

The democracy and economic growth nexus: do FDI and government spending matter? Evidence from the Arab world

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Abstract

The purpose of the paper is to examine the direct and indirect links between democracy and economic growth. To do so, the authors estimate a dynamic panel simultaneous equations model on a sample of 16 Arab countries during the period 2002–2013. This study focuses on two particular channels through which democracy affects growth, namely FDI inflows and public consumption expenditure. The results show that there is no clear relationship between democracy and economic growth in the Arab countries, which confirms the skeptical approach. The ambiguity of this relationship can be explained by the fact that democracy promotes growth indirectly by stimulating FDI inflows and hinders growth by generating higher public consumption expenditure.

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Keywords Democracy; economic growth; FDI, government spending; Arab world; dynamic panel simultaneous equations model

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1 Introduction

In the wake of the popular uprisings of 2011, first broken out in Tunisia and subsequently widespread in neighboring countries, the Arab world seemed to witness a new phase of socio-political changes marking a turning point in the history of the region. The peaceful protests, pursued in the name of freedom and democracy,¹ have enabled some Arab countries to finally break with the persistent authoritarian regimes which have escaped from various waves of democratization that invaded the world.

In light of these political upheavals, studying the effect of democracy on economic growth in the Arab world context is of key importance given that such a relationship could be influenced by the specificities of this region.² From both theoretical and empirical points of view, democracy has an ambiguous effect on economic growth as existing studies on this topic provide evidence of positive, negative and even no significant relationship between democracy and economic growth (Sirowy and Inkeles, 1990).

Investigating the economic consequences of democratization in the Arab countries is obviously relevant in that little empirical studies examining this issue have been conducted on this set of countries. In addition, most studies carried out on this sample of countries have been limited to merely studying the direct link between democracy and growth while neglecting the transmission channels through which democracy may affect economic growth (Elbadawi, 2005; Elbadawi and Soto, 2014; Selim and Zaki, 2014; Rachdi and Saidi, 2015).

This paper aims to fill this gap by examining the direct and indirect relationship between democracy and economic growth in the Arab world. To this end, we estimate a dynamic panel

¹The Arab revolutionary movements also appear as a response to the economic downturns resulting from the global financial crisis in 2008, high youth bulges, the increase of labor force and the inability of Arab governments to deal with high unemployment, the lack of economic opportunities and the spread of corruption (Malik and Awadallah, 2013; Makdisi, 2017).

² Many features distinguish the Arab region from other regions of the world. One of the most distinguishing characteristics of the region is its endowment with oil and natural resources. In fact, the region possesses nearly 57% of global oil reserves and 28% of those for gas (AMF, 2013). In addition, the incidence of conflicts and civil wars is higher in the Arab region than the world average (the Arab-Israeli conflict, Lebanese civil war (1975–1990), Sudanese civil war (1983–2005), Algerian civil war (1991–2002), Yemeni civil war (1994), the Gulf war-Kuwait's invasion by Iraq (1990–1991) and the US invasion of Iraq in 2003). This has made the Arab region the targets of intervention by foreign powers. Moreover, the Arab countries share the same religion, language, culture and history. Indeed, Islam, the predominant religion in the region, has played a key role in building the Arab political culture (Tessler, 2002; Elbadawi and Makdisi, 2007). All these specific factors have shaped the political and economic paths of the Arab countries. Nevertheless, it should be noted that despite the fact that the Arab region share several common features, some disparities should be pointed out. In fact, the level of endowments in oil and gas varies across Arab countries, with the Gulf states (Saudi Arabia, UAE, Bahrain, Kuwait, Qatar, Oman) being the most oil-endowed. These differences in resource endowments have created some economic heterogeneity within the region. Importantly, oil accounts for 60–90 percent of export earnings of the Arab oil-exporting countries (Algeria, Bahrain, Iraq, Kuwait, Libya, Oman, Saudi Arabia, UAE, Yemen) and more than 60 percent of their GDP. The per capita income of these countries is much higher than that of the non-oil Arab countries. The economic gaps could be observed even within oil rich-countries it-selves. Indeed, the gulf states are classified as high-income countries while other Arab oil-rich countries such as Algeria, Iraq and Libya belong to the upper-middle-income group. Furthermore, the adopted political regimes differ between Arab countries. Actually, Arab political regimes are divided into two main types: monarchies and republics. Monarchies can be further categorized into absolute (Oman, Qatar and Saudi Arabia), mixed (Bahrain, Kuwait and United Arab Emirates) and constitutional (Jordan and Morocco). The republics are Algeria, Egypt, Iraq, Lebanon, Libya, Sudan, Syria, Tunisia and Yemen.

simultaneous equations model on a sample of 16 Arab countries during the period 2002–2013,³ using public consumption expenditure and FDI inflows as potential transmission channels. The choice of these two channels stems from the importance of state intervention in Arab economies and the increasing evolution of FDI flows as an outcome of globalization.

The remainder of the current study is organized as follows. Section 2 briefly reviews the related literature. Section 3 displays the econometric methodology, the model assumptions and the data. Section 4 presents the empirical findings. Finally, section 5 concludes and provides some policy implications.

2 Literature review

Theoretical and empirical studies examining the effect of democracy on economic growth revealed a lack of consensus on the nature of the relationship between democracy and economic growth. Theoretically, the link between democracy and economic growth has been analyzed on the basis of three approaches: the “compatibility view” which sustains that democracy promotes economic development (Papaioannou and Siourounis, 2008; Acemoglu et al., 2019), the “conflict view” according to which democracy hampers economic development (Barro, 1996; Gerring et al., 2005), and the “skeptical view” which advocates that there is no systematic relationship between democracy and economic development (Helliwell, 1994; Tavares and Wacziarg, 2001; Baum and Lake, 2003).

Relying on the democratic experiences of Latin American countries, the partisans of ‘the compatibility approach’ sustain that the adoption of a democratic regime in less developed countries helps to create an economic and social environment conducive to development (Sirowy and Inkeles, 1990; Feng; 1997). Indeed, a large body of literature emphasizes that democracy may enhance growth, most importantly via increased spending on education and health (Saint-Paul and Verdier, 1993; Bourgoignon and Verdier, 2000). Accordingly, democracy is most often associated with higher school attainment rates, increased literacy rates, a better health care provision, higher life expectancy and lower infant mortality (Acemoglu and Robinson, 2006; Lake and Baum, 2001, 2003; Brown and Hunter, 2004; Stasavage, 2005).

In addition, it has been argued that an environment guaranteeing fundamental freedoms insures high degree of certainty, which may motivate citizens to invest, thereby fostering growth (Kurzman et al., 2002). In other words, preserving freedom of expression and press, establishing an effective legal system and strengthening the rule of law, a democratic regime ensures a greater protection of property rights (Busse and Hefeker, 2007), a better control of corruption (Mohtadi and Roe, 2003; Kalenborn and Lessmann, 2013) and a higher degree of economic freedom (De Haan and Sturm, 2003; Rode and Gwartney, 2012). Hence, this would provide a more attractive institutional environment for investment in general and FDI in particular (Harms and Ursprung, 2002; Jakobsen, 2006; Busse and Hefeker, 2007; Mathur and Singh, 2011).

³ Several political and economic events have marked this time interval. The most remarkable events were the attacks of September 11, 2001 and the subsequent invasion of Iraq by the United States in 2003, the emergence of the global economic crisis in 2008 and finally, the Arab Spring revolutions in 2011.

Moreover, democratic regimes are generally more open to exchange, which could facilitate the entry of new technologies and more innovative investors, promoting economic dynamism (Halperin et al., 2005; Milner and Kubota, 2005).

The “conflict perspective”, known as the ‘Lee Thesis’⁴ (Sen, 1999), finds its roots in the experiences of the East Asian tigers that flourished economically under the aegis of authoritarian regimes. This literature goes back to Huntington (1968), who suggests that democracy leads to an increase in current consumption and a decrease in investment and production, penalizing economic growth. Evidently, it is well acknowledged that democracies reduce income inequality through implementing redistribution policies, which could be harmful for economic growth (Alesina and Rodrik, 1994; Persson and Tabellini, 1994). Obviously, in order to meet the demands of the population for a more egalitarian distribution of income, the government increases income taxes of the richest, who generally have a high marginal propensity to save, so as to benefit the poorest of social transfers. As a result, the savings of the richest would be reduced in favor of an increase in the poorest incomes. Hence, this may lead to a slow-down in physical capital investment and an increase in public and private consumption (Acemoglu and Robinson, 2000, 2006; Acemoglu et al., 2019). In addition, under a democratic system, interest groups may exert pressure for higher wages, which would reduce the firms’ profitability, generating negative effects on investment (Rodrik, 1999). Interestingly, labor union demands are usually accompanied by strikes and work stoppages, leading to huge economic losses. In this regard, it should be emphasized that authoritarian governments are better positioned to resist the influence of interest groups and lobbies and, therefore, more willing to implement effective economic policies.

A different branch of literature has emphasized that there is no systematic effect of democracy on economic growth or, more specifically, it is impossible to recognize whether democracy has an impact on economic growth. In fact, several studies pointed out that the ambiguity of such a relationship could be attributed to the fact that democracy can affect economic growth indirectly through various channels; some of them show a positive impact while others show a negative influence, which makes it difficult to perceive the overall effect of democracy on economic growth (Helliwell, 1994; Barro, 1996; Tavares and Wacziarg, 2001; Baum and Lake, 2003; Doucouliagos and Ulubasoglu, 2008).

From an empirical perspective, a number of studies have used simultaneous equations models to examine the direct and indirect relationship between democracy and economic growth. Interestingly, Helliwell (1994) has constructed a two-equation system for a sample of 125 countries during the period 1960–1985. The results suggest that democracy has a negative direct effect on economic growth and a positive indirect impact via education and investment. Helliwell (1994) also argues that this positive indirect effect offsets the negative direct one, and that the net effect of democracy on economic growth seems impossible to discern.

Further evidence on the insignificant effect of democracy on economic growth is provided by Tavares and Wacziarg (2001) for a sample of 65 industrialized and developing countries over the period 1970–1989. The results show that democracy stimulates growth indirectly by promoting human capital accumulation and reducing income inequality. However, it negatively

⁴ With reference to the Prime Minister of Singapore Lee Kuan Yew.

affects economic growth by hindering physical capital accumulation and increasing public consumption.

In the same vein, on the basis of a panel of 106 countries covering the period 1951–1980, Kurzman et al. (2002) have shown that no significant direct effect between democracy and growth is captured. However, the authors have identified two potential channels through which democracy affects growth. On the one hand, democracy stimulates investment, which is considered as a key factor in economic growth. On the other hand, democracy tends to reduce public spending, which is detrimental to economic growth.

Using data for a sample of 128 countries over a 30-year period, Baum and Lake (2003) conclude that there is no direct influence of democracy on economic growth. These authors find that democracy tends to promote economic growth via improving access to education and public health.

However, using instrumental variables technique for a sample of 175 countries during the period 1960–2010, Acemoglu et al. (2019) find a positive and significant effect of democracy on economic growth. These authors argue that democracy promotes growth by encouraging economic reforms, stimulating investment in primary education and health and mitigating social unrest. Similarly, using the GMM estimation technique, Gründler and Krieger (2015) have demonstrated that democracy promotes economic growth as it is associated with more developed education system, higher investment rates and lower fertility rates.

3 Econometric methodology and data

The aim of this paper is to study the channels through which democracy may affect economic growth. To this end, we use a panel dynamic simultaneous equations model for 16 Arab countries from 2002 to 2013. We consider that the effect of democracy on economic growth operates mainly through its impact on FDI and public consumption expenditure.

On the one hand, in the wake of globalization, FDI flows have grown rapidly in the world economy. FDI inflows to Arab countries have increased considerably since the early 2000s (IMF, 2016). Like many developing countries, Arab policy-makers have paid particular attention to FDI inflows. These additional resources are needed to improve the recipient country's economic performance (Borensztein et al., 1998; Agosin and Mayer, 2000). More specifically, FDI inflows favor the increase of the country's production and productivity, encourage local investment and stimulate development and technological progress.

On the other hand, public spending plays an important role in the Arab economies, particularly in the oil-producing countries, where a large share of government revenues comes from the export of oil and hydrocarbons. Although public spending is highly sensitive to fluctuations in oil prices, a disproportionate share of these expenditures is allocated for wages, subsidies and security. In fact, the proportion of public servants in the region as a whole is twice the world average (Malik, 2016). Specifically, more than 50 per cent of the budgets of these countries are devoted to public consumption spending, including public sector wages and social services provision. Indeed, Arab governments use public employment as a political tool to ease social tensions and preserve stability. Moreover, in order to preserve internal security, the Arab

countries, in particular those of the GCC,⁵ devote an enormous proportion of public expenditure to defense and national security. This may explain the stability of the Arab regimes and the persistence of authoritarianism in the region.

3.1 Model assumptions

As mentioned above, the purpose of this paper is to examine the direct and indirect effects of democracy on growth through two main channels: FDI inflows and public consumption expenditure. In this regard, the theoretical assumptions of our study are as follows:

H1: Democracy promotes growth indirectly by stimulating FDI inflows.

H2: Democracy hinders growth indirectly by generating higher public consumption expenditure.

H3: The harmful effect of democracy on growth via higher public consumption expenditure offsets the growth-enhancing effect of democracy through increased FDI inflows. Overall, the effect of democracy on growth appears difficult to identify.

3.2 Model specification

The equations of our model are formulated on the basis of previous theoretical developments. Thus, the system of equations can be written as follows:

$$\begin{aligned} growth_{it} = & \alpha_1 lgdppc_{it-1} + \alpha_2 democracy_{it} + \alpha_3 invest_{it} + \alpha_4 pop_{it} + \alpha_5 fdi_{it} \\ & + \alpha_6 govsp_{it} + \alpha_7 rents_{it} + \alpha_8 trade_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

$$\begin{aligned} democracy_{it} = & \beta_1 democracy_{it-1} + \beta_2 lgdppc_{it-1} + \beta_3 growth_{it} + \beta_4 trade_{it} \\ & + \beta_5 rents_{it} + \mu_{it} \end{aligned} \quad (2)$$

$$\begin{aligned} fdi_{it} = & \lambda_1 fdi_{it-1} + \lambda_2 democracy_{it} + \lambda_3 growth_{it} + \lambda_4 trade_{it} + \lambda_5 rents_{it} \\ & + \lambda_6 inflation_{it} + \lambda_7 law_{it} + \nu_{it} \end{aligned} \quad (3)$$

$$\begin{aligned} govsp_{it} = & \gamma_1 govsp_{it-1} + \gamma_2 democracy_{it} + \gamma_3 growth_{it} + \gamma_4 pop_{it} + \gamma_5 trade_{it} \\ & + \gamma_6 rents_{it} + \gamma_7 pubdebt_{it} + \gamma_8 inflation_{it} + \omega_{it} \end{aligned} \quad (4)$$

Equation (1) examines the determinants of economic growth based on a standard growth model that relates the growth rate of real GDP per capita to the initial level of real GDP, the investment rate and the population growth rate. Our growth equation is augmented by a set of variables: democracy, our variable of interest, whose effect on growth is ambiguous (Helliwell, 1994; Tavares and Wacziarg, 2001), FDI inflows that are expected to stimulate growth by promoting technology and knowledge transfer (Borensztein et al., 1998), public consumption expenditure which is considered as non-productive and harmful for growth (Barro, 1997; Afonso and Furceri, 2010) natural rents that should stimulate economic growth by generating

⁵ Gulf Cooperation Council

resources to finance development and trade openness which is supposed to have a positive effect on growth (Frankel and Romer, 1999).

Equation (2) examines the determinants of democracy. According to the “modernization theory”, democratization is influenced by income per capita and other socioeconomic variables such as economic growth (Lipset, 1959). However, many studies have advocated that the positive impact of income on democracy disappears once it is reached through oil wealth (Ross, 2001). Democratization is also affected by external factors. Indeed, countries that are more open to international trade are likely to be more democratic (Csordas and Ludwig, 2011).

Equation (3) highlights the impact of democracy on FDI inflows. Many studies argue that a democratic regime can create an attractive institutional environment for FDI by providing better protection of property rights (Busse and Hefeker, 2007), promoting economic freedom (Mathur and Singh, 2011) and guaranteeing better control of corruption (Kalenborn and Lessmann, 2013). Other determinants of FDI have been included in the equation, namely, economic growth which increases the country's attractiveness for receiving FDI (Asiedu and Lien, 2011), natural resources that tend to attract FDI (Poelhekke and van der Ploeg, 2010), trade openness that positively affects FDI flows destined to serve foreign markets and negatively affects those destined to serve domestic markets (Blonigen, 2005), inflation to take into account the detrimental effect of macroeconomic instability on FDI (Schneider and Frey, 1985) and law and order to check whether good institutional quality stimulates FDI (Staats and Biglaiser, 2011).

Equation (4) evaluates the impact of democracy on public consumption expenditure. The literature suggests that democracy favors the rising of public spending due to increased redistribution demands (Aidt et al., 2006), trade union pressure for wage increases (Rodrik, 1999) and the opportunistic behavior of politicians during elections (Drazen and Eslava, 2010). A number of explanatory variables are introduced into the equation: economic growth which leads to an increase in demand for public services (Adsera and Boix, 2002), the population growth which is assumed to have a negative effect on public consumption due to economies of scale (Alesina and Wacziarg, 1998), natural rents that are often used to finance public expenditure (Ross, 2001), public debt that has a crowding out effect on public expenditure (Mahdavi, 2004), inflation that can lead to a reduction in public spending due to the deterioration in the real value of tax revenues (Zakaria and Shakoor, 2011), and trade openness which can lead to lower taxes and thus decreasing spending (Schulze and Ursprung, 1999).

3.3 Estimation method

The main econometric problem that may arise when estimating simultaneous equations model for dynamic panel data is that of the endogeneity of the explanatory variables. This endogenous bias⁶ is due essentially to the problem of reverse causality between economic development and democracy (Przeworski and Limongi, 1993; Barro, 1996; Tavares and Wacziarg, 2001). In fact, as noted above, according to the modernization theory (Lipset, 1959), economic development may lead to the emergence of democracy.

⁶ The endogeneity problem can also arise due to omitted variable bias and measurement errors.

Similarly, the dynamic structure of the model makes the traditional estimators (OLS, Fixed effect, Random effect) biased since the lagged level of the dependent variable is correlated with the error term. To overcome this problem, we use the difference-GMM estimator suggested by Arellano and Bond (1991). This estimation method makes it possible to instrument the lagged dependent variable as well as the endogenous explanatory variables with their own past values. This method controls not only the endogeneity of the lagged dependent variable but also that of some explanatory variables.

We employed the Durbin-Wu-Hausman test to check the potential endogeneity of the dependent variables included in the model as explanatory variables.⁷ The DWH test results, given in Table 1, support the rejection of the null hypothesis. That is to say, the estimation of the system with OLS estimator yields inconsistent results.

Interestingly, it should be noted that we estimated the equations one by one using difference-GMM estimator. The main reason behind this choice is that the traditional estimators (2sls, 3sls...) suffer from weak instrument bias.

The validity of the instruments is tested using the Hansen test and the Arellano-Bond test for second-order autocorrelation. The null hypothesis of the Hansen test is that the instruments are uncorrelated with the error term whereas that of Arellano and Bond (1991) assumes the absence of second-order autocorrelation of the residuals.

3.4 Data

In this study, we employ an unbalanced panel of 16 Arab countries covering the period 2002–2013 (see Appendix for the country list). We use two different measures of democracy. Our main democracy measure is the Freedom House index widely used in the political science literature. This measure is composed from two indices: the political rights index which refers to how fair and free elections are held and the civil liberties index which involves a set of fundamental rights and freedoms mainly freedom of expression and belief, associational and organizational rights, rule of law and individual rights. More specifically, the Freedom House index defines democracy by the set of freedoms that it is supposed to assure, thus leading to a maximalist definition of democracy (Munck and Verkuilen, 2002). The Freedom House index is constructed by averaging the sum of political rights and civil liberties sub-indices. The index is measured on a 1–7 scale, with 1 representing the most democratic and 7 representing the least democratic. The scale has been inverted, so that higher values indicate more democratic countries.

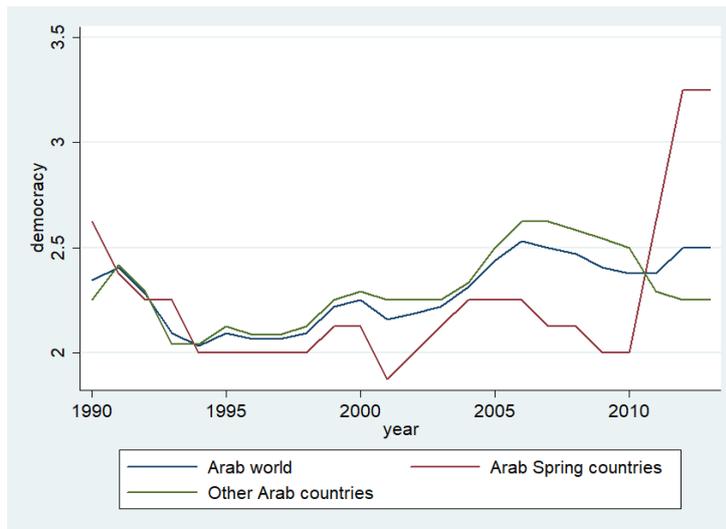
Taking a closer look at the pattern of Freedom House index in the Arab world from more recent years, one might notice the persistence of democracy deficit in the Arab region. In fact, the Arab autocracies have survived much longer than the average duration of authoritarian

⁷ We also checked the rank and order conditions using the STATA module CHECKREG3 (*Stata module to check identification status of simultaneous equations system*) (Baum et al., 2007). The obtained results show that the system is identified.

regimes in the world.⁸ As shown in Figure 1, democracy scores of the Arab world have known a downward trend in the mid-1990s and a slight improvement in early 2000s. This may be attributed to the democracy promotion strategy adopted by the United States in the Middle East after the events of 11 September 2001.⁹ Nevertheless, democracy scores have broken down in late 2000s, and one might wait until 2010 to see an upturn in democracy in the Arab states. In fact, in late 2010 and early 2011, demonstrations have invaded the streets of Tunisia, Egypt, Libya, Syria, Yemen and Bahrain calling for democratic changes. This wave led to the downfall of four dictators in the region.¹⁰ Eventually, Figure 1 shows that the Arab Spring countries (Tunisia, Libya, Egypt, Yemen)¹¹ appear to be lagging behind the rest of the Arab countries in the late 1990s and early 2000s. However, with the revolution of 2010, these countries have known at least a one-point improvement in their democracy scores.

To assess the robustness of our results, we use the Polity2 index from the Polity IV database as an alternative measure of democracy. The Polity2 index ranges from –10 to 10, with higher values reflecting more democratic countries. In contrast to Freedom house index, Polity IV index defines democracy by the set of rules and procedures that ensure political power transfer and electoral participation, thereby providing a minimalist definition of democracy. Both the

Figure 1: The evolution of the Freedom House index in the Arab World (1990–2013)



⁸ Both Arab monarchies and republics have survived for a long time. In fact, it is worth acknowledging that the Arab monarchies have succeeded in maintaining legitimacy to stay in power. Specifically, the Gulf monarchies, Jordan and Morocco derive legitimacy from religion and tradition, while all Arab republics use nationalism as a legitimating ideology in order to ensure its long-term persistence (Russell, 2004; Schlumberger, 2010).

⁹ Despite its controversial effects (see Otaway, 2008).

¹⁰ Zine El Abidine Ben Ali in Tunisia who has been in power for 23 years, Hosni Mubarak who has ruled Egypt for nearly 30 years, Muammar Gaddafi in Libya who has stepped down after more than 40 years in power and Ali Abdullah Saleh who first served as president of the Yemen Arab Republic in 1978 and then became president of unified Yemen in 1990.

¹¹ The countries that have succeeded in removing dictators from power.

Freedom House and the Polity IV measures of democracy are normalized between zero and one, with higher values indicating higher levels of democracy.

Economic growth in the Arab world is characterized by a high degree of volatility. This strong growth instability is mainly due to the high dependence on oil which is seen as the main source of growth in the Arab region. Despite the fact that Arab countries witnessed strong economic growth in the 1970s as a result of rising oil prices, this economic expansion was followed by a period of growth slowdown in the following decades. Figure 2 shows that the Arab countries recorded growth rates below the world average in the early 1980s, a situation that persisted until the early 1990s. However, at the beginning of the 2000s, the Arab region achieved high growth rates as a result of increases in oil revenues. This economic expansion was interrupted by the 2008 global financial crisis. In fact, the Arab region were among the most affected regions by the financial crisis of 2008. Nevertheless, the effect of this crisis on Arab countries was not as deep as it was on advanced economies. This is mainly due to the fact that most of these countries were not exporters of manufactured goods and Arab banks were not enough integrated into the international financial system.

In this paper, we advocate that democracy affects economic growth through its impact on FDI inflows and public consumption expenditure. Figure 3 and Figure 4 present scatter plots of democracy against FDI and public consumption expenditure over the period 2002–2013, respectively. The dispersion diagram shown in Figure 3 indicates a positive correlation between democracy and FDI inflows. This positive relationship between the two variables is also displayed in the correlation matrix reported in Table A.3 of the Appendix. This points out that the emergence of democracy in the Arab countries tends to promote the attractiveness of the region for FDI.

Likewise, the positive slope shown in the Figure 4 suggests that there is a positive correlation between democracy and public consumption expenditure. This amounts to saying that democracy tends to stimulate public consumption expenditure in the Arab countries.

Variables description and data sources as well as summary statistics of the main variables used in the current study are provided in the Appendix.

Figure 2: Per capita GDP growth in the Arab world (1976–2013)

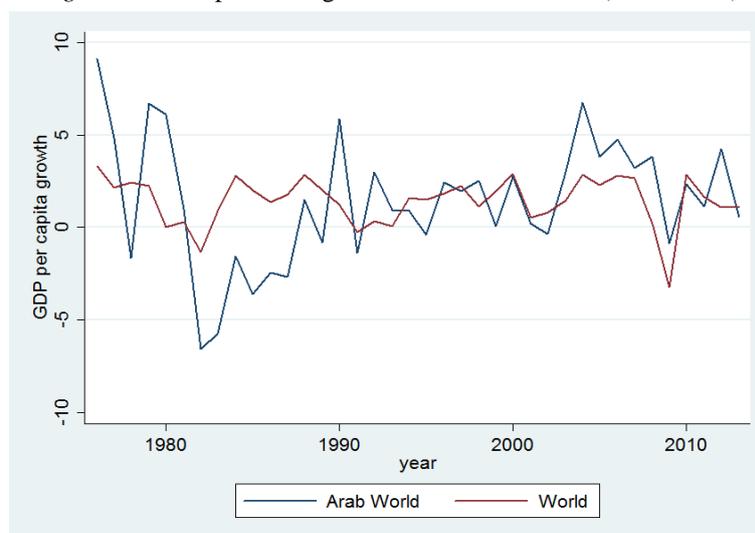


Figure 3: Democracy and FDI in the Arab world

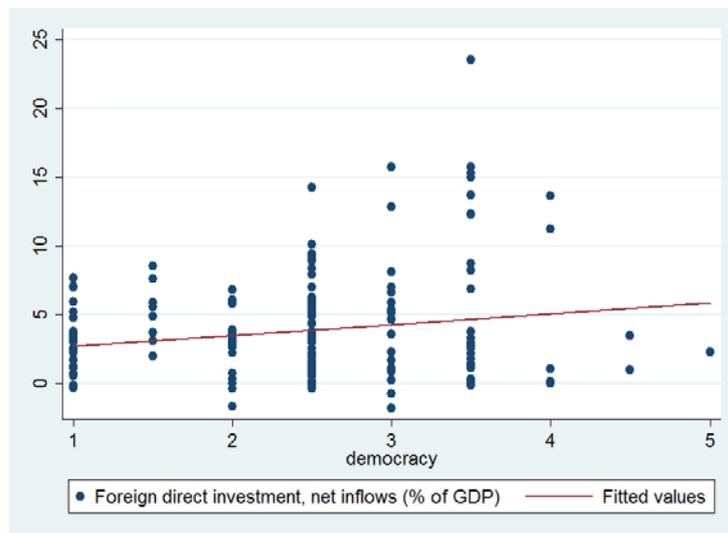
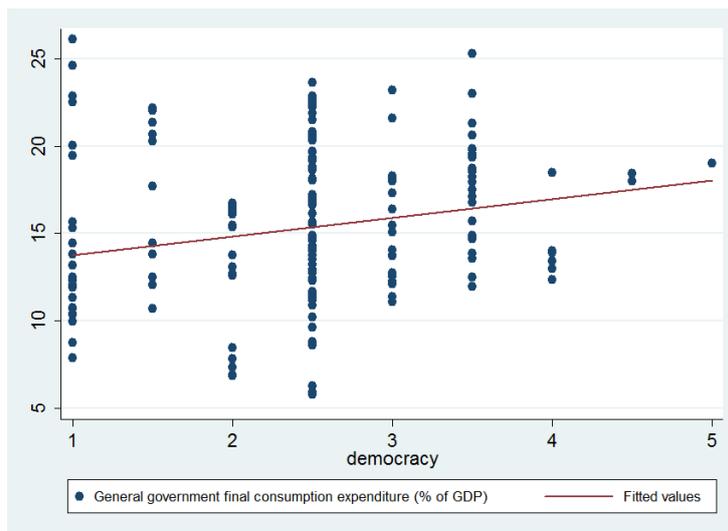


Figure 4: Democracy and public consumption expenditure in the Arab world



4 Results

The estimation results of our system of equations are presented in Table 1. The results of the growth equation¹² shown in column (1) suggest that democracy, as measured by the Freedom

¹² Estimating an economic growth equation with annual data may provide fallacious answers about the long-term growth process. Generally, to take the long-run effects into account, empirical studies take averages of five years or more of data in order to smooth out cyclical fluctuations (Grier and Tullock, 1989; Mendoza et al., 1997). However, this may result in a loss of degrees of freedom. An alternative method to capture the long-run effects is to use many lags of the independent variables in a model with annual data (Kocherlakota and Yi, 1997; Bleaney et al. 2001). For

House index,¹³ has a positive and insignificant effect on economic growth, confirming the skeptical approach according to which there is no clear relationship between democracy and growth.¹⁴ This result is similar to those obtained by Helliwell (1994), Tavares and Wacziarg (2001), Kurzman et al. (2002) and Baum and Lake (2003). Regarding the other explanatory variables, the results obtained are consistent with those reported in prior empirical studies dealing with the determinants of economic growth. The conditional convergence hypothesis is verified since the initial GDP coefficient is consistently negative.¹⁵ Similarly, the population growth rate seems to have the expected negative sign.

The effect of investment on economic growth, although positive, is found to be insignificant. In fact, investment in the Arab countries is largely considered unproductive. The low productivity is mainly due to the predominance of public investment and to the low level of private investment¹⁶ (Sala-i-Martin and Artadi, 2003; Hakura, 2004; Makdisi et al., 2006).

FDI inflows appear to have a positive and significant effect on economic growth. This result is in sharp contrast to that reported by El-Wassal (2012) which showed that FDI inflows play only a very limited role in promoting economic growth in the Arab countries. This positive effect can be interpreted in light of the fact that FDI flows in these countries are mainly formed by Greenfield investments¹⁷ (Burger et al., 2013).

The results show as well that public consumption spending has a negative and statistically significant influence on economic growth. These findings support those obtained by Sala-i-Martin and Artadi (2003), Hakura (2004) and Espinoza and Prasad (2012) which revealed that the important size of the public sector is one of the main factors explaining the poor economic performance of the Arab countries, especially the GCC countries. This situation worsened

this reason, to pick up long-run effects in our model, we run regressions with longer lags of democracy. The results remain the same for all equations (The results are available upon request).

¹³ To check the robustness of our results, we use the Polity2 index of the Polity IV database as an alternative measure of democracy. As can be clearly seen in column (1) of Table A.5 of the Appendix, democracy does not appear to have a significant effect on economic growth in the Arab countries even when it is measured by the Polity IV indicator. As a result, it is important to mention that our core results are not affected by the democracy index employed. Similarly, the effect of FDI and public consumption expenditure on economic growth is significant and the estimated coefficients have the signs initially obtained. It also seems that the results remain unchanged for most control variables.

¹⁴ The results are robust to controlling for other determinants of economic growth and dropping FDI and govsp from growth equation. The effect of democracy is irrelevant even if FDI and govsp are excluded from the regression (see Table A.4 of the Appendix).

¹⁵ The results show a speed of conditional convergence of 15.7 percent per-year, which rejects the 2 percent per-year speed of conditional convergence widely obtained in the empirical literature. In fact, the empirical literature suggests that the speed of conditional convergence varies across regions and countries. Barro and Sala-i-Martin, (1991) and Sala-i-Martin (1996) show that the speed of convergence is close to 2 percent in the United States, Europe, and Japan. Islam (1995) notices that the speeds of convergence switch between 4 percent and 10 percent across 97 countries. Caselli et al. (1996) found it to be around 13 percent across 97 different countries, while Canova and Marcet (1995) found a speed of convergence of 20 percent across regions of Western Europe.

¹⁶ The financial systems of the Arab countries are underdeveloped, the business environment is weakened by internal and external conflicts and the institutional environment is characterized by complex administrative procedures and regulations. These factors explain the decline in private investment in these countries (Elbadawi, 1999).

¹⁷ Greenfield investments foster capital accumulation, which stimulates economic growth, in contrast to mergers and acquisitions which are not the result of additional investments but merely a change of ownership (Wang and Wong, 2009; Harms and Méon, 2014).

Table 1: Baseline results

VARIABLES	(1) <i>growth</i>	(2) <i>demf</i>	(3) <i>fdi</i>	(4) <i>govsp</i>
<i>lgdppc</i> ₍₋₁₎	-15.69* (8.588)	0.162** (0.0747)		
<i>demf</i>	9.630 (16.75)		6.451*** (2.104)	1.909*** (0.616)
<i>fdi</i>	0.341** (0.125)			
<i>govsp</i>	-0.393** (0.174)			
<i>invest</i>	0.164 (0.138)			
<i>pop</i>	-0.966*** (0.229)			-0.0678 (0.0667)
<i>rents</i>	3.401* (1.843)	-0.0286* (0.0153)	1.006 (1.466)	0.494** (0.230)
<i>trade</i>	-20.82** (9.517)	0.132 (0.0807)	-9.772* (4.682)	-1.148 (0.750)
<i>demf</i> ₍₋₁₎		0.958*** (0.144)		
<i>growth</i>		0.00416*** (0.00100)	0.304** (0.115)	-0.101** (0.0418)
<i>fdi</i> ₍₋₁₎			0.926*** (0.0950)	
<i>inflation</i>			-0.0646** (0.0230)	-0.0966*** (0.0218)
<i>law</i>			3.170** (1.434)	
<i>govsp</i> ₍₋₁₎				0.677*** (0.135)
<i>pubdebt</i>				-0.106 (0.376)
Observations	135	144	142	127
Number of countries	16	16	16	16
F-stat (p-value)	0	0	0	0
DWH test (p-value)	0.00	0.02	0.03	0.06
AR(2) test (p-value)	0.930	0.545	0.188	0.335
Hansen J-test (p-value)	0.641	0.794	0.677	0.587

Notes: Standard errors are in parentheses. Two-step Diff-GMM regressions use robust standard errors clustered by country. All explanatory variables are considered endogenous except the variable *rents*. Lagged dependent variables are considered predetermined. DWH test is the Durbin–Wu–Hausman test for endogeneity. The Hansen and AR(2) tests indicate that we cannot reject the validity of our instruments. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively.

further following the revolution. In fact, to ease social tensions and protect their regimes from any attempt of reverse, most GCC countries have significantly increased spending to finance subsidies and wages. The same goes for the Arab Spring countries that have increased public spending, including subsidies, pensions, wages and public-sector employment in response to social pressures. This increase in public spending has accentuated inflationary pressures and crowded out private investment, thus penalizing the economic growth of these countries (Burger et al., 2013).

For the natural resource rents, the positive and significant coefficient result indicates that natural resources in Arab countries are a blessing rather than a curse for economic growth, which contrasts with Elbadawi and Soto (2014) and Selim and Zaki (2014) who argue that natural resource revenues in the Arab world are negatively associated with economic growth due to the poor institutional quality and to the persistence of authoritarian regimes in these countries. Contrary to our expectations, trade openness appears to have a negative and significant effect on economic growth. This can be attributed to the fact that exports from Arab countries are not very diversified and more concentrated on low value-added products (Galal and Selim, 2012; IMF, 2015).

Column (2) reports the estimation results of the democracy equation.¹⁸ The results show that per capita income is positively and significantly associated with democracy, confirming the modernization theory of Lipset (1959) according to which an increase in income per capita stimulates democracy. In addition, economic growth seems to favor democracy, which reinforces the conclusions of Lipset (1959). In line with Csordás and Ludwig (2011), we find no significant relationship between trade openness and democracy. The results also reveal a negative and significant effect of natural resource rents on democracy. These findings are consistent with recent research suggesting that natural resources are a barrier to the emergence of democracy (Elbadawi and Makdisi, 2007; Tsui, 2011; Fayad et al., 2012; Bougharriou et al., 2017). This is tantamount to saying that, in resource-rich countries, governments use the rents derived from these resources to reduce social pressure and ensure their stay in power.

In light of the estimation results of the FDI equation presented in column (3), it seems that democracy stimulates FDI inflows significantly.¹⁹ These results are in line with those of Busse (2004) and Jakobsen and Soysa (2006). This brings us to the point that democratic countries tend to create an investment climate that provides better protection of property rights, better control of corruption and efficient legal system that guarantees economic freedom, thereby attracting foreign investors.

In line with our expectations, economic growth appears to be positively and significantly related to FDI inflows. These findings support those of Moosa (2009) and Mottaleb and Kalirajan (2010). The estimates also show that inflation has a negative and statistically

¹⁸ For the democracy equation, the results reported in column (2) of Table A.5 of the Appendix show that the initial level of income per capita continues to be consistently positive even after using an alternative measure of democracy, which confirms again the modernization theory. As for the other explanatory variables, the results are consistent with those obtained previously.

¹⁹ With regard to the FDI equation, column (3) of Table A.5 of the Appendix indicates that democracy, as measured by Polity IV index, continues to have a positive and significant effect on FDI. The control variables seem to exert the same effects as those obtained in our benchmark model, except for inflation which becomes insignificant.

significant effect on FDI. This result, consistent with that obtained by Schneider and Frey (1985), implies that an unstable macroeconomic environment impedes the entry of foreign firms. Similarly, trade openness seems to have a negative and significant coefficient. This may be justified by the fact that FDI in Arab countries is essentially horizontal in nature, generally intended for the local market, thus confirming the tariff jumping hypothesis (Almounsor, 2007).

Moreover, we find that natural resources affect positively, but not significantly FDI inflows. This is not surprising in view of the fact that several studies sustain that the effect of natural resources on FDI flows depends on institutional quality (Poelhekke and van der Ploeg, 2010; Asiedu, 2013). More specifically, natural resources tend to stimulate significantly FDI only in countries with good institutional quality. This is well illustrated by the positive and significant coefficient associated with the “law and order” variable, reflecting that a strong legal system creates an investment-friendly environment and strengthens foreign investors' confidence (Biglaiser and Staats, 2010; Alexander, 2014).

The results shown in column (4) indicate that democracy stimulates public consumption expenditure.²⁰ Our findings are consistent with those reported by Aidt et al. (2006) and Profeta et al. (2013) who advocate that the extension of the right of voting to the masses, most notably the poor, causes an increase in demands for income redistribution, which favors the increase of public spending and social transfers. Workers' unions can also lobby for wage increases. In such a situation, the political elites find themselves obliged to meet these requirements in an attempt to remain in power. This is illustrated by the fact that, in response to the events of the Arab Spring, Arab governments have increased wages and employment in the public sector in order to alleviate social discontent.

The results also suggest a negative and significant relationship between economic growth and public expenditure. This implies that, in times of economic downturn and in order to absorb unemployment, governments increase public spending by stimulating public sector employment and rising subsidies to calm social frustration. Similarly, population growth appears to have the expected negative effect. Regarding macroeconomic indicators, we find that inflation is negatively associated with public expenditure. These findings support those of Zakaria and Shakoor (2011) and Eterovic and Eterovic (2012) who argue that high inflation tends to reduce the real value of tax revenues, which can hamper the growth of government spending. The results also reveal no evidence that public debt and trade openness have a significant explanatory power.

The estimates also indicate that an increase in natural resource revenues favors that of public spending. This result can be explained by the fact that in the resource-rich Arab countries, oil rents have led to the expansion of government expenditures, mainly public-sector wages. In fact, politicians tend to increase employment in the public sector in order to retain popular support and contain political protests so that they can ensure their political survival (Ali and Elbadawi, 2012).

²⁰ The reported estimates of the public consumption expenditure equation in column (4) of Table A.5 of the Appendix confirm the positive effect of democracy on public expenditure even when democracy is measured by the Polity IV index. The results show as well that some control variables retain their significance and keep the same sign, while others gain significance.

5 Conclusion and policy implications

The revolutions of the Arab Spring have fostered the fall of some Arab authoritarian regimes that have held power for several decades, opening the way for democratic changes in the region. In light of these political developments, it is particularly interesting to study the relationship between democracy and economic growth in the Arab world context as little empirical research has been conducted on this topic.

The purpose of the paper is to examine the direct and indirect links between democracy and economic growth. To do so, we estimate a dynamic panel simultaneous equations model on a sample of 16 Arab countries during the period 2002–2013. This study focuses on two particular channels through which democracy affects growth, namely FDI inflows and public consumption expenditure. The results show that there is no clear relationship between democracy and economic growth in the Arab countries, which confirms the skeptical approach (Helliwell, 1994; Tavares and Wacziarg, 2001; Kurzman et al. 2002; Baum and Lake, 2003). The ambiguity of this relationship can be explained by the fact that the impact of democracy on economic growth operates through different channels, each of which affects growth differently. Interestingly, our model shows that democracy promotes growth indirectly by stimulating FDI inflows and hinders growth by generating higher public consumption expenditure.

More specifically, a democratic country offers a favorable climate for investment that ensures the rule of law and the protection of private property, thereby making itself more attractive to foreign investors. At the same time, democracy is associated with higher public spending. In fact, to cope with social pressures and to keep themselves in power, politicians raise social transfers and subsidies in order to satisfy citizens' demands for income redistribution and stimulate public employment so as to reduce unemployment during economic recession periods. These results are robust to the use of an alternative measure of democracy.

In view of the results obtained from our model, it should be emphasized that democracy has a growth-enhancing effect only if its benefits outweigh its costs. In other words, the benefits of FDI must exceed the costs of public spending. Hence, a number of policy implications for the Arab countries may arise from our findings.

First, as democracy is associated with an increase in administrative salaries and expenses, a reduction in current expenditure is of paramount importance. Accordingly, the adoption of public sector reforms is highly desirable. On the one hand, it is essential to create incentives to motivate public servants to move towards employment in the private sector. On the other hand, Arab governments have to undertake expenditure reforms and improve the quality of their budget institutions. Indeed, the implementation of effective spending rules can help control public spending. Reducing the excessive dependence on natural resources and fostering the economic diversification are as well expected to lower public spending.

Second, improving institutional quality and the business environment seems to be a key solution to attract more FDI. Therefore, reforms aimed at promoting good governance are needed. Stimulating economic diversification in the Arab countries and attracting FDI concentrated in the non-oil sector would as well enhance economic growth (IMF, 2016).

In view of the above, it is important to note that the simultaneous equation model cannot take into consideration all the costs and benefits of democracy. In fact, the current research is limited to studying only the effects of two transmission channels which are supposed, from our

point of view, to be the most influential in the Arab world context. Nevertheless, other channels can also be considered while examining the link between democracy and economic growth. This may be the subject of future research.

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Appendix

Country list (16 Arab countries)

Algeria, Bahrain, Egypt, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, UAE, Yemen

Table A.1: Variables description and data Sources

Variables	Description	Sources
<i>demf</i>	The average of political rights and civil liberties indices. The index is measured on a 1–7 scale, with 1 representing the most democratic and 7 representing the least democratic. The scale is inverted and the index is normalized between zero and one, with higher values indicating a higher level of democracy.	Freedom House
<i>demp</i>	The Polity2 index ranges from -10 to 10. The index is normalized between zero and one, with higher values indicating a higher level of democracy.	Polity IV
<i>growth</i>	Real GDP per capita growth	WDI
<i>lgdppc</i>	Real GDP per capita (constant 2005 US\$) (in logarithm)	WDI
<i>fdi</i>	Foreign direct investment, net inflows (% GDP)	WDI
<i>govsp</i>	General government final consumption expenditure (% of GDP)	WDI
<i>invest</i>	Gross capital formation (% GDP)	WDI
<i>pop</i>	Population growth rate	WDI
<i>rents</i>	Total natural resources rents (% of GDP) (in logarithm)	WDI
<i>trade</i>	The sum of exports and imports of goods and services measured as a percentage share of GDP (in logarithm)	WDI
<i>inflation</i>	Growth of GDP deflator	WDI
<i>pubdebt</i>	The ratio of total public debt stocks to GDP (in logarithm)	(Abbas et al., 2010)
<i>law</i>	The law and order index lies between 0 and 6, with higher values indicating more efficient legal system.	ICRG
<i>corruption</i>	The control of corruption index lies between –2.5 and 2.5, with higher scores corresponding to lower corruption level.	WGI

Table A.2: Summary statistics

Variables	Obs.	Mean	Std. Dev.	Minimum	Maximum
<i>growth</i>	192	1.330683	10.16989	-62.21435	104.6576
<i>lgdppc</i>	192	8.611738	1.337341	6.407185	11.01657
<i>demf</i>	192	.1892361	.1546634	0	.6666667
<i>demp</i>	192	.2627604	.2136229	0	.8
<i>fdi</i>	185	3.821773	3.876652	-1.802918	23.53736
<i>govsp</i>	180	15.27085	4.367002	5.745824	26.09611
<i>invest</i>	170	23.93529	5.931456	8.948526	46.01657
<i>pop</i>	192	3.462496	3.313806	-2775595	17.62477
<i>rents</i>	186	2.344572	2.422639	-5.946491	4.28685
<i>trade</i>	176	4.445044	.3667664	3.247355	5.170865
<i>inflation</i>	192	8.464953	9.739545	-25.3128	36.67306
<i>pubdebt</i>	167	3.488874	1.095625	-.5963027	5.203516
<i>law</i>	192	4.171875	.9921384	2	6
<i>corruption</i>	192	-.1897247	.746779	-1.51808	1.722849

Table A.3: Correlation matrix

	<i>growth</i>	<i>lgdppc</i> ₍₋₁₎	<i>demf</i>	<i>demf</i> ₍₋₁₎	<i>demp</i>	<i>demp</i> ₍₋₁₎
<i>growth</i>	1.0000					
<i>lgdppc</i> ₍₋₁₎	-0.3481	1.0000				
<i>demf</i>	-0.1357	0.1728	1.0000			
<i>demf</i> ₍₋₁₎	-0.0976	0.2241	0.8961	1.0000		
<i>demp</i>	0.1623	-0.5077	0.2997	0.2061	1.0000	
<i>demp</i> ₍₋₁₎	0.1861	-0.5011	0.2702	0.2409	0.9689	1.0000
<i>fdi</i>	0.1406	-0.0630	0.0914	0.1177	0.3174	0.3371
<i>fdi</i> ₍₋₁₎	0.1376	-0.0338	0.0469	0.0933	0.3086	0.3323
<i>govsp</i>	0.2098	-0.0560	0.1200	0.1098	-0.0828	-0.0868
<i>govsp</i> ₍₋₁₎	0.3486	-0.0029	0.1338	0.1312	-0.1110	-0.1159
<i>invest</i>	-0.1581	0.3645	0.1630	0.2032	-0.1136	-0.1189
<i>pop</i>	-0.5075	0.6777	0.0420	0.0775	-0.4569	-0.4580
<i>rents</i>	-0.1453	0.2198	-0.2804	-0.2550	-0.6572	-0.6672
<i>trade</i>	-0.2744	0.6174	0.3373	0.3594	-0.1517	-0.1392
<i>inflation</i>	0.1571	0.0044	-0.1319	-0.1429	-0.1045	-0.0960
<i>pubdebt</i>	0.2415	-0.5706	0.0890	0.0448	0.4692	0.4597
<i>law</i>	-0.1021	0.5898	0.1635	0.2099	-0.5161	-0.5162
<i>corruption</i>	-0.3286	0.7933	0.2412	0.2750	-0.5859	-0.5786

Table A.3: Correlation matrix (continued)

	<i>fdi</i>	<i>fdi</i> ₍₋₁₎	<i>govsp</i>	<i>govsp</i> ₍₋₁₎	<i>invest</i>	<i>pop</i>
<i>growth</i>						
<i>lgdppc</i> ₍₋₁₎						
<i>demf</i>						
<i>demf</i> ₍₋₁₎						
<i>demp</i>						
<i>demp</i> ₍₋₁₎						
<i>fdi</i>	1.0000					
<i>fdi</i> ₍₋₁₎	0.7937	1.0000				
<i>govsp</i>	0.0439	-0.0115	1.0000			
<i>govsp</i> ₍₋₁₎	0.0383	-0.0055	0.9199	1.0000		
<i>invest</i>	-0.0568	0.0533	0.0434	-0.0184	1.0000	
<i>pop</i>	0.0182	0.0500	-0.3607	-0.3476	0.4188	1.0000
<i>rents</i>	-0.6049	-0.5783	-0.0458	-0.0364	0.0642	0.2559
<i>trade</i>	0.2627	0.2581	0.0435	0.0706	0.1087	0.3367
<i>inflation</i>	-0.1342	-0.1155	-0.2409	-0.0012	-0.1798	0.0639
<i>pubdebt</i>	0.3224	0.2993	0.0558	0.0304	-0.1892	-0.3578
<i>law</i>	-0.0196	-0.0220	0.3827	0.3928	0.2972	0.2228
<i>corruption</i>	-0.0806	-0.0836	0.0268	0.0457	0.2809	0.6301

Table A.3: Correlation matrix (continued)

	<i>rents</i>	<i>trade</i>	<i>inflation</i>	<i>pubdebt</i>	<i>law</i>	<i>corruption</i>
<i>growth</i>						
<i>lgdppc</i> ₍₋₁₎						
<i>demf</i>						
<i>demf</i> ₍₋₁₎						
<i>demp</i>						
<i>demp</i> ₍₋₁₎						
<i>fdi</i>						
<i>fdi</i> ₍₋₁₎						
<i>govsp</i>						
<i>govsp</i> ₍₋₁₎						
<i>invest</i>						
<i>pop</i>						
<i>rents</i>	1.0000					
<i>trade</i>	-0.1053	1.0000				
<i>inflation</i>	0.3026	-0.1231	1.0000			
<i>pubdebt</i>	-0.5916	-0.3116	-0.2210	1.0000		
<i>law</i>	0.0460	0.5089	-0.1765	-0.2411	1.0000	
<i>corruption</i>	0.3492	0.6234	-0.0523	-0.4403	0.5487	1.0000

Table A.4: Robustness checks: dropping FDI and govsp from growth equation

VARIABLES	(1) Basic specification	(2) Model specification	(3) Alternative specification
<i>lgdppc₍₋₁₎</i>	-18.49* (9.000)	-20.68** (7.478)	-14.98*** (4.546)
<i>demf</i>	19.31 (21.72)	13.67 (16.57)	0.565 (3.303)
<i>invest</i>		0.232 (0.138)	-0.326 (0.211)
<i>pop</i>		-0.796*** (0.193)	-0.354 (0.203)
<i>rents</i>		4.255** (1.714)	
<i>trade</i>		-22.10** (9.498)	
<i>inflation</i>			0.111*** (0.0346)
<i>corruption</i>			3.117* (1.681)
Observations	160	135	138
Number of countries	16	16	16
F-stat (p-value)	0.107	0.000	0.001
AR(2) test (p-value)	0.322	0.998	0.920
Hansen J-test (p-value)	0.192	0.613	0.608

Notes: Standard errors are in parentheses. Two-step Diff-GMM regressions use robust standard errors clustered by country. The Hansen and AR(2) tests indicate that we cannot reject the validity of our instruments. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively.

Table A5: Robustness checks: Alternative measure of democracy

VARIABLES	(1) <i>growth</i>	(2) <i>demp</i>	(3) <i>fdi</i>	(4) <i>govsp</i>
<i>lgdppc</i> ₍₋₁₎	-19.76* (11.00)	0.187** (0.0808)		
<i>demp</i>	14.21 (11.39)		6.879* (3.782)	8.819* (4.375)
<i>fdi</i>	0.316** (0.143)			
<i>govsp</i>	-0.410* (0.222)			
<i>invest</i>	0.214 (0.190)			
<i>pop</i>	-0.921*** (0.243)			-0.204** (0.0950)
<i>rents</i>	3.509 (2.362)	-0.0718 (0.0517)	1.198 (2.701)	0.375 (0.270)
<i>trade</i>	-21.75 (14.02)	0.188** (0.0794)	-12.43** (4.296)	-2.200** (0.826)
<i>demp</i> ₍₋₁₎		0.585** (0.218)		
<i>growth</i>		0.00262 (0.00160)	0.341* (0.193)	-0.165*** (0.0344)
<i>fdi</i> ₍₋₁₎			0.900*** (0.150)	
<i>inflation</i>			-0.0297 (0.0868)	-0.115*** (0.0104)
<i>law</i>			3.200*** (0.954)	
<i>govsp</i> ₍₋₁₎				0.941*** (0.100)
<i>pubdebt</i>				-0.444 (0.325)
Observations	135	144	142	127
Number of countries	16	16	16	16
F-stat (p-value)	0	0	0	0
AR(2) test (p-value)	0.986	0.434	0.131	0.155
Hansen J-test (p-value)	0.985	0.281	0.873	0.648

Notes: Standard errors are in parentheses. Two-step Diff-GMM regressions use robust standard errors clustered by country. All explanatory variables are considered endogenous except the variable *rents*. Lagged dependent variables are considered predetermined. The Hansen and AR(2) tests indicate that we cannot reject the validity of our instruments. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively.

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