



Foreign Direct Investment, Financial Development and Economic Growth in MENA Countries

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Abstract: This study is an effort to explain and establish a relationship among foreign direct investment (FDI), financial development and economic growth on a panel of 7 MENA countries (Tunisia, Morocco, Algeria, Egypt, Oman, Qatar and United Arab Emirates) from 2008 to 2022. Using the system Generalized Method of Moments (GMM) in a panel data analysis, we found that FDI has a positive effect on economic growth. We also found that financial development appears to be working as a complement to FDI. The policy implications of this study appeared clear. Improvement efforts need to be driven by local-level reforms to ensure the development of domestic financial system in order to benefit more from the significant inflows of FDI.

Keywords: Foreign direct investment, Financial development, Economic growth.

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1. Introduction

The endogenous growth model has been developed by Romer (1986) and Lucas (1988). This growth model introduces capital in the form of human capital accumulation and R&D and emphasizes the externalities that arise from these, types of capital. Foreign direct investment (FDI) encourages the incorporation of new inputs and technologies in the production systems of host countries. FDI could also promote economic growth endogenously if it generates productivity, positive externalities and spillover effects. Since FDI is considered as an important source of know-how, human capital and technological diffusion, these factors can be initiated to stimulate economic growth through FDI inflows. The number of empirical studies examining the impact of foreign direct investment and financial sector development on economic growth has been growing ever since the emergence of endogenous growth theory. In the FDI-growth literature, empirical studies have so far yielded mixed results on whether FDI contributes positively to economic growth (e.g. Borensztein et al. 1998; De Mello, 1999; Hansen and Rand, 2006). Meanwhile, in the financial development-growth literature, the empirical results were more conclusive; most studies found that

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financial sector development contributes positively to economic growth (e.g. King and Levine, 1993a; Beck et al. 2000; Levine, et al. 2000).

Several studies have shown that the impact of FDI on economic growth can be limited by the local conditions existing in the host developing countries. For example, Borensztein et al. (1998) and Xu (2000) showed that FDI brings technology, which translates into higher growth only when the host country has a minimum threshold of stock of human capital. Further, the beneficial effect of FDI is enhanced in an environment characterized by an open-trade and investment regime and macroeconomic stability (Balasubramanyam et al. 1996). In Alfaro et al. (2004) it is found that the developed of local financial markets is crucial for FDI having positive growth impact. Somewhat similar effects seem to be in place in Alfaro et al. (2010) and Choong (2012) where linkages are found between the development of the host economy's financial system and the positive effects of FDI on economic growth: economies with more developed financial systems reap more benefits.

The contribution of this paper to the literature is threefold. First, further on the literature of the link between FDI and economic growth, this article, among other recent studies, is intended to identify the appropriate financial conditions under which a beneficiary country can fully benefit from FDI. Second, in terms of policy implications, the results of this research will guide policy makers in designing policies aimed at better directing external capital, such as FDI, towards sectors with the highest effect on economic growth. Third, for governments and policy makers, having a better understanding of the characteristics of FDI and how they are linked to economic growth is key when designing sound policies to attract more “quality” foreign investments and to direct them toward appropriate sectors of the economy in a manner which increases the overall well-being of the population.

The main purpose of this paper is to examine the role of financial development in mediating the impact of FDI on economic growth on a panel of seven MENA countries, namely Tunisia, Morocco, Algeria, Egypt, Oman, Qatar and United Arab Emirates from 2008 to 2022. Our dynamic panel regression analyses show that FDI positively and significantly effects economic growth in MENA countries. This study also highlights the positive complementarities between financial development and FDI. This implies that the presence of FDI induces more capital-intensive investment in host countries and a better-developed domestic financial market is more effective in promoting economic growth.

The organization of the paper is as follows. Section 2 presents literature review. Section 3 describes the used data and the empirical methodology. Section 4 presents the empirical results. Section 5 presents the concluding remarks and policy implications.

2. Review of literature

The important role of financial development in the process of economic development has long been recognized in the literature. Schumpeter (1911) argued that entrepreneurs require credit in order to finance the adoption of new production techniques. Banks are viewed as key agents in facilitating these financial intermediating activities and improving economic development. Hence, well developed financial systems can channel financial resources to the most productive use.

The notable early works on finance and development along the Schumpeterian lines include Gurley and Shaw (1955) and Goldsmith (1969). They argued that development of a

financial system is important in stimulating economic growth. Similarly, McKinnon (1973) and Shaw (1973) suggested that the increase in the level of financial development, which follows from financial liberalization, will lead to higher economic growth. With evolution of growth literature in the 1980s, more complex types of financial development models incorporating financial institutions into endogenous growth models emerged in the early 1990s. These models supported the finance-led argument by demonstrating that financial development reduces informational frictions and develops resource allocation efficiency (see, e.g., Greenwood and Jovanovic 1990; King and Levine 1993b).

Theoretically, FDI can create technological positive externalities and knowledge spillovers for the local economy (Blomström, 1989; Kokko, 1994; Markusen and Venables, 1999). This argument has been supported by the empirical findings of Blomstrom et al. (1994), Kokko and Blomstrom (1995), among others. Based on these findings, many developed and developing countries have offered different incentives to stimulate FDI in their home countries.

The effect of FDI on the economy may crucially depend on the absorptive capacities of the home country. While various types of absorptive capacities have been discussed in the literature (e.g., human capital, trade regime, infrastructure, etc), one of these capacities that has gained growing attention is the development of local financial markets (see, e.g., Hermes and Lensink 2003; Omran and Bolbol 2003; Alfaro et al. 2004). In principle, there are several ways in which a higher level of financial development can allow the host country to take advantage of FDI more efficiently. Firstly, the provision of more credit facilities permits entrepreneurs who lack internal funds to purchase new machines, adopt new technology, and hire better skilled managers and labors (Omran and Bolbol 2003; Alfaro et al. 2004). Secondly, the development of domestic financial markets also relaxes credit constraints faced by foreign firms, allowing them to extend their innovative activities to the domestic economy (Hermes and Lensink 2003). Finally, the presence of an efficient financial system facilitates FDI to create backward linkages, which are beneficial to the local suppliers in the form of improved production efficiency (Ang, 2009; Alfaro et al. 2010). Consequently, financial development plays an important role in allowing the host country to absorb the spillovers associated with FDI. In other words, the level of financial development in the host country affects its ability to absorb the benefits of FDI. In this way, finance enters into the growth equation through the interaction with FDI.

There is huge literature based on cross-sectional studies, which provides evidence about importance of well-functioning financial markets to attain positive spillovers from FDI to stimulate economic growth. The more developed the domestic financial system is the better it mobilizes savings, and screen and monitor investment projects, which will contribute to speed up economic growth (Hermes and Lensink, 2003).

Numerous studies show strong positive and significant effect of FDI to economic growth. For instance, Ljunwal and Li, (2007) investigated the relationship between FDI and economic growth with role of financial system in China. Time series data set starting from 1986 up to 2003 has been used over 28 Chinese provinces. Their empirical findings seem to support the view by Hermes and Lensink, (2003) and Alfaro et al. (2004). Ang (2009) investigated the role of financial development and FDI on economic growth for the case of Thailand. He revealed that financial development stimulates economic growth. It is also inferred that an increased level of financial development permits Thailand to gain more from FDI, suggesting that the impact of FDI on economic growth can be improved through financial development.

For their part, Choong and Lim, (2009) discussed endogenous growth model to analyze the role of financial development and FDI in improving Malaysia's economic growth. They examined a dynamic endogenous growth function that includes the impact of FDI and financial system development with location determinants. They concluded that FDI, labor, investment, and government expenditure play a crucial role in promoting local economic activity and hence prosperity. The interaction between FDI and financial development has positive and significant impact on economic growth of Malaysia. As for Shahbaz and Rehman (2010), they also explored the roles of foreign capital inflows and domestic financial sector development on economic growth in case of Pakistan. Their empirical findings revealed that financial sector's development and public investment or public capital stock stimulates economic growth. Further study suggested that Pakistan's government should undertake further financial reforms to improve the efficiency of the domestic financial system. As for Agbloyor et al. (2013), they argued that financial markets are a necessary absorptive capacity for the private financial flows; their study tested this issue empirically in the African context. Essentially, for FDI to have a positive impact on an economy, the country must first go through the trouble of developing a steady financial market. Moreover, Shah (2016) examined the effect of financial development on inward FDI in 10 Middle East and North African (MENA) countries. He suggested that financial development in the MENA region exerts positive and statistically important influence on FDI inflows (for instance, market size, development level, trade liberalization, macroeconomic stability, trade agreements, infrastructure, etc.). He also concluded that financial development is a robust predictor of FDI inflows in the MENA region.

On the other hand, Desbordes and Wei (2017) found that source and destination countries' financial development have a large positive influence on green-field, mergers and acquisitions, and expansion FDI. The influenced by direct and indirectly, through increasing access to external finance and boosting manufacturing activity, respectively. Financial market development has an impact on the relationship between FDI and business start-up, which is a salient feature of entrepreneurship (Munemo 2016). The study found that financial market development enabled FDI to crowd-in new businesses. Improving financial conditions in developing countries is important as a precondition for facilitating the positive effect from FDI inflows which stimulate entrepreneurship and enhancing economic growth. For their part, Sirag et al. (2018) investigated the effect of financial development and FDI inflows on economic performance in Sudan. They showed that financial development and FDI inflows exert positive effects on economic growth in Sudan. However, when the financial system of a country is more developed, it improves the positive effect of FDI on economic growth could be achieved through the development of financial system.

As for Thi An and Yeh (2021), they studied the impact of FDI on economic growth by the level of local financial system development in emerging and developing Asia over the period 1996-2017. They discovered novel results regarding two distinct thresholds of financial development in the FDI-growth nexus. The growth-boosting effect of FDI is realized only when financial development is between the two threshold values. Notably, at very high levels of financial development, the beneficial effect of FDI on growth disappears. They provided new insights into the effect of FDI on economic growth and the role of financial development. The estimated nonlinear effect of FDI on growth and the thresholds of financial development can serve as a benchmark for emerging and developing Asia in assessing their situations. The results suggest important implications for the region in shaping long-term policies to enhance the effect of FDI on economic growth.

For their part, Yusuf et al. (2022) examined the role of financial development, FDI, democracy and political instability on economic growth in West Africa. They suggested that even though no significant relationship is established in the short run, the long-run coefficient of FDI is found to be significant and positive; a 1% increase in FDI inflow into the West African sub-region results in a 0.26% increase in economic growth. In addition, the estimate of financial development–growth nexus follows the supply-leading hypothesis. They concluded that the governments of West African countries are enjoined to promote policies that attract FDI into the subregion and promote financial sector credits so that economic performances may be enhanced. In addition, the governments of West African subregion should fully entrench democratic practices and enhance a stable and sustainable political environment. This will not only restore investor confidence but will also facilitate the inflow of FDI into the West African economy.

As for Nguyen (2022), she examined the role of financial development in the impact of foreign direct investment on economic growth. She expressed through the effort to determine the level of financial development to maximize the spillover effects of foreign direct investment on economic growth in 6 countries of the Association of Southeast Asian Nations (ASEAN-6) in the period 2002-2019, including: Indonesia, Malaysia, Thailand, Singapore, the Philippines, and Vietnam. She found that there are threshold values of financial development through the banking sector and the stock market. Furthermore, this study found a positive impact of foreign direct investment on economic growth in the regions before and after these threshold values. In particular, the positive impact of foreign direct investment on economic growth becomes stronger when financial development exceeds the defined threshold value.

On the other hand, Grandes and Dossina (2023) examined empirically the extent to which financial development, FDI and exchange rate regime altogether positively influence economic growth in African countries over the period 1980-2015. They suggested that financial development, FDI influence positively and significantly economic growth, whereas exchange rate regime has no significant effect on economic performance, controlling for the usual growth- regression variables like trade openness, human capital, investment, governance, and the lagged value of per capita GDP. They concluded that African countries should create stable and sound macroeconomic environment, promote financial development and FDI in most productive sectors while diversifying financing by fostering capital markets development, and manage the exchange rate regime carefully to ensure competitiveness, and ultimately attract external funding to sustain long-run growth.

More recently, El Fakiri and Cherkaoui (2024), examined the relationship between FDI and financial development in 16 selected countries of the MENA region (Algeria, Bahrain, Egypt, Iran, Israel, Jordan, Kuwait, Lebanon, Malta, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Tunisia, and the United Arab Emirates) over the period 2000-2018. They argued that even though no significant relationship is established in the short run, the long-run coefficients of the overall financial development proxy and financial markets' development proxy are positive and statistically significant. They suggested that a 1% increase in the overall financial development proxy and financial markets' development proxy results in an increase of 172% and 150% of FDI inflows to MENA region countries, respectively.

3. Data and Empirical methodology

3.1. Data

This paper considers a sample of seven MENA countries, namely Tunisia, Morocco, Algeria, Egypt, Oman, Qatar and United Arab Emirates. The choice of the selected countries for this study is primarily dictated by the availability of reliable data over the sample period. The panel covers the period 2008-2022. The dependent variable is economic growth, measured as the growth rate of real GDP per capita at 2015 USD prices. The main variable of interest (FDI) and the other control variables are obtained from the World Development Indicators database (World Bank, 2025).

According to the World Bank, FDI are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP. It is expected that the sign of the coefficients associated with FDI would be positive as spillover effects may have been observed in MENA countries.

In this study we use the credit provided by the banking sector to GDP to measure financial development. This indicator measures how much intermediation is performed by the banking system, including credit to the public and private sectors. Calderon and Liu (2003) suggested that this indicator has an advantage as it takes into account the credits to private sector only and isolates credit issued to the private sector, as opposed to credit issued to governments, government agencies, and public enterprises. Furthermore, it excludes credits issued by the central bank. They argued that the measure is even better than indicators used by previous studies such as King and Levine (1993a, b) and Levine (1999). Indeed, De Gregorio and Guidotti (1995) claimed that indicator is a better measure of financial development than measures of monetary aggregates such as M1, M2 and M3 because it reflects the more accurately on the actual volume of funds channeled into private sector. The ratio, therefore, is more directly linked to the investment and economic growth. Moreover, Calderon and Liu (2003) showed that a higher ratio credit provided by the banking sector to GDP indicates more financial services and hence, greater financial intermediary development.

The hypothesis that FDI and other economic variables affect economic growth is tested by estimating dynamic panel data model for GDP per capita growth. Our baseline model includes the explanatory variables common to most growth regressions found in the literature:

- Initial GDP per capita (log): log of real GDP per capita. Several studies pointed out that per capita income could serve as a good proxy for the general development and sophistication of institutions (La Porta et al. 1998). A negative coefficient is expected, indicating the existence of conditional convergence among countries.
- Trade openness measured by the ratio of total imports plus exports over GDP. Increased international trade can generate economic growth by facilitating the diffusion of knowledge and technology from the direct import of high-tech goods (Almeida and Fernandes, 2008). Therefore, a positive coefficient is expected.

In order to account for the effects of macroeconomic stability on economic growth, two additional variables will be added to the model⁴:

- Inflation rate measured as the annual percentage change in the consumption price index. A negative coefficient is expected, as high inflation has been found to negatively affect growth (Elder, 2004);
- Government spending defined as the ratio of central government expenditures to GDP. An excessively large government may crowd out private investment and be harmful to economic growth (Afonso and Furceri, 2010). Consequently, a negative coefficient is expected.

3.2. Empirical methodology

The purpose of our empirical analysis is to examine if financial development plays an important role in influencing the effects of FDI on economic growth in MENA countries. To this end, we employ a specification that is broadly similar to others (e.g., Alfaro et al. 2004, 2010; Choong, 2012). We consider the following model:

$$y_{i,t} = \alpha y_{i,t-1} + \beta_1 FDI_{i,t} + \beta_2 FD_{i,t} + \beta_3 X_{i,t} + \mu_t + \eta_i + \varepsilon_{i,t} \quad (1)$$

Eq. (1) can also be alternatively written with the growth rate as a dependent variable as:

$$Growth_{i,t} = y_{i,t} - y_{i,t-1} = (\alpha - 1) y_{i,t-1} + \beta_1 FDI_{i,t} + \beta_2 FD_{i,t} + \beta_3 X_{i,t} + \mu_t + \eta_i + \varepsilon_{i,t} \quad (2)$$

The subscript “*t*” represents periods, whereas *i* represents the country, *y* is the logarithm of the real GDP per capita, FDI is foreign direct investment, FD is the financial development variable and X is the matrix of control variables described in the previous section, μ_t is a time specific effect, η_i is an unobserved country-specific fixed effect and $\varepsilon_{i,t}$ is the error term. Eq. (2) forms the basis for our estimation. $(\alpha - 1)$ is the convergence coefficient.

While FDI has the potential to affect economic activity through a host of channels, in a second set of regressions, we examine one specific link between FDI and economic growth, specifically the one working through FD. The hypothesis we would like to test is whether the level of FD in the host country affects FDI on economic growth. To this end, we add an interaction term constructed as the product of FDI and the FD (i.e., FDI*FD) to Eq. (2) as an additional explanatory variable, apart from the standard variables used in the economic growth equation. To ensure that the interaction term does not proxy for FDI or the level of FD, both of the latter variables were included in the regression independently. If the coefficient on the interaction term is positive and significant, it implies that the marginal effect of FDI on economic growth depends on the level of FD.

The regression to be estimated is the following:

$$Growth_{i,t} = (\alpha - 1) y_{i,t-1} + \beta_1 FDI_{i,t} + \beta_2 FD_{i,t} + \beta_3 (FDI_{i,t} \cdot FD_{i,t}) + \beta_4 X_{i,t} + \mu_t + \eta_i + \varepsilon_{i,t} \quad (3)$$

⁴ Here, we follow Levine et al. (2000), who accounted for macroeconomic stability in a growth regression by including the inflation rate and the size of government.

Eq. (3) is dynamic model to the extent that the lagged dependent variable among the explanatory variables. The appropriate econometric technique in this case is the GMM. It provides solutions to the endogeneity bias and also controls individual and time specific effects. There are two approaches to estimate the empirical model: the first difference GMM estimator Arellano and Bond (1991) GMM estimator and the system Blundell and Bond (1998). However, the estimator of the system GMM is preferred for several reasons. Although for the first difference estimator supposes that the explanatory variables are weakly endogenous, that the error terms among themselves and with all explanatory variables are uncorrelated, it suffers from weak instruments. Furthermore, the differentiation of the level equation eliminates inter country variations and takes into account intra-country variations. The first difference GMM estimator provided limits. These deficiencies may be removed by the system GMM estimator. Therefore, Blundell and Bond (1998) admit that the system GMM estimator is more efficient than the first difference GMM estimator. Consequently, the estimation by the system GMM will be used.

The efficiency of the estimation of system GMM is based on the validity of two tests. First, the test of Sargan/Hansen, which enabled us to test the validity of the lagged variables and the second, is the test of Arellano and Bond where the null hypothesis is the absence of autocorrelation of errors in the second order difference equation.

4. Empirical results

Table 1 reports a preliminary analysis on the effects of FDI and FD on economic growth. It also presents the coefficient estimates obtained from the baseline specification, which used an interaction term constructed as a product of FDI and FD.

Table 1: The growth effect of FDI and financial development

Variable	Estimation
Initial GDP per capita	-0.39** (-2.681)
Foreign Direct Investment	0.451** (2.811)
Financial Development	0.611*** (3.351)
Foreign Direct Investment*Financial Development	0.12** (2.5867)
Trade Openness	0.324** (3.017)
Inflation	-0.68*** (-6.121)
Government Spending	-0.524*** (-5.732)
Constant	48.561*** (4.298)
AR(2) test (p-value)	0.521
Sargan test (p-value)	0.572

Note: AR(2) is a test of second order residual serial correlation while the J-test is the Sargan over-identification test. T-statistics are in parentheses. *, ** and *** indicate a statistical significance at 10%, 5% and 1% levels, respectively.

The results indicate that the estimated coefficient on FDI is statistically significant at 5% level, which suggests that FDI plays a positive role in boosting the economic growth of MENA countries. This result is consistent with some studies in the FDI-growth literature (e.g. Chong et al. 2010; Gui-Diby, 2014). In addition, the results show a strong relationship between financial development and economic growth. The coefficient on FD is statistically significant at 1% level. The finding that financial development plays a catalyst role in output expansion is generally in line with the literature on finance and development (see, e.g., King and Levine 1993a; Levine et al. 2000). Additionally, the estimated regression passed both specification tests. The null hypothesis of no second-order serial correlation cannot be rejected at 5% level. The regression is not plagued by simultaneity bias as the orthogonality conditions cannot be rejected at 5% level, as indicated by the Hansen's test. This suggests that the equation is adequately-specified and the instruments employed in the analysis are valid.

The results shows also the regression results based on interaction specification using an interaction term between FDI and the FD indicator (FDI*FD). In this specification, we relied on the interaction term to establish the contingency. If the term is positive and significant, this implies that the impact of FDI on economic growth increases with FD. The first thing to note is that the interaction term turns out to be positively signed and statistically significant at 5% level. The results suggest that FDI and financial sector development are complementary in facilitating economic growth. Therefore, it can be inferred that the impact of FDI on the MENA countries is strengthened by the level of sophistication of the financial system. The results are consistent with the findings of Hermes and Lensink (2003); Alfaro et al. (2004) and Azman-Saini et al. (2010).

We introduced the level of initial GDP per capita (the natural logarithm) as an independent variable according to the conditional convergence hypothesis. The coefficient of initial GDP per capita shows the expected negative sign and is highly significant, indicating a convergence of per capita income across countries as proposed in the growth theories. This result corroborates the work of Barro and Sala-i-Martin (1997). The effect of the other variables in the regression is consistent with the standard growth regression results. Trade openness exerts a positive and significant influence on economic growth. These findings suggest that the openness of MENA countries to international trade should be associated with economic growth, which is in line with other empirical works (Ismail et al. 2010; Erçakar, 2011). The result also confirms a significant negative effect of inflation on economic growth. This result implies that greater macroeconomic instability via the variability of inflation negatively affects global economic growth in the MENA region. Therefore, this result corroborates the work of Aydin et al. (2016). Government spending has the expected negative coefficient, indicating that an excessively large government is expected to crowd out resources from the private sector and be harmful to economic growth. Barro and Sala-i-Martin (1997) attributed the negative impact of government on economic growth to unproductive public sector or some aspects of bad government such as corruption, which is likely to be captured by the variable. These factors have the tendency to hinder economic growth.

5. Conclusions and policy implications

Our study examines the relationship between FDI and growth in the presence of domestic financial system. Using GMM panel data model to examine the link between FDI,

financial development, and economic growth in a panel of seven of MENA countries, over the period 2008-2022, both FDI and financial development indicators generally show a significant and positive impact on economic growth.

To examine whether financial development helps a country to benefit more from FDI, the study interacted FDI with financial development. The result is that when FDI is interacted with the financial development indicator, the interaction term is generally positive and significant, shedding light on the role of financial development in benefiting from FDI. Therefore, an important implication of the findings in this paper is that the extent and efficiency of the financial system of the host country is a crucial prerequisite in order to realize the beneficial effects of FDI.

Based on the result of this study, MENA countries should adopt appropriate policies to maximize the impact of FDI on economic growth. In particular, improving domestic conditions and increasing FDI absorption capacity are essential to improve economic growth. To achieve this, MENA countries must focus more on improving the level of financial development. Thus, FDI spillovers can stimulate economic growth in a maximum and sustainable manner.

Furthermore, MENA countries must adopt appropriate policies to create a favorable investment environment, thereby increasing their ability to attract FDI and optimizing the effectiveness of private sector investment. FDI attraction must focus on technology-intensive sectors and the host country's business sectors. In addition, MENA countries must also implement policies to grant preferential treatment and protect the benefits of foreign investors. At the same time, improving the quality of human resources is a crucial issue for the region's countries. Improving the quality of human resources will enhance the effectiveness of technology transfer and absorption capacity, which will be an important driver of economic growth.

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