarantees for the implementation of property rights and contracts than authoritarian with the same level of political stability.

Political stability does not appear to be systematically related to democracy. The stylized facts do appear relatively high levels of growth in the presence of political stability and absence of democracy. Thus, the good macroeconomic performance of a number of non-democratic Asian countries (Hong Kong, Singapore, Taiwan and China) contradicts the idea supporting good economic facts of Democracy (Sandalicar, 2013). Moreover, growth levels of 4.5% per year achieved by the precursor of the Arab Spring countries; Tunisia during 23 years of dictatorial politics and undemocratic regime challenges the idea of the economic benefit of Democracy (Jamshidi, 2014). Similarly, democracy in political instability does not promote growth. Thus, the combined effect of democracy and political stability could support economic growth.

The results of the theoretical work suggest that political (in) stability can influence the nature of the effect of democracy on growth. Ozler and Tabellini (1991), report that political instability reduces the time horizon, not only for the investors but also for the policy maker. Therefore, the necessary reforms so huge dodge these effects which are particularly noticed in weak democracies, in which the partisan system is highly fragmented. In addition, government short time horizons is capable of holding the flight forward and adopt bad economic policy through which it hopes to receive medium-term failure of his successor.

Furthermore, according to Clague et al. (1996), a government short time horizon is not encouraged to respect its commitments or, the rules and principles which must, in principle, control and monitor

economic activity (property rights, contract law, taxation ...).

Moreover, Feng (1997) supports the idea that democracy offers a stable political environment, which reduces the unconstitutional changes of government in the political system and create conditions that are conducive to sustainable economic growth.

Democracy can hurt economic growth when civil liberty and social demands turn into strikes and demonstrations that disturb the dynamism of investors and push foreign investors to liquidate their positions, stop their activities and leave the country.

The various social events can turn into political turmoil and therefore, the impact of democracy on economic growth in this case can only be negative. In fact, political (in) stability can impact the nature of the relationship between democracy and the nature of the political regime and economic growth.

Ranmali Abeyasinghe (2004) examined the hypothesis that democracy and political stability have significant effects on the economic growth of the developing countries. In a more recent article, Jong-A Pine (2009) also found that high levels of political instability reduce economic growth. As for private investment, Alesina and Perotti (1996) showed that socio-political instability creates an uncertain political and economic environment, which raises the risks and reduce investment. Political instability also leads to higher inflation, as it is evidenced by Aisen and Veiga (2006) who also added that political instability shortens the perspectives of governments, disrupts the long-term economic policies which are conducive to better economic performance.

The experiences of several countries that have experienced a change of political regime, particularly the Arab Spring countries (Tunisia, Libya and Egypt) show that the transition to a more democratic political system may be accompanied by political instability that affects economic growth. The lesson from these experiences is that the stabilization of the political situation seems to be an imperative for countries weakened by a long period of transition. For example, Tunisia is currently in a dominant economic focus. Therefore, the impact of democracy on economic growth depends on political stability.

4. Data and Model Specification

The present study applies data which are an excerpt from the World Development Indicator (WDI, 2011-CD-ROM), and cover the 1998 and 2011 period with the exception of democracy and corruption related variables, which are respectively extracted from the sites Freedom in the World Index (Freedom House, 2011) and Transparency International.

The objective of this paper is to analyze the causality between democracy index and economic growth using the production function where the GDP depends on endogenous variables including democracy index. This extended production function provides a meaningful framework to explore the two-way linkages between these two variables. These dynamic simultaneous-equation models are also constructed on the basis of the theoretical and the empirical insights from the existing literature. Thus, our proposed model, takes the following from:

$$\text{GDP} = f(\text{CPI}, \text{DEM}, \text{H}, \text{K}, \text{L}, \text{SIZE}, \text{DEM*PS}, \text{FDI}) \quad (1)$$

This essentially states that economic growth is a function of the corruption perception index (CPI), Democracy Index (DEM), human capital (H), capital stock (K), labor force (L), government size (SIZE), the term of interaction between democracy and political stability (DEM*PS) and foreign direct investment (FDI).

Since our study is a panel data study, Eq. (1) can be written in panel data form as follows:

$$\begin{aligned} \text{GDP}_{it} = & \\ & \alpha \text{GDP}_{it-1} + \beta_1 \ln H_{it} + \beta_2 \ln L_{it} + \beta_3 \ln K_{it} + \beta_4 \text{CPI}_{it} + \beta_5 \ln \text{SIZE}_{it} + \beta_6 \text{DEM} + \\ & \beta_7 \text{FDI} + \mu_{it} \end{aligned} \quad (2)$$

Where i represents the country (in our study, we have 17 countries¹); t represents the time (our time frame is 1998–2011). The annual data on gross domestic product (GDP) in constant US dollars are used as a proxy for economic growth (GDP). The corruption perception index (CPI) represents the index of

¹ Tunisia, Algeria, Libya, Morocco, Egypt, Kuwait, Iran, Arabia, Jordan, Bahrain, Lebanon, Oman, Qatar, Syria, United Arab Emirates, Yemen, Iraq

perceived corruption published by Transparency International, and the index ranking countries on a scale from 10 to zero, according to the perceived level of corruption. A score of 10 represents a reputedly total honest country, while a zero indicates that the country is perceived as completely corrupt. Concerning the democracy index (DEM), it has been designated by Freedom House, and is a construct of the average of the political rights and civil liberties. This variable is rescaled in such a way as the value ranges from 1 (most democratic) to 7 (less democratic). The (PS) is an index for political stability compiled by the World Bank. This index measures the likelihood that the government in power will be destabilized by unconstitutional means, including domestic violence and terrorism. This index captures the idea that the likelihood of changes in government can affect the quality of governance by affecting the continuity of policies (Kaufmann et al. 2009).

The human capital (H) is measured by gross enrolment in high school, the physical capital stock (K) as a proxy gross capital formation (% of GDP) because it took into account the inventory change, and labor capital (L) measured by the rate of participation in the total active population (% of total population aged 15 and over). The government size measured by final consumption expenditure of general government (% of GDP) and (FDI) are the foreign direct investment (% GDP).

The two-way link between democratization and growth is empirically examined by making use of the following two equations:

$$\begin{aligned}
 \text{GDP}_{it} = & \\
 & \alpha \text{GDP}_{it-1} + \beta_1 \ln H_{it} + \beta_2 \ln L_{it} + \beta_3 \ln K_{it} + \beta_4 \text{CPI}_{it} + \beta_5 \ln \text{SIZE}_{it} + \beta_6 \text{DEM} + \\
 & \beta_7 \text{FDI} + \beta_8 \text{PS} + \beta_9 \text{DEM} * \text{PS} + \mu_{it} \quad (3)
 \end{aligned}$$

$$\begin{aligned}
 \text{DEM}_{it} = & \alpha' \text{DEM}_{it-1} + \delta_1 \text{GDP}_{it} + \delta_2 \ln \text{INDUST}_{it} + \delta_3 \ln \text{ENERG}_{it} + \\
 & \delta_4 \ln \text{LIFE}_{it} + \varepsilon_{it} \quad (4)
 \end{aligned}$$

Where DEM_{it} is the degree of democracy for country i in period t ; DEM_{it-1} is the lagged democracy variable used to account for the persistence of democracy over time. The equation 4 essentially states that

the democracy is a function of the economic growth (Glaeser et al. 2007; Acemoglu et al. 2009), the industrialization (Goujon and Kafando (2012)), the energy consumption and the life expectancy at birth (Barro, 1999). Energy use in kg of oil equivalent is used as a proxy for the natural resources (ENERG). The level of industrialization (INDUST) that captures the industrialization variable of the modern theory is also used by Goujon and Kafando (2012). Differently Lipset (1959), which uses the percentage of men in agriculture and the energy consumption per person and considering the given problem in the sample of the MENA countries, we use the value added of the industrial sector percentage of GDP (Industry, value added (% of GDP)) to measure the level of industrialization in the region. (LIFE) measured by life expectancy at birth, total (years) of the database of the World Bank. The descriptive statistics mean and standard deviation (Std. Dev.) of these variables are recorded below in Table 2.

Table2. Descriptive statistics

Variables	Mean	Std. dev
GDP	4.624	3.067
Democracy	5.544	0.827
Industrialization	3.612	0.391
FDI	3.422	4.164
Human capital	4.426	0.213
Capital stock	3.149	0.310
Labor capital	3.919	0.153
Energy consumption	9.910	2.633
Life expectancy at birth	4.285	0.827
PS	-0.481	0.911
Government size	2.785	0.346
Corruption	3.898	1.106

NB: These statistics are based on annual data relevant to the years ranging from 1998 to 2011.

Regarding the correlation matrix results, they are reported in the following table (Table 3). It is worth

noting that the correlation coefficients prove to suggest that the reported regression models would not be seriously distorted by multicollinearity. The correlation analysis helps indicate that economic growth seems to correlate positively with foreign direct investment, government size, life expectancy at birth, corruption perception index, the labor capital as well as with human capital. Besides, the GDP seems to correlate negatively with democracy, capital stock, energy consumption, along with industry. Furthermore, democracy appears to correlate positively with the human capital, energy consumption, life expectancy at birth and the industry, while it negatively correlates with other variables.

Table3. Correlation matrix

	Variable	1	2	3	4	5	6	7	8	9	10	11	12
1	GDP	1.0000											
2	DEM	-0.1967	1.0000										
3	CPI	0.0641	-0.1495	1.0000									
4	Ln(H)	0.1553	0.5298	0.1373	1.0000								
5	Ln(K)	-0.1451	-0.3016	-0.2559	-0.1862	1.0000							
6	Ln(L)	0.2424	-0.1116	-0.0465	-0.4615	-0.1966	1.0000						
7	Ln(ENERG)	-0.0266	0.7423	-0.4183	0.3959	-0.1357	0.1278	1.0000					
8	PS	-0.5195	-0.1133	0.1205	-0.2392	0.2206	-0.5292	-0.3086	1.0000				
9	Ln(FDI)	0.3498	-0.1684	0.1734	0.2881	-0.0084	-0.3212	-0.3549	-0.1063	1.0000			
10	Ln(SIZE)	0.0862	-0.4424	0.6129	-0.1348	0.3170	-0.0448	-0.6440	0.1281	0.1517	1.0000		
11	Ln(LIFE)	0.3125	0.2249	0.3432	0.5953	-0.0364	-0.1773	-0.1201	-0.2180	0.5543	0.3447	1.0000	
12	Ln(INDUST)	-0.0707	0.5762	-0.2623	0.3226	0.0728	0.0553	0.8417	-0.2526	-0.3233	-0.2967	-0.1413	1.0000

Eqs (3) and (4) were estimated simultaneously by means of the generalized method of moments (GMM). The GMM is the estimation method, the most commonly used in models with panel data and in the two-way linkages between some variables. This method uses a set of instrumental variables to solve the endogeneity problem. It is well-known that the GMM method provides consistent and efficient estimates in the presence of arbitrary heteroskedasticity. Moreover, most of the diagnostic tests discussed in this study can be cast in a GMM framework. Sargan test was used to test the overidentifying restrictions in order to provide some evidence of the instrument validity. The instrument validity is tested using Sargan's test which cannot reject the null hypothesis of overidentifying restrictions. In other words, the null hypothesis of the instrument appropriateness cannot be rejected.

The Durbin–Wu–Hausman test is used to test the prevalence of any endogeneity problem. The null hypothesis would then be rejected, suggesting that the ordinary least squares estimations might be biased or inconsistent, and that the instrumental technique variables' need to be implemented.

5. Analysis and Results

Worth recalling, our objective consists in investigating the economic growth trend and democracy in the 17 MENA countries. For this sake, the Arellano and Bond (1991) GMM estimator has been applied to model the dynamic simultaneous-equation panel data. Based on the diagnostic tests, the estimated coefficients of Equations (2), (3) and (4) are provided in Tables 4, 5 and 6 below. As can be noticed, the AR (2) tests show no evidence of autocorrelation at conventional levels of significance for each of the estimates. As for the Durbin–Wu–Hausman test, it indicates that the endogenous repressors' effects on the estimates prove to be meaningful, and that the instrumental variables techniques seem imposed. The instruments' validity will be tested through the Sargan test, whereby the null hypothesis, relevant to overidentifying restrictions, cannot be rejected, i.e., the null hypothesis stipulating the instruments' validity and appropriately should be retained.

Table4. Equation (2) related results

Dependent variable :	Coefficient	P-Value
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economic growth		
(GDP) _{t-1}	9.424**	0.035 (4.47)
DEM	0.621***	0.000 (0.12)
CPI	-0.062***	0.000 (0.09)
FDI	0.205**	0.022 (0.01)
Ln(SIZE)	-0.923***	0.001 (0.26)
Ln(H)	3.066***	0.000 (0.39)
Ln(K)	1.376***	0.000 (0.29)
Ln(L)	-0.351	0.376(0.87)
Number of observations	221	221
Sargan test	61.84	0.235
DWH test	28.014***	0.000
AR2 test	-0.24	0.814

NB: The bracketed values represent the standard errors. Sargan test refers to the over-identification test for the restrictions appearing in the GMM estimation. DWH test is the Durbin–Wu–Hausman endogeneity test. The AR2 test is the Arellano–Bond test relevant to the existence of the second-order autocorrelation in first differences. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table5. Equation (3) related results

Dependent variable : economic growth	Coefficient	P-Value
(GDP) _{t-1}	16.270***	0.000(4.26)
DEM	-0.502***	0.000(0.13)
CPI	-0.095**	0.027(0.08)
FDI	0.035**	0.030(0.01)
Ln(SIZE)	-1.093***	0.000(0.24)
Ln(H)	1.555*	0.068(0.37)
Ln(K)	1.376***	0.000(0.26)
Ln(L)	-0.348	0.349(0.85)
PS	1.335***	0.007(0.49)
DEM*PS	-0.310***	0.001(0.09)
Number of observations	221	221
Sargan test	6 3.05	0.459

DWH test	28.014***	0.000
AR2 test	-0.51	0.611

NB: The bracketed values represent the standard errors. Sargan test refers to the over-identification test for the restrictions in GMM estimation. DWH test is the Durbin–Wu–Hausman endogeneity test for. The AR2 test is the Arellano–Bond test for the existence of the second-order autocorrelation in first differences. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table6. Equation (4) relevant results

Dependent variable :	Coefficient	P-Value
democracy		
DEM _{t-1}	-18.192***	0.001(5.70)
GDP	-0.206**	0.014(0.07)
Ln(ENERG)	0.177***	0.000(0.03)
Ln(INDUST)	0.675	0.386(0.20)
Ln(LIFE)	5.293***	0.000(1.18)
Number of observations	221	221
Sargan test	33.60	0.117
DWH test	36.766**	0.025
AR2 test	-0.62	0.535

NB: The bracketed values represent the standard errors. Sargan test refers to the over-identification test for the restrictions in GMM estimation. DWH test is the Durbin–Wu–Hausman endogeneity test for. The AR2 test is the Arellano–Bond test for the existence of the second-order autocorrelation in first differences. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

The analysis of the interactions between the nature of the political regime, stability and economic development, have often given perplexed results as to the existence of a correlation on the direction of causality.

On the one hand, there is a correlation between the nature of the political regime and development, the assumption that democracy would cost in terms of growth or a stimulant would not seem obvious.

One the other hand, as to the link between stability of the political regime and development, the research managed to generate stronger results without leading to a politically or economically strong deterministic

pattern. Therefore, it is legitimate to test the combination of democracy and political stability for economic growth.

Table 4 depicts the estimated results relevant to equation 2. Indeed, the impact of the one-period lagged values of real GDP on the dependent variable turns out to be positive and significant. Similarly, it appears that democracy has a positive and statistically significant impact on economic growth at a rate of 1%. Noteworthy, the proxy DEM which is used as a democracy measure in our model will be inversely related to the second, that is, an increase in DEM would necessarily denote an increase in autocracy and, therefore, the country is dubbed as less free. That is to say, the more we approach the authoritarian regime, the more economic growth improves. Then, we can say that a relatively low level of democracy in the countries of the MENA region is a determinant of a better economic performance. This is affirmed by (Doucouliagos and Ulubasoglu 2008; Narayan et al. 2011; Aisen and Veiga 2013; Baklouti and Boujelbene 2015).

In fact, maintaining a more or less authoritarian practice is considered essential for the preservation of strong economic growth for the country to benefit from greater prosperity and greater stability. This result corroborates that of Booth et al. (2015) which provide that non-democratic countries can achieve economic growth. This is also consistent with the work of Barro (1996) who found that democracy has a negative effect on economic growth after considering the empirical link for 100 countries over a period which runs between 1960 and 1990. Actually, he demonstrated that “too little” and “too much” democracy disadvantages economic growth through reducing the rate of accumulation of physical capital and increases the public spending.

Democracy is also unable to implement measures to increase investment, because it forces people to reduce their consumption levels. However, authoritarian regimes are able to take such measures. Moreover, proponents of this view argue that democracies are often unable to limit public social spending to stimulate growth distribution dealing with pressures (Haggard, 1990). Furthermore, democracy undermines property rights of security by allowing some groups that have political power to make wealth of property owners. Therefore, this process leads to economic uncertainty and reduces economic growth.

Besides, the form of government adopted by the countries of the MENA region may be particularly favorable to economic growth. This cuts the overall impression of a strong confidence in the democratic institutions of these countries, and a search for stability and economic development through authoritarian regimes.

A striking example of successful economies and accelerated economic growth without pre requisite democratic regimes is the case of the Asian countries such as China and Singapore, which stand as a proof of our empirical results' validity, sustaining the hypothesis of a positive contribution of authoritarianism.

The MENA countries could usefully learn from the example set by a number of Asian countries not only to find their proper paths to economic progress, but also to stop thinking that the absence of democracy constitutes an obstacle impeding their own development, the overall growth and prosperity.

Table 5, which provides the results of the **Eq 3**, shows that upon the introduction of the "PS" variable, the impact of the "DEM" variable becomes negative. Our result shows that political stability can affect the nature of the relationship between the nature of the political regime and economic growth. In other words, with the introduction of the "political stability" variable, the impact of democracy on growth turns negative, that is to say the opposite of what we have shown earlier that is, the freer country is, the more economically prosperous it becomes. This means that it is essential to have a stable political situation that democracy is a stimulant of economic growth. Furthermore, political stability can be a channel through which democracy affects growth (Feng 1997 and 2005).

The political instability greatly reduces the time horizon, not only for the investor but also for the political decision maker (Rodrik, 1999; Jong-A-Pin, 2009; Aisen and Viega, 2010; Ari Aisen et al. 2011). In addition, taking into account the experiences of three countries, such as Tunisia, Libya and Egypt (As mentioned above), this has led some to reconsider arguments to demonstrate and prove that when democracy and political instability, are taken together, there have a negative and significant effect on growth.

The dimension of 'political stability' seeks to measure the likelihood of the violent threat to, and the changes in government. This measure reflects the idea that the likelihood of the radical changes in

government can affect the quality of governance by affecting the continuity of policies (Kaufmann et al. 2003). This variable is an indicator which varies between -2.5 and 2.5. The highest values reflect higher marks, that is to say a low instability of the government, while the lower indicate the country with high political instability.

Indeed, political stability plays an important role in the relationship that links democracy and economic growth, as it can create uncertainty at the political level (instability and political violence) and therefore the risk associated with the uncertainty. These certainly harm the credibility of the country's laws and policies.

Referring to the work of North (1990) and Rosenberg and Birdzell (2008), the increase of economic activity is accompanied by a good institutional quality. Furthermore, a healthy institutional environment helps to minimize uncertainties (corruption, political violence, forced nationalization, the denial of contracts, political instability, the weakness of the rule of the law and the absence of Civil Liberties); transaction costs and contributes to the effective and fair application of the necessary government regulations. In case the quality of governance is poor, the lack of political stability marked by the presence of social events and major changes in politics through coups reduces the time horizon and discourages democracy meet its commitments, its rules and principles which must, in principle, control the economic activity.

This suggests that it is through political stability that democracy has an indirect impact on economic growth as the main characteristics of political stability are identified as the legitimacy of the effectiveness of conflict management mechanisms and sustainability of the exploited system. With stable political regimes, citizens perceive institutions and leaders to have reached this status through a legitimate manner acceptable to the majority.

The FDI variable has a positive and significant impact on the real GDP as shown in (Table 4). The positive sign of this relationship is justified by the importance of foreign direct investment through the transfers of expertise and technology from foreign firms and through capital inflows for the host country and access to new markets, stimulate the economic growth. This result corroborates those of (Anwar and

Sun (2011); Hassan and Anis (2012); Adams (2009) and Belloumi (2014)).

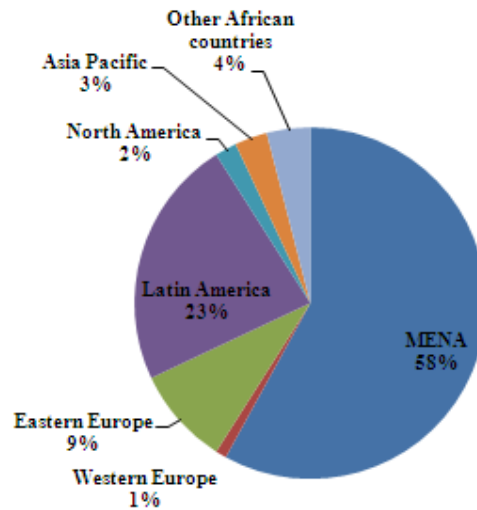
Statistically, the variable of corruption (CPI) has a significant negative impact on economic growth in our sample. Indeed, the negative impact of the rise of corruption on economic growth may be due to the importance of corruption in the MENA region and adversely affects a just and stable governance and leads to a lower quality public services.

This result strengthens the idea of Avnimelech and Zelekha (2011), Dzhumashev (2009), and also Blackburn and Sarmah (2008), and Bhattacharyya and Hodler (2010) who state that corruption lead to an increase of inflation, which, in turn, reduces capital accumulation and economic growth.

According to **Eq. (4)** presented in table 6, the sign of the coefficient for lagged democracy is negative and significant. Similarly, economic growth is negatively and significantly related to democracy at a rate of 5% (the DEM variable is inversely related to democracy). As expected, the coefficient of the real GDP is significantly negative, with reference to the modernization theory advanced by Lipset (1959). The negative sign shows that with increasing economic growth, the DEM variable, which is inversely related to democracy, proves to be decreasing. This empirical finding reveals that the MENA countries', economic performance has led to strengthening democratic principles, which has been made possible only following the initial development stage, as often asserted by the authoritarian regimes and states. In fact, this can be better illustrated through the statement put forward by Moore (1966) announcing that: "no bourgeoisie- no democracy", which confirms well what we have shown empirically.

Therefore economic growth stimulates the democratization of the political regimes (Barro, 1999; Acemoglu et al. 2009; Papaioannou et al. 2009; Boix, 2011). This result was confirmed in several empirical studies (Epstein et al. 2006; Acemoglu et al. (2009), Glaeser et al. 2007; Papaioannou et al. 2008; Freeman and Quinn, 2012), because a high level of economic development leads to a higher level of education and a more diverse society. Diversification leads to a greater demand for institutions supporting pluralism and education that lead to pluralistic values and tolerance. These two factors (diversification and education) should increase demand for democratic governance (Lipset 1959).

Figure 1: The MENA countries hold nearly 60 percent of the world's proven oil reserves



Source: OPEC¹ 2010

As shown in Figure 1, the countries of the MENA region are rich in natural resources. These resources allow the ruling class to purchase foreign and domestic support while blocking the political reform. A vast literature in political science stressed the negative impact of the natural resources (including oil, gold and diamonds) on democracy (Barma et al. 2014). Countries with a wealth of natural resources have seen their standard of weakening democracy because it can evoke a cost to the opposition leaders since taking wealth from the state for their own use. This is the reason that significant revenue resources can be a political incentive to undermine democracy.

In addition, the countries of the MENA region are rich in natural resources, and are assisted to the accompaniment of political violence and the income from this wealth has been used by public policymakers to block the establishment of democracy (Jensen and Wantchekon, 2004). In other words, the exploitation of the natural resources leads to annuities by caught policy makers who establish institutions interested in ensuring the expropriation of these annuities for their own profits at the expense of the whole society and perverse policy incentives. Therefore, the rich natural resource exacerbates competition for takeover, synonymous control of these resources.

According to the overall results, we can conclude that: first, there is a bidirectional causal relationship

¹ Organization of the Petroleum Exporting Countries

between economic growth and democracy; second, the combination of democracy and political stability would help to sustain economic growth. Therefore we can conclude that democracy can stimulate economic growth through political stability and disadvantage in the situation of political instability.

6. Conclusion and implications

This paper is an investigation into the causes of back ambiguity of the relationship between economic growth and democracy. To find the condition in which democracy could prevent or stimulate growth, our estimation was to verify if the institutional quality and political stability could specifically impact the nature of such a relationship.

Through the dynamic simultaneous-equation panel data models, we firstly, showed that democracy stimulates growth through political stability, that is to say, it is important to allow greater visibility of the effects of democracy on economic growth and, secondly, that economic performance in turn is a key factor for democracy. Democracy is a desirable objective that can be reached only after an economic and social maturation. It should be seen as the difficult realization of a long modernization process that is faster and better led by the authoritarian regimes than by the democratic ones.

In fact, we tried to show that there is a two-way relationship between democracy and economic growth while taking into account the effect of political stability. Moreover, we try to demonstrate that the positive effects of democracy on growth can be realized only in the presence of a stable political framework. Therefore, these results imply that economic growth, democracy and political stability are complementary.\

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