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Ahmed Badreldin and Sherif M. Hassan



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Carlo Mierendorff Str. 43, 34132 Kassel, Germany

Telephone +49 (0)56149941680,

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Determinants of Sectoral and Sub-Sectoral FDI: Evidence from the MENA Region

Ahmed M. Badreldin

Economics of the Middle East Research Group, Center for Near and Middle Eastern Studies,
University of Marburg, Germany
+49(0)6421 282 4961
ahmed.badreldin@uni-marburg.de

&

Sherif M. Hassan

M&S Research Hub; Center for Near and Middle Eastern Studies, University of Marburg,
(Germany) Faculty of Commerce, Suez Canal University; British University in Egypt; ERF (Egypt)
hassan@ms-researchhub.com

Abstract

Ignoring the heterogeneity of determinants across sectoral and sub-sectoral FDI begets flawed inferences in the mainstream literature. Significant drivers of FDI inflows vary across sectors and sub-sectors. Using UNCTAD Database of FDI from 2004 to 2018, we run GMM, Fixed Effects, and 3SLS estimations across a global sample of 198 countries and a regional sample of 17 the Middle East and North African (MENA) countries. We select the common determinants of FDI in the literature and re-visit their stylized evidence of significance and magnitude across four main FDI sectors, total, primary, secondary and tertiary, as well as across 29 subsectors. Our results confirm the divergence of the magnitude, sign, and significance of the determinants across sectors and countries' samples.

Keywords: FDI, GMM, 3SLS, MENA

JEL: E61, F41, F32

1. INTRODUCTION

Foreign direct investment (FDI) is less volatile than other capital inflows such as remittances or capital stock market investments, thus FDI is a more subtle source of long-run economic growth and development since it brings foreign technology, enhances labor skills, and the process of job creation (Walsh & Yu, 2010). Nevertheless, FDI inflows are heterogeneous across countries and sectors within the same country. 47% of global FDI flow to developing economies in 2019, while ASIA and Africa accounted only for 4.7% of these total inflows (UNCTAD, 2020). MENA region provides a clear example of such heterogeneity, the FDI into the region, in general, have been in decline since 2009, yet countries with low cost of labor have not been very successful in attracting FDI relative to countries with an abundance of natural resources (Chan & Gemayel, 2004)(DIAI, 2018).

Dunning (2008) outlines four motives for a firm to engage in FDI: access to resources, access to markets, efficiency gains, and acquisition of strategic assets. FDI literature claims that FDI flows are highly sensitive to economic and political stability as well as the quality of institutions (Walsh & Yu, 2010). This argument explains why MENA has been lagging relative to other regions in attracting FDI flows. Still, it is not clear why some specific sectors and subsectors in a country are more successful than others in attracting FDI inflows. This study contributes to filling these missing dots, using the Generalized Method of Moments (GMM) and Three-stage Least Square (3SLS), by investigating the main macroeconomic determinants of disentangled FDI sectoral: primary, secondary, and tertiary, and at the sub-sectoral industries within each of the sectoral categories.

Understanding the sectoral and sectoral determinants of FDI is especially important in MENA countries given the high youth unemployment. It is perceived that the primary capital-intensive sector (petroleum, mining, and agriculture) receives the largest share of FDI thus may not significantly push up the employment creation process, relative to the labor-intensive secondary and tertiary sectors. It is therefore important for policy recommendations to understand the hidden dynamics that make some sectors more attractive to FDI than other sectors. In this study, we critically question the aggregation assumption of FDI drivers, and we distinguish between the determinants of sectoral and sub-sectoral FDI inflows by applying them to a group of MENA countries.

The remainder of the paper is structured as follows: the next section presents the literature on the determinants of sectoral FDI with a focus on the MENA region. This is followed by a section on the methodology and data used to determine the determinants of (sectoral) FDI in the MENA region. The fourth section presents the main empirical results, and section five summarizes the conclusions and policy implications, pinpointing research limitations and giving ideas for further research.

2. LITERATURE

The determinants of FDI inflows have been studied extensively in the literature, however, little work has been done to disentangle the determinants of sectoral and sub-sectoral FDI in general and in the MENA region in particular (Sabir, et al., 2019; Mottaleb, 2007; Martinez-Galan & Fontoura, 2019; Kurul & Yalta, 2017). In this study, we are more interested in those that are applied to the MENA region or that incorporate sectoral FDI into their analysis and what determinants they used in their analyses.

A key paper tackling the idea of analyzing sectoral FDI is by (Walsh & Yu, 2010), which covers 27 countries (including only two MENA countries: Turkey and Saudi Arabia) and uses GMM dynamic estimator based on the Arellano-Bond methodology. They found that differences do exist among the determinants of sectoral FDI: Primary FDI was not found to be correlated with any macroeconomic variables, while secondary FDI is derived by the exchange rate and GDP. Furthermore, they found that richer countries (by GDP per capita) attract less secondary FDI than poorer countries. Tertiary FDI was driven by trade openness, exchange rate, and FDI stock. Our study goes on a step further and studies these determinants not only at the three main sectoral levels but also at the industrial sub-sectors at each one of these main sectors.

Studies focusing on FDI in the MENA region, in general, are numerous. Rogmans & Ebbers (2013) focus on natural resources as one of the determinants of FDI in the MENA region. They clearly state in their study that one major limitation is their inability to obtain data on sectoral FDI, which would have enriched their study. We are thus able to address this limitation by utilizing sectoral (and sub-sectoral) FDI and including resource rents as a determinant, and thus testing whether its effects hold on sectoral and sub-sectoral levels. Nidhal & Wajdi (2018) in a more recent study focused on governance factors and their relation to FDI in the MENA region.

Other studies focusing on FDI in the MENA region include studies by Moosa (2009), Jabri et al. (2013), Abumangosha (2014), Aziz & Mishra (2016), and Mina (2017) which use a broad array of variables to explain FDI. Studies such as Mina (2007) and Khrawish & Siam (2010) have a narrower geographic focus, namely focusing on GCC countries and Jordan respectively. An older study by Chan & Gemayel (2004) suggests that FDI is not influenced by economic and political risks themselves, but rather by their variation, i.e., how stable risks are, arguing that stable risks can be anticipated, while unstable risks are more problematic. Finally, recent studies by Carril-Caccia et al. (2018a) and Carril-Caccia et al. (2018b) depart from using FDI inflows and instead focus on explaining the determinants of greenfield investments as a proxy for FDI.

A large number of studies have investigated the FDI determinants in the MENA region, yet only a few have had done the same by applying sectoral and sub-sectoral FDI. This study follows Walsh & Yu's (2010) approach and investigates the determinants of sectoral and sub-sectoral FDI determinants on selected MENA countries.

3. METHODOLOGY & DATASET

3.1 *Econometric Model Specification and Operationalization of Variables*

To investigate the determinants of sectoral and sub-sectoral FDI in the MENA region, we conduct our primary analysis using panel fixed effects regression. We further run several robustness checks using GMM and 3SLS models to ensure the problems of endogeneity, autocorrelation, and time-invariant fixed effects are addressed (Kurul & Yalta, 2017). The selection of variables/determinants in the model is extrapolated from the FDI literature, to examine how aggregate FDI, significant, determinates behave on sectoral and sub-sectoral levels. In the first stage of the analysis, we check whether discrepancies between total, sectoral and sub-sectoral exist across a global sample. In the second stage, we focus on the MENA region.

The basic estimation using Pooled OLS method incorporates each one of the sectoral and sub-sectoral FDI measures as the main dependent variable. This method ignores the country's heterogeneities and to correct for this bias, we use fixed effects to account for the distinct nature of each country and control for the unobserved fixed effects that are constant over time and correlated with the dependent variables, such as a country's geographical location and cultural norms (Farzanegan and Hassan, 2019).

For the panel fixed-effects we use the following specification:

$$FDI_{i,t} = \alpha_0 + \alpha_1 Manufacturing_{it} + \alpha_2 Agricultural_{it} + \alpha_3 Exports_{it} \\ + \alpha_4 Rents_{it} + \alpha_5 Governance_{it} + \mu_i + \lambda_t + \varepsilon_{i,t}$$

Since we suspect that there is a feedback relationship between foreign direct investment and most of the macroeconomic indicators, raising concerns about endogeneity and estimation biases. We also suspect that there are structural linkages between the FDI sectoral and sub sectoral variables, thus and to benefit from this unique error disturbance structure, we estimate our model using the 3SLS structural equations method, which is widely used in the literature for estimating similar relationships, see, for example, Sun, et al. (2017). 3SLS estimates systems of structural equations where some equations contain endogenous variables among the list of explanatory variables. These endogenous variables are then defined in the system as the dependent variables of the other equations. Due to this endogeneity, the error disturbances

of the equations become correlated with the endogenous variables, which in turn violate the assumptions of OLS. The 3SLS specifications are structured as follows, wherein x_{it} represents the independent variables that are held constant across the models.

$$FDI\ total_{it} = \alpha_0 + \alpha_1 x_{it} + \alpha_2 FDI\ primary_{it} + \alpha_3 FDI\ secondary_{it} \\ + \alpha_4 FDI\ tertiary_{it} + \varepsilon_{it}$$

$$FDI\ primary_{it} \\ = \alpha_0 + \alpha_1 x_{it} + \alpha_2 FDI\ total_{it} + \alpha_3 FDI\ secondary_{it} \\ + \alpha_4 FDI\ tertiary_{it} + \varepsilon_{it}$$

$$FDI\ secondary_{it} \\ = \alpha_0 + \alpha_1 x_{it} + \alpha_2 FDI\ total_{it} + \alpha_3 FDI\ primary_{it} \\ + \alpha_4 FDI\ tertiary_{it} + \varepsilon_{it}$$

$$FDI\ tertiary_{it} \\ = \alpha_0 + \alpha_1 x_{it} + \alpha_2 FDI\ total_{it} + \alpha_3 FDI\ primary_{it} \\ + \alpha_4 FDI\ secondary_{it} + \varepsilon_{it}$$

Most economic relationships are dynamic, and the advantage of panel data is allowing for dynamic adjustment. For instance, the work of Baltagi and Levin (1986) on the dynamic demand for addictive commodities, as well Arellano and Bond (1991) on the dynamic model of employment. The GMM is developed to overcome the limitations of simple panel data estimation. Given the biases in the use of OLS and fixed effect regression and line with the suggestions of Arellano and Bond (1991), we additionally employ the GMM model to estimate the dynamic model. Difference GMM estimator is designed for analyzing the panel data models in which the dependent variable is influenced by its past values (Mileva, 2007), which is the case when utilizing FDI as a dependent variable. It is proved by Arellano and Bond (1991) that the consistent estimates of the parameters are provided by GMM by using the instruments obtained from orthogonality conditions that exist between variables' lagged values and the disturbances. Roodman (2009) further supports the use of the difference GMM when there are entity fixed effects in

error terms. Difference GMM avoids the problems of entity fixed effects and serial correlation in panel data by taking the differenced form of the model. Many recent studies of the dynamic capital structure such as Drobetz and Wanzenried (2007), use difference GMM as the estimation technique. Flannery and Hankins (2013), report that out of the established estimation techniques of the dynamic panel model the GMM appears to perform better. Chang and Dasgupta (2011) empirically show that empirical studies ignoring the fixed effects are misspecified because the majority of variation in capital structures is explained by country/firm-specific factors. Furthermore, Roodman (2009) also supports the use of GMM when the panel data have short periods (T) and a large number of cross-sections/countries(N). Our panel data comprises of many countries but only 15 years of data; hence the use of difference GMM is supported. Roodman (2009) also supports the use of the difference GMM when some of the regressors may be endogenous and some explanatory variables may be predetermined and may not be strictly exogenous. The GMM specification used is as follows:

$$y_{it} = \alpha_1 y_{it-1} + \alpha_1 x_{it} + \alpha_2 w_{it} + \varepsilon_{i,t}$$

with

$$\varepsilon_{i,t} = U_i + V_{i,t}$$

and y_{it-1} is the one period lagged FDI, x_{it} includes strictly exogenous regressors, w_{it} includes endogenous regressors (agricultural and manufacturing value-added and exports), all of which may be correlated with U_i , the unobserved individual effect. First-differencing the equation removes the U_i and the associated omitted-variable bias.

3.2 Dependent Variables

The FDI sectoral and sub-sectoral data are obtained from UNCTAD Database. We differentiate between FDI inflows and FDI stock, with inflows being the positive change during a year, while stock the accumulated amount across time measured at the given year, with all values in US\$ Million. According to the UNCTAD Database, FDI is defined as “an investment involving a long-term relationship and reflecting a lasting interest of a resident entity in one economy (direct investor) or an entity resident in an economy other than of the investor. The direct investor's purpose is to exert a significant degree of influence on the management of the enterprise resident in the other economy. FDI involves both the initial transaction between the two entities and all subsequent transactions between them and among affiliated enterprises, both incorporated and unincorporated. FDI may be undertaken by individuals, as well as business entities”.

FDI stock is defined for associate and subsidiary enterprises as “the value of the share of the capital and reserves (including retained profits) attributable to the parent enterprise (this is equal to total assets minus total liabilities), plus the net indebtedness of the associate or subsidiary to the parent firm” and for branches as “the value of fixed assets and the value of current assets and investments, excluding amounts due from the parent, fewer liabilities to third parties”.

3.3 Independent Variables

Several variables have been introduced in the literature to explain FDI inflows, where the majority were identified as determinants for aggregate FDI. The magnitude and impact of these determinants on sectoral and sub-sectoral FDI are still indistinct, in particular by applying to the MENA region. Value-added per economic sector has been used to explain FDI in Europe and Sub-Saharan Africa, with evidence usually pointing to a positive effect of manufacturing value-added, and a negative effect of agriculture value-added (Wako, 2018; Sayari & Sari, 2018). We measure income and economic development using GDP per capita since a high-income/prosperous economy would set in principle an attractive environment for FDI flows (Mohamed & Sidiropoulos, 2010; Moosa, 2009; Helmy, 2013). Another commonly used variable is trade openness, which is measured as the volume of exports and/or imports as a percentage of GDP in a country. It is suggested that countries with high trade openness tend to attract more FDI inflows (Liargovas & Skandalis, 2012; Shirazi, et al., 2008; Mohamed & Sidiropoulos, 2010; Helmy, 2013; Kandiero & Chitiga, 2006).

Gross capital formation is used as a proxy for domestic investment. Hanafy and Marktanner (2019) suggest that capital formation measures spillover effects of FDI in their analysis of FDI inflows in Egypt. Lautier and Maureaub (2012) find a positive relationship between domestic investment and FDI. Contrary to other studies, Moosa (2009) argues that domestic investment deters FDI inflows since it is seen as a substitute rather than a complementary factor. Inflation is used as an indicator for macroeconomic stability while high inflation signals instability and increases foreign investment risk thus discouraging FDI inflows (Okafor, 2015; Hefeker & Busse, 2005; Abotsi & Iyavarakul, 2015; Ranjan & Agrawal, 2011). We use corruption and internal conflict to control for institutional quality of each country. Corruption’s effect on FDI is debatable (Egger & Winner, 2005), nevertheless studies from the MENA region tend to find more evidence of the “grabbing hand” hypothesis (Helmy, 2013), i.e., corruption’s negative effect on FDI, while internal conflict is also considered a deterrent for FDI.

Given the natural resources abundant in the MENA region, we include a proxy for natural resource rents. Studies find conflicting evidence about the FDI effects of natural resource rents, yet we hypothesize that

these natural reserves attract FDI flows (Nandialath & Rogmans, 2019; Mohamed & Sidiropoulos, 2010; Mina, 2012; Khayat, 2017; Matallah & Matallah, 2016).

3.3 Data Set

We use annual data from 2004 to 2018 for 198 countries. A sub-group was created containing 18 MENA countries according to the World Bank's definition of the MENA region. Some countries were eliminated due to a lack of data on a sub-sectoral analysis level resulting in a total of 17 MENA countries. Furthermore, due to a lack of data on the sub-sectoral level, we were unable to run the sub-sectoral analysis using 3SLS or GMM for the MENA region, only the fixed effects panel estimation was conducted. However, sectoral analysis was conducted using all three methods.

4. RESULTS

4.1 Global Level

4.1.1 Main Results

Table 4 reports the panel fixed effects regression of the global sample. Total FDI inflows are positively and significantly influenced by the manufacturing value-added, inflation, resource rents, and gross capital formation. While internal conflict, as hypothesized, is found to be a significant deterrent for FDI. The remaining determinants, agriculture value-added, trade openness (exports as a percentage of GDP), and corruption are not statistically significant. These results are in line with much of the literature on the topic and therefore are of little interest to be discussed here, instead, we focus on our main contribution, namely investigating whether these determinants hold when moving to sectoral or sub-sectoral FDI levels.

From the same table, we can see that the determinants of primary sector FDI differ from the determinants of total FDI. Agriculture value-added, as hypothesized, is positively stimulating primary sector FDI, while manufacturing seems to be significant. This seems valid given that agriculture is a major component in primary sector activities and thus its value-added is a clear signal for foreign investors about the profitability of their investments in this sector. Again, unlike the determinants for total FDI, we find trade openness to be a significant and a negative determinant of primary FDI. This reflects the "crowding out" effects of cheaper imports on local primary products. Inflation and resource rents both remain positive and significant determinants of the primary sector and total FDI, while gross capital formation and internal conflict were found to not affect primary sector FDI.

Resource rent is positive and statistically significant in triggering secondary FDI inflows, while rents and inflation are the main determinants of tertiary sector FDI.

These findings highlight that ignoring the FDI sectoral heterogeneity leads to misleading inferences. We gain valuable insights by comparing the behavior of the determinants as we move across a total of 29 sub-sectors, i.e., agriculture as one of the subsectors of primary FDI. The complete list of subsectors is listed in Appendix A. Given a large number of variables included, we cannot discuss the determinants of each one, rather we will showcase the first sub-sector of primary FDI. Agriculture as one of the largest components of primary FDI tends. After running the regression, it is found that agriculture is influenced by the same determinants of primary FDI, namely being significantly positively correlated with agriculture value-added, inflation, and rents, and significantly negatively correlated with trade openness. However, we further find a significant negative correlation between gross capital formation and internal conflict – both were not reported as primary FDI determinants. For the agricultural sub-sector, these findings fit such a labor-intensive sub-sector like agriculture. A summary of all significant determinants for all FDI levels, their sign, and source tables are presented in Table 3-1.

4.1.2 Robustness Checks

We test the robustness of the results by re-estimating our models using GMM (Table 4). In general, the significant determinants change as we move over the FDI levels from total to sectoral to subsectors. Table 8 reports the 3SLS regression results, except for secondary FDI, the determinants of FDI levels are the same in terms of sign and significance relative to the GMM results.

4.2 *MENA Region*

4.2.1 Main Results

Table 10 reports panel fixed effects results of the MENA region. For total FDI, internal conflict is the only significant variable from the list, while it behaves similar to the global sample in deterring FDI inflows, the absence of any other significant explanatory variables is a clear distinction between both samples. In the same table, we can see that determinants of primary sector FDI in the MENA region are different from those of total FDI. Trade openness triggers primary FDI inflows, while inflation on the other hand discourages these flows. As opposed to total FDI, internal conflict is now positive (instead of negative) and remains significant. The positive internal conflict coefficient of primary FDI can be explained by the crowding effect caused by political instability that creates massive food and primary products' deficits due to shut down of factories and the economy slow down. This turmoil creates a profit stimulus for foreign investors to overlook possible risks, intervene in the local market and fill the existing demand gaps. Similar results are found for tertiary FDI regarding trade openness and inflation, but the effect of internal conflict

disappears. The only exception to this rule was found in the case of secondary FDI which was found to have identical determinants as total FDI in the MENA region.

Across the 29 sub-sectors, as shown in Table 12, an interesting case is the petroleum FDI, wherein agriculture, manufacturing value-added, and resource rents are found to be significant and negatively correlated with sub-sectoral FDI inflows, while trade-openness, internal conflict, corruption, and inflation are found to be positively correlated with petroleum FDI. Not only do this sub-sector's determinants depart from the sectoral or total FDI, but they are quite informative given the significance of petroleum in the region. It seems that corruption has more of a greasing effect and that internal conflict is not much of a deterrent to inflows of petroleum FDI. This may be since such installations enjoy high levels of security and defense.

4.2.2 Robustness Checks

The above results are confirmed after re-estimating the models using the GMM in Table 7. Due to lack of data results could not be estimated using GMM and 3SLS. A summary of all significant determinants for all FDI levels, their sign, and source tables are presented in Table 3-2.

5. CONCLUSION

The objective of this paper is not to undertake a detailed investigation for each one of the sectoral and sub-sectoral determinants of FDI and compare across global and regional samples. Rather we aim to establish a verified doctrine that flawed inferences are drawn if the heterogeneity of FDI determinants across FDI sectors and sub-sectors as well as across global and regional samples is overlooked. In our empirical results, we rarely find cases wherein the determinants of sectoral, sub-sectoral, and total FDI inflows are similar. Our empirical results have several practical implications, both for the academic literature on the topic, as well as for policymakers and investors. First and foremost, we provide clear evidence that drawing generalized inferences on FDI determinates is flawed. It is misleading to ignore that these determinants are heterogeneous across sectoral and sub-sectoral levels, also the nature, magnitude, and impact of these determinants change as we move from a global to a regional context. Second, given such heterogeneity, it is pertinent that policymakers who wish to attract FDI inflows to a specific sector in the economy clearly understand its relevant determinants and their behavior. Since in many incidences, the determinants for some sub-sectors have an opposing effect on other sub-sectors for example, trade openness tends to deter total and primary FDI, while it has a positive impact on petroleum sub-sectoral FDI. Future research can build on this paper's findings to study and justify the significant determinants and their impact across the sectoral and sub-sectoral FDI.

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Appendix A

Items included in sub-sectoral data

- Total (merchandise and services)
- Primary
 - Agriculture and hunting
 - Growing of crops, market gardening, horticulture
 - Farming of animals
 - Growing of crops combined with farming of animals (mixed farming)
 - Hunting, trapping and game propagation including related service activities
 - Unspecified agriculture and hunting (FDI flows)
 - Unspecified agriculture and hunting (Trade flows)
 - Forestry and Fishing
 - Forestry logging and related activities
 - Fishing, operation of fish hatcheries and fish farms
 - Unspecified forestry and fishing
 - Mining and quarrying
 - Mining and agglomeration of hard coal
 - Mining and agglomeration of lignite
 - Extraction and agglomeration of peat
 - Unspecified mining of coal, lignite and peat
 - Mining of iron ores
 - Mining of non-ferrous metal ores, except uranium and thorium ores
 - Unspecified mining of metal ores
 - Quarrying of stone, sand and clay
 - Mining and quarrying not elsewhere classified
 - Unspecified other mining and quarrying (FDI flows)
 - Unspecified other mining and quarrying (Trade flows)
 - Petroleum
 - Extraction of crude petroleum and natural gas
 - Unspecified petroleum
 - Unspecified mining, quarrying and petroleum
 - Unspecified primary
- Secondary
 - Food, beverages and tobacco
 - Production, processing and preservation of meat, fish, fruit, vegetables, oils and fats
 - Manufacture of dairy products
 - Manufacture of grain mill products, starches and starch products and prepared animal feeds
 - Manufacture of other food products
 - Manufacture of beverages

- Tobacco products
 - Unspecified food, beverages and tobacco (FDI flows)
 - Unspecified food, beverages and tobacco (Trade flows)
- Textiles, clothing and leather
 - Spinning, weaving and finishing of textiles
 - Manufacture of other textiles
 - Manufacture of knitted and crocheted fabrics and articles
 - Manufacture of wearing apparel, except fur apparel
 - Dressing and dyeing of fur, manufacture of articles of fur
 - Tanning and dressing of leather, manufacture of luggage, handbags, saddlery and harness
 - Manufacture of footwear
 - Unspecified leather and leather products
 - Unspecified textiles, clothing and leather (Trade flows)
- Wood and wood products
 - Sawmilling and planing of wood
 - Manufacture of wood products, cork, straw and plaiting materials
 - Paper and paper products
 - Unspecified wood and wood products (FDI flows)
 - Unspecified wood and wood products (trade flows)
- Publishing, printing and reproduction of recorded media
 - Publishing
 - Printing and related activities
 - Reproduction of recorded media
 - Unspecified publishing, printing and reproduction of recorded media
- Coke, petroleum products and nuclear fuel
 - Manufacture of coke oven products
 - Manufacture of refined petroleum products
 - Processing of nuclear fuel
 - Unspecified coke, refined petroleum products and nuclear fuel
- Chemicals and chemical products
 - Manufacture of basic chemicals
 - Manufacture of other chemical products
 - Manufacture of man-made fibers
 - Unspecified chemicals and chemical products (FDI flows)
 - Unspecified chemicals and chemical products (trade flows)
- Rubber and plastic products
 - Manufacture of rubber products
 - Manufacture of plastic products
 - Unspecified rubber and plastic products (FDI flows)
 - Unspecified rubber and plastic products (trade flows)
- Non-metallic mineral products
 - Manufacture of glass and glass products

- Manufacture of non-metallic mineral products not elsewhere classified
 - Unspecified non-metallic mineral products
- Metal and metal products
 - Manufacture of basic iron and steel
 - Manufacture of basic precious and non-ferrous metals
 - Casting of metals
 - Unspecified basic metals
 - Manufacture of structural metal products, tanks, reservoirs and steam generators
 - Manufacture of other fabricated metal products
 - Unspecified fabricated metal products
- Machinery and equipment
 - Manufacture of general purpose machinery
 - Manufacture of special purpose machinery
 - Manufacture of domestic appliances not elsewhere classified
 - Unspecified machinery and equipment
- Electrical and electronic equipment
 - Office, accounting and computing machinery
 - Manufacture of electric motors, generators and transformers
 - Manufacture of electricity distribution and control apparatus
 - Manufacture of insulated wire and cable
 - Manufacture of accumulators, primary cells and primary batteries
 - Manufacture of electric lamps and lighting equipment
 - Manufacture of other electrical equipment not elsewhere classified
 - Unspecified electrical machinery
 - Manufacture of electronic valves and tubes and other electronic components
 - Manufacture of television and radio transmitters and apparatus for line telephony
 - Manufacture of television and radio receivers, sound or video recording or reproducing apparatus
 - Unspecified radio, tv and communications equipment (FDI flows)
 - Unspecified electrical and electronic equipment (trade flows)
- Precision instruments
 - Manufacture of medical appliances and instruments and appliances for measuring, checking and testing
 - Manufacture of optical instruments and photographic equipment
 - Manufacture of watches and clocks
 - Unspecified precision instruments
- Motor vehicles and other transport equipment
 - Manufacture of motor vehicles
 - Manufacture of bodies for motor vehicles
 - Manufacture of trailers and semi-trailers
 - Manufacture of parts and accessories for motor vehicles and their engines

- Unspecified motor vehicles, trailers and semi-trailers
 - Building and repairing of ships and boats
 - Manufacture of railway and tramway locomotives and rolling stock
 - Manufacture of aircraft and spacecraft
 - Manufacture of transport equipment not elsewhere classified
 - Unspecified other transport equipment
- Other manufacturing
 - Manufacture of furniture
 - Manufacturing not elsewhere classified
 - Unspecified other manufacturing
- Recycling
 - Recycling of non-metal waste and scrap
 - Unspecified recycling (FDI flows)
 - Unspecified recycling (trade flows)
- Unspecified secondary
- Tertiary
 - Electricity, gas and water
 - Production, collection and distribution of electricity
 - Manufacture of gas/distribution of gaseous fuels through mains
 - Steam and hot water supply
 - Collection, purification and distribution of water
 - Unspecified electricity, gas and water
 - Construction
 - Site preparation
 - Building of complete constructions of parts thereof/civil engineering
 - Building installation
 - Unspecified construction
 - Wholesale and retail trade
 - Sale of motor vehicles
 - Maintenance and repair of motor vehicles
 - Sale of motor vehicle parts and accessories
 - Sale, maintenance and repair of motorcycles and related parts and accessories
 - Retail sale of automotive fuel
 - Unspecified automotive trade and repair
 - Wholesale on a fee or contract basis
 - Wholesale of agricultural raw materials, live animals, food, beverages and tobacco
 - Wholesale of household goods
 - Wholesale of non-agricultural intermediate products, waste and scrap
 - Wholesale of machinery, equipment and supplies
 - Other wholesale
 - Unspecified wholesale trade
 - Non-specialized retail trade in stores

- Retail sale of food, beverages and tobacco in specialized stores
 - Other retail trade of new goods in specialized stores
 - Retail trade not in stores
 - Repair of personal and household goods
 - Unspecified retail trade and repair of personal and household goods
- Hotels and restaurants
 - Hotels, camping sites and other provision of short-stay accommodation
 - Restaurants, bars and canteens
 - Unspecified hotels and restaurants
- Transport, storage and communication
 - Transport and storage
 - Post and communication
 - Unspecified transport, storage and communications
- Finance
 - Monetary intermediation
 - Other financial intermediation
 - Unspecified financial intermediation
 - Insurance and pension funding
 - Activities auxiliary to financial intermediation, except insurance and pension funding
 - Activities auxiliary to insurance and pension funding
 - Unspecified activities auxiliary to financial intermediation
- Private buying and selling of property
 - Real estate activities with own or leased properties
 - Real estate activities on a fee or contract basis
 - Unspecified real estate
 - Renting of transport equipment
 - Renting of other machinery and equipment
 - Renting of personal and household goods not elsewhere classified
 - Unspecified rental
- Business activities
 - Hardware consultancy
 - Software consultancy and supply
 - Data processing
 - Database activities
 - Other computer related activities
 - Research and experimental development on natural sciences and engineering
 - Unspecified research and development
 - Legal, accounting, market research, business and management activities
 - Architectural, engineering and other technical activities
 - Advertising
 - Business activities not elsewhere classified
 - Unspecified other business activities

- Public administration and defense
 - Administration of the state and the economic and social policy of the community
 - Provision of services to the community as a whole
 - Unspecified public administration and defense
- Education
 - Primary education
 - Higher education
 - Unspecified education
- Health and social services
 - Human health activities
 - Veterinary activities
 - Social work activities
 - Unspecified health and social services
- Community, social and personal service activities
 - Sewage and waste disposal, sanitation activities
 - Activities of other membership organizations
 - Unspecified activities of membership organizations not elsewhere classified
 - Motion picture, radio, television and other entertainment activities
 - News agency activities
 - Library, archives, museums and other cultural activities
 - Sporting and other recreational activities
 - Unspecified recreational, cultural and sporting activities
- Other services
 - Other services
- Unspecified tertiary

Appendix B

Table 1: List of countries included in the global sample

Country	Country	Country
Afghanistan	France	Nicaragua
Albania	French Polynesia	Niger
Algeria	Gabon	Nigeria
Angola	Gambia	Northern Marianas
Antigua and Barbuda	Georgia	Norway
Argentina	Germany	Oman
Armenia	Ghana	Pakistan

Aruba	Gibraltar	Palau
Australia	Greece	Panama
Austria	Grenada	Papua New Guinea
Azerbaijan	Guatemala	Paraguay
Bahamas	Guinea	Peru
Bahrain	Guinea-Bissau	Philippines
Bangladesh	Guyana	Poland
Barbados	Haiti	Portugal
Belarus	Honduras	Qatar
Belgium	Hong Kong, China	Romania
Belize	Hungary	Russian Federation
Benin	Iceland	Russian Federation
Bermuda	India	Rwanda
Bhutan	Indonesia	Samoa
Bolivia	Iran, Islamic Republic of	Sao Tome and principe
Bosnia and Herzegovina	Iraq	Saudi Arabia
Bosnia and Herzegovina	Ireland	Saudi Arabia
Botswana	Israel	Senegal
Brazil	Italy	Serbia
British Virgin Islands	Jamaica	Serbia-Montenegro
Brunei Darussalam	Japan	Seychelles
Bulgaria	Jordan	Sierra Leone
Burkina Faso	Kazakhstan	Singapore
Burundi	Kenya	Slovakia
Cabo Verde	Kiribati	Slovenia
Cabo Verde	Kuwait	Solomon Islands
Cambodia	Kyrgyzstan	Somalia

Cameroon	Lao People's Democratic Republic	South Africa
Canada	Latvia	Spain
Cayman Islands	Lebanon	Sri Lanka
Central African Republic	Lesotho	Sudan
Chad	Liberia	Suriname
Chile	Libya	Sweden
China	Lithuania	Switzerland
Colombia	Luxembourg	Syrian Arab Republic
Comoros	Macao, China	Tajikistan
Congo	Madagascar	Thailand
Costa Rica	Malawi	Timor-Leste
Croatia	Malaysia	Togo
Cyprus	Maldives	Tonga
Czech Republic	Mali	Trinidad and Tobago
Czech Republic	Malta	Trinidad and Tobago
Côte d'Ivoire	Marshall Islands	Tunisia
Denmark	Mauritania	Turkey
Djibouti	Mauritius	Turkmenistan
Dominica	Mexico	Uganda
Dominican Republic	Micronesia	Ukraine
Dominican Republic	Mongolia	United Arab Emirates
Ecuador	Montenegro	United Kingdom
Egypt	Montserrat	United States
El Salvador	Morocco	Uruguay
El Salvador	Mozambique	Uzbekistan
Equatorial Guinea	Myanmar	Vanuatu
Eritrea	Namibia	Venezuela

Estonia	Nauru	Viet Nam
Ethiopia	Nepal	Viet Nam
Falkland Islands (Malvinas)	Netherlands	Yemen
Fiji	New Caledonia	Zambia
Finland	New Zealand	Zimbabwe

Table 2: List of countries included in the MENA sample

Country	Country	Country
Algeria	Jordan	Qatar
Bahrain	Kuwait	Saudi Arabia
Egypt	Lebanon	Saudi Arabia
Iran, Islamic Republic	Libya	Syrian Arab Republic
Iraq	Morocco	Tunisia
Israel	Oman	Yemen

Table 3-1: Summary of Empirical Findings – Global Sample

	<i>Global</i>		
	Sign Model	Dependent Variable	Source Table
Lags	+ GMM	All	4, 5
Agriculture value-added %GDP	- GMM	FDI tertiary	4
	- GMM, FE	Subsectors (Food, Defence, Forestry, Petroleum, Publishing, Finance)	5, and 11
	+ FE	FDI Primary	9
	+ FE	Subsectors (Agriculture, Others secondary, Business, Construction, and Wholesale)	11
Manufacturing value-added %GDP	+ GMM, FE and 3SLS	FDI primary, FDI total, FDI secondary, FDI tertiary	4, 8 and 9
	- GMM, FE	Subsectors (Forestry, Chemicals, Metals, Defence, Publishing, Finance)	5, and 11
	+ FE	Subsectors (Mining and Machinery)	11
Exports %GDP	- GMM, FE and 3SLS	FDI primary, FDI secondary, FDI total, FDI tertiary	4, 8 and 9
	- GMM, FE	Subsectors (Majority)	5, and 11
inflation	+ GMM, FE	FDI primary, FDI tertiary, FDI total	4, 9
	+ GMM, FE	Subsectors (Majority)	5, and 11
rents	+ FE	All	9
	+ GMM, FE	Subsectors (Majority)	5, and 11
	- GMM	Petroleum	5
intconflict	- GMM, FE	All	4, and 9
	- GMM, FE	Subsectors (Majority)	5, and 11
	+ GMM	Subsectors (Petroleum)	5

Table 3-2: Summary of Empirical Findings – MENA Sample

	MENA		
	Sign Model	Dependent Variable	Source Table
Lags	+ GMM	All	7
Agriculture value-added %GDP	- GMM	FDI Total, FDI Primary and FDI Tertiary	7
	- FE	Subsectors (Nonmetals, Defence, Petroleum, Electricity)	12
	+ FE	Subsectors (Machinery and Vehicles)	12
Manufacturing value-added %GDP	+ GMM	FDI tertiary	7
	- GMM	FDI Primary and FDI Secondary	7
	- FE	Subsectors (Petroleum, Machinery, Education and Precession)	12
	+ FE	Subsectors (Nonmetals, Vehicles, Electricity and Other tertiary)	12
Exports %GDP	- GMM	FDI primary, and FDI tertiary	7
	+ GMM, FE	FDI Secondary, FDI Primary and FDI Tertiary	7, 10
	- FE	Subsectors (Nonmetals, Education and Electricity)	12
	+ FE	Subsectors (Finance, Petroleum, Wholesale, Precession)	12
inflation	- GMM, FE	FDI Primary, FDI Tertiary, FDI Secondary	7, 10
	- FE	Subsectors (Finance and Electricity)	12
	+ FE	Subsectors (Petroleum, Nonmetals and Education)	12
rents	- GMM	FDI Primary, and FDI Secondary	7
	+ GMM	FDI Tertiary	7
	- FE	Subsectors (Petroleum, Finance, Wholesale, and Education)	12
	+ FE	Subsectors (Sale)	12
intconflict	+ GMM, FE	FDI Primary	7, and 10

	- GMM	FDI Tertiary	7
	- FE	Subsectors (Nonmetals, Electricity and Education)	12
	+ FE	Subsectors (Petroleum, Mining and Wholesale)	12
Gross fixed capital% GDP	- GMM	FDI Primary, FDI Tertiary and FDI Secondary	7, and 10
	- FE	Subsectors (Electricity and Mining)	12
	+ FE	Subsectors (Nonmetals, Education and Wholesale)	12

Table 4: Results of GMM - Main Sectors – Global Sample

	1	2	3	4
	Ln Stock-FDI total	Ln Stock-FDI primary total	Ln Stock-FDI secondary total	Ln Stock-FDI tertiary total
Lag Ln Stock-FDI total	0.354***			
	-3.97			
Agriculture value-added %GDP	0.0351	0.0493	0.0202	-0.0373*
	(-1.11)	(-1.44)	(-1)	(-1.67)
Manufacturing value-added %GDP	-0.00881	0.107**	0.0349	-0.00749
	(-0.33)	(-2.09)	(-1.19)	(-0.20)
Exports %GDP	0.00144	-0.0250***	-0.0120**	-0.00734
	(-0.2)	(-2.64)	(-1.96)	(-0.98)
inflation	-0.00883	0.0280**	-0.00111	0.0182**
	(-0.93)	(-2.19)	(-0.14)	(-1.98)
rents	-0.0104	-0.0156	0.00956	-0.0177
	(-0.94)	(-0.95)	(-0.77)	(-1.39)
Gross capital formation %GDP	0.0121	-0.0101	0.00809	-0.0173*
	(-1.01)	(-0.75)	(-1)	(-1.75)
intconflict	-0.371***	-0.421***	-0.168***	-0.224***

	(-3.70)	(-2.69)	(-2.60)	(-2.62)
corruption	-0.0605	0.342	0.0805	0.0869
	(-0.32)	(-1.27)	(-0.53)	(-0.44)
Lag Ln Stock-FDI primary total		-6.85E-07		
		(-0.15)		
Lag Ln Stock-FDI secondary total			-6.84E-07	
			(-0.77)	
Lag Ln Stock-FDI tertiary total				0.000000261**
				(-2.25)
N	590	145	182	171
sarganp	0.986	0.105	0.91	1.78E-11
ar1p	0.000198	0.924	0.0131	0.00365
ar2p	0.801	0.23	0.449	0.491

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

In such instrumental variable methods, R2 is no longer a valid indicator for model power, because we have endogeneity in the model and one or more regressors, especially the lagged dependent variable, are correlated with the error term.

Table 5: Results of GMM – Sub-Sectors – Global Sample – Part 1

[illegible]

					(-0.80)										
Lag Ln Stock-FDI Secondary chemicals						0.310***									
						(-2.88)									
Lag Ln Stock-FDI Secondary electronics							0.198								
							(-1.56)								
Lag Ln Stock-FDI Secondary machinery								0.283***							
								(-2.73)							
Lag Ln Stock-FDI Secondary metals									0.300***						
									(-3.82)						
Lag Ln Stock-FDI Secondary nonmetals										-0.326*					
										(-1.66)					
Lag Ln Stock-FDI Secondary vehicles											0.11				
											(-1.16)				
Lag Ln Stock-FDI Secondary precision												0.0027			
												(-0.01)			
Lag Ln Stock-FDI Secondary rubber													0.0427		
													(-0.35)		
Lag Ln Stock-FDI Secondary wood														0.214**	
														(-2.52)	
Lag Ln Stock-FDI Secondary publishing															0
															(.)
N	97	13	103	11	92	102	54	82	94	23	73	24	73	77	6
r2															
sarganp	0.0872	0.0265	0.196	0.00485	0.000073	0.136	0.0189	0.171	0.222	0.0404	0.143	0.134	0.117	0.0000562	.
ar1p	0.762	0.00923	0.594	0.134	0.00433	0.0716	0.0491	0.000355	0.0212	0.296	0.002	0.0000928	6.92E-08	0.485	0
ar2p	0.787	0.044	0.708	0.0554	0.227	0.728	0.41	0.089	0.0803	0.0618	0.0122	0.00831	0.691	0.382	0

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Results of GMM – Sub-Sectors – Global Sample – Part 2

	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	Ln Stock	Ln Stock-FDI Secondary other manufacturing	Ln Stock-FDI Secondary other secondary	Ln Stock-FDI Tertiary electricity	Ln Stock-FDI Tertiary social services	Ln Stock-FDI Tertiary business	Ln Stock-FDI Tertiary construction	Ln Stock-FDI Tertiary education	Ln Stock-FDI Tertiary finance	Ln Stock-FDI Tertiary health	Ln Stock-FDI Tertiary transport	Ln Stock	Ln Stock	Ln Stock

	-FDI Secon dary textile s											-FDI Tertia ry whol esale	-FDI Terti ary other servi ces	-FDI Tertia ry other tertiar y
Lag Ln stock- FDI primary agricultu re														
Agricult ure value added %GDP	- 0.053 9	-0.00548	0.109	0.0591**	0.00381	0.00112	-0.0219	-0.0558	-0.0735**	0.086	-0.0355	0.009 88	- 0.082 9**	
	(- 0.84)	(-0.12)	(-0.98)	(-2.11)	(-0.06)	(-0.02)	(-0.66)	(-0.92)	(-1.99)	(-1.12)	(-0.78)	(- 0.41)	(- 2.15)	
Manufac turing value added %GDPp	- 0.056 3	0.00559	0.153	-0.00348	0.0109	-0.0325	0.0363	0.0689	0.0396	-0.0452	0.094	0.051 8	0.19	
	(- 0.82)	(-0.13)	(-1.15)	(-0.11)	(-0.17)	(-0.44)	(-0.76)	(-0.93)	(-0.69)	(-0.84)	(-1.45)	(- 1.37)	(- 1.35)	
Exports %GDP	0.005 72	0.00727	-0.0206	0.00522	-0.0236	-0.0229	-0.0358***	-0.0347	0.000851	0.0115	-0.00422	- 0.006 1	- 0.016	0.102 ***
	(- 0.27)	(-0.51)	(-1.33)	(-0.57)	(-1.08)	(-1.11)	(-2.85)	(-1.49)	(-0.06)	(-0.48)	(-0.27)	(- 0.68)	(- 1.32)	(- 1.30E +13)
Inflation	0.007 85	0.00299	0.0494	-0.00207	-0.0138	-0.00332	0.0135	0.00853	0.0113	-0.0217	0.0129	0.007 12	- 0.016 2	- 0.015 4***
	(- 0.31)	(-0.19)	(-1.2)	(-0.21)	(-0.61)	(-0.17)	(-0.99)	(-0.42)	(-0.85)	(-0.95)	(-0.83)	(- 0.79)	(- 1.16)	(- 6.84e +12)
Rents	0.009 6	-0.0174	0.153*	-0.0111	0.0114	0.0288	0.0157	0.0466*	-0.0302	0.0522*	-0.0188	0.003 67	0.029 5*	- 0.139 ***
	(- 0.29)	(-0.83)	(-1.93)	(-0.75)	(-0.34)	(-0.9)	(-0.86)	(-1.74)	(-1.45)	(-1.69)	(-0.75)	(- 0.29)	(- 1.78)	(- 9.08e +12)
Gross Capital Formati on %GDP	0.002 21	0.0082	-0.00809	-0.00159	0.00667	-0.0063	-0.0096	0.0406	-0.0520***	0.0044	0.0121	0.008 04	- 0.003 49	0.018 6***
	(- 0.09)	(-0.47)	(-0.30)	(-0.17)	(-0.29)	(-0.29)	(-0.66)	(-1.63)	(-3.13)	(-0.2)	(-0.68)	(- 0.75)	(- 0.16)	(- 5.89E +12)
intconfli ct	0.363 *	-0.102	0.362	-0.261***	0.039	-0.349	-0.0187	-0.119	-0.206	-0.191	-0.215	0.095 5	0.142	- 0.740 ***
	(- 1.86)	(-0.75)	(-1.01)	(-2.77)	(-0.19)	(-1.56)	(-0.13)	(-0.49)	(-1.57)	(-0.92)	(-1.48)	(- 0.81)	(- 0.51)	(- 2.27e +13)
Corrupti on	0.113	-0.0984	-0.0521	-0.11	0.339	0.164	0.32	-1.223*	-0.212	-0.167	0.131	0.32	0.11	1.859 ***

	-0.22	(-0.27)	(-0.22)	(-0.40)	-0.62	-0.37	-1.05	(-1.81)	(-0.57)	(-0.28)	-0.34	-1.51	-0.51	- 2.41E +13
Lag Ln Stock-FDI Secondary textiles	0.068													
	(- 0.42)													
Lag Ln Stock-FDI Secondary other manufac turing		0.0248												
		(-0.36)												
Lag Ln Stock-FDI Secondary other Seconda ry			-0.248*											
			(-1.79)											
Lag Ln Stock-FDI Tertiary electricit y				0.0547										
				(-0.56)										
Lag Ln Stock-FDI Tertiary social services					0.00536									
					(-0.05)									
Lag Ln Stock-FDI Tertiary business						-0.0978								
						(-1.13)								
Lag Ln Stock-FDI Tertiary construc tion							-0.0632							
							(-0.65)							
Lag Ln Stock-FDI Tertiary educatio n								-0.321**						

								(-2.54)						
Lag Ln Stock- FDI Tertiary finance									0.380***					
									(-4.17)					
Lag Ln Stock- FDI Tertiary health										0.0905				
										(-0.71)				
Lag Ln Stock- FDI Tertiary transport											0.316***			
											(-3.17)			
Lag Ln Stock- FDI Tertiary wholesal e												0.461 ***		
												(- 4.66)		
Lag Ln Stock- FDI Tertiary other services													0.401 ***	
													(- 2.98)	
Lag Ln Stock- FDI Tertiary other tertiary														- 0.026 7***
														(- 2.01e +12)
N	74	76	53	107	75	148	122	52	138	50	153	134	22	7
r2														
sarganp	0.673	0.0284	0.24	0.457	0.0258	0.00908	0.213	0.21	0.0000729	0.00388	0.00000424	0.667	0.008 47	.
ar1p	9.66E-08	0.000159	7.40E-09	0.21	0.742	0.000713	5.21E-08	0.0000396	1.26E-13	0.986	2.13E-12	0.000 289	0.067 6	.
ar2p	0.796	0.329	0.000138	0.409	0.488	0.0227	0.768	0.834	0.631	0.0725	0.984	0.507	0.943	.

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7: Results of GMM – Main Sectors – MENA Sample

	1	2	3	4
	Ln Stock-FDI total	Ln Stock-FDI primary total	Ln Stock-FDI secondary total	Ln Stock-FDI tertiary total
Lag Ln Stock-FDI total	0.310***			
	(-4.37)			
Agriculture value-added %GDP	-0.0977**	-0.159***	6.575***	-1.378***
	(-2.36)	(-2.88e+11)	(-5.39E+12)	(-7.84e+12)
Manufacturing value-added %GDP	-0.0115	-1.706***	-2.019***	1.596***
	(-0.46)	(-4.08e+12)	(-7.63e+12)	(-6.22E+12)
Exports %GDP	-0.0053	-0.0714***	0.889***	-0.307***
	(-0.59)	(-4.25e+11)	-4.41E+12	(-5.71e+12)
inflation	-0.00191	-0.0109***	-0.0108***	-0.0626***
	(-0.15)	(-2.41e+11)	(-1.46e+11)	(-3.12e+12)
rents	-0.0323	-0.0310***	-0.0775***	0.123***
	(-1.46)	(-3.64e+11)	(-5.37e+11)	(-3.87E+12)
Gross capital formation %GDP	0.01	-0.126***	-0.0506***	-0.0463***
	(-0.84)	(-2.18e+12)	(-1.43e+12)	(-2.47e+12)
intconflict	-0.0537	2.364***	0	-9.101***
	(-0.90)	(-1.64E+12)	(.)	(-7.46e+12)
corruption	0.154	0	0	0
	(-1.04)	(.)	(.)	(.)
Lag Stock-FDI primary total		0.0000384***		
		(-3.46e+12)		
Lag Stock-FDI secondary total			0.00113***	
			(-7.68E+12)	
Lag Stock-FDI tertiary total				0.000144***
				(-9.13E+12)
N	75	8	7	8
r2				
sarganp	0.00424	.	.	.
ar1p	0.246	.	0	.
ar2p	0.545	.	.	.

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3: Results of 3SLS – Global Sample

VARIABLES	(1) Ln Stock-FDI total	(2) Ln Stock-FDI primary total	(3) Ln Stock-FDI secondary total	(4) Ln Stock-FDI tertiary total
Agriculture value-added %GDP	-0.00304 (0.00828)	-0.0144 (0.0121)	-0.000699 (0.0117)	0.00316 (0.00921)
Manufacturing value-added %GDP	0.0652*** (0.0135)	-0.0223 (0.0197)	0.103*** (0.0190)	0.0837*** (0.0150)
Exports %GDP	-0.0151*** (0.00257)	-0.00931** (0.00376)	-0.0187*** (0.00362)	-0.0174*** (0.00286)
Inflation	-0.0104 (0.0216)	-0.0263 (0.0316)	0.0109 (0.0304)	-0.0133 (0.0241)
Rents	0.00119 (0.00803)	0.00373 (0.0117)	0.00828 (0.0113)	3.81e-05 (0.00893)
Gross capital formation %GDP	-0.0406*** (0.0129)	0.0327* (0.0189)	-0.0628*** (0.0182)	-0.0535*** (0.0144)
intconflict	-0.126* (0.0647)	-0.438*** (0.0947)	-0.196** (0.0911)	-0.0584 (0.0720)
corruption	0.867*** (0.0815)	0.444*** (0.119)	0.858*** (0.115)	0.924*** (0.0907)
Constant	10.42*** (0.770)	10.41*** (1.127)	9.523*** (1.084)	9.222*** (0.857)
Observations	263	263	263	263
R-squared	0.396	0.156	0.293	0.395

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Results of Panel Fixed Effects Regression – Main Sectors – Global Sample

	1	2	3	4
	Ln stock-FDI total	Ln stock-FDI primary total	Ln stock-FDI secondary total	Ln stock-FDI tertiary total
agriculture value-added %GDP	0.0179	0.0310*	-0.00107	0.00990
	(0.92)	(1.69)	(-0.07)	(0.57)
manufacturing value-added %GDP	0.0234*	0.100	0.0190	0.00872
	(1.97)	(1.49)	(1.30)	(0.39)
exports %GDP	-0.00640	-0.0312**	-0.00708	-0.0109
	(-1.01)	(-2.15)	(-1.15)	(-1.66)
rents	0.0167**	0.0578***	0.0209**	0.0293**
	(2.13)	(3.95)	(2.36)	(2.66)
intconflict	-0.267***	-0.00771	-0.0757	-0.112
	(-3.23)	(-0.07)	(-1.39)	(-1.56)
corruption	0.111	0.306	0.113	-0.0404
	(1.01)	(1.49)	(1.09)	(-0.30)
inflation	0.0237***	0.0435**	0.00738	0.0196*
	(2.82)	(2.19)	(0.74)	(1.71)
Gross capital formation %GDP	0.0122**	-0.00394	-0.00555	-0.0158
	(1.98)	(-0.20)	(-1.04)	(-1.51)
N	1010	345	403	393
r2	0.100	0.151	0.0651	0.0807

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5: Results of Panel Fixed Effects Regression – Main Sectors – MENA Sample

	1	2	3	4
	Ln stock-FDI total	Ln stock-FDI primary total	Ln stock-FDI secondary total	Ln stock-FDI tertiary total
agriculture value-added %GDP	-0.104	0.687	-0.775	0.310
	(-0.79)	(2.06)	(-1.45)	(1.47)
manufacturing value-added %GDP	-0.0112	-0.636	-0.527	0.148
	(-0.39)	(-0.72)	(-0.41)	(0.39)
exports %GDP	-0.00346	0.376**	-0.0142	0.233**
	(-0.19)	(3.70)	(-0.07)	(3.77)
rents	0.0182	-0.114	0.0548	-0.0686
	(0.68)	(-1.03)	(0.39)	(-1.84)
intconflict	-0.274*	1.856***	-0.630	0.0659
	(-2.13)	(6.60)	(-1.76)	(0.46)
corruption	0.389	0.566	0.951	-0.374
	(1.36)	(0.12)	(2.09)	(-0.33)
inflation	0.0259	-0.178*	0.00558	-0.102*
	(1.06)	(-2.15)	(0.04)	(-2.73)
Gross capital formation %GDP	0.00300	-0.329	0.0405	-0.0495
	(0.17)	(-1.60)	(0.77)	(-0.72)
N	128	21	20	22
r2	0.205	0.903	0.474	0.822

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Results of Panel Fixed Effects Regression – Sub-Sectors – Global Sample

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	19	20	21	22	23	24	25	26	27	28	29	30
	Ln stock-FDI agriculture	Ln stock-FDI forestry	Ln stock-FDI mining	Ln stock-FDI petroleum	Ln stock-FDI food	Ln stock-FDI chemicals	Ln stock-FDI electronics	Ln stock-FDI machinery	Ln stock-FDI metals	Ln stock-FDI nonmetals	Ln stock-FDI vehicles	Ln stock-FDI precision	Ln stock-FDI rubber	Ln stock-FDI wood	Ln stock-FDI publishing	Ln stock-FDI textiles	Ln stock-FDI other secondary	Ln stock-FDI electricity	Ln stock-FDI social services	Ln stock-FDI business	Ln stock-FDI construction	Ln stock-FDI education	Ln stock-FDI finance	Ln stock-FDI health	Ln stock-FDI defense	Ln stock-FDI transport	Ln stock-FDI wholesale	Ln stock-FDI other services	Ln stock-FDI other tertiary
agriculture value-added %GDP	0.0695**	0.0318	0.0378	0.0408	-0.0257**	0.0144	-0.170**	-0.00318	-0.00131	-0.0620	0.0216	-0.287***	0.00494	0.00761	-0.0615	0.00366	0.126**	0.0151	-0.0125	0.0955**	0.0450**	-0.00499	0.0209	0.0377	-1.843***	0.00490	0.0284**	-0.0241	0.0352
	(2.02)	(0.25)	(1.41)	(0.62)	(-2.14)	(0.72)	(-2.65)	(-0.22)	(-0.07)	(-0.59)	(1.10)	(-5.52)	(0.25)	(0.62)	(-0.44)	(0.14)	(3.95)	(0.43)	(-0.64)	(2.63)	(2.05)	(-0.41)	(1.16)	(1.67)	(-1735311.02)	(0.35)	(2.28)	(-0.79)	(0.27)
manufacturing value-added %GDP	0.0386	-0.316	0.198***	-0.0589	0.0282	-0.0429*	0.103	0.0863***	-0.0650***	-0.134	0.0597	0.193	-0.0208	-0.00302	-0.0712	0.0512	-0.00449	-0.0471	-0.0990	-0.00414	0.0126	0.0377	0.0137	-0.0608	-1.967***	-0.00746	-0.0266	0.0927	0.161
	(1.02)	(-1.27)	(2.89)	(-0.30)	(1.12)	(-1.85)	(0.90)	(2.73)	(-2.84)	(-0.70)	(1.15)	(1.21)	(-0.31)	(-0.09)	(-0.21)	(1.68)	(-0.08)	(-0.94)	(-1.68)	(-0.09)	(0.23)	(0.73)	(0.57)	(-1.19)	(-561643.44)	(-0.22)	(-1.66)	(0.82)	(1.20)
exports %GDP	-0.0374***	-0.0325**	-0.0402***	-0.00485	-0.0153*	-0.00384	0.0474	-0.00630	0.0184*	-0.0104	-0.00183	0.0226	0.000586	0.00998	-0.0172	0.0245*	-0.0118	-0.0112	-0.0123	-0.0132	-0.0117	-0.0154	-0.0150**	-0.0235*	0.646***	-0.0146	-0.0147**	-0.0457**	0.0440
	(-2.98)	(-2.70)	(-2.82)	(-0.11)	(-1.99)	(-0.26)	(1.55)	(-0.56)	(1.91)	(-1.60)	(-0.11)	(0.67)	(0.03)	(1.42)	(-0.24)	(1.97)	(-1.58)	(-1.12)	(-1.13)	(-0.63)	(-1.17)	(-0.90)	(-2.10)	(-1.86)	(335503.44)	(-1.55)	(-2.04)	(-3.22)	(1.59)
rents	0.0584**	0.0715	0.0892**	0.0375	0.00857	0.0264*	-0.00292	0.0196	0.00894	0.112**	0.0241	-0.0764**	0.0397	0.00509	-0.0341	-0.0275	0.0871**	0.0323*	0.0617**	0.0676***	0.0537**	0.0356*	0.0247*	0.0840***	-0.301***	0.0183	0.0446***	0.00490	0.0452
	(2.53)	(0.91)	(2.50)	(0.75)	(0.98)	(1.69)	(-0.08)	(0.85)	(0.43)	(8.22)	(1.60)	(-2.38)	(0.92)	(0.25)	(-0.37)	(-1.55)	(4.52)	(1.82)	(3.56)	(2.70)	(2.25)	(1.86)	(1.90)	(2.81)	(-189494.74)	(1.26)	(3.77)	(0.17)	(0.45)
intconflict	-0.221*	0.330	-0.115	-0.000298	-0.120	-0.0233	0.0114	-0.208	0.0210	-0.221*	-0.0934	-0.467	0.0515	0.0931	0.241	0.0463	-0.180	-0.0846	-0.0234	-0.0605	-0.0835	0.344***	-0.195**	-0.0517	0	0.0372	-0.0107	-0.241	-0.580*
	(-1.89)	(0.74)	(-0.99)	(-0.00)	(-1.58)	(-0.34)	(0.07)	(-1.49)	(0.14)	(-2.01)	(-0.72)	(-1.41)	(0.25)	(1.06)	(0.73)	(0.36)	(-0.98)	(-0.87)	(-0.16)	(-0.38)	(-0.74)	(-2.97)	(-2.02)	(-0.30)	(.)	(0.43)	(-0.09)	(-1.56)	(-1.74)
corruption	0.150	0.417	0.319	0.0438	0.598**	0.211	-0.117	0.392**	0.478	-0.104	0.122	-0.180	0.116	0.573***	0	-0.00267	-0.204	-0.0477	-0.129	0.176	0.0556	-0.493	0.0336	0.0207	0	0.0481	0.0982	0.862	0.161
	(0.85)	(1.47)	(0.95)	(0.04)	(2.14)	(1.15)	(-0.57)	(2.82)	(1.35)	(-0.91)	(0.48)	(-0.39)	(0.42)	(2.81)	(.)	(-0.01)	(-1.58)	(-0.17)	(-0.52)	(0.45)	(0.29)	(-1.19)	(0.25)	(0.06)	(.)	(0.44)	(0.48)	(1.56)	(1.03)
inflation	0.0294**	0.0266	0.0463**	0.0834***	0.00971	0.0120	-0.0105	0.0431***	0.00913	0.0708***	0.0257	-0.0383	0.0289	0.000840	-0.0157	0.0134	0.0161	0.0103	0.0357	0.00487	0.0276*	0.0238*	0.0286*	0.0164	0	0.000324	0.0110	0.0165	0.0195
	(2.44)	(0.63)	(2.19)	(3.19)	(1.23)	(0.87)	(-0.21)	(3.39)	(0.75)	(3.24)	(1.47)	(-0.44)	(1.66)	(0.09)	(-0.27)	(0.62)	(0.69)	(0.89)	(1.56)	(0.26)	(1.69)	(1.82)	(1.90)	(1.33)	(.)	(0.02)	(0.97)	(1.07)	(0.58)
Gross capital formation %GDP	-0.0344**	-0.0742	-0.0242	-0.0281	-0.0123	0.00407	0.0424	-0.0171	-0.0106	0.0191	-0.0230	0.0104	-0.0444***	0.00417	-0.0944	-0.0333*	0.0199	-0.0207*	0.00567	-0.00959	-0.0180	0.00927	-0.0289**	-0.0299***	0	-0.0136	-0.00225	0.0635	0.00594
	(-2.07)	(-0.91)	(-1.19)	(-0.79)	(-1.19)	(0.36)	(1.54)	(-1.46)	(-1.50)	(0.84)	(-0.89)	(0.22)	(-2.96)	(0.37)	(-1.02)	(-2.00)	(1.07)	(-1.95)	(0.42)	(-0.75)	(-1.27)	(1.54)	(-2.37)	(-3.03)	(.)	(-0.87)	(-0.35)	(1.60)	(0.22)
N	279	58	303	55	244	274	168	213	256	84	209	78	204	216	25	206	173	271	199	367	359	148	379	171	8	379	383	96	55

r2	0.238	0.129	0.206	0.256	0.0899	0.0581	0.172	0.186	0.132	0.335	0.0760	0.263	0.125	0.111	0.301	0.106	0.160	0.0814	0.0976	0.119	0.105	0.204	0.110	0.182	1	0.0334	0.112	0.150	0.215
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t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7: Results of Panel Fixed Effects Regression – Sub-Sectors – MENA Sample

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	19	20	21	22	23	24	25	26	27	28	29	30
	Ln stock-FDI agriculture	Ln stock-FDI forestry	Ln stock-FDI mining	Ln stock-FDI petroleum	Ln stock-FDI food	Ln stock-FDI chemicals	Ln stock-FDI electronics	Ln stock-FDI machinery	Ln stock-FDI metals	Ln stock-FDI nonmetals	Ln stock-FDI vehicles	Ln stock-FDI precision	Ln stock-FDI rubber	Ln stock-FDI wood	Ln stock-FDI publishing	Ln stock-FDI textiles	Ln stock-FDI other secondary	Ln stock-FDI electricity	Ln stock-FDI social services	Ln stock-FDI business	Ln stock-FDI construction	Ln stock-FDI education	Ln stock-FDI finance	Ln stock-FDI health	Ln stock-FDI defense	Ln stock-FDI transport	Ln stock-FDI wholesale	Ln stock-FDI other services	Ln stock-FDI other tertiary
agriculture value-added %GDP	1.113	0.255	- 1.308	- 0.707***	0.418	0.457	0.196	0.791***	1.642	- 0.184***	0.895***	- 0.873***	1.749	6.435	6.435	- 0.838	-1.031	- 1.185***	67.33	- 0.463	0.982*	- 0.0142***	0.218	0.746	- 0.439***	- 1.071	- 0.0286	0.214	0.151
	(.)	(.)	(- 1.43)	(- 3306.59)	(.)	(.)	(.)	(5207.68)	(.)	(- 12002.62)	(2051 079.65)	(- 1122 38.74)	(.)	(.)	(.)	(.)	(-0.62)	(- 120.73)	(.)	(- 2.13)	(2.73)	(- 380.18)	(1.30)	(.)	(- 3.98e +15)	(- 1.22)	(- 0.19)	(1.98)	(1.24)
manufacturing value-added %GDP	-1.430	- 0.161	- 2.951	- 0.293***	0.0304	0.381	0.389	- 7.477***	0.915	1.826***	0.589***	- 3.533***	0.375	27.42	27.42	- 0.913	-0.383	2.775***	0	0.394	0.323	- 0.0664***	0.181	0	0	- 0.951	0.354	-1.074	0.785**
	(.)	(.)	(- 2.16)	(- 1670.89)	(.)	(.)	(.)	(- 10729.61)	(.)	(3187 6.75)	(8877 81.08)	(- 3387 56.01)	(.)	(.)	(.)	(.)	(-0.13)	(7.00)	(.)	(0.30)	(0.54)	(- 7016.94)	(0.63)	(.)	(.)	(- 0.66)	(1.22)	(-5.26)	(3.28)
exports %GDP	0.154	0.0306	0.112	0.347***	0.120	0.116	0.0790	0	0.366	- 0.194***	0.109***	0.434***	0.0751	0	0	0.156	-0.0970	- 1.374***	0	0.0524	0.232**	- 0.0271***	0.257***	0	0	0.0898	0.207**	0.327	0.152
	(.)	(.)	(0.17)	(3151.92)	(.)	(.)	(.)	(.)	(.)	(- 40489.89)	(2331 361.25)	(4088 97.61)	(.)	(.)	(.)	(.)	(-0.31)	(- 13.20)	(.)	(0.37)	(4.88)	(- 5357.71)	(7.04)	(.)	(.)	(0.37)	(4.27)	(0.74)	(1.44)
rents	1.960	0.195	- 0.138	- 0.0255***	- 0.0623	0.0132	- 0.0692	0	- 0.0717	0.0859***	0.0334***	0.229***	0.124	0	0	- 0.144	0.0725	0.733***	0	0.0525	- 0.0129	0.0342***	- 0.0849**	0	0	- 0.0101	- 0.134**	-0.167	- 0.0872
	(.)	(.)	(- 0.60)	(- 583.99)	(.)	(.)	(.)	(.)	(.)	(1758 9.93)	(1171 287.97)	(- 2044 51.48)	(.)	(.)	(.)	(.)	(0.44)	(11.38)	(.)	(0.48)	(-0.32)	(- 1968 7.72)	(- 3.56)	(.)	(.)	(- 0.06)	(- 3.96)	(-1.31)	(-0.43)
intconflict	0.0154	0.0170	1.202**	0.817***	0.175	1.512	0	0	2.055	- 0.357***	1.645***	0	1.666	0	0	- 1.624	-0.660	7.493***	0	- 0.739**	0.414	0.377***	- 0.00186	0	0	- 1.105	0.448***	-0.254	-0.220
	(.)	(.)	(3.55)	(3894.47)	(.)	(.)	(.)	(.)	(.)	(- 30185.51)	(7957 13.61)	(.)	(.)	(.)	(.)	(.)	(-1.02)	(- 25.50)	(.)	(- 5.45)	(1.27)	(- 2109 51.20)	(- 0.02)	(.)	(.)	(- 1.82)	(14.60)	(-0.63)	(-0.42)
corruption	0	0	- 2.953	6.728***	0.167	- 2.671	0	0	- 3.673	4.416***	- 2.167***	0	1.238	0	0	3.915	0.673	0	0	0.666	-1.972	1.401***	0.221	0	0	- 0.288	2.342*	-2.475	-0.349
	(.)	(.)	(- 0.62)	(2622 8.53)	(.)	(.)	(.)	(.)	(.)	(1249 20.72)	(- 7709 75.71)	(.)	(.)	(.)	(.)	(.)	(0.32)	(.)	(.)	(0.51)	(-0.66)	(5279 6.55)	(0.17)	(.)	(.)	(- 0.29)	(2.44)	(-0.71)	(-0.33)

inflation	0	0	-0.289	0.410***	0	0	0	0	0	0.184***	0	0	0	0	0	0	-0.0167	-0.448***	0	0.0161	0.0506	0.0877***	-0.145**	0	0	-0.165	-0.0500	-0.191	0.122
	(.)	(.)	(-0.59)	(13477.57)	(.)	(.)	(.)	(.)	(.)	(77395.86)	(.)	(.)	(.)	(.)	(.)	(.)	(-2.05)	(-7.89)	(.)	(-0.26)	(-0.52)	(47038.51)	(-4.07)	(.)	(.)	(-1.00)	(-1.75)	(-0.45)	(1.47)
Gross capital formatio n %GDP	0	0	-0.631**	0	0	0	0	0	0	0.197***	0	0	0	0	0	0	0.0197	-0.114***	0	0.0811	-0.1000	0.112***	-0.0309	0	0	0.0879	0.138*	-0.0982	-0.0138
	(.)	(.)	(-4.58)	(.)	(.)	(.)	(.)	(.)	(.)	(96774.65)	(.)	(.)	(.)	(.)	(.)	(.)	(0.14)	(-7.03)	(.)	(0.93)	(-0.61)	(18552.11)	(-0.44)	(.)	(.)	(0.94)	(2.45)	(-0.45)	(-0.71)
N	7	6	14	10	8	8	6	4	8	11	8	6	7	4	4	8	17	12	3	19	22	10	22	2	3	20	21	13	15
r2	1	1	0.908	1	1	1	1	1	1	1	1	1	1	1	1	1	0.399	0.999	1	0.725	0.762	1	0.870	1	1	0.591	0.831	0.938	0.911

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1