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Financial Development and Foreign Direct Investment: The Case of Middle East and North African (MENA) Developing Nations

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Abstract

This research paper studies the likely effect of financial development on inward Foreign Direct Investment (FDI) in Middle East and North African (MENA) nations. Making use of yearly data for ten MENA developing countries from 1988 to 2015, the study finds significant positive influence of financial development on overseas investors' investment decision. The empirically established FDI determining factors such as market size, development level, trade liberalisation, macroeconomic stability, trade agreements, bilateral investment treaties and infrastructure & skilled labour availability, were also taken into consideration. Moreover, to sift purely the effect of financial development devoid of any time variant phenomenon equally affecting all the MENA nations I have also controlled for a time trend. Hence, it is expected that the results of the research shall be free of any omitted variable bias. Using various proxies for financial development through random effects panel estimation method the findings of the study suggests that financial development is a robust predictor of FDI inflows in the MENA region.

Keywords: *Financial Development, FDI, MENA Countries and Panel Data.*

Introduction

The investment made by an investor in a firm doing business abroad to acquire a resilient long-term tangible control in the operations of the entity is termed as Foreign Direct Investment (Wurgler, 2000; Shah, 2016b). International Monetary Fund (IMF) defines foreign direct investment (FDI) as a type of investment which is undertaken for acquiring durable/lasting stakes in businesses functioning beyond the investor's home country (IMF, 1993). When 10% or more investment is received from an overseas investor intending to manage the firm, it is known as FDI (World Bank, 1992).

FDI is expected to play a dynamic role in industrial technological progress and economic growth of a nation (UNCTAD, 2007; Shah 2009). It is an important and major constituent of financial resources flowing to the developing countries (Lin & Miyamoto, 2012). Especially, post 2009 recession it is becoming the chief external source of foreign financing in developing nations (Korgaonkar, 2012; Shah & Faiz, 2015). In the Middle East and North Africa (MENA) countries FDI is on a constant decline since 2008, in essence depriving them of this vital possible source as well (World Bank, 2016). Therefore, it is imperative for academics and researchers to keep exploring the factors that influence investor's overseas investment location choice especially in MENA developing countries.

The magnitude of activities and size along with the efficiency of the financial markets and their intermediaries are usually used as indicators of financial development (Cihak, Demirguc-Kunt, Feyen, & Levine, 2013). The key part that financial development (FD) play, being the essential constituent, in the growth mechanism of a developing nation is amply acknowledged by academics and empirical researchers (Hermes & Lensink, 2003). However, in the developing countries investigating the FD and FDI nexus came to the fore only after the considerable decline in FDI to them due to the recent financial slowdown

and recession in the developed nations (Shah, 2016a). According to the World Bank, the only way to develop private sector and reduce poverty in developing countries is by attracting FDI and engendering small business growth (Durham, 2004). Availability of an established financial structure accompanied by the presence of an effective financial and credit amenities shall assist overseas investors particularly in the services sector (World Economic Forum, 2015). Well-known advantages of financial development are: efficient resource channelling, risk diversification and pooling, reducing issues arising from information asymmetry, mobilising savings, trade facilitation, hedging, managers monitoring through corporate control and facilitating the exchange of services and goods (Dutta & Roy, 2011; Shah, 2011b). Hence, in developing and emerging markets financial sector development is crucial for the growth and expansion of private sector and enhancing inward FDI.

Five major FDI determinants are: market size of a country, its development level, openness of the economy, infrastructure availability and its skilled human capital (Shah, 2012b). Other supporting factors effecting inward FDI include political stability, double taxation treaties, trade agreements, macroeconomic stability, bilateral investment treaties and the health of domestic governing institutions (Shah & Qayyum, 2015). The current study explores the role of financial development in attracting FDI to MENA region for twenty eight years i.e. from 1988 to 2015 by using random effect panel estimation technique.

Since, early 1990s MENA countries receive less FDI inflows as compared to other developing regions and it has worsened from 2008/2009. Different researchers like El-Wassal (2012), Rogmans and Ebbers (2013), Zenasni and Benhabib (2013) and Asongu (2015) tried to find the link between FDI and financial development in some of the MENA economies by using different variables like broad money and domestic credit provision to private sector, etc. This paper contributes to literature by using a much comprehensive set of six proxy measures of financial development for the first time in MENA countries. These include two principal stock market growth measures that are, the number of total companies listed on the domestic stock exchanges and their aggregate market capitalisation. These two shall provide the extent of equity capital that new companies can generate from the stock markets. Moreover, they also shed light on the financial instruments available, their trading frequency and settlements timing. Furthermore, three proxies are employed to gauge the degree of banking sector progress. Broad Money or liquid liabilities as a percentage of GDP is utilised for the financial intermediaries ability to mobilise capital and the relative size of financial sector vis-à-vis the economy (Deichmann, Karidis, & Sayek, 2003). To gauge entrepreneur's access to funds in the host economy, banking sector provision of domestic credit relative to GDP is used. This proxy illustrates the ease of obtaining finance by a company or entrepreneur with an appealing project (Baltagi, Demetriades, & Law, 2009). The overall local credit offered to private sector in proportion to GDP is used for the probable investment prospects, likely possibilities of raising funds and conceivable funding opportunities for fresh entrants to the economy (Portes & Rey, 2005). Presuming that all these five proxies usually wield a positive effect on an economy's financial growth and expansion their average is also used (Soumaré & Tchana, 2015).

Research Question

- Does financial development influence investors' location choice in the MENA countries?

Research Objectives

The major research objectives are:

- To find out the effect of financial development on FDI into MENA countries
- To identify the primary movers of FDI among the five FD proxies and their composite used to represent financial development in these countries.
- To find the other FDI driving factors in MENA.
- To suggest possible measures that may enhance FDI inflows in MENA, deduced from the findings of the research work.

Purpose of the Study

Rigorous financial, monetary and commercial systems operating in an economy buoy up overseas investors. The present research work is intended to evaluate the effect of financial development on FDI into the MENA countries.

Limitation/Scope of the Study

This study considers only ten developing countries of the total twenty MENA member nations for 28 years, that is, from 1988 to 2015. Therefore, the findings of the study are applicable only to Algeria, Egypt, Iran, Jordan, Lebanon, Libya, Morocco, Oman, Syria and Tunisia for the time considered. Therefore, prior to any generalisation the future researchers shall make appropriate adjustments for the socioeconomic conditions of economies included in their samples.

Research Hypothesis

H₀: Financial development doesn't affect FDI to MENA region.

H₁: Financial development significantly affects FDI into MENA region.

The rest of the paper continues in the following manner. Literature review is given as part two, research methodology as three, empirical issues as four, results and findings as five and the last one i.e. six concludes the paper.

Literature Review

This part summarises the previous empirical work done on FDI determining variables. The literature review contains two parts the first one covers the major and auxiliary factors influencing inward FDI, whereas, the second one concentrates primarily on financial development.

FDI Motivators

Several empirical research works are conducted to explore the association between FDI, and its primary determinants (Shah, 2017b). This subsection summarises some of them concerning the impact of market size, development level, openness, human capital, infrastructure, macroeconomic stability etc.

Blonigen (1997) and Zheng (2009) found exchange rate to be negatively affecting inward FDI. Borensztein, Gregorio and Lee (1998) used 69 countries data from 1970-1989 and concluded that FDI promoted growth but only in the countries with a certain threshold level of human capital. Kinoshita and Campos (2006) found trade openness, agglomeration and institutions to be major FDI determinants in a panel of 25 transition economies from 1990-1998. Blomström and Kokko (2003) explored FDI-human capital relationship, and found that host economies having highly skilled human capital were successful in attracting numerous technology intensive foreign firms, which led to further labour skills development. However, nations having weaker conditions experienced lesser FDI inflows and multinational corporations (MNCs) entering there usually used modest technologies which had little or no contribution in improving local skills. Nonnenberg & Mendonça (2005), analysing 38 developing countries for 1975-2000, found strong association between FDI, level of schooling, openness of the economy and inflation (Shah, 2011f). Krogstrup and Matar (2005) investigating FDI determinants in MENA region concluded that despite the surge of FDI to the developing countries since 1990 except Jordan, Tunisia and Morocco, MENA received a very insignificant slice of aggregate FDI flowing to the developing nations.

Alsan, Bloom and Canning (2006) analysed panel data for 74 developing and industrialized countries from 1980-2000 and said that FDI inflows were positively and strongly influenced by life expectancy in low and middle income countries. Asiedu (2006) using a panel of 22 Sub-Saharan African countries for 1984-2000 concluded that countries having bigger markets, abundant natural resources, educated human capital and relatively open economies attracted more FDI (Shah, 2015). Oladipo (2010) investigating factors effecting

inward FDI in Nigeria from 1970-2005, found market size; human capital and degree of export orientation to be very important for foreign investors (Shah & Khan, 2016). Anyanwu (2012) knowing that FDI flows to Africa were always less as compared to rest of the world investigated factors causing FDI flows into 53 African countries from 1996-2008. It was found that market size, human capital, trade openness, foreign aid, agglomeration and natural resource exploitation has a positive impact on inward FDI.

Financial Development

The variable of primary interest of the study i.e. financial development of the host country influencing investors' location choice is discussed in this subsection. Financial sector is the set of instruments, institutions and markets concerning reducing costs of information acquisition, contracts enforcement and transaction execution. Countries having developed financial systems enjoy sustained periods of growth. According to literature, FDI positively effects economic growth of a country, but this positive relation depends on absorptive capacities of the economy, particularly financial development. According to Alfaro, Chanda, Ozcan and Sayek (2004) after debt crisis in 1980's, emerging markets turmoil in 1990's, the bubble burst in 2000, and the 2009 recession, attitude of developed countries for outward FDI has changed. FDI is expected to help countries in their development efforts. It is motivated by lower costs and higher efficiency of host country (Shah, 2013b). While from perspective of the host country, FDI benefits includes improved utilization of resources, labour force training etc. According to them both developed and developing nations formed investment agencies and promoted fiscal and financial incentives policies, which could be effective in attracting FDI. They argued that absence of developed local financial markets could limit the ability of economy to benefit from FDI.

Omran and Bolbol (2003) exploring FDI in Arab nations from 1975-1999 supported the hypothesis that if Arab countries wanted to attract FDI, their domestic financial system should be reformed. Zakaria (2007) found little evidence that development of domestic banks causes FDI. Nasser and Gomez (2009) utilising banking sector and stock market variables as measures of financial development for fifteen South American economies from 1978-2003 found by pooled OLS that both the banking sector and stock market variables are clearly significant positive determinants to inward FDI. Kinda (2010) analysing 77 developing countries through micro company level data found that investment environment related restrictions like financing constraints, restricted FDI and discouraged it. Mahmoud (2010) probed the effect of financial development on inward FDI in 62 countries from 1996-2007. The findings confirm that native financial progress act as a catalyst in attracting FDI to low income, non OECD and lower middle income economies. Dutta and Roy (2011) using domestic credit to banking as well as private sector for a panel of 97 countries underlined the fact that financial development influences FDI inflow into an economy. Fakhreddin, Nezakati and Vaighan (2011) studied the factors affecting FDI in Malaysia from 1974-2009. They determine that native investment, trade openness, domestic credit to private sector and GDP positively and significantly influenced foreign direct investment into Malaysia.

Adeniyi and Omisakin (2012) examined causal linkage between FDI and financial development in five Economic Community of West African States (ECOWAS) from 1970-2005. By using a number of financial deepening/development measures i.e. total liquid liabilities, domestic credit provided to private sector and domestic credit by banking sector as percentage of GDP. The authors concluded that due to heterogeneity in these countries' economic structures, different measures of financial deepening were found important in different countries, therefore relevant components must be employed in specific countries. Ezeoha and Cattaneo (2012) examined effect of financial development, institutional and macroeconomic factors on FDI flows in 30 Sub-Saharan African (SSA) countries for 1995-2008. FDI flows to SSA region increased in 1990s. Nonetheless, bulk of FDI is natural resource seeking and little progress is made in attracting market and efficiency seeking FDI. Therefore, Africa is facing the challenge of formulating policies for attracting all types of FDI. Korgaonkar (2012) using data for 78 countries from 1980-2009 evaluated the effect of a healthy financial system on FDI inflow. The research findings proposed that inward FDI dwindles into the economies with underdeveloped stock markets, ill functioning banking sector and inefficient financial intermediaries.

There are few studies exploring FDI flows in MENA, hence this paper focusing on MENA countries, and on FDI determinants that were important but were not given much attention before e.g. financial

development will shed some light on many unanswered questions. Financial development can impact FDI through: liquidity channel, allocative channel, contract of financial enforcement channel and reduction in transaction cost channel. MENA nations have underdeveloped financial systems with inadequate financial innovation, which probably is one of the primary reasons for the limited multinational presence.

Research Methodology

Research means searching for nouvelle knowledge or new facts apropos existing knowledge (Shah, 2010). It uses scientific methods in a logical manner to get the answers for the undiscovered realities. The hidden truths are brought out and added to the existing set of literature. Thus, the way in which research is carried out is known as research methodology (Shah, 2012a). Research provides us with the findings on the phenomenon explored, giving us more knowledge about the subject and further our insight of the question under study.

Population and Sample

Population of the study consists of the 20 countries included in the Middle East and North Africa region by World Bank. The individual countries are: Yemen, Algeria, West Bank and Gaza, Bahrain, United Arab Emirates, Djibouti, Tunisia, Egypt, Syria, Iran, Saudi Arabia, Iraq, Qatar, Israel, Oman, Jordan, Morocco, Kuwait, Libya and Lebanon. Ten MENA developing countries namely: Tunisia, Algeria, Syria, Egypt, Oman, Iran, Morocco, Jordan, Libya and Lebanon are included in the sample for the current study. Data for twenty eight years from 1988 to 2015 for these economies is collected. Some of the economies like Bahrain, Djibouti, Iraq, West Bank and Gazza and Yemen were not included due to non-availability of complete data for all the variables for the time period under study. United Arab Emirates, Israel, Saudi Arabia, Kuwait and Qatar are excluded because they are considered as developed economies by the World Bank due to their relatively higher GDPPC.

Empirical Estimation Model

The introduction and the literature review, provides us with enough rationale to set an empirical estimation model that will help to gauge the effect of financial development on FDI inflows.

$$FDI = f \left[\begin{array}{l} \text{Market Size, Development Level, Openness, Human Capital,} \\ \text{MacroStability, Infrastructure, Trade Agreements,} \\ \text{Bilateral Investment Treaties and Financial Development} \end{array} \right] \quad (1)$$

Here FDI is used as the dependent variable and all the other variables are the explanatory variables. All of them are explained in the following subsection. Appropriate proxies for all the independent variables are applied in equation two and it is log linearized to reduce the expected heteroscedasticity.

$$\ln FDI_{it} = \alpha_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDPPC_{it} + \beta_3 \ln Trade_{it} + \beta_4 \ln HK_{it} + \beta_5 \ln Inflation_{it} + \beta_6 \ln Tele_{it} + \beta_7 \ln TA_{it} + \beta_8 \ln BITen_{it} + \beta_9 \ln FD_{it} + \beta_{10} Time Trend_{it} + \epsilon_{it} \quad (2)$$

Here ln is used for natural logarithm. i is used to represent the ten sample countries and t for the time period of twenty eight years. GDP is used for market size, GDPPC for development level, trade for openness of the economy, HK for human capital, inflation for macroeconomic stability, TELE for infrastructure availability, TA for trade agreements, BITen for the enforced bilateral investment treaties and FD for financial development. All the variables used in the study and their proxies are summarised in table 1, followed by the explanation and rational for using each one of them.

Table 1: Variable – Proxies and Sources

Variable	Proxy Used	Sources
Foreign Direct Investment	FDI Stock (LnFDIst)	UNCTAD FDISTAT
Market Size	GDP (LnGDP)	WB, WDI 2016
	Population (LnPop)	WB, WDI 2016
Development Level	GDPPC (LnGDPPC)	WB, WDI 2016
Openness	Trade (LnTrade)	WB, WDI 2016
Human Capital	Average Years of Schooling	Barro & Lee Data Set (2015)
	Education Attainment (Primary, Secondary & Tertiary)	
	Gross Enrolment (Primary, Secondary & Tertiary)	WB, WDI 2016
Macroeconomic Stability	Inflation	WB, WDI 2016
	Exchange Rate	Pen World Table 8
Financial Development	Total Listed Companies (TLC)	WB, WDI 2016
	Market Capitalization of Listed Companies (LnMCLC)	
	Broad Money, Liquid Liabilities	
	Domestic Credit to Banking Sector (LnDCBS)	
	Domestic Credit to Private Sector (DCPS)	
	Financial Development	

Dependent Variable - Foreign Direct Investment

The stock of Foreign Direct Investment (FDI) is used as the dependent variable. Its data was collected from UNCTAD FDI STAT for each of the economies included in the sample. The World Bank says that FDI is the investment made by overseas investors to get management control by acquiring at least ten percent of shares in a firm doing business in economies other than that of the investor (Shah, 2011c). The stock of FDI includes retained earnings, the market value of the stocks bought by the investor and their total reserves. This also contains the debt that the parent owes to the subsidiary or the associate. In case of the branches, the stock of FDI is the total worth of fixed and current assets as well as investments of the parent in the branch (Shah, 2013a). The payments expected from the parent and third party liabilities are deducted from this value (Fischer, 2000, page 551).

Independent Variables

The independent variables used in the current study to analyse the variability in the dependent variable are discussed one by one below.

Market Size

Market size is the number of individuals in a particular market who are potential purchasers and/or payers for a product or service. Proxies used for market size are gross domestic product (GDP) and Population of the host country. GDP determines the economic size of the host country. Bigger markets are expected to provide more opportunities for sales (Müllner, 2016). So, a positive relation is assumed between FDI inflows and the market size.

Development Level

Different proxies such as gross fixed capital formation, income per capita, and per capita GDP are used as proxies for measuring development level of a country (Shah, 2011d). The current study uses GDP per capita as proxy of development level. GDPPC at times is employed as an indicator of the resident's living standard. It demonstrates the performance of one nation state in comparison to others. A growing per capita GDP indicates rising productivity of the work force, economic expansion and higher purchasing power of the populace (Shah, 2012c). Hence, a positive connection is assumed between FDI inflow and development level.

Openness

Trade volume as a fraction of GDP as well as imports and exports of a host country are used as proxies for openness. Aggregate commerce is the total exchange of services and commodities between people from various countries (Shah & Samdani, 2015). Higher trade represent relative economic openness of the FDI host nation and its commercial and industrial integration with the world (Shah, 2011e). Assuming that with increasing globalisation of the world, nations are becoming more interdependent (Shah, 2017c), thus, a positive rapport is assumed between FDI and Openness.

Human Capital

Different proxies like life expectancy, income per capita, average years of schooling, literacy rates at primary, secondary and tertiary levels and school enrolment ratios etc. are used for measuring a nations human capital (Shah, 2014a). In current research, education attainment and enrolment at the three different levels are used as alternate proxy measures of human capital to find its effect on FDI. Multinationals require the presence of trained and educated labour force for the better utilisation of their technology and management practices (Morita & Sugawara, 2015). Consequently, a positive rapport is expected.

Infrastructure Availability

Multinationals need a certain threshold level of infrastructure availability for the optimum exploitation of their imported technology (Shah, 2012d). Tele density is used as a proxy for infrastructure in the current study. Telecommunications infrastructure fosters and engenders progressive network externalities. Unlike bridges, roads, transit routes, airports and sewage systems that get congested with increasing number of consumers. In telecommunication infrastructure the value derived by current users multiplies with new entrants. This characteristic distinguishes it from the other kinds of public infrastructure (Shah, 2014b). The expected return on investment for the MNCs shall thus be higher in the economies ensuring tele-communications infrastructure functionality and availability. Mollick, Ramos-Duran and Silva-Ochoa, (2006) found telephone lines to be very important for FDI.

Macroeconomic Stability

Macroeconomic stability is proxied by inflation, exchange rate and budget deficit etc. of the host country. Dabla-Norris, Honda, Lahreche and Verdier (2010) suggest that economies with low inflation receive statistically significant and positive inward FDI. Macroeconomic uncertainty as measured by the real interest rate and exchange rate volatility signals financial distress causing the flight of capital (Shah, 2011a). Importantly, though high inflation at times lead to short term positive effects on output growth, still, macroeconomic uncertainty deters inward FDI, especially in developing countries. Inflation and exchange rate are used as alternate measures of macroeconomic stability and a significant sway of the two on overseas investors is assumed.

Trade Agreements

The third generation of trade agreements (TA) comprehensively emphasises detailed obligations related to trade and investment liberalisation (Shah, 2017a). These commitments are expected to cause an increase in investment. The directly expected effect of TAs on FDI is the immediate response of multinationals to the enactment of the several investment promoting measures mentioned in the agreement such as abolishing legal and regulatory barriers in global capital movements and permitting the overseas investors participation in local financial markets to acquire domestic firms. The enactment of such investor's friendly provisions shall normally foster FDI activity. The recent trade agreements have led to new sector openings, relaxing foreign proprietorship constraints, and changing or abolishing local content requirements. Assuming, these factors to be beneficial to multinational activities in the host a positive association is expected.

Bilateral Investment Treaties

The first bilateral investment treaty (BIT) was signed between Pakistan and Germany in 1959. A bilateral investment treaty establishes the rules and regulations for overseas investor operations in a foreign country. It usually contains clauses ensuring their investment security and details on the concessions reciprocally granted to each other investors. In case of expropriation or confiscation of their properties they can file a complaint in the international council for settlement of investment disputes. On top of the relaxations associated with assets protection and MNCs operations, BIT's are cultivating a business friendly global environment for the relocation, repatriation and worldwide growth of FDI. These treaties are valuable and beneficial to both the host and the foreign direct investors. The significance of the others factors that influence the investors' investment decision apart; investment security is vital among them particularly in the developing world (Shah, 2011b). For this reason, it is anticipated that a BIT shall positively affect inward FDI.

Primary Explanatory Variable - Financial Development

The retail and wholesale financial services offering bodies collectively represent an economy's financial sector. They facilitate the financial transactions between other financial institutions, individuals and business consumers. The improvement in quantity, efficiency and quality of the intermediary services leads to financial development. Moreover, competitive intensification of financial services, expansion in the variety of existing financial facilities, growth in the range of monetary institutions functioning in the economy, strengthening and enhancement of the laws governing the financial sector etc. also cause financial development (Donaubauer, Neumayer & Nunnenkamp, 2016). It is the primary explanatory variable of the paper and six proxy measures are used to gauge its effect on FDI inflows in MENA region.

Total Listed Companies

The firms having listed shares by the year end on the local stock exchanges are counted in the total listed companies. It includes both the foreign and local companies. Unit trusts, investment funds and firms with the primary function of holding shares of other business concerns are excluded from the list irrespective of their legal status. Firms with multiple share categories are counted once. Only business concerns listed on the stock exchange are included. It is used for the ease of access into the financial market available to new entrants and a positive influence on FDI inflows is assumed.

Market Capitalisation of Listed Companies

The total market value of the outstanding shares of the listed companies is known as their market capitalisation. It is calculated by multiplying the several share classes of firm's shares on their respective trading value per unit. Annual yearly data is obtained in dollar terms for comparability by taking the same year total capitalisation and the end of the year foreign exchange rates. Like the previous proxy it is included to measure the extent of stock market sophistication and competition in the FDI host economy.

Broad Money, Liquid Liabilities

Monetary financial statements and cash that are used for recording money supply is the soul of an economy's financial system. Three different terms are used for the same category such as M3, broad money or liquid liabilities. Total central bank deposits and currency (M0), as well as electronic currency and transferable deposits (M1) are included. Saving and transferable foreign exchange deposits, securities repurchase agreements (M2) and deposit certificates, traveller's checks, mutual fund shares, residents held market funds and commercial papers are part of liquid liabilities. Broad money also includes demand deposits excluding the federal government ones and the quantity of domestic currency circulating out of the banks. Defined in whatever manner, money deposits are the banking system liabilities. It is different from other liabilities of the bank as it acts as the nation's medium of exchange, a store of monetary value as well as a unit of account.

Though, it's a gauge of the overall monetary size of the domestic market and its ability to mobilise funds yet increase in money supply shows future growth in prices which as explained earlier in macroeconomic stability may deter foreign investors.

Native, Domestic or Local Credit Provided by the Banking Sector

Domestic or local credit provided to private sector by banks refers to monetary capital channelled by the financial intermediaries from the savers to the private sector investors. The funds made available exclude state/central/federal bank deposits. The capital is generated from loans, non-equity securities purchase, accounts receivables and other trade credits etc. establishing a repayment claim. In certain economies such claims are inclusive of public enterprises credit. This gives an indication of the possible funds the firms can generate from the host economy as leverage financing. Credit is also a vital linkage in currency transmission for financing production, capital formation and consumption. These factors are responsible for enhancing commercial activities. Therefore, it is assumed to positively affect inward FDI.

Domestic Credit to Private Sector

Local credit to the private sector denotes monetary fund's given to private sector by fiscal bodies including financial authorities and consumer banks, plus other commercial institutions subject to data availability. This includes institutions that entertain saving deposits but not admit transferable ones. The other financial corporations are: money lenders, pension funds, insurance corporations, leasing and foreign exchange companies. Tapping the investment initiatives from the private sector is critical for a firm's operations in an economy. Parallel to efforts of the public sector, private venture investments, particularly in competitive liberal markets remarkably contributes to growth potential. Private markets create high paying jobs, demanding and causing greater labour productivity. Especially, when the government plays a complementary role of service provision, funding and supportive regulations, private investment initiatives normally engenders the business conditions that facilitate multinationals by providing superior human capital and supportive financial infrastructure. In this paper domestic credit provided to the private sector is used as a measure of financial depth for assessing the possible effect of the local credit sector on FDI and a positive effect is expected.

Financial Development

Various measures are used for stock market size and each one of them provides us with a distinct country rankings. Overall economic progress goes hand in hand with financial market development. Healthy financial structures provide readily available information on individual firms and the overall economy, which by lowering transaction costs and improving resource allocation subsequently boosts trade and industry growth (Shah & Khan, 2017). Resilient stock markets and efficient banking structure, both, enhance economic growth. It is the key to reducing poverty in the developing nations. In the low income, less developed countries commercial banks lie at the heart of the financial system and dominates it. As economies progress and the financial sector expand local stock markets become more dynamic, effective and active relative to consumer banks. Liberal economies having a thorough legal system, robust macroeconomic policies and ensures the protection of shareholders wealth appeal to investors and consequently foster financial markets growth.

Recent research on stock market development shows that increased financial integration and modern communications technology have caused a stronger presence of financial firms around the world, ensued cross-border capital flows and the migration of stock activities to global exchanges. A lot of companies from the emerging markets now cross-list on worldwide exchanges for greater liquidity (traded shares) and lower cost of capital. However, this also implies that emerging economies stock exchanges may not have enough financial activity to sustain them. Therefore, putting pressure on them to rethink and reconsider their mode of operations.

Assuming that the five financial development measures mentioned above are equally important proxies to gauge the size and strength of the host economy's financial advancement a collective average of the five is also used to show their collective effect on the foreign direct investors and a positive rapport is expected.

Empirical Issues

The issues related to the data first need to be understood and resolved before carrying out the empirical estimations.

Descriptive Statistics

A brief description of the salient features of the data, primarily the measures of central tendency and variability are given over here. They provide the summary of the historical behaviour of the explanatory variables which is of great help for carrying out critical analysis. Measures of central tendency include mean, median and mode, while the measures of variability include variance, minimum and the maximum values for each of the variable used in the results and analysis section. The descriptive statistics are provided as table 2.

Table 2: Descriptive Statistics

Variables	No. of Observation	Mean	Standard Deviation	Minimum	Maximum	Median
FDI Stock	280	21.3665	1.9832	12.2308	24.6453	21.5998
GDP	280	23.8993	0.9585	21.7232	26.3795	23.8063
GDPPC	280	7.6367	0.7689	5.4507	9.6339	7.5051
Trade	280	4.1861	0.3808	2.6928	5.0476	4.1616
Inflation	280	1.9183	1.1156	-1.6965	6.1907	1.9914
TeleM	280	13.6572	1.5467	9.7577	17.7972	13.4501
GSEP	280	4.5984	0.1631	3.8337	4.8726	4.6187
TA	280	0.7709	0.6410	0.0000	2.0794	0.6931
BITE _n	280	1.7329	1.0908	0.0000	3.7377	1.6094
TLDC	280	4.5474	1.3394	0.0000	7.0458	4.5643
MCLC	280	33.8179	43.8625	0.0000	298.0435	18.4359
DCBS	280	69.87061	37.2091	24.3232	191.1657	71.1602
DCPS	280	40.9508	22.8783	3.9074	93.1159	37.2029
M3	280	68.3491	23.1251	15.7304	141.935	60.4018
FD	280	31.5954	19.5386	10.5528	100.1117	31.1379

Multicollinearity

Correlation and Variance Inflation Factor (VIF) are used to detect the existence of problematic multicollinearity in the independent variables.

Correlation

Correlation matrix shows the correlation of the dependent and all the independent variables with one another. The variables exhibiting a correlation of more than 90% shows the existence of problematic multicollinearity. These shall not be included in the same regression to avoid the issue of possible extreme multicollinearity (Shah & Afridi, 2015). Table three shows that most of the correlations are less than 80% which means there is no need to control for multicollinearity in regressions involving these variables.

Variance Inflation Factor

The mean Variance Inflation Factor (VIF) of 2.91 also confirms the inexistence of problematic multicollinearity as it is less than the conventional yard stick of $VIF > 10\%$.

Table 3: Correlation Matrix

No	Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1.	FDI Stock	100														
2.	GDP	52	100													
3.	GDPPC	12	05	100												
4.	Trade	-25	-86	31	100											
5.	Inflation	-16	42	-24	-45	100										
6.	TeleM	57	88	25	-61	29	100									
7.	GSEP	17	06	67	26	11	28	100								
8.	TA	79	16	17	-02	-51	20	-01	100							
9.	BITEn	87	25	25	05	-46	43	22	78	100						
10.	TLDC	30	53	-40	-53	27	60	-08	-10	28	100					
11.	MCLC	-33	-45	05	49	-32	-17	09	-33	01	18	100				
12.	DCBS	04	-44	-42	35	-24	-30	-20	04	20	27	49	100			
13.	DCPS	-02	-66	43	81	-69	-39	29	21	35	-35	59	48	100		
14.	M3	-24	-53	-39	44	-22	-35	-23	-23	-01	27	70	89	47	100	
15.	FD	-18	-60	-15	58	-40	-34	-05	-13	14	16	84	87	71	94	100

Heteroscedasticity

Heteroscedasticity means that the variance in error term is not constant (Shah & Ali, 2016). Breusch-Pagan / Cook-Weisberg test is performed to detect heteroscedasticity. It tests the null hypothesis of constant variance or homoscedasticity, against the alternate hypothesis that variances are not constant or heteroscedastic. The test results for the dependent variable shows the existence of heteroscedasticity with $\text{Chi}^2(1) = 105.40$ and Probability $> \text{Chi}^2 = 0.0000$. Heteroscedasticity was also found in the explanatory variables with the following statistics $\text{Chi}^2(9) = 358.94$ and Probability $> \text{Chi}^2 = 0.0000$. The null hypothesis of constant variance can easily be rejected in both the cases hence there is a need to control for heteroscedasticity in the regression analysis.

Specification Tests

The sample consists of ten countries for twenty eight years therefore the data is arranged in a panel form. Hausman (1978) specification test was performed to choose the appropriate panel estimation technique between the fixed and random effect.

Hausman Test

H_0 : Difference in coefficients not systematic

$$\text{Chi}^2(6) = (\mathbf{b} - \mathbf{B})' [(\mathbf{V}_b - \mathbf{V}_B)^{-1}] (\mathbf{b} - \mathbf{B}) = 5.40$$

Probability $> \text{Chi}^2 = 0.4935$

The null hypothesis cannot be rejected therefore random effect panel estimation method can be used in the regressions.

Results and Analysis

The purpose of the research study is to find the possible role of financial development in influencing investors' location choice in the developing countries from MENA region. As evident from the regressions in table four market size exert a significantly positive effect on FDI. On the contrary development level, trade openness, human capital and trade agreements despite their recognised importance in the literature fail to influence overseas investors. This result contradicts with the earlier findings in the literature which shows positively significant link of the four variables with FDI.

Multinationals revulsion to macroeconomic disorder is evident from the consistently negative significant coefficient of inflation. The close rapport of the tele density with FDI is also manifested through their statistically significant positive effect on FDI. This shows the importance of these two factors for multinationals in the MENA states. Moreover, an enforced bilateral investment treaty also helps in reducing the foreign investor's scepticism of the host economy in term of expropriation and loss of property and lures them to invest.

The coefficients for the trade agreements are altogether insignificant. This is probably due to the fact that while theoretically the transition mechanism is straightforward in a trade agreement, substantial increases in FDI flows can only materialize if the most important sectors are not left out of the liberalisation provisions and the relevant schedules are successfully fulfilled.

Table 4: Empirical Results for Conventional FDI Determinants with Random Effects Panel Method

Variables	Proxies	1	2	3	4	5	6	7	8
Market Size	Ln GDP	1.7091*** (0.3013)	1.2712*** (0.4704)	1.3103*** (0.3429)	1.0533*** (0.3096)	0.0994 (0.2098)	0.0610 (0.1799)	0.1511 (0.1512)	1.8652*** (0.7104)
Development Level	Ln GDPPC		0.7704 (0.9312)	0.7385 (0.7632)	0.5866 (0.7291)	0.7019 (0.6243)	0.7424 (0.6248)	0.7502 (0.5928)	-0.0629 (0.3199)
Openness	Ln Trade			1.6555 (1.1047)	1.5809 (0.9916)	0.7296 (0.7853)	0.7505 (0.8289)	0.7494 (0.7521)	2.2551 (1.6362)
Marco Economic Stability	Ln Inflation				-0.3757** (0.1686)	-0.3632** (0.1826)	-0.3644** (0.1853)	-0.3604** (0.1665)	-0.0867 (0.1633)
Infrastructure Availability	Ln Tele Mobile					0.4257*** (0.1379)	0.4150*** (0.1056)	0.4926** (0.2879)	0.4801*** (0.1694)
Human Capital	Ln GSEP						0.2629 (1.1356)	-0.3628 (1.1277)	-0.5715 (0.7478)
Trade Agreements	Ln TA							-0.7017 (0.5762)	-0.2458 (0.4184)
Bilateral Investment Treaties	Ln BIT Enforced								1.1221*** (0.2318)
Coefficient of Determination R ²		46.23%	49.82%	51.07%	52.65%	56.98%	57.19%	57.62%	60.91%
Number of Observations		280	280	280	280	280	280	280	280

*** Indicates significance at 1%, ** at 5 % and * at 10% level respectively. All the regressions are robust to heteroscedasticity.

The eighth regression in table four will also act as a baseline model for testing the possible influences of the financial development related proxies. The variable of primary interest, financial development exhibits mix results in table five. Two of the proxies, that are, total capitalisation of the listed companies and broad money are insignificant whereas the remaining ones have a positive sway on foreign investors. In table five the first model displays that as the number of listed companies in an economy increases so does the presence of multinationals. Domestic credit to banking sector (model ten) and domestic credit to privates sector (model eleven) proxying the possibilities of local credit availability are both positively affecting investors from abroad. These results are consistent with previous studies which also show FD as an important determinant of FDI inflow to a country. Moreover, trade openness and trade agreements which were insignificant earlier in table four now wield a substantial positive effect in some of the models. Finally using the average of the five proxies as an aggregate measure of the extent of financial development in model thirteen and fourteen it can be seen that cumulatively financial development continue to exert a progressive influence on inward FDI.

To mitigate the effect of any time related phenomenon equally affecting all the countries a time trend was also employed. It is insignificant as evident from regression fourteen, table five. The coefficient of financial development though decreases but very slightly from 0.0299 to 0.0275, exhibiting a decrease of only 0.12 percent.

Table 5: Empirical Results - Financial Development - Random Effects Panel Method

Variables	Proxies	9	10	11	12	13	14
Market Size	Ln GDP	0.8095*** (0.1596)	0.6661*** (0.1792)	2.2724*** (0.7879)	2.1755*** (0.5375)	1.8096*** (0.6052)	2.2097** (0.9588)
Development Level	Ln GDPPC	-0.1705** (0.0555)	-0.1059 (0.0902)	-0.4162 (0.2848)	-0.4848 (0.3176)	0.0009 (0.2946)	-0.2611 (0.4580)
Openness	Ln Trade	0.5273*** (0.1315)	0.2353 (0.2771)	3.2938* (1.8748)	2.5995** (1.2702)	2.0887 (1.4783)	2.2373 (1.5485)
Macro Stability	Ln Inflation	0.0522 (0.0600)	0.0437 (0.0746)	-0.2527 (0.1972)	-0.2645 (0.1935)	-0.1409 (0.1938)	0.0049 (0.0961)
Infrastructure	Ln Tele Mobile	0.2209** (0.0927)	0.2275** (0.1157)	0.4695** (0.2051)	0.4324*** (0.1527)	0.4447** (0.1764)	0.8998** (0.4504)
Human Capital	Ln GSEP	-0.0152 (0.5816)	0.4391 (0.4258)	-0.6926 (1.03714)	-0.9605 (0.6966)	-0.4801 (0.7756)	-0.3990 (0.6586)
Trade Agreements	Ln TA	0.1031 (0.1362)	0.2241* (0.1311)	-0.3327 (0.3659)	-0.3211 (0.3257)	-0.2213 (0.3903)	-0.3985 (0.5169)
Bilateral Investment Treaties	Ln BITE	0.9521*** (0.1504)	0.9049*** (0.1619)	0.8022*** (0.2692)	0.7039*** (0.2533)	0.9139*** (0.2403)	0.9853*** (0.2138)
Financial Development	Ln LC	0.0936*** (0.0326)					
	Ln MCLC		0.0004 (0.0013)				
	Ln DCBS			0.0081* (0.0050)			
	Ln DCPS				0.0259** (0.0102)		
	FD					0.0299*** (0.0063)	0.0275*** (0.0065)
Time Trend							0.9049 (0.9058)
R Square		61.83 %	61.95%	62.12%	66.94%	67.20%	67.25%
Number of Observations		280	280	280	280	280	280

*** Indicates significance at 1%, ** at 5 % and * at 10% level respectively. All the regressions are robust to heteroscedasticity.

Thus, to summarise, the results of the current study indicates that FDI is a function of market size, effective infrastructure, commitment to macroeconomic discipline and ensuring investors property rights through an enforced bilateral investment treaty and a vibrant functioning financial sector. These phenomena prove to be important for explaining cross-country FDI variations in MENA countries.

Conclusion

This paper explores the influence of financial development on inward foreign direct investment in MENA. Using annual data of ten MENA countries from 1988 to 2015, the study finds that financial development mostly has a significant positive effect on FDI inflows.

To sift purely the effect of the primary variable of interest i.e. financial development, other conventional FDI determinates were also used as explanatory variables in the study such as: market size, development level, openness, macroeconomic stability, infrastructure, human capital, trade agreements and bilateral investment treaties etc. as well as the time trend. The results of the study suggest that the FDI does not enter those countries which are financially under/undeveloped. Hence, a vibrant financial sector is a strong predictor of FDI inflows in the MENA countries.

According to findings of this study MENA countries must focus on following policy areas to attract more FDI i.e. market liberalisation, improving monetary system, curtailing inflation, improving the infrastructure and enhancing investors' confidence by signing bilateral investment treaties with different countries especially the developed nations and taking steps for development of the financial sector.

The study will certainly enlighten the policy makers from other developing regions of the world in policy formulations apropos encouraging overseas investors. Nonetheless, it shall be kept in mind that the findings of the study are limited to the MENA region for the time period under study only. Therefore, prior to making any generalisations appropriate macro and socioeconomic adjustments shall be made.

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