

## What Types of Perceived Governance Indicators Matter the Most for Private Investment in Middle East and North Africa

Ahmet Aysan  
*Boğaziçi University*

Zeynep Ersoy  
*Boğaziçi University*

Marie-Ange Véganzonès –Varoudakis  
*World Bank, CERDI, CNRS, Université d'Auvergne,  
France*

### *Abstract*

By using a simultaneous equations model, this paper establishes that the perceived quality of governance, which is measured by three different indicators “Quality of Administration”, “Public Accountability” and “Political Stability”, has a positive effect on the private investment decisions in the developing countries. Our model allows us to point out the fact that the mechanisms through which each type of indicator affects private investment are different. In addition to our primary result we also show that Middle East and North Africa (MENA) region could have attained a better private investment performance if it had reached a more advanced level of perceived institutions in last two decades. The low level of public accountability, among other governance deficiencies, was predominantly responsible for the deficiency in private investment in MENA.

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## 1. Introduction

The quality of governance in the Middle East and North Africa (MENA) region is generally considered to be inadequate. Although this is true for a large number of institutions, quality of governance is a wide-ranging phenomenon and its distinct features may exhibit quite different paths for the same region (see Table I). For example in terms of the administrative quality and political stability indicators used in this paper, MENA ranks third in average during 1980 to 2002-with scores of 0.14 and 0.07 respectively- among the six developing regions and is superior to Africa (AFR), Latin America (LAC) and South Asia (SAS). This basic comparison shows that contrary to common belief, MENA is not particularly deficient in institutional quality when measured by these indicators. On the other hand political accountability for the MENA is the lowest among the regions with the score of -0.90<sup>1</sup>. The different levels of advancement displayed by the various governance indicators in the MENA region (as well as other regions) suggest that the mechanisms shaping each indicator can be quite different. Hence these different types of governance institutions are also expected to exert their influences on the economic variables differently as well. Hence, in this paper we focus on the various different dimensions of governance indicators and analyze the impact of various types of perceived governance institutions on the level of private investment in MENA.

There is an emerging literature on the quality of governance which advocates that “good” governance institutions are needed for successful market-based economies<sup>2</sup>. The impact of institutions on economic growth<sup>3</sup>, GDP per capita<sup>4</sup> and or volatility of the economic activity<sup>5</sup> have been studied extensively in the recent years. Although private investment is one of the main channels through which institutions exert their influence on growth and economic development, very little research is done on the relationship between private investment and governance institutions. The existing studies on governance and private investment have generally concentrated on the effect of the rule of law<sup>6</sup>. Private investment is very much responsive to the changes in the business environment; which governance constitutes an important element. The forward looking nature of investment highlights the importance of a stable and secure environment. World Bank (2004) finds a strong positive link between the investment climate and private investment decisions and suggests that better governance improves the investment climate by improving bureaucratic performances and predictability which in turn reduced uncertainty and the cost of doing business.

Since governance is an important determinant for investment, private investors would want to know about the quality of the governance institutions at the time of making investment decisions but they may not know the actual governance establishments with 100% accuracy. Hence they collect information about the quality of governance institutions from various sources to form their perceptions about these institutions. Since their opinions on governance institutions are crucial in making the investment decisions, perceived level of quality of the governance

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<sup>1</sup> Table II, also confirms the same result. The level of the variables associated with administrative quality and political stability look rather satisfactory for the MENA region. In contrast, in terms of political accountability variables –civil liberties and government stability- MENA has the lowest score among all the regions.

<sup>2</sup> See in particular Rodrik (1999) and Frankel (2002).

<sup>3</sup> See for example Knack and Keefer (1995) and Acemoglu, Johnson, and Robinson (2001) among others.

<sup>4</sup> See Acemoglu, Johnson, and Robinson (2001) among others.

<sup>5</sup> See for example Acemoglu and Taicharoen (2003).

<sup>6</sup> Under this category the security of the property rights is the most studied and empirically validated component. See North (1981) and Knack and Keefer (1995)

institutions needs to be analyzed as a determinant of private investment. For the governance variables we use the data obtained from International Country Risk Guide (ICRG) and Freedom House (FH). These are independent private firms that provide consulting services to international investors. We argue that, this data set can be a good proxy to measure the perceptions of the investors about the institutions. We also allow for the possibility that perceived and actual institutions may actually differ. Based on the existing literature, we classify governance institutions in three groups as “Administrative Quality”, “Political Stability” and “Political Accountability”. The first one, Administrative Quality contains four variables from the ICRG: “Control over Corruption”, “Quality of Bureaucracy”, “Investment Profile”, and “Law and Order”<sup>7</sup>. This governance unit shows the capacity of the government to provide investment-friendly and reliable conditions for the private investors. Political Stability is composed of the following four variables from ICRG: “Government Stability”, “Internal Conflict”, “External Conflict” and “Ethnic Tensions”. The lack of Political stability creates uncertainty which has detrimental effects for the level of investment. Our last indicator, Public Accountability consists of two indicators from FH: “Civil Liberties” and “Political Rights”. Private investment decisions are highly sensitive to the perception of the credibility and persistence of the political regime, as well as of policies (See Rodrik 1991). A participatory political system provides the stability of social institutions and ensures a broad public support to policies, which are in this case more sustainable in the long run.

The neoclassical flexible accelerator model (Jorgenson, 1963) is based on the neoclassical idea of the theory of the firm. The determinants of investment in the neoclassical flexible accelerator model include the expected aggregate demand (the accelerator), the user cost of capital, the wage rate and the initial capital stock. The firms in developing countries face certain constraints that are not accounted for in the conventional neoclassical theory<sup>8</sup>. One of the main constraints confronted by the investors in the developing countries is the deficit in economic reforms. Structural reforms are important determinants of the actual and future profitability of private investment. Our structural reforms index includes trade policy and financial development. Financial development is an important determinant for private investment since it creates profitable investment opportunities. A developed financial system mobilizes and allocates resources to the projects that will create the most surplus. Trade reforms can also encourage private investment decisions. The link between persistent growth and trade openness is generally acknowledged (See Bisat et. al., 1996). In addition to their direct effects; economic reforms are also expected to affect private investment through their impact on institutional quality. For example, there is some evidence that greater openness to trade and stronger competition are conducive to institutional improvement (Berg and Krueger 2003). Human capital is also an important determinant for the level of private investment. Human capital stimulates private capital formation by raising the profitability of investment and can provide positive externalities (Mankiw, Romer and Weil 1992). Additionally, human capital gives rise to institutions with better quality. More educated people with higher life expectancy become more competent bureaucrats demand for better quality of bureaucracy (Galor et al., 2005). In the developing countries, the government is still the pre-dominant actor in the economy. Hence the level of government consumption can be an important determinant for private investment for these countries. When government spending is used to finance projects which increase the

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<sup>7</sup> These four variables (as well as the components of the other two groups) are aggregated using the Principle Components Analysis to form a broad index for the Quality of Administration.

<sup>8</sup> See in particular Shafik (1992) and Aysan et al. (2006b) for a discussion and additional references.

profitability of the private investment (like health and education services) then the effect of this factor on private investment will be positive. On the flip side government consumption can reduce the amount of funds available to the private sector. This effect is most likely to be observed through the increase in the interest rates (Binter 1977) and future tax burden (Friedman 1976). Since government consumption can have beneficial as well as damaging effects on the private investment in theory, the overall impact of this variable on the level of private investment needs to be analyzed empirically. Government spending is expected to have a positive effect on governance. For example the improvements in the living standards of the bureaucrats caused by the increase in wages can induce them to form better governance institutions.<sup>9</sup>

Aysan et.al. (2006a) have reexamined and updated the International Finance Corporation (IFC) data set for private investment by consulting the national sources, IMF and World Bank series and country economists. We use their disseminated data set (which covers the period from 1970 to 2002 and includes 60 developing countries) in our study. Private investment and different forms of governance institutions are jointly determined so we use a simultaneous equations model. The procedure of this model is justified by the fact that private investment can have a direct effect on the institutions<sup>10</sup>. Our findings show that the perceived quality of governance institutions plays an important role in private investment decisions. “Administrative Quality” (QA) and “Political Stability” (PS) and “Political accountability” (PA) are crucial for the determination of private investment. This result supports the hypothesis that different categories of governance institutions effect private investment through different channels.

## 2. The Econometric Analysis

### 2.1. The Model Tested

In our empirical model, endogenous variables are the share of private investment and the various measures of governance, namely Quality of Administration (*QA*), Political Accountability (*PA*) and Political Stability (*PS*). To incorporate the two-way causality into our analysis, we form a system of equations to estimate the share of private investment (*PI*) in GDP and quality of governance institutions (*IQ*) simultaneously. In the private investment equation, perceived quality of governance institutions is expected to increase the private investment. In the governance equation, the sign of the coefficient of private investment is expected to be positive. This system of equations is estimated using three stage least squares by controlling for the other determinants. The model estimated is the following:

$$PI_{it} = \alpha_0 + \alpha_1 IQ_{it} + \alpha_2 X_{1i} + \varepsilon_{1it} \quad (A)$$

$$IQ_{it} = \gamma_0 + \beta_1 PI_{it} + \beta_2 X_{2i} + \varepsilon_{2it} \quad (B)$$

In these equations,  $PI_{it}$  is the share of private investment in GDP and  $IQ_{it}$  represents the various indexes of governance (*QA*, *PA* and *PS*).  $X_{1i}$  And  $X_{2i}$  are the other control variables in

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<sup>9</sup> See Azariadis and Lahiri (2002)

<sup>10</sup> For instance, an increase in the private investment strengthens the private sector' incentive in lobbying .Hence these newly-empowered corporate bodies are likely to exert more pressure on the government and demand institutional changes for their own well-being, see Altmann (2006).

private investment (*PI*) and governance (*IQ*) equations respectively.  $\varepsilon_{1it}$  and  $\varepsilon_{2it}$  are the error terms of each equation. *i* signifies the country and *t* represents the time of the variable.

The private investment equation in our model includes real interest rate (Realr) to capture the user cost of capital and the GDP growth rate in last year (Growth) to account for the accelerator effect<sup>11</sup>. These two variables are assumed to have no direct effect on the level of the perceived quality of governance so are not included in the governance equations. The following variables appear in both of the equations. GDP per capita variable enters in the private investment with an expected negative sign. This variable in the governance equation is expected to exert a positive influence on the governance indicators<sup>12</sup>. Our Structural reforms (SR) index is composed by aggregating trade policy and financial development indicator by using the principal component analysis. Financial development is calculated by the private credit by banks and other depository institutions. Trade policy indicator is formed by subtracting the exports of oil and mining products and the “natural trade openness” (Constructed by Sachs and Warner 1997) from the commercial openness (Calculated by aggregating the export and import in total GDP). Structural reform is expected to enhance the level of private investment and the perceived quality of the governance institutions. Human Capital (HC) index is formed by aggregating life expectancy at birth and average years of primary, secondary and higher schooling variables. The ratio of government consumption to GDP (GCons) is used to account for the level of government consumption and this variable is included in both of the equations. The effect of this variable on private investment is not certain ex-ante, but it is expected to exert a positive influence on the governance equations. Oil export as a percentage of total merchandise export (Oil Export) is also included as explanatory variables in both equations. The validity of the natural curse hypothesis is tested by incorporating this variable in the investment equation<sup>13</sup> and the sign of this variable in the private investment equation is expected to be negative. The share of oil exports has also implications for the quality of governance institutions in the economy<sup>14</sup> so, oil export as a percentage of total merchandise export is expected to have a negative coefficient in the governance equations.

The tenure of the system (Tensys) from Keefer et al. (2001) is excluded from the investment equation to identify the system and is expected to have a positive influence on the governance institutions<sup>15</sup>. Finally, a regional dummy for the Middle Eastern and North African countries (MENA dummy) appears as a right hand side variable in both of the equations.

## 2.2. Estimation Results

Equations “(A)” and “(B)” have been estimated on an unbalanced panel of 32 developing countries over 1970-2002. Three sets of regressions have been calculated, each one utilizing a

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<sup>11</sup> GDP growth rate enters the equation with an expected positive sign whereas the effect of the real interest rate is expected to be negative.

<sup>12</sup> According to more Azariadis and Lahiri (2002) developed countries can afford to have better institutions.

<sup>13</sup> When a country relies more on natural resources extraction in its export, there can be less incentives to invest for other products, Rodriguez and Sachs (1999).

<sup>14</sup> Countries which are less dependent on natural resources are expected to form better governance institutions, see Ross (2001).

<sup>15</sup> Tenure system reports the number of years that an administrative system lasts in the country.

different governance indicator to account for the perceived quality of the government institutions. Tables IV present the results.

From table IV column 1-where Administration Quality (QA) is used as a measure of governance- we can conclude that the QA has a positive and significant coefficient at the 5 % level in the investment equation. In this specification especially the structural reforms have an important impact on private investment. The accelerator variable has the expected positive sign and it is significant. Although not significant, interest rate appears to exert a negative effect on the private investment, which is consistent with the user cost of capital theory. The coefficient of the GDP per capita and human capital variables are not significant. Government consumption variable has a significantly negative coefficient in equation 1 (Table IV column 1). This finding indicates that, for the countries that are included in our sample the crowding out effect of government spending outweighs the crowding in effect. The coefficient of the oil export variable as a percentage of total merchandise export is significant and negative in equation 1. Similarly, the regional dummy for MENA countries has a negative coefficient. MENA countries seem to be diverging from the rest of the world in terms of private investment. However, this dummy variable is not significant. This result is most likely stem from the inclusion of the oil exports variable in the regressions. On the “Administrative Quality” equation (Table IV, column 2), our results uncover the positive influence of several factors on the perceived quality of the administration. For example GDP per capita-although small- has a significantly positive coefficient which implies that countries with superior resources are able to develop better institutions. Besides, private investment helps improving the administrative quality considerably. This last result validates the usage of the 3SLSQ estimation technique. Tenure of system is also an important determinant for the administrative quality. Government spending has a significantly positive coefficient for the administration quality. Our estimations fail to confirm the negative impact of the share of oil export in merchandise export. Structural reforms and human capital are not significant in explaining administrative quality in equation (2). However, when estimating the system by excluding private investment from equation (B), the coefficient of the structural reforms and human capital becomes positive and highly significant (see Table IV column 4). This result seems to be due to the fact that the structural reforms index is correlated with private investment. Hence, the positive impact of private investment on administrative quality seems mainly due to the structural reforms which stimulate firms’ decisions to invest. This result also shows that the impact of human capital on private investment is indirect.

Political Stability (see columns 5&6 of Table IV) seems to have a significant and positive impact on the investment decisions, but for this governance indicator the level of significance is 10%. Once again structural reforms are confirmed to be crucial for private investment, but this time their effect is indirect. They enhance the level of investment by improving the political stability of a country (see Table IV columns 5&6). In this specification, both of the variables that are related to the neo-classical investment model- growth and interest rate- are highly significant with the expected signs. The influence of human capital on the political stability is highly significant. Hence we can say that the human capital variable is exerting its influence on private investment through its influence on political stability. Similar to the Administrative Quality case, we are again able to verify the natural curse hypothesis. But the effect of private investment is not significant on political stability. The regional MENA dummy in the political stability equation (Table IV column 6) is significant with a positive sign. This result establishes a strong conclusion about the level of the quality of the governance in the MENA region as measured by

the political stability indicator. Controlling for the other determinants of the political stability, being a MENA country increases the level of stability. Unlike the administrative quality case, government consumption does not have a robust effect on political stability (Table IV, column 6). Also the positive impact of GDP and Tenure system on political stability are validated in this specification.

Table IV (columns 7&8) reports the regression results when “Political Accountability” measures the perceived quality of institutions. We show that the coefficient of Political Accountability in the private investment equation (See table IV equation 7) is significant at the 10% level. This can be viewed as an important contribution to the literature on economic activity and democracy. This set of estimations also confirms that structural reforms encourage private investment decisions. This time, the link appears to be only direct, the coefficient of the structural reforms indicator in the political accountability equation appears insignificant (Table IV, columns 7&8). Like the political stability case human capital has a significant influence on the political accountability but not on private investment. Unlike the previous indicators the MENA dummy variable has different coefficients in both of the equations. In equation (7), the coefficient of the MENA dummy is positive, although not significant. On the political accountability equation (Table IV, columns 8) the coefficient of this variable is now significant and negative. This last finding strengthens our claims about the low level of democratic quality in the MENA region introduced in the first section. Once again both of the variables that are related to the neo-classical investment model are highly significant with the expected signs. Like the previous cases crowding out effect of the government sector spending on private investment and the positive influence of government consumption on the quality of institutions is established in this specification too (Table IV, columns 7&8). Finally like the previous two indicators, this one also verifies the natural curse hypothesis along with the positive influence of the level of GDP on governance.

### **3. Perceived Quality of Governance and Private Investment Performance of MENA**

In this section, we use the models estimated previously to uncover the contribution of each type of governance institution to the improvement of private investment performance in the MENA region. For this purpose, we compare private investment performance of the MENA region in these respects to the one of the more advanced developing economies of our sample, the East Asian economies and simulate which level of private investment MENA could have achieved if the region had the same perceived governance institutions as East Asia. This is done for two time periods; the 1980s and the 1990s respectively. In our simulations we use the equations obtained for private investment in the three different specifications. (See Table IV, columns 1, 5 and 7). The contribution of the Quality of Administration index has been calculated by aggregating the contributions of its four sub-components and the same thing has been done for the other governance indicators.<sup>16</sup>

From Table V (top section) it can be seen that, if MENA had the same perceived quality of administration as the East Asia in the 1980s its average-private investment to GDP ratio would have reached 13.8 (compared to 11.9 per cent observed). When the contributions of the various components of administration quality to this result are examined, it becomes clear that

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<sup>16</sup> See Annex 2 and Annex 3. For more details on the methodology, see Nagaraj et al. (2000).

deficiencies in the investment profile and law & order were the primary reasons for the gap between the actual and potential level of private investment (these two components are responsible for the loss of 0.6 and 0.8 points of private investment to GDP respectively). These results imply that, in the 1980s the countries in the MENA region had difficulties in ensuring an equitable and consistent rule of law in protecting the security rights, as well as providing an investment environment that is free from risks to operations and excessive regulations. Table VI shows that in the 1980s, private investment in the MENA region had the potential to reach on average 15.9 per cent of GDP if the gap with the East Asian institutions in terms of political stability was diminished. External and internal stability components were nearly the sole contributors to this result which have reduced private investment decisions by respectively 1.6 and 2.7 per cent of GDP on average per year. If MENA had benefited from the same quality political accountability private investment would have been 15.9 percent of GDP in the 1980s (See table VII). The lack of civil liberties and political rights has both been important factors in keeping the region from reaching its potential level of investment.

In the 1990s, the gap with East Asia has been noticeably reduced in terms of “Administrative Quality” and “Political Stability”. The deficit in private investment caused by insufficient quality of administration was 0.4 points of GDP on average per year in the 1990s (see Table V bottom section). The gap with East Asia has nearly fully diminished in terms of corruption, investment profile and law&order. On the other hand just like the 1980s lack of bureaucratic quality is still responsible for the loss the private investment equaling to 0.3 points of GDP on average. In the 1990s, MENA had a superior performance –in terms of the overall political stability indicator- than the East Asia in terms of political stability (see Table VI). Government stability and ethnic tension sub-components are better for the MENA region, whereas- although improved significantly compared to the 1980- external conflict still accounts for the loss of 0.3 points of private investment to GDP. In terms of Political Accountability, the gap between the two regions nearly did not decrease at all. The low level of political accountability is responsible for the deficit in private investment equaling to 3.9 points of GDP (See Table VII).

#### **4. Conclusion**

In this paper we empirically show that the perceived quality of governance is an important determinant of the private investment decisions in the developing countries by stressing the existence of different types of possible measures of governance. Different types of governance; namely “Quality of Administration” (*QA*), “Political Accountability” (*PA*) and “Political Stability” (*PS*) are confirmed to exert their influence on the private investment through diverse mechanisms. All of the three indicators were proved to be significantly –although at different levels of significance and magnitudes of influence-important for private investment decisions. The weakness of MENA institutions during the 1980s was an important reason for the observed low level of investment in this region. In the 1990s the gap between the two regions mostly diminished in terms of the quality of the administration and political stability. On the other hand the gap between the MENA and East Asia regions did not decrease at all in terms of the political accountability. The low level of perceived *PA* was still responsible for the deficit in private investment equaling to 3.9 points of GDP. These results support the argument that governance may exert different levels of influence on private investment when measured by different indicators.



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## Annex 1

Table I: Governance Indicators (average 1970-2002)

Region	Administrative Quality	Political Stability	Political Accountability
AFR	-0.38	-0.63	-0.55
EAP	0.59	0.29	-0.05
ECA	0.29	0.42	0.03
LAC	-0.31	-0.09	1.16
MENA	0.14	0.07	-0.90
SAS	-0.55	-0.88	0.46

Sources: International Country Risk Guide, Freedom House, and the Authors' calculations.

Table II: Disaggregated Governance Variables (average 1970-2002)

Region	Corruption	Bureaucracy Quality	Investment Profile	Law and Order	Political Rights	Civil Liberties	Government Stability	Internal Conflict	External Conflict	Ethnic Tensions
AFR	2.81	1.49	5.42	2.71	-5.10	-4.97	6.07	6.96	8.44	2.99
EAP	3.22	2.37	6.29	3.89	-4.29	-4.49	7.07	9.28	9.99	3.33
ECA	3.43	1.71	5.69	4.04	-4.20	-4.39	6.94	9.68	10.06	3.92
LAC	2.71	1.44	5.73	2.81	-2.72	-3.02	6.13	7.61	9.75	4.34
MENA	2.98	1.95	5.89	3.39	-5.41	-5.51	7.62	8.30	8.34	4.34
SAS	1.98	1.81	5.38	2.33	-3.38	-4.08	5.73	6.60	8.27	2.29

Sources: International Country Risk Guide, Freedom House the Authors' calculations.

Table III: List of Countries with High Quality Data (60 countries)

<p>Argentina, Bangladesh*, Barbados*, Belize, Benin*, Bolivia*, Brazil*, Bulgaria, Cambodia, Chile*, China*, Colombia*, Comoros, Costa Rica*, Cote d'Ivoire, Croatia, Dominican Rep., Ecuador*, <b>Egypt Arab Rep.*</b>, El Salvador, Estonia, Ethiopia, Guatemala*, Guinea-Bissau, Guyana, Haiti, Honduras*, India*, Indonesia*, <b>Iran Islamic Rep.</b>, Kenya*, Lithuania, Malawi*, Malaysia*, Mauritius*, Mexico, Moldova, <b>Morocco</b>, Namibia, Pakistan*, Panama, Papua New Guinea*, Paraguay*, Peru*, Philippines*, Poland*, Romania, Serbia and Montenegro, Seychelles, South Africa*, St. LuciaSt., Vincent and the Grenadines , Thailand*, Trinidad &amp; Tobago*, <b>Tunisia*</b>, Turkey*, Uruguay*, Uzbekistan, Venezuela*, Yugoslavia (FR)</p>
<p><b>Due to the lack of corresponding data for some countries, only counties marked with * are included in the final regressions</b></p>

Table IV: Estimation Results

Explanatory Variables	Endogenous Variables		Endogenous Variables		Endogenous Variables		Endogenous Variables	
	Priv inv (1)	QA (2)	Priv inv (3)	QA (4)	Priv inv (5)	PS (6)	Priv inv (7)	PA (8)
QA	2.07 <b>(2.08)**</b>		2.16 <b>(2.17)**</b>					
PS					3.64 <b>(1.72)*</b>			
PA							4.74 <b>(1.66)*</b>	
GCons	-0.27 <b>(-3.35)***</b>	0.07 <b>(4.07)***</b>	-0.26 <b>(-3.36)***</b>	0.04 <b>(3.81)***</b>	-0.20 <b>(-2.52)**</b>	-0.01 (-0.49)	-0.44 <b>(-2.45)**</b>	0.05 <b>(2.55)**</b>
Priv Inv		0.12 <b>(2.53)**</b>				-0.07 (-1.59)		-0.05 (-0.87)
SR	1.71 <b>(5.24)***</b>	-0.0018 (-0.01)	1.73 <b>(5.28)***</b>	0.3 <b>(9.11)***</b>	1.11 (1.51)	0.53 <b>(4.36)***</b>	3.53 <b>(4.66)***</b>	-0.13 (-0.98)
HC	0.25 (1)	0.05 (0.95)	0.2 (0.79)	0.09 <b>(2.47)**</b>	-0.42 (-0.76)	0.25 <b>(5.32)**</b>	-0.71 (-1.00)	0.25 <b>(4.70)***</b>
Oil Export	-0.03 <b>(-2.96)***</b>	0.0025 (0.85)	-0.04 <b>(-3.28)***</b>	-0.0025 (-1.41)	-0.05 <b>(-3.02)***</b>	-0.001 (-0.25)	-0.06 <b>(-3.06)***</b>	0.001 (0.33)
GDP per capita	0.00009 (0.38)	0.0007 <b>(1.80)*</b>	0.00018 (0.73)	0.0001 <b>(3.12)***</b>	-0.00002 (-0.06)	0.0002 <b>(3.90)***</b>	-0.0008 (-0.95)	0.0003 <b>(5.64)***</b>
MENA Dummy	-0.97 (-0.99)	0.13 (0.67)	-0.83 (-0.86)	0.02 (0.15)	-2.19 (-1.64)	.34 <b>(1.81)*</b>	4.47 (1.25)	-1.15 <b>(-5.27)***</b>
Rear	-0.01 (-1.53)		-0.03 <b>(-3.18)***</b>		-0.05 <b>(-2.47)**</b>		-0.04 <b>(-2.86)***</b>	
Growth	0.19 <b>(2.77)***</b>		0.16 <b>(2.13)**</b>		0.19 (2.53)**		0.23 <b>(2.77)***</b>	
Ten Syst		0.01 <b>(3.55)***</b>		0.02 <b>(6.21)***</b>		0.013 <b>(3.66)***</b>		0.01 <b>(2.29)***</b>
Constant	15.5 <b>(10.13)***</b>	-2.84 <b>(-3.85)***</b>	15.62 <b>(10.16)***</b>	-1.03 <b>(-6.65)***</b>	16.96 <b>(7.09)***</b>	-0.02 (-0.02)	17.35 <b>(6.80)***</b>	-0.25 (-0.30)
Num obs	349 in each equation							

Notes: (\*) indicates significance at 10 %; (\*\*) indicates significance at 5 %; (\*\*\*) indicates significance at 1 %.

Table V: Private Investment to GDP – Administrative Quality (QA) Case

		Increase with an improvement in					
	Priv. Invest. (Actual)	QA	Corruption	Bur. Qual.	Invest.Prof.	Law & Order	Priv Invest. (Potential)
<b>1980</b>	<b>11.9</b>	<b>1.9</b>					<b>13.8</b>
			0.2	0.3	0.6	0.8	
<b>1990</b>	<b>11.6</b>	<b>0.4</b>					<b>12.0</b>
			0.0	0.3	0.0	0.1	

Source: Authors' calculations.

Table VI: Private Investment to GDP – Political Stability Case (PS) Case

		Increase with an improvement in					
	Priv. Invest. (Actual)	PS	Gov. Stab.	Int. Confl.	Ext. Confl.	Ethn. Tens.	Priv Invest. (Potential)
<b>1980</b>	<b>11.9</b>	<b>4.0</b>					<b>15.9</b>
			0.1	1.6	2.7	-0.4	
<b>1990</b>	<b>11.6</b>	<b>-0.7</b>					<b>10.9</b>
			-0.6	0.1	0.3	-0.5	

Source: Authors' calculations.

Table VII: Private Investment to GDP – Political Accountability (PA) Case

Private Investment to GDP – Political Accountability (PA) Case						
		Increase with an improvement in				
	Priv. Invest. (Actual)	PA	Pol. Rights	Civ. Lib.	Priv Invest. (Potential)	
<b>1980</b>	<b>11.9</b>	<b>4.0</b>			<b>15.9</b>	
			1.9	2.1		
<b>1990</b>	<b>11.6</b>	<b>4.0</b>			<b>15.6</b>	
			1.9	2.1		

Source: Authors' calculations.

## Annex 2

Principal Component Analysis: To get the overall impact of the changes in each category of the governance indicators, we first calculated the contribution of each initial variable in the category to the overall improvement in the level of private investment. The calculation is based on the estimated coefficients of each type of governance indicator in the regression (Table IV, equations 1,5 and 7) as well as on the weights of each principal component in the aggregate indicator combined with the loading of the initial variables in each principal component .

Figure 1: The Administrative Quality Indicator

Component	Eigenvalue	Cumulative R <sup>2</sup>
P1	2.23	0.56
P2	0.83	0.76
P3	0.51	0.89
P4	0.43	1

Loadings	P1	P2	P3	P4
<i>Corruption</i>	0.49	-0.57	0.06	0.65
<i>Bureaucracy Quality</i>	0.54	-0.08	0.64	-0.54
<i>Investment profile</i>	0.41	0.81	0.08	0.40
<i>Law and Order</i>	0.54	-0.02	-0.76	-0.36

$$QA = P1*(0.5577/0.7640) + P2*(0.2063/0.7640)$$

Figure 2: The Political Stability Indicator

Component	Eigenvalue	Cumulative R <sup>2</sup>
P1	2.96	0.42
P2	0.97	0.56
P3	0.90	0.69
P4	0.68	0.79
P5	0.62	0.88
P6	0.57	0.96
P7	0.30	1

Loadings	P1	P2	P3	P4
<i>Gov Stability)</i>	0.32	-0.62	-0.38	0.05
<i>Socioeco Conditions</i>	0.29	0.63	-0.44	-0.14
<i>Internal Conflicts</i>	0.51	-0.06	-0.09	-0.07
<i>External Conflicts</i>	0.39	-0.29	0.26	-0.6
<i>Ethnic Tensions</i>	0.39	-0.06	0.02	0.77
<i>Religious Tensions</i>	0.31	0.19	0.76	0.1
<i>Military in Politics</i>	0.39	0.31	-0.12	-0.11

$$PS = P1 * (0.4253 / 0.7878) + P2 * (0.1373 / 0.7878) + P3 * (0.1280 / 0.7878) + P4 * (0.0972 / 0.7878)$$

Figure 3: The Political Accountability Indicator

Component	Eigenvalue	Cumulative R <sup>2</sup>
P1	1.88	0.94
P2	0.12	1

Loadings	P1	P2
<i>Political Rights</i>	0.71	0.71
<i>Civil Liberties</i>	0.71	-0.71

$$PA = P1$$

### Annex 3

Figure 4: Short term coefficients of the Disaggregated Indicators

Short and Long Term Coefficients/Elasticities			
Index	Variables	Short Term Coefficients	
		Standardized Variables	Level Variables
QA	<i>Corruption</i>	0,43	0,40
	<i>bureaucracy quality</i>	0,78	0,75
	<i>investment profile*</i>	1,08	0,51
	<i>law and order</i>	0,80	0,62
PS	<i>Government Stability</i>	1,81	0,75
	<i>Internal Conflict</i>	1,56	0,60
	<i>External Conflict</i>	1,49	0,67
	<i>Ethnic Tensions</i>	0,67	0,46
PA	<i>Political rights</i>	3,37	1,70
	<i>Civil liberties</i>	3,37	2,10