The Determinants of Foreign Direct Investment to Egypt

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Abstract:

This paper studies the determinants of Foreign Direct Investment (FDI) in Egypt. Africa is the world's poorest continent and often regarded as the 'lost continent.' Nevertheless, North and East Africa are strategically significant for competing global actors. The Middle East remains a primary incubator for socioeconomic discontent and a source of global instability. Thus, FDI to the region is critical for development but has lagged in the relative share of global FDI for decades. The significant population and geographic location between Africa, Europe, and the Middle East, the development and stability of Egypt, is critical for many reasons. FDI is an important pillar for such stability. A framework of reference is required for local policymakers and corporate management to understand the actual determinants of FDI and possible misconceptions relative to the empirical reality of actual FDI flows. The study presents the empirical reality to provide a basis for public and corporate decision-makers in Egypt to focus on specific policies to attract a much higher share of global FDI.

Introduction:

While globalization has accelerated in recent decades, the trend of internationalization is a process that was initiated centuries ago, and FDI was a crucial factor in that process. The International Monetary Fund (IMF) provides a broad definition of FDI as the investment that involves a long-term relationship and a long term interest of a resident entity in one economy, in an entity of another economy (IMF, November 2004). The World Bank is more specific and defines FDI as the net investment inflows acquiring more than 10% in an entity in a foreign economy (WorldBank, 2018). The most comprehensive definition is offered by De Mello as an aggregated bundle of capital, technology, training, skills, managerial, and organizational practices (de Mello, 1999).

A study of FDI to Egypt is very relevant from both an economic and strategic perspective. The importance of Egypt, in an African, Middle East, and developed world context, is significant and includes the following: (a) the reindustrialization of Africa's third-biggest economy after years of socio-political induced stagnation and the potential positive impact on regional growth; (b) to sustain socioeconomic stability after four years of Muslim Brotherhood government; (c) the avoidance of cultivating an environment facilitating regional discontent; (d) a staging platform for regional development; and (e) the strategic and geographic importance, given the negative collateral effects of the fundamentalist socio-economic models of Syria, Iran and Yemen to the east.

Socio-politically, Egypt will also be required to manage the many contradictions confronting the country. First, diplomatic relations require the reconciling of conflicting policies. For example, regarding Saudi Arabia, Egypt must handle the encouragement of the Bashar al-Assad regime in Syria fighting the Muslim Brotherhood ideology, and hostility that Saudi Arabia brings to Syria because of its ties to Shiite Iran. Second, Egypt complies with the Camp David Accords signed with Israel, while sharing with the Arab and Muslim world the aversion of Israel on the Palestinian dilemma. Third, Egypt has to manage the Arab solidarity regarding the Gaza Strip, despite the area administered by Hamas which is closely linked with the Muslim Brotherhood, enemies of the current Egyptian government.

Economically, Egypt is a pillar of African economic activity, particularly in North Africa. Egypt has enjoyed strong ties with much of Africa over the decades and is Africa's third-largest economy even after five years of economic stagnation post the government of the Muslim Brotherhood. Similarly, Egypt is significant, given its close ties with Libya and Sudan and the motivation to advance economically as a region. The establishment of a military-secular

government in Egypt has created an opportunity for the country to advance rapidly, and stabilize the region through its political influence, and socio-economic links.

Considering the above, one of the vital drivers of Egypt's' future stability will be economic growth and prosperity. Exhibits 1 and 2 illustrate the extent to which FDI to Egypt has lagged significantly in recent decades when compared to Latin America and Middle East and Africa (MEA). This poor performance has been in spite of superior economic growth and a significant difference in population size, two aspects which have typically be deemed key drivers of FDI. This is illustrated in Exhibits 3 and 4.

The body of research literature is almost unanimous in the conclusion that FDI to an emerging or transitioning economy is crucial to sustainable economic growth. Such sustainability is not only derived from foreign capital inflows, but also technology and skills spillover. While the significant body of research since the 1960s has focused on the determinants of FDI from a variety of perspectives, the policymakers of an emerging economy must acknowledge the determinants for FDI to create the environment necessary to attract FDI for multinational companies (MNC's). The research is comprehensive, but the findings regarding the determinants are often inconclusive, and the determinants tend to be country and region-specific. This non-generality has implications for a single country attempting to attract FDI or at least recognizing the key drivers of country-specific FDI.

In the context of the above, this study aims to clarify and present evidence of the determinants of FDI in the country. It thus comprises an empirical assessment of domestic views relating to the probable determinants of FDI. It is the author's opinion that the domestic policies, institutional arrangements, and macroeconomic framework are critical to a developing economy attracting global FDI.

A significant research gap exists in the literature, and this is the first time since the demise of the Arab Spring, that a study considers these empirically determined factors in an Egyptian context.

This paper contributes to the body of literature by reducing the gaps in the field of international business and MNCs pertaining to:

1. Assessing the limited number of studies relating to the determinants of FDI into Africa generally; and
2. Identifying the determinants of FDI into Egypt from an empirical perspective.

Literature Review

The literature review is divided into three distinct components: First, a theory review of seven primary theories that the author has deemed most relevant to this study; second, a review of empirical methods used in FDI related studies in the last ten years; and finally a brief review of the relatively limited research on FDI in Africa.

Ohlin was the first prominent scholar to study FDI and considered the determinants as potential excess profitability in the target economy and cheap financing of the FDI in the vendor economy (Krugman, 1979). But the *first* comprehensive theory of the determinants of FDI hails back to the neo-classical work of MacDougall and the proposition that relative rates of return determined FDI (MacDougall, 1960). It was noted that gains could be achieved by both parties to the FDI, but the assumptions underpinning the research dwarf the conclusions. That is the unrealistic assumption of risk-free capital mobility, perfect market competition, free labor mobility, and zero default risk. Agarwal responded much later with a

portfolio perspective, which incorporated the central notion of uncertainty in the analysis of determinants (Agarwal, 1980).

The *second* approach and in contrast to the more macro-economic perspectives offered by the above scholars, both Hymer and Kindleberger suggested that the behavior of the host MNC in a local market would be determined by the market structure (monopoly, oligopoly) of the local market (Kindleberger, 1969; Shane, 1994). This added a firm-level perspective, which Caves expanded into the field of industrial organization. He argued that a primary determinant of MNC FDI related to tariffs and trade protection and the decision of the MNC to invest in a local economy to either protect against existing tariffs or pre-empt tariffs of the host country (Caves, 1971).

As the world evolved technologically, so did the debate on FDI. Vernon presented conclusions that FDI was related to temporal effects. As innovation and sales growth occur in the host economy, sales eventually plateau, and finally, a product becomes relatively commoditized. Thus a company will seek to move production to a local economy where production costs are cheaper, and profits are greater (Vernon, 1992). The view of Vernon was confirmed by Krugman, who concluded that the basis for FDI was technological innovation (Krugman, 1979). Buckley and Casson included the perspective of the internationalization of MNCs into the field of industrial organization as it relates to FDI (Buckley, 1988). To summarize the contribution from Buckley, if transaction costs in trading are inefficiently and prohibitively high, operations will be internationalized if the opportunity to relocate is more efficient. Phrased differently, the internationalization of MNCs is a response to market imperfection. However, it appears to be a form of cross-border arbitrage and a natural response to the opportunity for a profit-seeking firm, similar to the contributions of MacDougall (MacDougall, 1960).

The *third* approach to the determinants of FDI considers factors other than market structure, for example, market size and market growth. In some sense, these aggregated factors were not explicitly related to prior theoretical approaches noted above. Indeed, empirical studies concluded that factors such as market size, proximity to the host market, cultural homogeneity, experience, and market growth should be aggregated into other traditional models when assessing the determinants of FDI (Davidson, 1980; Goldberg, 1972; Scaperlanda & Mauer, 1972).

The *fourth* and very notable analytical framework for the study of FDI flows is based on the perspective of internationalization and was introduced by Dunning (Dunning, 1979). The central premise was the minimization of transaction costs and, thus, the dilemma of choice between licensing technology or 'know-how' to a foreign party or owning foreign production through FDI. This approach has become known as the Eclectic Approach and converged several other theories that were broadly based on the location aspects of FDI.

This work evolved into what is now known as the ownership-location-internationalization (OLI) concept, which encompasses the works described above and merges vital aspects of both micro and macroeconomics. The OLI approach is derived from the advantages of ownership (O), location (L), and internalization (I) in assessing the potential of FDI. The advantages associated with one factor will positively affect the others. OLI has become the bedrock framework in empirically testing the determinants of FDI. Thus, the Dunning eclectic paradigm has evolved to be known as the OLI paradigm. The OLI approach attempts to explain FDI in the following manner: MNCs create competitive 'O' advantages in the host economy and transfer the advantages to local economies (depending on the 'L' benefits available) via FDI. This facilitates the MNC exploiting the 'O' rewards. On the contrary, the

theory pertaining to internalization primarily clarifies the choice of mode of market entry. As an illustration, one advantage of 'I' is that it overcomes the disadvantage of knowledge as a public good since FDI is preferred to licensing, joint ventures, or alliances (which cause information leakages). In fact, in all the above three entry modes, there is an obvious risk of the evaporation of the firm's knowledge advantage. From Dunning's perspective, there is an adjacent relationship between 'O' and 'I' advantages. Knowledge-type 'O' advantages require internalization. The 'L' advantages, in contrast, can be comprehensively analyzed by country-level examination.

The *fifth* approach appears to be a logical progression of prior research and arose in the mid-1980s through the work of Helpman and Markusen (Helpman, 1985; Markusen, 1984). This approach includes OLI factors and country and technology factors. In a more modern, globally industrialized environment, the possession of 'knowledge' was deemed to be an updated perspective of the ownership factor. Location determinants included the traditional elements but were also updated with production stages and relative production factor endowments in various economies. Both knowledge and capital together were deemed critical for the manifestation of an internationalization advantage. Helpman (1985) analyses FDI with a general equilibrium model and assumes a monopolistic structure. He also assumes trade costs are zero and complete vertical integration of production, all of which was a limitation in his study.

The new century and the explosion of technology and globalization brought about a change in the theoretical focus of scholars. The environment resulted in a focus on business risk as to the basis for the *sixth* type of theoretical model. At the country level, it was clear that the FDI decisions of vertical and horizontal MNC's could be explained using the transaction cost or knowledge capital approaches. However, the growth of the diversified MNC rendered these

approaches less reliable. The business risk was becoming increasingly associated with FDI for these companies. Firms sought uncorrelated market exposures to absorb global political and economic shocks.

Interestingly, there was little new research of substance that considered this new environment. Indeed, the only prior theory was Rugman's perspective of MNC's allocating investments based on risk. Rugman stated that firms diversify overseas to mitigate risk associated with profit volatility, product, and location (Rugman, 1975). This early work has been unequivocally supported by Dewenter and Froot et al. (Dewenter, 1995; Froot & Stein, 1991). The primary risk factors that determine FDI flows in this approach are interest rate and exchange rate volatility and market risk which includes political risk. There have been no substantial updates to this perspective.

The *seventh* approach to determining FDI is based on government policy and incentives. This can be a complicated set of factors given that the MNC is required to make strategic entry decisions based on greenfield or brownfields investment, licensing for royalties or FDI, and incorporation of a new foreign subsidiary or acquisition. The determinants of this outcome depend on factors including trade conditions and policy, levels of skilled labor, available subsidies, and the ability to return capital to the host country. The problem of incomplete or asymmetric information facing the MNC and the effect on the FDI decision process was addressed by Bond and Samuelson (Bond & Samuelson, 1986). They presented evidence that when the MNC lacks general information regarding the quality of the local economy, government incentives are an imperative policy. Black and Hoyt studied the success of attracting FDI at the city level and concluded that a successful city is one which offered a package of low wages, low costs, and tax incentives, and showed indifference to other factors (Black & Hoyt,

1989). Haufler and Wooten introduced the costs of trade (as an alternative to FDI) into a mix of local economy size and competitive fiscal incentives (Haufler & Wooton, 1999). In this study, market size trumped all other factors. Haaland and Wooten found a strong relationship between offering incentives to a major FDI investor and the subsequent FDI that followed subsequently from other MNC's (Haaland & Wooton, 2002). Mudambi (1999) presented evidence of a very strong correlation between firm characteristics and the characteristics of the incentive package offered (Mudambi, 1999).

Empirical Perspectives of FDI

Empirical studies analyzing the specific role of policy in FDI allocation emerged in the 1990s. These studies included both incentives and economic determinants (Grubert and Mutti), regional studies such as in the Caribbean (Rolfe et al) and the EU (Devereaux and Griffith), and a more traditional empirical global market approach which concluded that high taxes, high relative GDP growth, volatile exchange rates, low proximity, and high transport costs decreased FDI flows (Devereux & Griffith, 1998; Grubert & Mutti, 1991; Rolfe, Ricks, Pointer, & McCarthy, 1993). Conversely, profit potential, size effects, and economy openness were positively related to FDI (Bénassy-Quéré, Fontagné, & Lahrèche-Révil, 2001). Montero found economic stability as measured by current account volatility was the most significant determinant of FDI in Latin America, and rights abuses and the political regime was not statistically significant (Montero, 2008). A study of transition economies by Lankes and Venables found that the determinants of FDI in EU transition countries varied significantly. The variance was ascribed to the level of development and whether the FDI was to support local consumption or more of export orientation (Lankes & Venables, 1996). The main conclusions of the empirical work undertaken suggest that policy concerning tariffs, government incentives, and

a supportive tax regime are conducive to higher levels of FDI. It is worth noting that tax was among the least influential factors in FDI flows. Market size, factor costs, and stability were deemed to have the most significant relationship with FDI.

In 2008, Ndikumana and Verick used a fixed-effects model (non-random economic variables) to analyze the relationship between FDI and domestic investment in 38 Sub-Saharan countries during 1970 and 2005. They concluded that FDI assists in encouraging domestic investment, and private investment in the local economy supports further FDI (Ndikumana & Verick, 2008).

More globally, Vadlamannati and Tamazian studied the actual impact of FDI on economic growth for the period 1980-2006. Some 80 countries were analyzed, and independent variables included inflation, openness, domestic investment, institutional limitations, wars, and labor output. They concluded that the strongest relationships to FDI related to output and institutional reform (Vadlamannati & Tamazian, 2009).

By 2010, the concept of BRIC (Brazil, Russia, India, and China) countries emerged as a composite of economies possessing very similar characteristics. Vijayakumar et al. study FDI to the BRIC composite utilizing panel data for the period 1975-2007. Variables included size, factor costs, inflation rate, openness, currency, and infrastructure. The study concluded that size, factor cost, infrastructure, and currency were all major determinants of FDI (Vijayakumar, Sridharan, & Rao, 2010).

Several studies undertaken between 2010 and 2012 produced very similar conclusions but used different methods. Azman (panel threshold regression), Doytch and Uctum (GMM, pooled OLS), Tiwari and Murascu (pooled OLS), Jadhav, and Katti (panel data), and

Fillat and Woerz (GMM, OLS and panel data) all produced unsurprising conclusions. That is, openness, infrastructure, governance, and domestic investment are positively associated with FDI (Azman-Saini, Law, & Ahmad, 2010; Doytch & Uctum, 2011; Fillat & Woerz, 2011; Jadhav & Katti, 2012; Tiwari & Mutascu, 2011). The similarity in conclusions possibly resulted in a different approach to FDI research in subsequent years.

For example, Kaur et al. used panel data, fixed effects, and regression to analyze FDI in the BRIC markets. The independent variables were different from previous years and included banking liabilities, banking credit extended, bank ROE, and cost-to-income and equity market total value. The paper concluded that the financial sector was a major determinant of FDI and that the equity market capitalization had a strong positive correlation with FDI (Kaur, Yadav, & Gautam, 2013).

Numerous studies subsequent to the above body of research utilized multiple model techniques, but due to the vast number of markets covered, the results were very consistent with results presented in prior decades. The significant limitation of the extant literature is that it does not appear to have evolved to provide the granularity for specific policy applications in an individual country.

An Africa FDI Perspective

Suliman and Mollick also used a fixed-effects approach to study 29 Sub-Saharan countries in the period 1980-2003. They focused on human capital and the impact of war. The variables included were infrastructure, openness, size, civil rights, and political freedom. Unsurprisingly, the paper concluded that wars discourage FDI, while civil rights and political freedom are positively associated with FDI (Suliman & Mollick, 2009). Azemar and Desbordes

analyzed 70 countries, including many Sub-Saharan (SSA) countries, for the impact of health on FDI flows. Using OLS and FE models for the period 1985-2005, it was concluded that SSA received significantly less FDI due to inferior health provision and public goods (Azémar & Desbordes, 2009). Interestingly, Adams found a negative relationship between FDI and its effect on domestic investment in SSA for the period 1990-2003. The model used included fixed effects and OLS on 42 SSA markets with variables that were not controversial: GDP, location; inflation; human capital; and political stability (Adams, 2009).

The impact of FDI on poverty was also investigated. Gohou and Soumare used the two-stage LS method on African countries between 1990 and 2007. The independent variables included data on poverty, the Human Development Index, GDP, and institutional structures, inter alia. The authors concluded that FDI has a strong inverse relationship with poverty, and even more so in poorer countries (Gohou & Soumaré, 2012). Cleeve et al. also examined the effects of FDI on human capital and undertook a panel data analysis of 35 SSA economies for the period 1980-2012. While human capital factors (literacy and the size of human capital) were included, other factors included more traditional measures: openness, resource stock, market size, infrastructure, and socio-political involvement. They concluded that all the above were determining factors of FDI (Cleeve, Debrah, & Yiheyis, 2015).

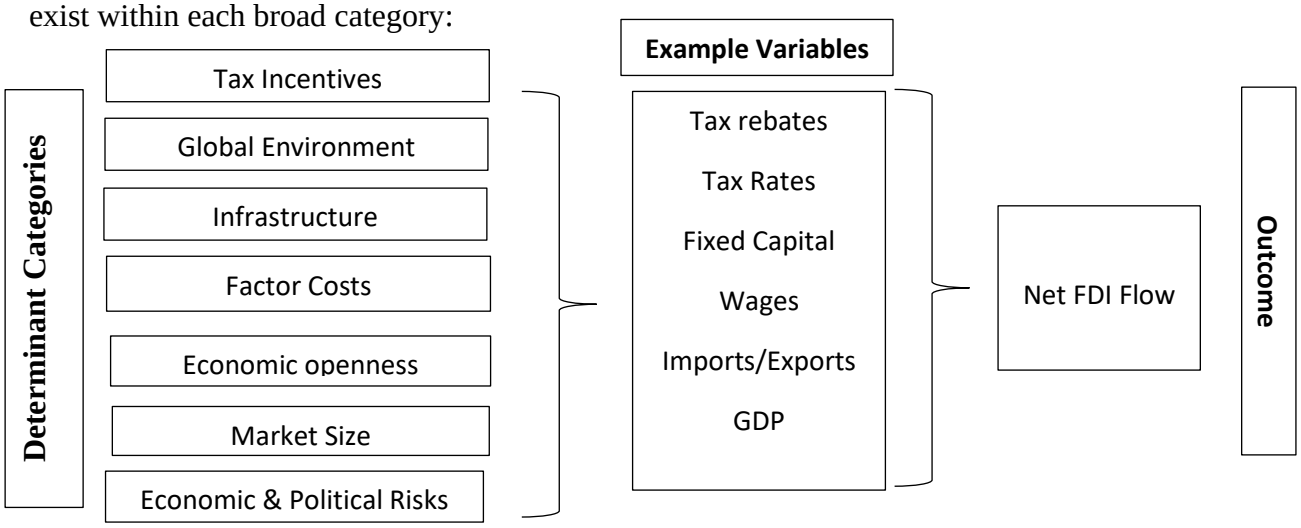
Since Africa is primarily a commodity-exporting continent, the relationship between openness and FDI would be expected to be positive. Seyoum et al. used panel data for the period between 1977 and 2009 to study this causality. The found ‘bidirectional’ causality between liberalized trade policies and FDI (Seyoum, Wu, & Lin, 2014).

The review of the body of research above clearly indicates that the study of the determinants of FDI has attracted multiple theoretical models over the decades (Metaxas & Kechagia, 2016). The

author is of the view that a general model fitting even most FDI decision making circumstances is not possible. The numerous and complex decisions involving both FDI and location, regions versus countries, licensing versus acquiring, asymmetric information versus competitive incentives, economic market size versus factor costs, inter alia, suggest that a particular MNC circumstance must be married to a specific FDI theory. Furthermore, the review also highlights the view that the various theories are not mutually exclusive, and all have some empirical support. When considering FDI in Egypt, as a large size emerging economy in transition on the severely underdeveloped African continent but based on the Mediterranean with significant resource endowments and low factor costs, the only meaningful and appropriate approach is one that selects relevant aspects from the various theories.

Research Framework and Model

Further to the above, one can draw several concrete conclusions from the body of research regarding the most significant types of macroeconomic conditions, incentives, and policies that can be created and adopted by policymakers. These are decomposed broadly and diagrammatically below, although not every factor may apply to each country and sub-categories exist within each broad category:



The scarcity of data prior to 1990 has resulted in a number of potentially valid variables being excluded from the study. Being an emerging market and having to be subject to the vagaries of dictatorship and revolution, the public institutions responsible for record-keeping and data collection were obviously not in a position to gather the granularity required for a comprehensive investigation of the potential data sets that are available in other countries.

Hypotheses:

Given the above framework, it is hypothesized that:

FDI=FDI (WLDFDI_WGDP, MILIT_GDP, FCAP_GDP, INTSPRD, X_GDP, SHOCKS, TRADE_GDP) **(1)**

$FDI_{WLDFDI\_WGDP} > 0$, $FDI_{MILIT\_GDP} < 0$, $FDI_{FCAP\_GDP} > 0$, $FDI_{INTSPRD} > 0$, $FDI_{X\_\_GDP} > 0$, $FDI_{SHOCKS} > 0$, $FDI_{TRADE\_GDP} > 0$

Where,

FDI = Net inflows to FDI to Egypt as a percentage of GDP;

WLDFDI_WGDP = World FDI as a percentage of World GDP;

MILIT_GDP = Military spending by government as a percentage of GDP;

FCAP_GDP = Fixed Capital Formation as a percentage of GDP;

INTSPRD = Lending Rate minus Deposit Rate;

X_GDP = Total Exports as a percentage of GDP;

SHOCKS = Sequential Dummy variable representing three changes in government during the period; and

TRADE_GDP = Total Trade as a percentage of GDP.

Consistent with the body of research, it is expected that the extent of Global FDI in any given year would have a positive impact on the magnitude of FDI to Egypt in that same year, *ceteris paribus* (Vernon, 1992). A global environment that exhibits relatively abundant liquidity,

a heightened requirement for additional returns, and increased risk appetite will likely benefit capital flows to an emerging market like Egypt.

Hypothesis 1: World FDI will have a positive relationship with FDI to Egypt, ceteris paribus.

It is further expected that military expenditure (MILIT_GDP) by the government is a proxy for domestic and regional stability and would have a negative relationship with FDI to Egypt, *ceteris paribus* (Montero, 2008; Mudambi, 1999; Suliman & Mollick, 2009).

Hypothesis 2: Military Expenditure will have a negative relationship with FDI to Egypt, ceteris paribus.

The growth of Fixed Capital Formation (FCAP) in an economy is deemed a positive sign of domestic sentiment and optimism . Furthermore, such Capital Formation is long term in nature and is consistent with the duration of FDI, and thus we expect a positive relationship between FCAP and FDI, *ceteris paribus (Doytch & Uctum, 2011; Rugman, 1975).*

Hypothesis 3: Fixed Capital Formation will have a positive relationship with FDI to Egypt, ceteris paribus.

It is anticipated that the Interest Rate Spread (INTSPRD) will have a positive relationship with FDI. The higher the spread, the greater the perception that the market is dominated by large banks, rather than macro policy or domestic liquidity. This is especially the case in developing economies where opportunities for superior returns are deemed more prevalent (de Mello, 1999; Kaur et al., 2013; Vadlamannati & Tamazian, 2009).

Hypothesis 4: Interest Spread will have a positive relationship with FDI to Egypt, ceteris paribus.

Exports (X_GDP) are an indicator of the openness and the degree to which an investor can potentially export from the local economy, and a robust trade profile is likely to have a positive relationship with FDI, *ceteris paribus*. Changes in governments is a normal and cyclical phenomenon in most countries. However, Egypt has been subject to radical government changes in recent decades (Grubert & Mutti, 1991; Helpman, 1985; Seyoum et al., 2014).

Hypothesis 5: Total Exports will have a positive relationship with FDI to Egypt, ceteris paribus.

A sequential dummy variable (SHOCKS) is used to reflect this political landscape and as an indicator of pollical and economic stability. The SHOCKS variable has been coded 1 to 4 to reflect the various benign regime changes, and it is expected to have a positive relationship with FDI, *ceteris paribus (Lankes & Venables, 1996; Vijayakumar et al., 2010)*. Egypt has experienced periods of stability and robust growth during the Mubarak and El Sisi regimes. The government of the Muslim Brotherhood was short-lived but encouraged by the developed world at the time and thus was expected to be positive for Egypt. Given the above, the regimes have been sequentially coded a Mubarak regime (1), Arab Spring (2), and ElSisi regime (3).

Hypothesis 6: Regime change, will have a positive relationship with FDI to Egypt, ceteris paribus.

Total Trade (TRADE_GDP) is an additional indicator of openness and will have a positive relationship with FDI, *ceteris paribus (Froot & Stein, 1991; Helpman, 1985; Seyoum et al., 2014)*. While exports are important as a determinant of foreign investment, equally, the level of imports is important in contributing to understanding tariffs, other taxes, customs behavior, and transport links. Higher levels of imports suggest a more robust trade environment than that which exports presents (Froot & Stein, 1991).

Hypothesis 7: Total Trade will have a positive relationship with FDI to Egypt, ceteris paribus.

Specification of the Variables

Based on the research framework and the hypotheses described above, the Ordinary Least Squares (OLS) estimation initially comprises the linear model presented below:

$$FDI_t = \alpha_0 + \alpha_1 WLDFDI\_WGDP_t + \alpha_2 MILIT\_GDP_t + \alpha_3 FCAP\_GDP_t + \alpha_4 INTSPRD_t + \alpha_5 X\_GDP_{t-2} + \alpha_6 SHOCKS_{t-1} + \alpha_7 TRADE\_GDP_{t-1} + u_t \quad \textbf{(2)}$$

Where,

FDI_t = Net inflows to FDI to Egypt as a percentage of GDP in year t;

$WLDFDI\_WGDP_t$ = World FDI as a percentage of World GDP in year t;

$MILIT\_GDP_{t-2}$ = Military Expenditure by government as a percentage of GDP in year $t-2$;

$FCAP\_GDP_{t-2}$ = Fixed Capital Formation as a percentage of GDP in year $t-2$;

$INTSPRD_t$ = Lending Rate minus Deposit Rate in year t;

X_GDP_{t-2} = Total Exports as a percentage of GDP in year $t-2$;

$SHOCKS_{t-2}$ = Sequential Dummy variable representing three changes in government in the period $t-2$;

$TRADE\_GDP_{t-2}$ = Total Trade as a percentage of GDP in year $t-2$;

u_t = Stochastic Error Term

Most of the variables are scaled by GDP since these variables are best assessed in terms of the size of the Egyptian economy, and world GDP in the case of WLDFDI_GDP. The interest rate spread (INTSPRD) and the dummy variable (SHOCKS) are unscaled since the variables should not be judged relative to economy size (Lankes & Venables, 1996).

The data used in this paper was obtained from The World Bank world development indicators database. The data used in the model is shown in Table 1. The descriptive statistics for each of the variables expressed in equation (2) are provided in Table 2.

OLS and TSLS Results with Annual Data: 1977-2018

The empirical results for the study are presented using annual data for the period 1977-2018. The Least Squares estimation of the initially hypothesized equation (2) is shown in Table 3. The estimate is presented in the format prior to identifying or correcting for multicollinearity and heteroskedasticity. It will be evident that the initially hypothesized equation will have to be adjusted to achieve a credible result. The data in Table 3 provides clear evidence of an equation that lacks satisfactory credibility. In the column labeled 'Coefficients,' some of the estimated coefficients of the independent variables exhibit incorrect signs. The hypotheses proposed that $FCAP\_GDP_{t-2}$, $SHOCKS_{t-2,}$ and $TRADE\_GDP_{t-2}$ would have positive signs. Indeed, it was anticipated that only $MILIT\_GDP_{t-2}$ would present a negative coefficient sign in the estimation result. In addition, three explanatory variables failed significance levels, namely $FCAP\_GDP_{t-2}$, INTSPRD, $SHOCKS_{t-2,}$ and $TRADE\_GDP_{t-2}$. Finally, the Durbin Watson statistic is 0.959 which is significantly below the benchmark 2.000 level. In addition to the above issues, the Variation Inflation Factors (VIF) presented in Table 4, after assessing evidence of multicollinearity, are unacceptable. $TRADE_{t-2}$ and X_GDP_{t-2} exhibit particularly poor results of 33.252 and 2.662 respectively, significantly above the range of between zero and 10 deemed acceptable as a range of multicollinearity.

We undertake a series of adjustments to ascertain the appropriate explanatory variables to include in robust estimation. Following on from the above initial hypothesized equation (2), we remove $TRADE\_GDP_{t-2}$, given the variable's very high VIF, from the equation to determine the impact on the hypothesized model. As exhibited in Tables 5 and 6, removing the variable $TRADE\_GDP_{t-2}$ results in significantly improved t-statistics, as evidenced by the p-values ($< \alpha = 0.05$) The VIF values suggest no material evidence of severe Multicollinearity. The coefficient signs in the OLS output are mostly correct, with the sign for $MILIT\_GDP_{t-2}$ being incorrect. We

can accept that Multicollinearity has been corrected. We have also corrected Heteroskedasticity by using the Newey-West Coefficient Covariance Matrix. However, studying the output in Table 6, the Durbin-Watson statistic remains poor after the correction, and the significance of the t-statistics remains mixed. We adjust the lags of the explanatory variables to one year, but the resulting estimation output remains statistically weak: incorrect variable coefficient signs, the significance of the t-statistics deteriorated, and a very weak Durbin-Watson statistic. We thus adjust the independent variables of the models by a series of iterations using different lags. Table 7 presents a combination of lags that has resulted in a statistically improved regression estimation. The coefficient signs are correct, and t-statistics are more statistically significant. But the Durbin-Watson statistic remains weak.

We included a trend variable in the analysis to potentially eliminate the problem of non-stationarity. The estimated regression output is presented in Table 8. Adding the trend variable (TREND) had no material effect on the significance of the t-statistics, but the Durbin-Watson statistic remains very weak. Consequently, we eliminated the trend variable (TREND) from the regression equation and added first and second-order autoregressive terms to correct for the non-stationarity as an alternative to the trend variable. The impact of the autoregressive terms is exhibited in Table 9. The regression equation seems to represent a very stable model. The Durbin-Watson statistic is an acceptable 2.276, but there are a number of very statistically insignificant independent variables in the output.

The insignificance of the t-statistics indicated above, and contemporaneous variables in the model indicate a simultaneity problem. We use Two-Stage Least Squares with two additional instrumental variables as a proxy for the contemporaneous variables FCAP_GDP and INTSPRD. The instrumental variables added are $GFCAP\_GDP_{t-3}$ and $DOMCRED\_GDP_{t-3}$ respectively,

both lagged 3 years. The regression estimate output is shown in Table 10. The Durbin-Watson statistic improved notably, and the coefficient signs are mostly correct. The significance of the t-statistics is mixed.

However, by removing the statistically insignificant factors of MILIT_GDP$_{t-2}$ and INTSPRD (and thus the additional instrument DOMCRED_GDP$_{t-3}$), the output in Table 11 presents a regression estimate that is both stable and comprises variables that are statistically significant, with the exception of for X-GDP$_{t-1}$.

In sum, the two-stage least squares regression estimate indicates that levels of domestic Fixed Capital have a strong positive relationship with FDI. It appears that a 1% increase in domestic fixed capital increase FDI by some 0.22%. This positive relationship is rational, given the importance of local private sector investment in illustrating long-term commercial confidence in the domestic economy by local private sector business. The coefficient is statistically significant far beyond the 1% level.

The estimate also suggests a very strong positive relationship between Global FDI in a given year and FDI to Egypt in that same year. This is consistent with the notion that higher levels of global foreign investment indicate greater global liquidity, confidence, and appetite for risk. The estimate indicates that a 1% increase in Global FDI will lead to a very material 0.78% increase in FDI to Egypt. The coefficient is almost significant at the 1% level but falls well within the 5% level of significance. Interpreting the above, an emerging market like Egypt would benefit from such a robust global investment environment, ceteris paribus. It is worth noting that variable global FDI (WLDFDI_WGDP) has been remarkably stable across the various estimations in the study. This has important implications for Egypt in the sense that a significant

factor in determining FDI is exogenous to Egypt and is thus not within the control of policymakers, ceteris paribus.

The positive relationship between regime change, as denoted by $SHOCKS_{t-2}$, and FDI is also clear. Egypt's history is punctuated with western government-backed regime change, and thus the subsequent foreign direct investment after such regime change is not surprising. The estimate indicates that regime change causes a 0.58% per annum increase in FDI two years after the change.

However, regarding total exports (X_GDP_{t-1}), the least squares estimate finds that the estimated coefficient failed to be statistically significant even at the 10% level. While the p-value exceeds even the 10% confidence level (p=0.122), the variable does add to the stability of the model, and it is the most robust of the insignificant variables previously eliminated.

The final equation derived from Table 11 is defined as:

$$FDI_t = -8.117 + 0.790\, WLDFDI\_WGDP_t + 0.230\, FCAP\_GDP_t + 0.150\, X\_GDP_{t-1} + 0.581\, SHOCKS_{t-2} + 1.045 \quad \textbf{(3)}$$

Where,

FDI_t = Net inflows to FDI to Egypt as a percentage of GDP in year t;

$WLDFDI\_WGDP_t$ = World FDI as a percentage of World GDP in year t;

$FCAP\_GDP_t$ = Fixed Capital Formation as a percentage of GDP in year t;

X_GDP_{t-1} = Total Exports as a percentage of GDP in year $t-1$;

$SHOCKS_{t-2}$ = Sequential Dummy variable representing three changes in government in the period; and

u_t = the stochastic error term

Conclusion

This study applies Least Squares estimation to annual data for the period 1977 – 2018. The estimation results are in contrast to the conclusions and predictions found in the extant literature. As indicated in the Literature Review, there exists a dearth of studies on FDI both in an African context and African country-specific context. None of the studies presented any evidence of global FDI as a determinant or significant determinant of FDI into a local economy. In this study, global FDI is a significant determinant of local FDI. More specifically, for every 1% increase in global FDI, FDI to Egypt increases by 0.78%, ceteris paribus.

Moreover, of the seven explanatory variables initially considered in the hypothesized equation, only three are ultimately statistically significant. The implication is that the ability of policy-makers and business managers to influence FDI net inflows is relatively small and limited to fixed capital growth and stable government. This assessment is based on past data and to some extent, limited by the depth of data available on Egypt from the World Bank. But unless policy changes to influence global FDI, in a global environment that competes for investment flows, foreign investment flows to Egypt will remain primarily subject to the vagaries of the global investment environment. Decision-makers in Egypt should revise their perceptions and actions to create a competitive advantage in attracting sustainable foreign investment flows relative to other countries.

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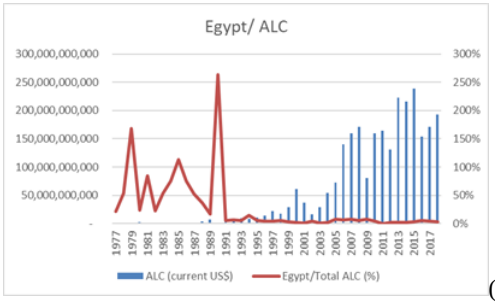
EXHIBIT 1:



(WorldBank, 2019)

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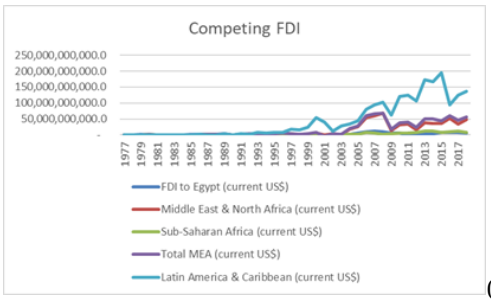

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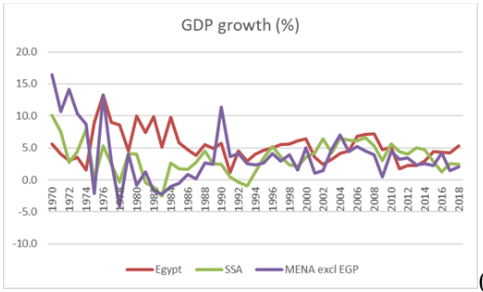

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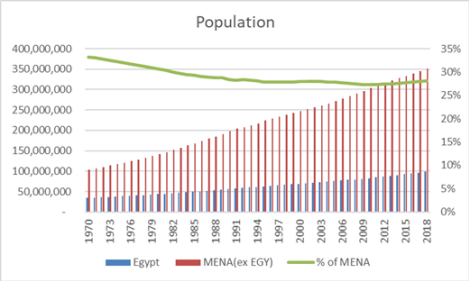

(WorldBank, 2019)

TABLE 1: Model Data

YEAR	FDI_GDP	DOMCRED_GDP	FCAP_GDP	INTSPRD	MILIT_GDP	SHOCKS	TRADE_GDP	WLDFDI_WGDP	X_GDP
1977	0.7276	18.7176	22.3913	7.8467	1.3973	0.0000	52.9519	0.3920	21.5861
1978	2.1481	18.3207	26.9995	8.3283	1.2113	0.0000	53.8394	0.4178	19.9032
1979	6.7494	18.9958	29.3870	6.2975	1.3252	0.0000	69.4643	0.4548	26.4927
1980	2.5302	13.9364	24.6227	4.6792	1.4391	0.0000	73.3830	0.5189	30.5146
1981	3.3998	25.8951	32.0988	5.5542	1.5530	0.0000	74.4596	0.6284	30.9614
1982	1.0615	24.7088	27.3869	5.0417	1.6669	0.0000	64.2020	0.5059	26.3333
1983	1.5824	25.8481	31.4883	3.9563	1.8608	0.0000	57.1429	0.4335	22.9323
1984	2.1464	26.2158	29.2886	7.9470	1.8947	0.0000	52.5316	0.4963	20.5696
1985	3.0153	27.1987	28.7885	8.4348	2.0086	0.0000	46.1126	0.4586	18.2306
1986	2.9511	29.2243	29.7528	6.3780	2.1225	0.0000	36.0544	0.5957	13.8322
1987	2.3426	28.8951	28.5887	4.7390	2.2364	0.0000	35.3398	0.7930	12.6214
1988	3.4019	28.1333	34.1271	5.6252	2.3503	0.0000	52.5974	0.8436	17.3701
1989	3.1446	26.5301	31.1660	5.1061	2.4643	0.0000	50.1299	0.9884	17.7922
1990	1.7078	25.5257	27.2987	4.0068	2.8014	0.0000	52.9228	0.9062	20.3549
1991	0.6767	22.0586	27.0660	8.0486	2.7314	1.0000	62.8444	0.6479	27.4667
1992	1.0966	22.2705	23.2950	8.5426	2.6057	1.0000	59.3098	0.6171	28.3968
1993	1.0584	23.7658	21.0903	6.4596	2.5380	1.0000	55.9278	0.8359	25.8376
1994	2.4201	27.9037	22.8656	4.7996	2.4568	1.0000	50.6286	0.8887	22.5714
1995	0.9940	32.7338	22.5594	5.6971	3.4797	1.0000	50.2451	1.0591	22.5490
1996	0.9404	36.5344	23.9269	5.1714	3.7666	1.0000	46.9486	1.1724	20.7498
1997	1.1354	39.6936	25.7543	6.6490	3.7513	2.0000	43.7382	1.4842	18.8417
1998	1.2684	46.5550	21.3461	7.0715	3.6943	2.0000	41.9276	2.1942	16.2143
1999	1.1744	52.0018	20.8140	7.8467	3.4758	2.0000	38.3615	2.9801	15.0520
2000	1.2370	51.9533	18.9500	8.3283	3.3858	2.0000	39.0179	4.4148	16.2011
2001	0.5223	54.9311	17.7256	6.2975	3.7692	2.0000	39.8104	2.4223	17.4798
2002	0.7364	54.6554	17.8178	4.6792	3.7276	2.0000	40.9871	2.1634	18.3162
2003	0.2863	53.8976	16.3121	5.5542	3.6148	2.0000	46.1796	1.8753	21.7964
2004	1.5896	54.0429	16.3932	5.6500	3.5582	2.0000	57.8199	2.2435	28.2300
2005	5.9938	51.1654	17.9121	5.9167	3.4350	2.0000	62.9526	3.2864	30.3435
2006	9.3435	49.2910	18.7374	6.5833	3.5994	2.0000	61.5185	4.2798	29.9498
2007	8.8735	45.5152	20.8569	6.4083	3.4381	2.0000	65.0779	5.3293	30.2497
2008	5.8314	42.7975	22.2819	5.7417	3.3720	2.0000	71.6806	3.7848	33.0430
2009	3.5514	36.0927	18.9155	5.4833	3.2541	2.0000	56.5534	2.2203	24.9568
2010	2.9173	33.0723	19.2133	4.7750	3.0435	2.0000	47.9364	2.7746	21.3492
2011	-0.2045	31.1549	16.7068	4.2917	2.9925	3.0000	45.2556	3.0625	20.5674
2012	1.0014	27.3884	14.6933	4.3583	2.9068	3.0000	40.7118	2.6177	16.3970
2013	1.4527	26.2224	12.9871	4.6083	2.8199	3.0000	40.3730	2.5634	17.0178
2014	1.5096	25.6067	12.4456	4.7917	2.7640	4.0000	36.9202	2.2532	14.2441
2015	2.0815	26.3164	13.6548	4.7167	2.8032	4.0000	34.8459	3.4157	13.1838
2016	2.4350	34.1349	14.4696	5.7417	2.7704	4.0000	30.2465	3.3353	10.3455
2017	3.1477	28.5200	14.8216	6.0833	2.7265	4.0000	45.1268	2.3252	15.8184
2018	2.7093	25.5480	16.2511	6.0000	2.7100	4.0000	48.2783	1.4023	18.9120

(WorldBank, 2019)

Table 2: Initial Hypothesized Model Descriptive Statistics, 1977-2018 (Annual Data)

	FDI_GDP	FCAP_GDP	INTSPRD	MILIT_GDP	SHOCKS	TRADE_GDP	WLDFDI_WGDP	X_GDP
Mean	2.445	22.220	5.145	2.751	1.500	50.770	1.811	21.323
Median	1.895	21.814	5.000	2.786	2.000	50.187	1.443	20.569
Maximum	9.344	34.127	8.328	3.769	4.000	74.460	5.329	33.043
Minimum	-0.205	12.446	3.654	1.211	0.000	30.247	0.392	10.345
Std. Dev.	2.114	5.918	1.134	0.764	1.348	11.265	1.303	5.819
Skewness	1.780	0.188	0.814	-0.429	0.423	0.354	0.766	0.284
Kurtosis	5.951	1.948	3.218	2.121	2.139	2.349	2.730	2.119
Obs	42	42	42	42	42	42	42	42

Table 3: Least Squares Hypothesized Model Estimation Results, 1977-2018 (Annual Data)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FCAP_GDP(-2)	-0.020	0.132	-0.152	0.880
INTSPRD	0.359	0.233	1.543	0.133
MILIT_GDP(-2)	-2.509	0.705	-3.559	0.001
SHOCKS(-2)	-0.511	0.587	-0.871	0.391
TRADE_GDP(-2)	-0.269	0.134	-2.007	0.053
WLDFDI_WGDP	1.499	0.378	3.964	0.000
X_GDP(-2)	0.543	0.247	2.194	0.036
C	7.662	3.755	2.041	0.050
R-squared	0.505	Mean dependent var		2.495
Adjusted R-squar	0.397	S.D. dependent var		2.149
S.E. of regression	1.669	Akaike info criterion		4.040
Sum squared resi	89.171	Schwarz criterion		4.377
Log likelihood	-72.791	Hannan-Quinn criter.		4.162
F-statistic	4.663	Durbin-Watson stat		0.959
Prob(F-statistic)	0.001			

Table 4: Variance Inflation Factors - Hypothesized Model, 1977-2018 (Annual Data)

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
FCAP_GDP(-2)	0.017	134.784	8.335
INTSPRD	0.054	27.810	1.192
MILIT_GDP(-2)	0.497	58.330	4.273
SHOCKS(-2)	0.344	16.929	7.584
TRADE_GDP(-2)	0.018	702.560	33.252
WLDFDI_WGDP	0.143	10.629	3.358
X_GDP(-2)	0.061	436.514	29.662
C	14.097	202.352	NA

Table 5: Variance Inflation Factors - Adjusted Model, 1977-2018 (Annual Data)

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
FCAP_GDP(-2)	0.013	92.505	5.720
INTSPRD	0.058	27.284	1.169
MILIT_GDP(-2)	0.331	35.586	2.607
SHOCKS(-2)	0.333	14.976	6.709
WLDFDI_WGDP	0.155	10.550	3.332
X_GDP(-2)	0.003	19.015	1.292
C	14.932	196.315	NA

Table 6: Least Squares Adjusted Model Estimation Results, 1977-2018 (Annual Data)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FCAP_GDP(-2)	-0.168	0.125	-1.349	0.187
INTSPRD	0.295	0.295	1.001	0.324
MILIT_GDP(-2)	-1.625	0.363	-4.484	0.000
SHOCKS(-2)	-0.911	0.689	-1.323	0.195
WLDFDI_WGDP	1.434	0.603	2.379	0.023
X_GDP(-2)	0.057	0.069	0.821	0.418
C	6.360	3.952	1.609	0.117

R-squared	0.443	Mean dependent var	2.495
Adjusted R-squar	0.341	S.D. dependent var	2.149
S.E. of regression	1.744	Akaike info criterion	4.108
Sum squared resi	100.400	Schwarz criterion	4.404
Log likelihood	-75.163	Hannan-Quinn criter.	4.215
F-statistic	4.368	Durbin-Watson stat	0.977
Prob(F-statistic)	0.002	Wald F-statistic	4.241
Prob(Wald F-stat	0.003		

Table 7: Least Squares Adjusted Model Estimation Results, 1977-2018 (Annual Data)

Dependent Variable: FDI_GDP
Method: Least Squares
Date: 11/30/19 Time: 17:20
Sample (adjusted): 1979 2018
Included observations: 40 after adjustments
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FCAP_GDP	0.291789	0.057635	5.062338	0.0000
INTSPRD	0.500757	0.259243	1.931614	0.0620
MILIT_GDP(-2)	-1.053312	0.402861	-2.614560	0.0134
WLDFDI_WGDP	1.410026	0.337930	4.172539	0.0002
X_GDP(-1)	0.116359	0.051550	2.257221	0.0307
SHOCKS(-2)	0.913510	0.388712	2.350095	0.0249
C	-10.04886	2.669681	-3.764068	0.0007

R-squared	0.629140	Mean dependent var	2.495317
Adjusted R-squared	0.561710	S.D. dependent var	2.149159
S.E. of regression	1.422817	Akaike info criterion	3.700783
Sum squared resid	66.80550	Schwarz criterion	3.996337
Log likelihood	-67.01566	Hannan-Quinn criter.	3.807646
F-statistic	9.330377	Durbin-Watson stat	1.099349
Prob(F-statistic)	0.000005	Wald F-statistic	15.28143
Prob(Wald F-statistic)	0.000000		

Table 8: Least Squares Adjusted Model Estimation Results, 1977-2018 (Annual Data)

Dependent Variable: FDI_GDP
Method: Least Squares
Date: 12/02/19 Time: 15:11
Sample (adjusted): 1979 2018
Included observations: 40 after adjustments
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FCAP_GDP	0.299759	0.071715	4.179862	0.0002
INTSPRD	0.167291	0.188398	0.887965	0.3812
MILIT_GDP(-2)	-1.126424	0.425620	-2.646546	0.0125
WLDFDI_WGDP	1.327877	0.446336	2.975060	0.0055
X_GDP(-1)	0.136478	0.066202	2.061539	0.0475
SHOCKS(-2)	0.884138	0.727966	1.214532	0.2334
TREND	0.021283	0.099309	0.214307	0.8317
C	-9.117971	3.114044	-2.928016	0.0062

R-squared	0.568066	Mean dependent var	2.495317
Adjusted R-squared	0.473580	S.D. dependent var	2.149159
S.E. of regression	1.559318	Akaike info criterion	3.903230
Sum squared resid	77.80709	Schwarz criterion	4.241006
Log likelihood	-70.06460	Hannan-Quinn criter.	4.025359
F-statistic	6.012198	Durbin-Watson stat	0.916355
Prob(F-statistic)	0.000159	Wald F-statistic	10.47055
Prob(Wald F-statistic)	0.000001		

Table 9: Least Squares Adjusted Model Estimation Results, 1977-2018 (Annual Data)

Dependent Variable: FDI_GDP
Method: ARMA Maximum Likelihood (OPG - BHHH)
Date: 12/02/19 Time: 15:18
Sample: 1979 2018
Included observations: 40
Convergence achieved after 49 iterations
Coefficient covariance computed using outer product of gradients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FCAP_GDP	0.248704	0.120293	2.067479	0.0474
INTSPRD	0.038479	0.253891	0.151557	0.8806
MILIT_GDP(-2)	-0.169935	1.285577	-0.132186	0.8957
WLDFDI_WGDP	0.698350	0.640874	1.089683	0.2845
X_GDP(-1)	0.099025	0.084677	1.169434	0.2514
SHOCKS(-2)	0.445021	0.730418	0.609269	0.5469
C	-6.671833	4.273472	-1.561221	0.1290
AR(1)	1.035898	0.187179	5.534256	0.0000
AR(2)	-0.442728	0.283594	-1.561134	0.1290
SIGMASQ	1.185984	0.299808	3.955817	0.0004

R-squared	0.736648	Mean dependent var	2.495317
Adjusted R-squared	0.657642	S.D. dependent var	2.149159
S.E. of regression	1.257502	Akaike info criterion	3.537476
Sum squared resid	47.43936	Schwarz criterion	3.959696
Log likelihood	-60.74953	Hannan-Quinn criter.	3.690138
F-statistic	9.323984	Durbin-Watson stat	2.276064
Prob(F-statistic)	0.000001		

Inverted AR Roots	.52-.42i	.52+.42i

Table 10: Two-stage Least Squares Adjusted Model Estimation Results, 1977-2018

Dependent Variable: FDI_GDP
Method: Two-Stage Least Squares
Date: 12/02/19 Time: 16:13
Sample (adjusted): 1981 2018
Included observations: 38 after adjustments
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)
Convergence achieved after 17 iterations
Instrument specification: GFCAP_GDP(-3) DOMCRED_GDP(-3) FCAP_GDP INTSPRD MILIT_GDP(-2) WLDFDI_WGDP X_GDP(-1) SHOCKS(-2)
Constant added to instrument list
Lagged dependent variable & regressors added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FCAP_GDP	0.226783	0.057800	3.923575	0.0005
INTSPRD	-0.016448	0.122414	-0.134368	0.8940
MILIT_GDP(-2)	-0.212282	0.345177	-0.614995	0.5434
WLDFDI_WGDP	0.833888	0.293514	2.841054	0.0081
X_GDP(-1)	0.151601	0.095406	1.589004	0.1229
SHOCKS(-2)	0.612630	0.218968	2.797804	0.0090
C	-7.540343	3.804541	-1.981932	0.0570
AR(1)	0.877511	0.156688	5.600356	0.0000
AR(2)	-0.337508	0.184104	-1.833244	0.0771

R-squared	0.791202	Mean dependent var	2.382449
Adjusted R-squared	0.733603	S.D. dependent var	2.089573
S.E. of regression	1.078506	Sum squared resid	33.73210
Durbin-Watson stat	2.120938	J-statistic	13.24785
Instrument rank	23	Prob(J-statistic)	0.507107

Inverted AR Roots	.44-.38i	.44+.38i

Table 11: Final Adjusted Model Estimation Results, 1977-2018

Dependent Variable: FDI_GDP
Method: Two-Stage Least Squares
Date: 12/02/19 Time: 16:25
Sample (adjusted): 1981 2018
Included observations: 38 after adjustments
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)
Convergence achieved after 16 iterations
Instrument specification: GFCAP_GDP(-3) FCAP_GDP WLDFDI_WGDP X_GDP(-1) SHOCKS(-2)
Constant added to instrument list
Lagged dependent variable & regressors added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FCAP_GDP	0.229850	0.056377	4.077019	0.0003
WLDFDI_WGDP	0.789588	0.295484	2.672183	0.0119
X_GDP(-1)	0.148934	0.093753	1.588575	0.1223
SHOCKS(-2)	0.581023	0.231864	2.505882	0.0177
C	-8.116993	3.358040	-2.417182	0.0217
AR(1)	0.892010	0.154993	5.755151	0.0000
AR(2)	-0.340652	0.186033	-1.831135	0.0767

R-squared	0.790335	Mean dependent var	2.382449
Adjusted R-squared	0.749755	S.D. dependent var	2.089573
S.E. of regression	1.045298	Sum squared resid	33.87212
Durbin-Watson stat	2.104163	J-statistic	9.561566
Instrument rank	16	Prob(J-statistic)	0.387129

Inverted AR Roots .45-.38i .45+.38i