

## **The Relationship between Institutional Quality and Foreign Direct Investment Inflows**

### **Empirical study of Arab Economies.**

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#### **Introduction**

For long decades scholars have been interested in exploring the main factors that determine a country's level of FDI attractiveness. Traditionally scholars focused on economic factors such as exchange rate, market size, labor cost, infrastructure and other as a key explanatory factors in determining a host country's ability to attract or deter FDI. In the 1990s, FDI searchers began to focus more attention on the influence of institutions quality; suggesting several reasons why their quality may matter. Institutional quality that promotes property rights and rule of law could lead to better economic prospects and make a country more attractive to foreign investors. Poor institutional quality can be an obstacle for FDI inflows as it represents a threat to the investment. FDI has high sunk costs, which make enterprises reluctant to enter foreign markets unless these markets have low levels of uncertainty and risk. Countries that plan to attract more foreign capital should therefore provide an appropriate institutional environment in terms of political stability, market efficiency and property rights.

Better institutional environment is normally characterized by high private investment, FDI inflows and lower political stress events. Institutional reforms are crucial for countries with limited fiscal space and a reliance on foreign investment to enhance their prospective growth. In the 1980s, Arab economies

started reforms to establish institutional frameworks promoting investment, free market mechanisms and privatization. However, the uneven implementation of these reforms led to an ineffective institutional environment which weakened fair competition and the enforcement of contracts. The Arab region has poor business quality as a result of its failure to adopt adequate institutional reforms and reduce political instability.

Numerous researches in FDI mainly focus on the regions of Africa, North and South America, East Europe and Asia. There is little attention in the research on FDI inflows and institutional quality nexus in Arab economies due to lack of reliable data compared with other regions. There are many of FDI studies<sup>(1)</sup> that focus only on Gulf Cooperation Council (GCC) countries. Few FDI studies have been investigated the FDI flows and institutional quality relationship that focus on the Middle East and North Africa (MENA) region<sup>(2)</sup>.

This study focuses on 15 Arab economies (Algeria, Bahrain, Egypt, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Tunisia, United Arab Emirates, and Yemen)<sup>(3)</sup>.

Earlier FDI studies focus on shorter time period i.e.<sup>(4)</sup>. This study investigates the impacts of institutional quality on FDI

1 Mina, W.M., 2009. External commitment mechanisms, institutions, and FDI in GCC countries. *Int. Financial Markets, Inst. Money* 19, 371-386.

- Gangi, A., Al-Abri, S., 2013. Indicators of business environment, institutional quality and foreign direct investment in Gulf Cooperation Council (GCC) countries. *Int. Rev. Appl. Econ.* 27, 515-530.

2 Mohamed, S.E., Sidropoulos, M.G., 2010. Another look at the determinants of foreign direct invests in MENA: an empirical investigation. *J. Econ. Dev.* 35, 75-95.

- Rogmans, T., Ebbens, H., 2013. The determinants of foreign direct investment in the middle east North Africa region. *International Journal of Emerging Markets* 8, 240-257.

- Heiny, H.E., 2013. The impact of corruption on FDI: Is MENA an exception? *J. Int. Rev. Appl. Econ.* 27, 491-514.

3 The League of Arab State comprises 22 countries (Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, UAE and Yemen). This study focuses on 15 countries due to data limitation

4 Mina, W.M., 2012. The institutional reforms debate and FDI flows to the MENA region: the "best" ensemble. *World Dev.* 40, 1798-1809.

- Baouga, A., Gangi, Y., Abdrazak, R., Al-Fakhry, B., 2013. The effects of good governance on foreign direct investment inflows in Arab countries. *J. Appl. Financial Econ.* 23, 1239 - 1247.

Rogmans, T., Ebbens, H., 2013. op.cit

Heiny, H.E., 2013. op.cit

inflows to Arab economies over the period from 1985 and 2013. For econometric analysis, the current study employs system GMM techniques to deal with issues related to endogeneity, omission of relevant variables, measurement error, sample selectivity, or simultaneity. On the other hand, majority of the studies that have been conducted on MENA and GCC countries employed ordinary least squares (OLS) and (fixed and random effects) econometric estimation techniques<sup>(1)</sup>.

In addition, this study fills in the gap and contributes to the existing literature by taking into account wide range of institutional quality measurements in the analysis: doing business, economic freedom and political risk along with other important variables such as GFC. This comprehensive empirical analysis attempt to answer the following research questions: What is the impact of business regulations on FDI inflows to the Arab region? Does efficient protection of property rights and individual freedom play an important role in attracting FDI inflows to Arab region? How important is political risk in the Arab region to FDI inflows?

This paper is formulated as follows: section one covers the literature review. section two discuss the importance of institutional quality for FDI. section three describes the methodology, presents the summary statistics. And discusses the empirical results. section four concludes and provides policy implications.

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1 Mina, W.M. 2009, Op. Cit

- Mohamed, S.E., Sidiropoulos, M.G., 2010. Op.cit

Rogmann, T., Ebbers, H., 2013. Op.cit

Gaut, A., Al-Abri, S., 2015, op.cit

## section one

### The literature review

Tun et.al, (2012)<sup>(1)</sup> argue that countries with better institutional quality should be able to attract more investment due to reductions in both the cost of doing business and in uncertainty. They employ the GMM estimator on a sample of 77 developing countries over the period 2005-1981. Their results show that institutional quality, represented by bureaucratic quality, rule of law, corruption, risk of expropriation and government repudiation of contracts, is an important determinant of FDI inflows.

Masron and Nor, (2013)<sup>(2)</sup> find that institutional quality plays an important role in attracting FDI inflows to the Association of Southeast Asian Nations (ASEAN) over the period 2002 to 2010. Variables such as regulatory quality control, rule of law and corruption are found have impacts on foreign direct investment.

Tintin (2013)<sup>(3)</sup> employs OLS to test the determinants of FDI inflows on a sample of Central and Eastern European (CEE) countries over the period 2009-1996. He finds that institutions, measured by economic freedoms, state fragility and political rights, have significant impact in attracting FDI inflows.

Paul et al .,(2014)<sup>(4)</sup> analyze the impact of a country's public policies, in the area of institutional quality, on FDI inflows in Central and Eastern European (CEE) countries over the period 2010-2007. Their results indicate that the accuracy and efficiency of public administration creates an appropriate framework for

1 Tun Y.L, Azman-Saint, W. Lau, S. H., 2012. International evidence on the link between foreign direct investment and institutional quality. *Eng. Econ.* 23, 379-386.

2 Masron, A., Nor, E., 2013. FDI in ASEAN-8: does institutional quality matter? *Appl Econ. Lett* 20, 186-189

3 Tintin, C. 2013. The determinants of foreign direct investment inflows in the central and eastern European countries: the importance of institutions. *Communism. Post-Communist Stud.* 46, 287-298.

4 Paul, A., Popovich C. Callin, A., 2014. The attractiveness of CEE countries for FDI: a public policy approach using the TOPSIS method. *Transylvaniana Rev. Administrative Sci.* 42, 186-180.

attracting foreign direct investment, as market forces cannot substitute for the role of governments in this domain.

Naude and Krugell (2007)<sup>(1)</sup> examine the determinants of FDI inflows in Africa from 1970 to 1990; their results show that geographic distance does not seem to have a direct influence on FDI inflows but that institutional quality, such as rule of law and political stability, are robust determinants of FDI. These findings have policy implications to enhance political stability and good governance via institutions.

Mina (2012)<sup>(2)</sup> examines the impact of institutional quality on FDI inflows in Arab countries over the period 2008-1990. The results confirm that reducing the risk of investment expropriation and increasing government stability and bilateral investment treaties have a positive influence on FDI inflows.

Gani and AL Abri (2013)<sup>(3)</sup> investigate the effect of institutional quality on FDI inflows in GCC countries. Their findings confirm that political instability and the absence of democracy encourage FDI inflows.

Heimy (2013)<sup>(4)</sup> examines the determinants of FDI inflows to MENA countries after changes following the Arab Spring in 2010. Results show that freedom and security of investments have a positive impact on FDI, while chances of expropriation and corruption rates have a negative influence as they lead to an unsafe business environment.

Mina (2014)<sup>(5)</sup> argues that institutions concerned with social cohesion can have an influence on FDI inflows as social cohesion

1 Naude, W.A., Krugell, W.F., 2007. Investigating geography and institutions as determinants of foreign direct investment in Africa using panel data. *J. Appl Econ.* 39, 1223-1233.

2 Mina, W.M., 2012, op.cit

3 Gani, A., Al-Abri, S., 2013, Op.cit

4 Heimy, H.E., 2013, op.cit

5 Mina, W., 2014. But most of all we love each other: does social cohesion pay off? Evidence from FDI flows to middle income countries. International Centre for Public Policy Working Paper No.8. Retrieved from: <http://scholarworks.gsu.edu/icepp/8>.

shape the context within which enterprises make investment decisions. Using GMM estimation, he finds that religion in politics, conflicts (internal or external), and ethnic tensions have an impact on FDI inflows.

Aziz and Mishra (2016)<sup>(1)</sup> study FDI inflows in Arab countries. Their results show that better institutions and educated labor force may play a key role in attracting FDI inflows. They suggest that Arab countries should sequence their economic policy measures with the institutional ones, beginning with a focus on privatization and trade liberalization in order to attract more FDI inflows.

## **section two**

### **the importance of institutional quality for FDI**

The literature on FDI has paid particular attention to the importance of institutions in attracting FDI inflows, suggesting several reasons why their quality may matter. The studies pinpoint different ways in which institutions can affect FDI inflows. In the first place, the presence of good institutions tends to improve productivity, which stimulates foreign investment. The enhancement in productivity requires a strong research and development (R&D) system, the availability of financial institutions that are capable of

Funding large-scale scientific or technical projects, a flexible labor market, low restriction on businesses and a stable political government. The development of productivity is entwined with the evolution of institutions.<sup>(2)</sup>

Efficient institutions reduce transaction costs, a crucial factor in the calculation of investment revenues and taken into account by

1 Aziz, O., Mishra, A., 2016. Determinants of FDI inflows to Arab economics. J. Int Trade Econ. Dev. 52. 325- 356.

2 Hodgson, M., Stoelhorst, W., 2014, introduction to the special issue on the future of institutional and evolutionary economics. J. Inst Econ. 10. 513-540.

foreign enterprises considering making an investment abroad. In this context, efficiency refers to the ability to minimize transaction costs, which are mainly the costs of production, logistical operation, information about conducting business, and monitoring risk. These costs may arise due to inadequately protected property rights, the absence of a properly regulated institutional system, widespread corruption, undeveloped financial markets or weak incentive structures<sup>(1)</sup> Before entering a foreign market, such costs are, for many enterprises, unclear and often underestimated, and in some cases perhaps even ignored; when the enterprise is set and the day-to-day business begins, these costs become more apparent. Transaction costs are a significant factor for enterprises when they assess a business environment and evaluate their subsidiaries' performance to react rapidly in changing conditions. Thus, transaction costs have a negative impact on investment level as they limit the ability of enterprises to operate, diversify against risks, settle disputes or choose optimal organizational structures. Reducing transaction costs increases trust, reciprocity and commitment among businesses, upgrades competitiveness and ensures that the host country is committed to providing a stable and developed business environment.<sup>(2)</sup>

Efficient institutions protect property rights. The international economy is becoming a knowledge-based economy; as a result, intellectual property rights are becoming ever more important. Their protection is necessary because those who produce goods and services can be adequately rewarded. The value of property rights can quickly be destroyed unless governments enforce

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1 Dunning, J.H. (2004) 'Institutional reform, FDI and European transition economies', Economics and Management Discussion Paper No.14, University of Reading.

2 Tomassen, S., Benito, R., Lunnan, R., 2009. The costs of governance in international companies. *Int. Bus. Rev.* 18, 292-304.

Tomassen, S., Benito, G.R., Lunnan, R., 2012. Governance costs in foreign direct investments: a MNC headquarters challenge. *J. Int. Manage.* 18, 233-246.

rights in this area.<sup>(1)</sup> The degree to which foreign enterprises can increase investments in a country relies on the degree to which that country has created institutions and policies for protecting intellectual property rights, and a government's effectiveness in enforcing these rights affects the decisions of foreign enterprises to enter a host country, and how they operate once there. Weak intellectual property rights discourage foreign investors, particularly in technology-intensive sectors, and encourage investments in projects that focus on distribution, that is, exporting to the host country, rather than establishing production plants that could provide FDI spillovers.<sup>(2)</sup>

### Section three

#### Methodology

##### **3.1. Data and variables**

For the empirical analyses, this study utilizes panel data of 15 Arab countries over the period 2013-1985: Algeria, Bahrain, Egypt, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Tunisia, UAE and Yemen. Appendix Table A.I in appendix 1 provides information about the sources of data and definition.

##### **3.1.1. The dependent variable: Foreign direct investment (FDI)**

The study uses two indicators as a proxy foreign direct investment; the first is foreign direct investment inflows (FDI inflows) as a measure of foreign direct investment <sup>(3)</sup> and the

1 Wall, S., Minocha, S., Rees, B., 2010. *International Business*. (3rd ed.) Prentice Hall Financial Times, Harlow, England.

2 Rondinelli, D.A., 2005. Assessing government policies for business competitiveness in emerging market economies: an institutional approach. In: Grosse, R. (Ed.), *International and Business Government Relations in the 21st Century*. Cambridge University Press, Cambridge, UK, pp. 395-419.

3 Asiedu, E., 2005. Foreign direct investment in Africa: the role of natural resources, market, size, government policy, institutions and political stability. *World Economy* 29, 63-77.



second, is the real FDI inflows as another measure of foreign direct investment.<sup>1)</sup> The data of FDI inflows and GDP deflator are from the World Development Indicators.

### **3.1.2. . The independent variables (Institutional quality variables)**

The institutional quality is a proxy of domestic institutional function for the host country, affecting FDI inflows. In order to measure the quality of institutions, this study employs data from various sources: ease of doing business from the World Bank, economic freedom from the Fraser Institute, and international country risk guide (ICRG) from the Political Risk Services (PRS) Group.

3.1.2.a: Ease of doing business represents several important dimensions of the regulatory environment as it applies to local enterprises. Doing business indicators cover various aspects of the business climate and measure the complexity and cost of regulatory processes and the strength of legal institutions. They provide information on regulatory outcomes, such as time and money spent on bureaucratic procedures, and thus investigate the efficiency of the government institutions in place. A positive reform, as defined in doing business, is one that makes it faster, cheaper or administratively easier for businesses to start and run operations or a reform that increases the protection of property rights; these both attract investment.

Of the ten indicators in the database of doing business, seven are chosen to test the linkages between the regulation environment and FDI inflows in Arab economies. The chosen indicators are starting a business, dealing with construction permits, registering

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1 Cavallari, L. d'Addona, S., 2013. Nominal and real volatility as determinants of FDI. *Appl. Econ.* 45, 2603-2610.

property, paying taxes, trading across borders, getting credit, and resolving insolvency. To get an overall index of regulations for doing business, this study computes a weighted average of the seven indicators, taking factor loadings in principal components analysis (PCA) as weights. Higher values reflect better institutional quality. The base year for the regulation index is 2004, the first-year data is available.

3.1.2.b: Economic freedom measures the degree to which the policies and institutions of countries are supportive of economic freedom. The indicators are size of government, legal system and property rights, access to sound money, freedom to trade internationally, and regulation of credit, labor, and business. These help to measure the contribution of economic institutions more thoroughly and to distinguish it from political, climatic, locational, cultural, and historical factors as determinants of investments.<sup>(1)</sup> To obtain the overall index, the study computes a weighted average of the five individual indicators of economic freedom, taking factor loadings in principal components analysis as weights. Higher values of reflect more economic freedom, which means higher institutional quality.

3.1.2.c: The ICRG is risk rating system which assigns a numerical value (risk points) to a predetermined range of risk components, according to a preset weighted scale, for each country covered by the system. To measure institutional quality, this study employs several indicators from the political risk components covering political and social attributes: government stability, investment profile, law and order, corruption, democratic accountability, bureaucracy quality and military in politics. A lower score equates a high risk and a higher score a low risk.

<sup>1</sup> Gwartney, J., Lawson, R., Hell, J., 2014. Economic Freedom of the world: Annual report. Fraser Institute. Retrieved from: <http://www.freetheworld.com>.

- Government stability is the government's ability to carry out its declared programs and its ability to stay in office. The maximum score is 12.

- Investment profile is a measure of the government's attitude toward inward investment. It refers to the risk of investment expropriation, profits repatriation, and payment delays, which clearly influence foreign investment. The maximum score is 12.

- Law and order measures the country's judicial system, and is based on two elements: the law element reflects the strength and impartiality of the legal system, while the order element is an assessment of popular observance of the law. The maximum score is six.

- Corruption is an indicator for the corruption inherent in a political system, which is a threat to capital inflows and may force the withdrawal of investments. The most common type of corruption is the demand for special payments and bribes. The maximum score is six.

- Democratic accountability is a measure of the level of governance in a country. It reflects the extent to which elections are free and fair and the degree of government accountability to the electorate. The maximum score is six.

- Bureaucracy quality refers to institutional strength, which tends to minimize revisions of policy when governments change; a good bureaucracy leads to strength and expertise in governing without drastic changes in policy or interruptions in government services at such times. The maximum score is four.

- Military in politics refers to the risk of military involvement in politics, especially when they are not elected, which is regarded

as a diminution of democratic accountability. In such cases the government is unable to function effectively and the country has an uncertain environment that affects foreign capital flows. The maximum score is six.<sup>(1)</sup>

### 3.1.3. Control variables

The study includes key control variables for the model to reflect the determinants of FDI inflows as per the existing literature. They are GDP growth, trade openness, inflation rate, exchange rate, global financial crisis (GFC), Preferential Trade Agreements (PTA), membership of WTO, Euro-Mediterranean Association Agreement (EMU), education, total oil supply and financial development.

- GDP growth is the percentage growth of gross domestic production which refers to the market size for host countries.<sup>(2)</sup>

- Trade openness is the percentage of the sum of imports and exports to GDP. The level of trade openness may be indicative of a liberal economic orientation which attracts FDI inflows.<sup>(3)</sup>

- The inflation rate is the annual percentage change in consumer price index (CPI). High inflation rates in host countries discourage FDI inflows by creating uncertainty and making long-term planning difficult with regard to price setting and profit expectations.<sup>(4)</sup>

- The exchange rate is the official exchange rate of the local currency against the US dollar. It influences FDI by affecting the value of home currency cost of acquiring an asset abroad.

1 Ramady, M.A., 2014. *Political, Economic and Financial Country risk: Analysis of the Gulf Cooperation Council*. Springer, Cham, Switzerland.

2 Bayraktar, N., 2013. Foreign direct investment and investment climate. *J. Procedia Econ. Finance* 5, 83-92.  
Blundell, R., Bond, R., 1998. Initial conditions and moment restrictions in dynamic panel data models. *J. Econometrics* 87, 115 - 134.

3 Ramasamy, B., Yeung, M., 2010. The determinants of foreign direct investment in services. *J. World Economy* 33, 573-596.

4 Reece, C., Sam, A., 2011. Impact of pension privatization on foreign direct investment. *Journal of World Development* 40, 291-302.

Changes in currency exchange rate will directly affect the rate of return on foreign assets then reduces investment confidence and the international capital flows.<sup>(1)</sup>

- The GFC is a dummy variable for the global financial crisis, which takes the value of 1 over the period 2009 to 2011 and zero otherwise <sup>(2)</sup>. While global FDI inflows dropped to %14 in 2008 compared to 2007, inflows into Arab countries increased to %19 and reached peak levels in 2008, compared to 2007. However, the FDI inflows into Arab countries declined by %15.5 in 2009 compared to 2008, declined %16.7 in 2010 compared to 2009, and declined %32.5 in 2011 compared to 2010. In 2013, FDI rose to %15.3 as compared to 2011

-- The PTA is a dummy variable which takes the value of 1 for the years that one or more Arab countries were members of the PTA agreement with EU, USA, and Turkey, otherwise zero <sup>(3)</sup>

-- The membership of WTO variable is a dummy equal to one for the year in which an Arab country became a WTO member, otherwise zero. Bahrain, Egypt, Jordan, Kuwait, Morocco, Oman, Qatar, Saudi Arabia, Tunisia and UAE are all members of WTO

- The EMU is a dummy variable equal to one for the member country starting in the year the agreement was implemented, and zero otherwise. Tunisia, Morocco, Jordan, Egypt, Algeria and Lebanon are members of EMU Agreement Regional agreements cover a number of areas other than trade in goods. Usually they include provisions to liberalize investment, such as the removal of barriers to international capital inflows and limitations to foreign

1 Yang, H., Xiong, Y., Ze, Y., 2013. A comparative of determinants of international capital flows to Asian and Latin American emerging countries. *J. Procedia Comput. Sci.* 17, 1258-1265

2 Demean, A., Ivan, V., Oamen, D., 2012. The impact of the recent global crisis on foreign direct investment: evidence from central and eastern European countries. *J. Procedia Econ. Finance* 3, 1012-1017.

3 Cardismons, P., Scoppaia, M., 2012. The impact of EU preferential trade agreements on foreign direct investment. *World Economy* 35, 1473-1501.

investment in domestic economic activities, and commitments to liberalize services that may have a positive effect on FDI inflows by reducing investment costs.<sup>(1)</sup>

- Education is total enrollments in tertiary education as a percentage of secondary school graduates. The education variable is an indication of the level of development of human capital able and available to work with new production technologies.<sup>(2)</sup>

- The total oil supply variable includes the production of crude oil, natural gas plant liquids and other liquids, and refinery processing gains. Total oil supply positively affects FDI inflows as the availability of natural resources is very significant for MNEs, in both extraction and processing.<sup>(3)</sup>

- Financial development is the M2 to GDP ratio, a measure of the overall size of the financial sector. The level of financial development can promote FDI inflows by reducing the cost of financial transactions that affect the cost structure of investment projects.<sup>(4)</sup>

The data on GDP growth, trade openness, inflation rate, exchange rate, education and financial development are from the World Bank's World Development Indicators. The data on PTA and WTO membership are from the World Trade Organization ([www.wto.org](http://www.wto.org)). The data on EMU agreements are from the European Commission (<http://ee.europa.eu/index-en.htm>). The data on total oil supply are from the US Energy Information Administration (<http://www.eia.gov>).

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1 *ibid*

2 Jiménez, A., 2011. Political risk as a determinant of southern European fdi in neighboring developing countries. *Emerging Markets Finance Trade* 47, 59-74.

3 Morisset, P.m 2000, Foreign direct investment to Africa: policies also matter. *Transnational Corp.* 9, 107-125.

Hussain, F., Kimuli, K., 2012. Determinants of foreign direct investment flows to developing countries. *SBP 4 Res. Bullet.* 8, 13-31

### 3.2. Economic Estimation

This study employs the system GMM estimator<sup>(1)</sup>. It takes into account the presence of unobserved country-specific effects and any possible bias of omitted variables that are persistent over time.

FDI measure may be dynamic in nature and the econometric treatment of dynamic nature of FDI measure includes lagged values of FDI as an explanatory variable:

$$y_{it} = \delta y_{i,t-1} + \beta x_{it} + u_{it} \quad i = 1, \dots, N \quad t = 2, \dots, T$$

Where  $\delta$  is a scalar,  $x_{it}$  is a  $1 \times K$  vector of explanatory variables and  $\beta$  is a  $K \times 1$  vector of parameters to be estimated. The error term  $u_{it}$  is composed of an unobserved effect and time-invariant effect  $\mu_i$  and random disturbance term  $v_{it}$ .

$$u_{it} = \mu_i + v_{it}$$

Where  $\mu_i \sim \text{IID} (0, s^2)$  and  $v_{it} \sim \text{IID} (0, s^2)$  independent of each other and among themselves. The dynamic panel data regressions described in above Eqs. (1) and (2), are characterized by two sources of persistence over time i.e. autocorrelation due to the presence of a lagged dependent variable  $y_{i,t-1}$  among the regressors and individual effects characterizing the heterogeneity among the individual  $\mu_i$ .<sup>(2)</sup> using first-differencing Eq. (1) to eliminates the unobserved effect since the disturbance  $\mu_i$  does not vary with time as follow:

$$y_{it} - y_{i,t-1} = \delta(y_{i,t-1} - y_{i,t-2}) + \beta(x_{it} - x_{i,t-1}) + (v_{it} - v_{i,t-1})$$

GMM helps overcome endogeneity by using lagged-values of the explanatory variables as instruments. However, first-differencing

1 Arellano, M., Bover, 1995. Another look at the instrumental variable estimation of error-components models. *J. Econometrics* 68, 29-51.

2 Arellano, M., Bond, S. 1991. Some test of specification for panel data: Monte Carlo evidence and an application to employment equations. *Rev. Leon. Stud.* 58, 277-297.

generates a new statistical issue that the constructed differenced error term  $v_{it}$  is now correlated with the dependent lagged variable  $y_{i,t-1} - y_{i,t-2}$  which is included as a regressor. As a solution, GMM estimator that uses moment conditions in which lagged differences (Eq. 3) are used as instruments for the level equation (Eq. 1) in addition to the use of moment conditions of lagged levels as instruments for the differenced equation. However, the use of system GMM depends on two conditions, first is the validity of these additional instruments, second is the absence of second-order autocorrelation for  $v_{it}$ . To assess these two conditions, the Sargan test of over-identification, which tests the validity of the instruments, and Arellano-Bond (AR2) autocorrelation which tests for the absence of second-order autocorrelation are used.

### 3.3. Summary Statistics and correlation

Table 1 in appendix 2 illustrates summary statistics for variables. Economic freedom variable has lowest mean of - 0.645, while bureaucracy quality variable has the lowest standard deviation of 0.631. The trade openness variable has highest mean of 78.858, while the financial development variable has highest standard deviation of 40.731.

Table 2 in appendix 2 illustrates the correlation matrix between the variables. There is high correlation between several variables: doing business and GFC (- 0.53); economic freedom and financial development (- 0.70); economic freedom and total oil supply (0.54); economic freedom and EMU agreements (- 0.52); investment profile and trade openness (0.49); investment profile and exchange rate (- 0.56); investment profile and WTO membership (0.49); corruption and financial development (0.56); corruption and total oil supply (0.73-); corruption and WTO



membership (0.56); democratic accountability and financial development (0.52); democratic accountability and total oil supply (- 0.55); bureaucracy quality and exchange rate (- 0.49); bureaucracy quality and PTA (0.79); bureaucracy quality and WTO membership (0.67); military in politics and exchange rate (- 0.64); military in politics and WTO membership (0.63); trade openness and exchange rate (0.71-); trade openness and education (0.63); trade openness and total oil supply (0.57-); exchange rate and education (- 0.68); exchange rate and WTO membership (- 0.73); financial development and total oil supply (- 0.80); financial development and EMU agreements (0.54); PTA and WTO membership (0.50); PTA and EMU agreements (0.53). The study will not include highly correlated variables together in the same model.

Table 3 shows the panel unit root test Levin-Lin-Chu (LLC), Im-Pesaran-Shin (IPS) and Fisher-type test (Fisher) results. The variables are stationary.

### **3.4. Empirical Result**

Tables 4 and 5 in appendix 2 report the results of Arellano-Bover/Blundell-Bond GMM estimation for various versions of Eq. (1). Table 4 illustrates the results with FDI inflows as the dependent variable and other control variables. Table 5 illustrates the results with real FDI inflows as the dependent variable and other control variables.

The lagged FDI inflows variable is positive and significant. This implies that the demonstration effect of the existing FDI is an important factor in attracting more FDI. It is consistent with the argument that MNEs are more likely attracted to countries that already have an accumulated sizable FDI. This clearly indicates

that- the success of MNEs in the host countries is a strong attracting factor for further investments by foreign companies<sup>(1)</sup>.

The doing business variable is positive and significant. This implies that a good regulatory environment characterized by fewer business procedures and costs can attract more FDI inflows: Arab economies need to improve their business climate to be attractive to enterprises.<sup>(2)</sup>

The economic freedom variable is positive and significant. Economies that have a business environment that protects investors and offers individuals the freedom to make their own production and consumption decisions are more able to attract FDI inflows.<sup>(3)</sup>

The institutional quality indicators from ICRG, i.e. government stability, investment profile, law and order, corruption, democratic accountability, bureaucracy quality and military in politics are positive and significant. The higher the value of the indicator, the lower the risk related to that indicator.

The results in Table 3 indicate that good institutions are able to attract more FDI inflows because they make the business environment more attractive to MNEs to operate in. Institutional quality is a key determinant of FDI inflows. First, good government stability is associated with higher economic growth, which should attract more FDI inflows. Second, poor institutions that accept corruption tend to add to investment costs and reduce profits. Corruption can make it difficult to conduct business effectively, and in some cases may force the withdrawal or withholding of an investment. Third, a high investment profile risk for a country

1 This finding is in accordance with Tun Y.L. Azman-Saint, W. Law, S. H., 2012, Op.cit

2 This result is in line with Morris, R., Aziz, A., 2011, Op.cit

3 This result is consistent with Júlio, P., Pinheiro-Alves, R., Tavares, J., Chapter 1, 2013, Op.cit

makes investors sensitive to uncertainty, including political uncertainty and the chances of expropriation that may occur in poor institutions. Fourth, the increased involvement of the military in politics is an indication that the government is unable to function effectively and that the country therefore has an environment that is not amenable to the conduct of businesses. High political risk increases costs for foreign investors by forcing them to operate under extreme uncertainty; they could lose their investment<sup>(1)</sup>.

The GDP growth variable is positive and significant. This implies that foreign investors are attracted to host countries with large markets (market-seeking FDI).<sup>(2)</sup>

Trade openness variable is positive and significant. Potential foreign investors are able to become well informed about the local conditions of their international trade partners when trade is liberated. Therefore, foreign investors prefer investing in countries with sizable trade volume.<sup>(3)</sup>

The Inflation variable has mixed results. This is in contrast to Kinoshita and Campos (2003)<sup>(4)</sup> who find a positive and significant impact of inflation on FDI inflows. The exchange rate variable also has mixed results, in contrast to Abdelkarim et al. (2013)<sup>(5)</sup> who find it has a negative and significant impact of exchange rate variable on FDI inflows.

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1 This results is in line with:

-Gross, R., Trevino, J., 2005. New institutional economics and fdi location in central and eastern Europe. *Manage. Int. Rev.* 45, 123-145.

-Tun Y.L., Azman-Salnt, W. Law, S. H., 2012. *Op.cit*

-Mina, W.M., 2012. *op.cit.*

2 This finding is consistent with Bannaga, A., Gangi, Y, Abdrazak, R., Al-Fakhry, B , 2013. *op.cit*

3 This result is in line with Elfakhani, M., Malouf, M. 2007. Foreign direct investment in the Middle East and North Africa region. *J. Global Bus. Adv.* 1, 49-70

4 Kinoshita, Y., Campos, F., 2003. Why does FDI go where it goes? New evidence from the transition economies. William Davidson Institute Paper No. 573. Retrieved from:

5 Arab Monetary Fund. (2013) 'Joint Arab Economic Report', Abu Dhabi, United Arab Emirates.

The GFC dummy is positive and insignificant. There are several reasons why this might be. First, Arab economies are only weakly integrated into global trade and capital markets, and they were less exposed to the impact of the GFC. Second, some Arab economies possess globally significant crude oil and gas reserves and accumulated significant financial assets in the pre-crisis era, which helped them to manage the crisis. Third, Arab economies receive development aid from Europe and USA <sup>(1)</sup>

Fourth, Arab economies are not significant exporters of non-oil products, so they are less exposed to declines in world trade during crises.<sup>(2)</sup> but contrary to Domean et al. (2012)<sup>(3)</sup>.

The coefficient of PTA is positive and significant, which indicates that more open trade relationships attract more FDI inflows to Arab economies. PTA includes a number of non-trade provisions in areas such as investments, services, competition policy, intellectual property rights, standards and dispute settlements, and provides better integration for member countries by removing obstacles and facilitating investments, which leads to more FDI inflows.<sup>(4)</sup>

The WTO membership is positive and significant. This implies that membership to the WTO spurs trade activity and enhances the export capacity of the member country, attracting FDI.<sup>(5)</sup>

The EMU agreements variable is positive and significant. These agreements increase regional trade integration between Arab and European economies. This integration may enhance

1 Jeboua, S.A., Zarrouk, H., 2012. The impact of the recent financial crisis on arab countries transmission channels and lessons. *Euro. J. Econ. Finance Administrative Serv.* 46, 97-106.

2 This finding is in line with Von Hagen, J., Zhang, H., 2014. Financial development, international capital flows, and aggregate output. *J. Dev. Econ.* 106, 66-77.

3 Demeau, A., Issa, Y., Oanea, D., 2012. *Op.cit*

4 This result is in line with Cardamons, P., Scoppola, M., 2012.*op.cit*

5 This is in line with : Elkhoui, M., Malar, M. 2007.*op.cit*

Arab exports and shift resources, including FDI inflows, towards the region.<sup>(1)</sup>

The education variable is positive and significant. MNEs invest significantly in research and development activities to develop new technologies so a host country must have a certain level of human capital able to understand and work with new technology introduced by MNEs. A well-educated labor force can be key in attracting FDI.<sup>(2)</sup>

The total oil supply variable is positive and significant. This suggests that in Arab economies the FDI is resource-seeking. Oil and gas production requires capital and technology for extraction and processing, which MNEs possess. The surge in demand for oil and gas has fuelled a rise in profits that attracts MNEs to invest in this industry.<sup>(3)</sup>

The financial development variable has mixed results<sup>(4)</sup>.

The Arellano and Bond test statistics for serial correlation and the Sargan test for over identifying restrictions are reported in Tables 4 and 5. The Arellano and Bond AR (2) is insignificant, which implies that there is no second-order autocorrelation in the residuals. The Sargan test is insignificant, which means the instruments are not correlated with the residuals; thus these instruments are valid.

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1 The result contrasts: Ibd who find a positive and insignificant impact of the EMU agreement variable on FDI inflows.

2 Bakro, N., Omezzine, M., 2011, Governance infrastructure and FDI flows in MENA region countries. *J. Middle Eastern Finance Econ.* 12, 144-158.

3 This result is in line with the empirical findings of Rogman, T., Ebers, H., 2013. *Op.cit*

4 This is in contrast to Hussain, F., Kimuli, K., 2012. *Op.cit*

who find a positive and significant impact of financial development variable on FDI inflows.

## **section four**

### **Conclusion and policy implications**

1- This study empirically examines the impact of institutional quality on FDI inflows in the Arab region. The study argues that institutional quality that offers low risk uncertainty and high investment protection is able to create a better business environment and attract FDI inflows.

2- The analysis is performed by employing Arellano-Bover/Blundell-Bond GMM estimation in panel data comprising 15 Arab countries over the period 2013-1985.

3- The results confirm that the institutional quality variables of doing business, economic freedom and international country risk (ICRG) have a positive and significant impact on FDI inflows in Arab economies.

4- The results of this study have several implications for policy makers. Arab countries need to enhance the local institutional quality by reforming regulations to facilitate business operations and protect foreign investors. The reforms must aim to construct an efficient business infrastructure by reducing obstacles to entry by businesses, streamlining licensing processes, and simplifying complex regulations and bureaucratic procedures. Arab countries need to protect foreign investors by restructuring the judicial system to match global business standards in terms of simplicity and the time needed to initiate and complete a legal claim. They countries should create a better, more efficient institutional environment that relies on free market mechanisms and a legal system that protects property and individual rights.

5- Arab economies need to reduce political risk by democratizing their political systems, which may help stabilize the region. They could achieve governmental stability by adhering the democratic transformation to international community benchmarks in terms of respect for fundamental human rights, strengthening the role of law and promoting national elections.

6- Arab economies need to control corruption by supporting the rule of law and building an effective, impartial and transparent legal system. The effective strategy to enhance the rule of law requires the establishment of a judicial system in which all individuals, institutions and even the government are accountable to laws that are uniformly enforced and independently adjudicated.

7- Investment legislations must protect and guarantee investments in the region, and should be coherent with global standards to increase confidence and reduce the risk of appropriation or nationalization of foreign investments.

8- There is a need for the region to promote democratic accountability by adopting a governance system based on institutional obligations in providing transparent information about public decisions and enabling civil society to correct or sanction decisions that do not adhere to the mandate of law.

9- Constitutions should prevent political parties from establishing or becoming involved in military forces, to avoid the risks of take-over of an elected government or of weakening its ability to function effectively.

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## Appendix (1)

Table A.1

## Data definition and sources

Variable	Definition	Source
FDI inflows Real FDI inflows	Annual net inflows in US\$ (natural log). It is the FDI inflows divided by the GDP deflator (natural log).	World Bank, World Development Indicators. Author's own calculations based on World Development Indicators, World Bank.
Doing business	It measuring the ease of doing business. High score indicates high ease of doing business (natural log).	World Bank, World Development Indicators. Author's own calculations based on World Development Indicators, World Bank.
Economic freedom	It measuring the level of economic freedom. High score indicates high freedom (natural log).	Author's own calculations based, The Fraser Institute.
Government Stability	It is the government's ability to carry out its declared programs, and its ability to stay in office. It ranges from 0 to 12. A lower score indicates high corruption and vice versa.	ICRG political risk index.
Investment profile	It refers to the risk of investment expropriation, profits repatriation, and payment delays, which clearly influence foreign investment. It ranges from 0 to 12. A lower score indicates high corruption and vice versa.	ICRG political risk index.
Corruption	It is assessment of corruption within political system. It ranges from 0 to 6. A lower score indicates high level and vice versa.	ICRG political risk index.
Law and order	Measure for the country's judicial system level. It ranges from 0 to 6. A lower score indicates high level and vice versa.	ICRG political risk index.
Democratic accountability	It measuring the governance enjoyed by the country, it reflects the extent to which elections are free and fair. It ranges from 0 to 6. A lower score indicates high level and vice versa.	ICRG political risk index.

Variable	Definition	Source
Bureaucracy quality	It refers to the quality of the bureaucracy that tends to minimise revisions of policy when governments change. It ranges from 0 to 4. A lower score indicates high level and vice versa.	ICRG political risk index.
Military in Politics	It refers to the risk of military involvement without a popular mandate. It ranges from 0 to 6. A lower score indicates high level and vice versa.	ICRG political risk index.
GDP growth	The annual real GDP growth (percentage).	World Bank, World Development Indicators.
Trade openness	Sum of exports and imports of goods and services as percentage of GDP.	World Bank, World Development Indicators.
Inflation	Annual percentage change in CPI	UNCTAD database.
Exchange rate	Official exchange rate (LCU per US\$, period average).	World Bank, World Development Indicators.
Global financial crisis (GFC)	Dummy equal to 1 for years 2009, 2010 and 2011 and zero otherwise.	Authors own calculations.
Preferential Trade Agreements (PTA)	Dummy variable equal to 1 for the years that one or more of Arab countries have become members of the PTA with EU, USA, and Turkey, otherwise 0.	WTO.
WTO membership	Dummy equal to 1 from the year that Arab country joined the WTO, otherwise 0.	Author's own calculations.
EUM agreements	Dummy equal to 1 from the year that Arab country joined to the Euro- Mediterranean Association Agreement, otherwise 0.	Author's own calculations.
Education	Total enrolment in tertiary education as a percentage of the total population.	World Bank, World Development Indicators.
Total Oil Supply	The production of crude oil, natural gas plant liquids, and other liquids, and refinery processing gain in thousand barrels per day (natural log).	U.S Energy Information Administration, International Energy Statistics
Financial development	Money and quasi money (M2) as percentage of GDP.	World Bank, World Development Indicators.

## Appendix (2)

Table 1. Summary Statistics

Variables	Obs	Mean	Std. Dev	Min	Max
FDI inflows	401	19.372	2.364	9.210	24.398
Real FDI inflows	736	19.653	2.138	10.116	24.478
Doing business	49	0.243	0.940	-2.826	1.341
Economic freedom	106	0.050	0.617	-2.395	0.864
Government stability	464	8.185	2.356	1	11.5
Investment profile	464	7.264	2.408	1	11.5
Corruption	464	2.485	0.765	0.67	4
Law & order	464	3.727	1.274	1	6
Democratic accountability	464	2.443	1.220	0	1
Bureaucracy quality	464	1.815	0.631	0	3
Military in Politics	458	3.290	1.468	0	5
GDP growth	408	-4.414	5.692	-42.45	38.2
Trade openness	457	78.858	34.883	11.087	210.161
Inflation	365	7.391	13.629	-9.8	117.728
Exchange rate	464	4.461	4.276	0.384	11.225
Education	310	19.891	11.686	0.080	60.877
Total oil supply	412	12.568	2.682	2.572	16.277
Financial development	442	67.140	40.731	8.578	247.824
GFC	464	-0.034	0.182	0	1
PTA	464	0.168	0.374	0	1
WTO membership	464	0.340	0.474	0	1
EMU agreements	464	0.135	0.342	0	1

Note: Obs. is observation. Mean is mean. Std. Dev. is standard deviation. Min is minimum. Max is maximum. Refer to Appendix Table A.1 for definition of variables.



Table 2 Correlation Matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
FDI inflows_1	1																						
Real FDI inflows_2	0.70	1																					
Doing business_3	-0.18	-0.32	1																				
Economic freedom_4	-0.42	-0.37	0.17	1																			
Government stability_5	0.18	0.16	-0.04	-0.03	1																		
Investment profile_6	-0.18	-0.03	-0.33	-0.04	-0.18	1																	
Corruption_7	-0.10	0.28	-0.27	-0.48	-0.16	0.57	1																
Law & order_8	-0.32	0.34	-0.32	0.06	0.03	0.19	0.38	1															
Democratic accountability_9	-0.09	-0.30	0.23	-0.41	-0.38	0.27	0.35	-0.38	1														
Bureaucracy quality_10	0.33	0.21	-0.20	-0.24	-0.05	0.63	0.22	-0.20	0.37	1													
Military in politics_11	0.09	0.29	-0.48	-0.24	0.35	0.74	0.56	0.20	-0.07	0.58	1												
GDP growth_12	0.58	0.80	-0.01	-0.46	0.23	-0.23	0.17	-0.04	-0.18	-0.03	0.17	1											
Trade openness_13	-0.30	-0.01	-0.04	-0.08	-0.05	0.49	0.47	0.13	0.10	0.19	0.49	0.02	1										
Inflation_14	0.45	0.33	0.01	-0.16	0.14	-0.45	-0.18	-0.33	-0.34	-0.13	-0.15	0.48	-0.05	1									
Exchange rate_15	0.06	-0.32	0.24	-0.11	-0.05	-0.56	-0.31	-0.27	0.28	-0.49	-0.64	-0.02	-0.71	0.05	1								
Education_16	0.25	0.27	-0.11	-0.02	0.04	0.16	0.008	-0.18	-0.31	0.20	0.31	0.31	0.53	0.23	-0.08	1							
Financial development_17	0.28	0.26	0.07	-0.70	-0.08	-0.05	0.56	-0.25	0.82	0.11	0.09	0.37	0.24	0.24	0.12	0.08	0.42	1					
Total cell empty_18	0.13	-0.10	-0.01	0.54	-0.09	-0.24	-0.73	-0.08	-0.55	-0.17	-0.34	-0.18	-0.57	0.14	0.21	-0.08	-0.80	1					
IFR_19	-0.12	0.01	-0.53	0.01	0.01	0.23	0.22	0.12	-0.05	0.13	0.31	-0.33	-0.002	-0.32	-0.20	0.04	0.14	-0.18	1				
PIA_20	-0.01	-0.05	0.09	-0.08	0.008	0.28	0.15	-0.25	0.48	0.78	0.23	-0.23	0.20	-0.13	-0.30	-0.01	0.22	-0.35	0.18	1			
WTO membership_21	0.30	0.71	-0.25	-0.22	-0.01	0.49	0.56	0.37	0.01	0.67	0.53	0.25	0.38	0.005	-0.73	0.31	0.25	-0.37	0.20	0.50	1		
EMU agreements_22	0.43	0.11	0.08	-0.52	0.37	-0.20	-0.05	-0.44	0.46	0.42	0.05	0.22	-0.09	0.14	0.16	-0.05	0.54	-0.43	0.07	0.53	0.15	1	

Note: The column number corresponds with the row titles. Refer to Appendix Table A. 1 for definition of variables.

Table 3 Panel Unit root tests

Variables	LLC	IPS	Fisher	Decision
FDI inflows	(0.000) * -5.288	(0.000) * -5.406	(0.000) * -10.307	Stationarity
Real FDI inflows	(0.001) * -2.960	(0.019) ** -2.065	(0.000) * -7.251	Stationarity
Doing business	(0.000) * -10.548	(0.014) ** -2.173	(0.000) * -4.897	Stationarity
Economic freedom	(0.000) * -6.763	(0.000) * -7.788	(0.000) * -3.842	Stationarity
Government stability	(0.000) * -4.851	(0.000) * -6.787	(0.000) * -12.464	Stationarity
Investment profile	(0.000) * -7.675	(0.000) * -7.234	(0.000) * -12.708	Stationarity
Corruption	(0.000) * -12.322	(0.000) * -10.887	(0.000) * -15.039	Stationarity
Law & order	(0.000) * -4.075	(0.005) * -2.554	(0.000) * -7.919	Stationarity
Democratic accountability	(0.010) ** -2.308	(0.065) *** -1.507	(0.000) * -6.990	Stationarity
Bureaucracy quality	(0.000) * -3.860	(0.000) * -3.519	(0.000) * -8.453	Stationarity
Military in politics	(0.000) * -3.788	(0.000) * -3.157	(0.000) * -8.277	Stationarity
GDP growth	(0.000) * -8.316	(0.000) * -6.992	(0.000) * -8.327	Stationarity
Trade openness	(0.000) * -4.748	(0.000) * -4.842	(0.000) * -9.969	Stationarity
Inflation	(0.000) * -5.467	(0.000) * -6.343	(0.000) * -4.952	Stationarity
Exchange rate	(0.000) * -10.581	(0.000) * -7.982	(0.000) * -13.311	Stationarity
Education	(0.000) * -9.2571	(0.000) * -3.9646	(0.000) * -8.8802	Stationarity
Total oil supply	(0.000) * -10.097	(0.000) * -7.241	(0.000) * -8.132	Stationarity
Financial development	(0.001) -2.3112	(0.000) -9.2769	(0.000) * -13.5931	Stationarity

Note: LLC is Levin-Lin-Chu (Adjusted  $t^*$ ), IPS is Im-Pesaran-Shin ( $w$ - $I$ -bar) and Fisher is Fisher-type (Invers normal  $Z$ ). For LLC the null hypothesis  $H_0$ : panels contain unit root, while the alternative  $H_a$ : panels are stationarity. IPS  $H_0$ : all panels contain unit root,  $H_a$ : some panels are stationarity. Fisher  $H_0$ : all panels contain unit roots,  $H_a$ : at least one panel is stationarity. Therefore, LLC tests for common unit root, while IPS and Fisher tests for individual unit roots. P-values in brackets. \* denote significance at the 1 per cent level for p-values. Refer to Appendix 'able A.J for definition of variables.

Table 4: FDI and institutional determines

Independent	Doing (1) business	Economic (2) freedom	Govt (3) stability	Investment (4) profile	Corruption (5)	Law & order (6)	Democratic (7) accountability	Bureaucracy (8) quality	Military in (9) Politics
Lagged FDI inflows	**0.953 (0.000)	**0.198 (0.014)	(0.026) **0.707	(0.055) **0.164	(0.054) *0.259	(0.000) *0.725	(0.038) **0.325	(0.000) *0.222	(0.039) ***0.815
Institutional quality	**0.134 (0.017)	**0.316 (0.009)	(0.020) **0.263	***0.229 (0.005)	***-0.599 (0.001)	(0.002) *0.370	(0.043) **0.548	(0.001) **0.329	(0.042) **0.433
GDP growth	***0.815 (0.002)	*0.115 (0.008)	***0.877 (0.002)	(0.032) *0.833	(0.037) **0.833	(0.001) ***0.018	(0.009) *0.133	(0.042) *0.041	(0.067) ***0.035
Trade openness	**0.022 (0.025)	*0.482 (0.004)			(0.003) *0.811				
Inflation	0.014 (0.428)	(0.028) 0.015	(0.460) 0.017	(0.701) 0.006	(0.787) -0.802	(0.728) -0.801	(0.743) -0.804	(0.833) -0.803	(0.418) 0.011
Exchange rate			(0.241) -0.231						
GFC		(0.334) 0.234	(0.150) 0.417	(0.329) 0.231	(0.810) 0.059	(0.271) -0.144	(0.444) 0.315	(0.505) 0.162	(0.395) 0.001
FIA	*0.534 (0.005)	***0.671 (0.071)		***0.835 (0.096)					(0.003) *0.526
WTO membership						(0.099) ***0.676	(0.053) **0.951		
EU11 agreements			(0.068) *1.260		(0.002) *1.161			0.019 **1.547	
Education				(0.017) **0.052		(0.042) **0.071	(0.050) **0.043	(0.007) *0.043	(0.001) *0.122
Total oil supply			(0.856) **0.349					(0.434) **0.172	
Financial development	**0.007 (0.058)			(0.304) -0.087		(0.002) -0.084			(0.780) -0.063
Observation	32	131	222	163	250	183	182	160	137
Wald Chi2	*3281.50 (0.000)	*248.37 (0.000)	(0.000) *57.41	(0.000) *509.13	(0.000) *643.37	**21.878.09	(0.000) *768.09	(0.000) *214.63	(0.000) *2316.13
Sargan test	21.13 (0.451)	(0.118) 05.21	(0.909) 54.73	(0.060) 291.71	(0.457) 322.89	(0.443) 162.92	(0.317) 82.35	(0.799) 148.41	(0.981) 90.17
Arellano-Bond test AR	**1.19 (0.026)	**2.55 (0.011)	(0.040) **2.81	(0.029) **2.19	(0.087) *3.69	(0.036) **2.17	(0.015) **2.11	(0.042) ***1.87	(0.045) **2.01
(1)									
Arellano-Bond test AR	0.66 (0.643)	(0.577) 4.54	(0.317) 1.08	(0.457) -0.71	(0.552) -0.68	(0.514) -0.65	(0.708) -0.28	(0.455) -0.29	(0.147) -1.05
(2)									

Note: FDI inflows is dependent variable. Arellano-Bover/Blundell-Bond econometric estimation. \*, \*\*, \*\*\* denote significance at the %5, %1 and %10 levels, respectively for p-values. Refer to Appendix Table A.1 for definition of variables. Institutional quality refers to Doing Business (1), Economic freedom (2), Government stability (3), Investment profile (4), Corruption (5), Law & order (6), Democratic accountability (7), Bureaucracy (8) and Military in Politics(9)

Table 5: Real FDI inflows and Institutional Determinants

Independent	Doing (1)	Eco- (2)	Govern- (3)	Invest- (4)	Corrup- (5)	Law & (6)	Democ- (7)	(8)	Milit- (9)
	business	freedom	stability	profile			account-	bureaucr-	itary in
							ability	cracy	Politics
							quality		
Lagged real FDI inflows	0.741- (0.006)	**0.034 (0.058)	***0.066 (0.099)	*0.300 (0.000)	*0.247 (0.008)	*0.751 (0.000)	***0.255 (0.092)	*0.370 (0.009)	**0.205 (0.020)
Institutional quality	*0.152 (0.009)	*0.361 (0.001)	*0.090 (0.008)	**0.0362 (0.042)	**0.584 (0.045)	*0.151 (0.004)	**0.478 (0.022)	**0.904 (0.019)	**0.184 (0.011)
GDP growth	**0.077 (0.044)	*0.083 (0.005)	**0.011 (0.080)	**0.036 (0.025)	**0.029 (0.041)	***0.015 (0.036)	*0.121 (0.003)	**0.041 (0.015)	**0.013 (0.047)
Trade openness	*0.044 (0.000)	**0.018 (0.022)			**0.015 (0.018)				
Inflation	***-0.133 (0.031)	*0.018 (0.000)	(0.768) 0.002	0.0001 (0.999)	-0.007 (0.265)	0.001 (0.451)	0.002 (0.876)	0.003 (0.883)	**0.006 (0.010)
Exchange rate			***-0.080 (0.001)						
GFC		0.033 (0.867)	-0.004 (0.965)	0.061 (0.775)	0.142 (0.515)	-0.170 (0.383)	0.315 (0.374)	0.119 (0.647)	-0.020 (0.876)
PTA									
WTO membership	*0.965 (0.001)	***0.241 (0.096)		**0.910 (0.059)		***0.183 (0.084)	**1.313 (0.035)		***0.366 (0.073)
EMU agreements			**1.037 (0.014)		**0.740 (0.057)			**1.096 (0.018)	
Education				**0.030 (0.021)		**0.007 (0.013)	***0.031 (0.097)	*0.039 (0.001)	**0.018 (0.023)
Total oil supply			***0.281 (0.068)	-0.005 (0.716)		0.001 (0.202)		***1.467 (0.097)	-0.001 (0.820)
Financial development	-0.015 (0.317)								
Observations	32	124	215	177	250	188	182	163	168
Wald Chi2	*2823.72 (0.000)	*220.68 (0.000)	*54.02 (0.000)	*1650.45 (0.000)	*460.26 (0.000)	*3673.39 (0.000)	*107.57 (0.000)	*878.83 (0.000)	*529.57 (0.000)
Sargan test	26.46 (0.280)	77.42 (0.999)	(0.993) 38.89	156.25 (0.932)	284.19 (0.885)	162.85 (0.775)	79.01 (0.415)	221.19 (0.124)	147.93 (0.991)
Arellano-Bond test AR	**1.49 (0.038)	**2.45 (0.014)	**2.40 (0.016)	**2.24 (0.025)	**2.51 (0.012)	**2.17 (0.020)	**2.22 (0.027)	**2.43 (0.015)	**2.40 (0.016)
(1)									
Arellano-Bond test AR	0.95 (0.340)	-0.32 (0.749)	(0.377) -0.38	(0.499) 0.68	-0.50 (0.618)	(0.511) 0.66	-0.25 (0.803)	0.02 (0.985)	1.15 (0.252)
(2)									

Note: FDI inflows is dependent variable. Arellano-Bover/Blundell-Bond econometric estimation. \*, \*\*, \*\*\* denote significance at the %5, %1 and %10 levels, respectively for p-values. Refer to Appendix Table A.1 for definition of variables. Institutional quality refers to Doing Business (1), Economic freedom (2), Government stability (3), Investment profile (4), Corruption (5), Law & order (6), Democratic accountability (7), Bureaucracy (8) and Military in Politics (9).

## **The Relationship between Institutional Quality and Foreign Direct Investment Inflows**

**Empirical study of Arab Economies.**

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### **ABSTRACT**

This study empirically examines the effect of institutional quality on FDI inflows in the Arab economies. The analysis is performed by employing system GMM estimation in panel data comprising 15 Arab countries over the period 2013 - 1985. The study finds that the institutional quality variables of economic freedom, ease of doing business and international country risk (ICRG) have a positive and significant impact on FDI inflows in Arab economies. The results of this study have several implications for policy makers

# العلاقة بين الجودة المؤسسية وتدفقات الاستثمار الأجنبي المباشر دراسة تطبيقية للاقتصاديات العربية

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## مستخلص

قدمت الدراسة تحليلاً لتأثير الجودة المؤسسية على تدفقات الاستثمار الأجنبي المباشر

حيث تساهم الجودة المؤسسية في زيادة الإنتاجية والتي تتم من خلال وجود نظام جيد للبحث والتطوير ومؤسسات مالية قادرة على تمويل مشروعات علمية وتكنولوجية وسوق عمل مرن وتخفيض القيود على الأعمال وحكومات مستقرة سياسياً

وقد تم اختبار هذا التأثير على الاقتصاديات العربية باستخدام بيانات سلسلة زمنية قطاعية

(Panel Data) لمجموعة من الدول العربية تضم كل من الجزائر - البحرين - مصر - الأردن - الكويت - لبنان - ليبيا - عمان - قطر - السعودية - السودان - تونس - الإمارات العربية المتحدة - اليمن خلال الفترة (1985-2010).

وقد أوضحت نتائج التحليل باستخدام طريقة Generalized Method of Moments (GMM) إن كل من متغيرات الحرية الاقتصادية وجودة بيئة الأعمال التي تساهم في سهولة إدارة الأعمال وخفض معدل المخاطرة الدولية لهما تأثير موجب على تدفقات الاستثمار الأجنبي المباشر إلى الاقتصاديات العربية. وتعتبر نتائج الدراسة ذات أهمية كبيرة لصانعي السياسات في الدول العربية.