

Financial Market Development as a Driver of Foreign Direct Investment: Evidence from MENA Region

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Abstract

This study, which utilized the Panel ARDL model on data from 12 MENA countries spanning the period 1990–2021, intends to examine the effects of financial market evolution on flows of foreign direct investment (FDI). The results confirmed a strong, long-term equilibrium between the variables. In the long run, financial market development and economic growth are positively associated with FDI inflows. In particular, the long-run PMG coefficient of financial market development (0.4136) indicates that a one-unit increase in the Financial Market Development Index is associated with an approximately 0.414 percentage-point increase in FDI inflows as a share of GDP, holding other factors constant. Conversely, the short-run impact shows significant heterogeneity; the majority of countries do not respond to immediate changes, while the United Arab Emirates (UAE) represents the sole exception, where all variables positively and instantaneously affect FDI. The study recommends the necessity of continuing structural reforms to deepen financial markets as a strategic priority for ensuring sustainable FDI flows.

Keywords

Financial Market Development; Foreign Direct Investment; Panel ARDL Model; MENA Region.

Introduction

According to a number of scholars and policymakers, foreign direct investment (FDI) has a big influence on a host nation's development initiatives. Beyond providing a direct infusion of funds, foreign direct investment can be an essential source of technology and important knowledge, strengthening ties with regional businesses and possibly spurring economic expansion. Because of these strong reasons, both developed and developing countries have aggressively provided incentives to entice foreign direct investment into their economies (Alfaro, 2003, p. 1).

For many developing nations, foreign direct investment has surpassed remittances, private loans, portfolio equity, and official development assistance as the main source of external funding. Through the beneficial spillovers of technology transfer, increased FDI flows can reduce capital limitations, boost gross production, create jobs, and improve overall productivity. Furthermore, since roughly three-quarters of worldwide exports are the result of intra-firm and inter-firm commerce carried out by overseas affiliates, FDI enhances trade linkages. As a result, FDI and the existence of overseas affiliates can be important forces behind economic expansion. However, following the global financial crisis of 2008, FDI flows to developing nations have decreased. FDI inflows have decreased to less than 2% of GDP in recent years, from an average of 3% of GDP yearly prior to the crisis. A number of

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economic variables are contributing to this trend, such as decreased rates of return on foreign direct investment (FDI), altered tax laws, a growing dependence of global production on intangible assets, and increased policy uncertainty in trade and investment. Compounding these trends, the COVID-19 pandemic is expected to lead to further reductions in FDI flows (Saurav & Kuo, 2020, p. 2).

In light of this, luring foreign direct investment (FDI) has become a top priority for all governments, but particularly for developing countries, rising economies, and economies in transition, as a means of fostering economic growth, modernization, and income and employment expansion. To draw in investment, nations have liberalized their FDI policies and implemented various measures. They have considered how to develop domestic frameworks to ensure local market conditions decentralizing foreign presence have a major role in determining FDI, not only in terms of volume but quality (Bekmurodova, 2020).

Financial development is deemed an essential condition for harnessing the positive impacts of FDI on the host economy. A well-functioning financial system provides an attractive context for foreign investors, with timely, efficient, and low-cost access to financial services. With the support of financial development, foreign firms operating in the host country are able to obtain the required financing to expand their operations, contributing to economic development. Furthermore, a financial system that is developed will also provide those firms with the tools of risk management and investment efficiency. Moreover, financial development will improve the transfer of technology and knowledge from foreign firms to local firms, thereby improving the local firms' ability to innovate and develop. Financial development will be an important aspect in attempting to optimize the economic returns of FDI (Nguyen, 2022).

Moreover, financial market development is one of the key forces behind the growth of a nation's entire financial system and directly contributes to luring FDI. Economies with more advanced financial systems are more likely to gain from FDI. Foreign investors may seek to finance a portion of their investments by issuing shares in capital markets, and such markets also provide foreign investors with the liquidity to sell their shares (Hajilee & Al Nasser, 2015, p. 227). Conversely, the potential positive externalities of FDI are limited by the lack of sophisticated financial markets. (Alfaro et al., 2004, p. 91).

According to the theoretical literature, financial market development contributes to attracting higher levels of foreign direct investment (FDI) through the fulfillment of several key conditions. Well-developed financial markets reduce information asymmetries, lower transaction costs, improve the efficiency of capital allocation, and provide higher levels of liquidity, thereby facilitating investment decision-making by multinational enterprises (Levine, 2005). In addition, developed capital markets enable foreign firms to access local financing and manage risks more efficiently, which reduces their reliance on internal financing from parent companies (Bekaert et al., 2010).

With regard to financial globalization, it is considered a fundamental condition for the development of domestic financial markets, as it reflects the degree of a country's integration into the global financial system. Greater financial openness leads to increased international capital flows, enhances investor confidence, and sends positive signals to international investors regarding the attractiveness of the investment environment (Kose et al., 2009). Consequently, the joint effect of financial market development and financial globalization is expected to strengthen the capacity of host economies to attract foreign direct investment, particularly in emerging and semi-emerging economies.

This study contributes to the economic literature in several important ways. While most previous empirical studies have focused on regions such as Asia or Latin America, this paper concentrates on the Middle East and North Africa (MENA) region, which remains relatively underexplored despite its distinctive financial structures, pronounced institutional heterogeneity, and varying levels of financial openness. Moreover, by covering an extended time period from 1990 to 2021, the study captures different economic phases, including

major financial crises, thereby allowing for a more comprehensive and accurate analysis of the dynamics between financial market development and foreign direct investment inflows.

From a methodological perspective, the study adopts a Panel ARDL framework, which allows for the distinction between short-run and long-run effects while accounting for cross-country heterogeneity among the sampled countries. Furthermore, the inclusion of a financial globalization index enables a more in-depth assessment of the role of international financial integration in influencing foreign direct investment inflows into MENA countries, thereby enhancing the overall understanding of the determinants of investment attractiveness in these economies.

Based on the theoretical framework presented, financial market development can influence foreign direct investment through both direct and indirect channels, including improved liquidity, greater efficiency in capital allocation, and reduced information asymmetries. Financial globalization, in turn, determines the magnitude and persistence of this effect over time by strengthening the transmission of domestic financial market development into sustained foreign investment inflows.

Based on the theoretical framework and prior empirical evidence, this study seeks to test the following hypotheses:

Hypothesis 1 (H1):

Financial market development has a positive and statistically significant effect on foreign direct investment inflows in MENA countries.

Hypothesis 2 (H2):

The impact of financial market development on foreign direct investment differs between the short run and the long run in MENA countries.

Literature review

According to a number of studies, a financial market's degree of development and its ability to draw in foreign direct investment (FDI) are positively correlated.

A study carried out by (Ho & Booth, 2019) assessed liquidity in the US and Malaysia's financial markets from 1981 to 2013. The evidence indicated that as liquidity increased around the world, investors placed more investment in those countries. The study suggested that likely the reason investors placed confidence in highly liquid financial markets. A similar study was done by (Rajapakse, 2018) and considered liquidity in the Sri Lankan financial market, considering the period 1994 to 2017. This study demonstrated a unidirectional causal relationship between financial development and foreign investment, providing compelling evidence that the growth of the financial market attracts investment. Finally, (Pham et al., 2022) offered additional evidence to support the initial hypothesis by a study that considered a multitude (30) of developing Asian countries between 1986 and 2019. Similar to the previous studies, this study confirmed a bidirectional link, indicating that higher financial development attracts higher levels of FDI.

Overall, the studies reviewed above provide strong empirical support for the view that financial market development plays a pivotal role in attracting foreign direct investment. Improvements in market liquidity, enhanced access to financing, and higher levels of information disclosure appear to increase investor confidence and reduce investment risk, thereby encouraging foreign capital inflows. These findings suggest that well-functioning financial markets constitute a key locational advantage for multinational enterprises, particularly in developing and emerging economies where external financing constraints tend to be more pronounced.

In an analysis of emerging markets, Soumare and Tchana (2015) produced a panel data study that identified bidirectional causality for FDI and stock market development indicators. This demonstrated agreement with Acheampong and Wiafe (2013) who used quarterly data in a study covering Ghana from 1990- 2010 and produced evidence of bidirectional causality, with short term effects of FDI on stock market development. Further, Agbloyor et al. (2013) examined 58 African countries over the period of 1970 - 2007, and also noted that greater FDI flows from a more developed banking system. They also noted

that more developed stock markets also incentivized FDI flows, with a bidirectional feedback loop mutual causation with the banking sector role.

Not all studies reported or proposed positive or direct causal association however, as reported by Tsaurai (2014) reported a long-term relationship for stock markets and FDI in Zimbabwe, without direct causality moving in either direction, leading to the inference that the linkage may operate through unidentified variables.

Regarding the temporal dimensions, studies have collected mixed conclusions. A study conducted in Pakistan over the period 1970–2019 found that financial market development had a positive influence on FDI in the short run only, with no long-run effect observed. (Mahmood & Tanveer, 2021). With regard to a longer period of time, Hajilee and Al Nasser (2015) found that the relationship between financial market development and FDI was present in both the long run and the short run for the vast majority of the 14 Latin American countries examined.

The mixed empirical evidence reported in the literature indicates that the relationship between financial market development and foreign direct investment is not uniform across countries or time periods. Variations in institutional quality, stages of financial development, regulatory frameworks, and levels of macroeconomic stability help explain the divergence in empirical findings across studies (Kholdy & Sohrabian, 2005; Alfaro et al., 2010). In particular, several studies highlight the presence of threshold effects, whereby financial market development begins to exert a statistically significant influence on foreign direct investment inflows only after a minimum level of financial depth and efficiency has been attained (Munemo, 2017). This suggests that in economies characterized by underdeveloped or fragmented financial systems, improvements in financial markets may not immediately translate into higher levels of foreign direct investment inflows.

Munemo (2017) examined 92 developing nations and found that the degree of financial market development in the host nation—more precisely, a formal threshold of development—was a determining factor in FDI's capacity to support firm beginnings.. Finally, Kholdy and Sohrabian (2005) employed panel data from 25 countries between 1975 and 2002 and found that there was a reciprocal association between FDI and financial markets in countries with more developed financial markets and comparatively higher per capita GDP.

This study distinguishes itself from previous research in several important respects. While the majority of earlier studies—such as Ho and Booth (2019), Rajapakse (2018), and Pham et al. (2022) have documented a positive and causal relationship between financial market development and the attraction of foreign direct investment across various contexts (including the United States, Malaysia, Sri Lanka, and several Asian economies), significant gaps remain in the existing literature. In particular, there is a notable scarcity of studies that explicitly examine this relationship in the Middle East and North Africa (MENA) region, despite its distinctive economic structures, heterogeneous financial systems, and varying degrees of financial openness.

Moreover, most prior studies rely on static empirical models and do not adequately distinguish between short-run and long-run dynamics. Finally, the role of financial globalization as a complementary factor to domestic financial market development has received limited attention, especially in the context of emerging and semi-emerging economies. By addressing these gaps, the present study contributes to a deeper and more nuanced understanding of how financial market development and financial globalization jointly influence foreign direct investment inflows in MENA countries.

Research Methodology

The Middle East and North Africa (MENA) region is of strategic importance in the economic sphere, as it is characterized by a marked heterogeneity in financial systems, institutional frameworks, and levels of financial openness. This diversity makes the region a suitable environment for examining the relationship between financial market development and foreign direct investment inflows.

Based on data availability, a balanced sample consisting of 12 countries from the MENA region is employed in this study. The sample includes four North African countries—Algeria, Morocco, Tunisia, and Egypt—and eight Middle Eastern countries—Bahrain, Jordan, Kuwait, Saudi Arabia, the United Arab Emirates, Iran, Oman, and Qatar.

The study covers the period from 1990 to 2021, which reflects major transformations experienced by the financial sector in many countries of the region, including financial system reforms and phases of economic liberalization. This period was also marked by the occurrence of global and regional economic and financial shocks. Given the relatively long time span of the study, a dynamic modeling framework is adopted, allowing for the analysis of both short-run and long-run relationships between financial market development in the selected countries and its impact on foreign direct investment inflows.

1. Data sources

The main variable for the research variables was the Financial Market Development Index (FMI). Additionally, two control variables were added. The first is a measure of a nation's financial market openness to foreign investments, the Legal Financial Globalisation Index (GF). This index has three sections. (Gygli et al., 2019, p. 556):

- The Chinn-Ito index gave us the capital account openness.
- Based on the World Economic Forum's Global Competitiveness Report, there are limits on investments.
- The number of international investment agreements, such as bilateral investment treaties and treaties that include investment provisions.

Each year, the Swiss Economic Institute releases this index. Its composite values range from 0 to 100, where 100 represents the highest globally integrated financial level. Financial globalization is introduced as a control variable reflecting the degree of a country's integration into the global financial system. Its inclusion allows the model to account for the broader international financial environment within which domestic financial markets operate, without imposing an explicit interaction effect.

The GDP growth rate (GDPG), which also influences foreign direct investment, is the second control variable.

Lastly, the dependent variable was calculated as the total amount of foreign direct investment (FDI) entering the nation as a proportion of GDP.

The following table provides a summary of the variables utilized in the study:

Table 1 Study Variables (Type, Source, and Measurement)

Variable	Type	Source	Measurement
Foreign direct investment as % of GDP (FDI)	dependent variable	(World Bank, 2024)	Percentage of net inflows of FDI relative to GDP
Financial market development index (FMI)	Independent variable	(IMF, 2022)	This index (0-1) measures a country's financial development based on markets across depth, access, and efficiency.
Legal financial globalization index (GF)	Control variable	(KOF Swiss Economic Institute, 2024)	Composite index (0 to 100) including: Chinn-Ito index, investment restrictions, and number of investment agreements
GDP growth rate (GDPG)	Control variable	(World Bank, 2024)	Annual percentage growth rate of real GDP

Source: Authors' elaboration.

2. Empirical approach

The Panel ARDL methodology is well suited to this study for analyzing the dynamic relationship between foreign direct investment, financial market development, and financial globalization in a selected group of Middle East and North Africa (MENA) countries over the period 1990–2021. This methodology is appropriate as it allows for distinguishing

between short-run and long-run effects, while accommodating variables with different orders of integration.

Prior to estimation, unit root and panel cointegration tests are conducted to ensure the stationarity properties of the variables and the existence of a long-run equilibrium relationship. The model is estimated using the MG, PMG, and DFE estimators, with the Hausman test employed to select the most appropriate estimator.

The empirical strategy is directly aligned with the study's hypotheses. Long-run coefficients are used to test Hypothesis H1 regarding the impact of financial market development on FDI inflows, while the distinction between short-run and long-run dynamics allows for testing Hypothesis H2.

Result and discussion

The empirical results of this study are presented and explained in this section, with a focus on the connection between financial market development and foreign direct investment (FDI) in a few chosen MENA nations. The analysis uses the short-run and long-run dynamics derived from the Panel ARDL estimation to better understand how much financial market movements impact foreign direct investment inflows into nations in the region. The conversation focuses on the significance of financial structure, economic growth, and openness in luring international investment and examines how their effects vary by nation.

1. Unit root tests for the panel

Panel unit root tests are used to assess the variables' stationarity properties in order to guarantee the estimate process' accuracy. The Levin-Lin-Chu (LLC) test is applied assuming that all nations have a common unit root. (Levin et al., 2002), whereas the Im-Pesaran-Shin (IPS) test specifically allows for heterogeneous unit root processes among panel units (Im et al., 2003). While the alternative hypothesis proposes stationarity in both tests, the null hypothesis maintains that there is a unit root. The Panel ARDL model is deemed suitable if the variables are discovered to be stationary at level $I(0)$ or at first difference $I(1)$. The following table displays the outcomes of multiple tests.

Table 2 The panel unit root's result

Variable	Levin-Lin-Chiu (LLC)		Im-Pesaran-Shin (IPS)	
	Level	1st Difference	Level	1st Difference
FDI	-8.0755 (0.0000)	-22.0175 (0.0000)	-5.9149 (0.0000)	-21.4030 (0.0000)
FMI	-2.5730 (0.0550)	-15.7363 (0.0000)	0.6272 (0.2553)	-14.7469 (0.0000)
GF	-0.6947 (0.2436)	-14.3446 (0.0000)	1.3430 (0.9104)	-13.0762 (0.0000)
GDPG	-8.5328 (0.0000)	-23.5101 (0.0000)	-8.1579 (0.0000)	-25.2099 (0.0000)
Note: The numbers in () are p-Values.				

Source: Authors' elaboration based on Stata 15 software output.

The Levin-Lin-Chu (LLC) and Im-Pesaran-Shin (IPS) panel unit root tests were employed to examine the stationarity properties of the variables. The results indicate a mixed order of integration. Specifically, Foreign Direct Investment (FDI) and GDP Growth (GDPG) are stationary at level, $I(0)$, whereas the Financial Market Development Index (FMI) and financial globalization (GF) become stationary after first differencing, $I(1)$. Thus, the unit-root results indicate that all variables included in the model are either $I(0)$ or $I(1)$, with no variable requiring second differencing to achieve stationarity. This integration structure is compatible with the Panel ARDL framework, which permits the inclusion of variables integrated at $I(0)$ and $I(1)$. Accordingly, the analysis proceeds to panel cointegration testing

to examine whether a stable long-run relationship exists among the variables before estimating the short-run and long-run relationships within the Panel ARDL framework. (Pesaran et al., 1999).

2. Cointegration tests for panels

To examine whether a long-run equilibrium relationship exists among the study variables in the selected MENA countries, the Kao (1999), Pedroni (2004), and Westerlund (2005) panel cointegration tests were employed. These tests provide complementary evidence regarding the existence of a long-run cointegrating relationship among the variables under different panel assumptions. The Westerlund (2005) test is employed here strictly as a panel cointegration test and is not interpreted as a direct test of cross-sectional dependence. The null hypothesis of no cointegration is evaluated using the respective test statistics and associated p-values. As reported below, the results provide evidence supporting the existence of a long-run relationship among the study variables. The results of the panel cointegration tests are summarized in Table 3.

Table 3 The Cointegration Test Results

Test	Statistics	p-value	Decision
Kao Test			
Modified Dickey-Fuller	-4.9397	0.0000	H ₁ : a long-term cointegration relationship exists.
Dickey-Fuller	-5.5522	0.0000	
Augmented Dickey-Fuller	-2.9534	0.0016	
Unadjusted modified Dickey-Fuller	-15.1400	0.000	
Unadjusted Dickey-Fuller	-8.6684	0.0000	
Pedroni Test			
Modified Phillips-Perron	-3.0787	0.0010	H ₁ : a long-term cointegration relationship exists.
Phillips-Perron	-7.9386	0.0000	
Augmented Dickey-Fuller	-7.9039	0.0000	
Westerlund Test			
Variance ratio	-2.3182	0.0102	H ₁ : a long-term cointegration relationship exists.

Source: Authors' elaboration based on Stata 15 software output.

Kao, Pedroni and Westerlund's cointegration tests suggest unwavering long-run equilibrium association between the financial market they focused on development and FDI in certain MENA contexts.

The Kao test rejects the null hypothesis of no cointegration, because all of the Dickey-Fuller statistics (Modified DF, DF, ADF, and the unadjusted versions) show statistically significant negative values, with p-values below 5%. This could indicate that the series to be examined have a long-run relationship and are moving together (contemporaneously) over time.

The Pedroni test allows for cointegration. Its Modified Phillips-Perron, Phillips-Perron and Augmented Dickey-Fuller statistics also showed significant results, with all p-values under .01. Therefore, a long-run association exists between the variables considered.

The Westerlund test also rejects the null hypothesis of no cointegration, as indicated by the statistically significant variance-ratio statistic (-2.3182 , $p = 0.0102$), providing additional evidence of a long-run cointegrating relationship among the study variables.

Ultimately, all three cointegration tests express that there is a long-run cointegrating relationship between financial market expansion and MENA FDI inflow. Although short-run variation in the two variables will remain, their long run equilibrium path will be stability defined.

3. Model estimators for panel ARDL

Given the evidence of a long-run relationship among the variables, the Panel ARDL model is subsequently estimated using the Mean Group (MG), Pooled Mean Group (PMG), and Dynamic Fixed Effects (DFE) estimators. Particular attention is given to the PMG estimator, which imposes homogeneity on the long-run coefficients while allowing short-run coefficients, adjustment dynamics, and error variances to differ across countries (Pesaran et al., 1999). The choice among the alternative estimators is further evaluated using the Hausman specification test. The estimation results are presented in Table 4.

Table 4 Panel ARDL Estimation Results (MG, PMG, and DFE)

Variable	Estimator					
	Mean Group (MG)		Pool Mean Group (PMG)		Dynamic Fixed Effects (DFE)	
	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value
Long Run						
FMI	0.6865379	0.260	0.4136138	0.000	0.3909289	0.002
GF	0.6810765	0.077	0.0126850	0.883	0.2303059	0.061
GDPG	-0.0496052	0.650	0.1318011	0.014	0.0482510	0.550
Short Run						
ECT	-0.7849021	0.000	-0.5739342	0.000	-0.5496942	0.000
D(FMI)	0.066673	0.825	0.3777313	0.073	0.0683518	0.576
D(GF)	0.3123794	0.104	0.4654740	0.048	0.0845196	0.514
D(GDPG)	0.0471694	0.236	-0.0102432	0.840	0.0175353	0.627

Source: Authors' elaboration based on Stata 15 software output.

The long-run estimation results obtained from the PMG estimator provide strong empirical support for Hypothesis H1. The coefficient of the Financial Market Development Index (FMI) is positive and statistically significant, indicating that higher levels of financial market development are associated with increased foreign direct investment inflows in the long run across MENA countries. Accordingly, Hypothesis H1 is accepted.

To select the most appropriate estimator for the Panel ARDL model in this study, the Hausman specification test is applied. A statistically insignificant p-value suggests that the PMG estimator is preferred due to its efficiency under long-run coefficient homogeneity, whereas a significant p-value would favor MG or DFE, which allow greater heterogeneity across countries (Hausman, 1978).

Table 5 Output of the Hausman test

Trade-off	Statistics	p-Value	Decision
MG/PMG	4.00	0.2612	PMG has superior efficiency compared to the MG.
DFE/PMG	0.390	1.000	PMG has superior efficiency compared to the DFE.

Source: Authors' elaboration based on Stata 15 software output.

Based on the Hausman test results, the PMG estimator is the suitable option for examining the use of the Panel ARDL model in this study. PMG is considered to be best estimator since the tests do not reject equality of PMG and MG (p-value 0.2612) and of PMG and DFE (p-value 1.000) estimates therefore between the three estimators, PMG is preferred because it is a more efficient means of estimating both the short-run and long-run effects of financial market development on foreign direct investment in the selected MENA countries.

4. Discussion of the PMG-based findings

The empirical results indicate the existence of a positive and statistically significant long-run relationship between financial market development (FMI) and foreign direct investment inflows (FDI) in the countries under study. The estimated long-run PMG coefficient for financial market development (FMI) is approximately 0.4136. Since the model is estimated in levels rather than logarithms, this coefficient should not be interpreted as an elasticity or as a 41% increase in FDI. Given that FDI is measured as a percentage of GDP and FMI is an index ranging from 0 to 1, the coefficient indicates that a one-unit increase in FMI is associated with an approximately 0.414 percentage-point increase in FDI inflows as a share of GDP, holding other factors constant. Equivalently, a 0.1-point increase in FMI is associated with an approximately 0.041 percentage-point increase in FDI as a share of GDP in the long run.. This result should be interpreted with caution, as the index reflects multiple dimensions of financial market development—such as market depth, access, and efficiency—rather than the impact of a single reform measure.

When compared with the existing empirical literature, the long-run positive relationship identified between financial market development and FDI inflows in this study is broadly consistent with earlier findings emphasizing the role of market liquidity, access to finance, and information efficiency in attracting foreign investment (Catherine & Lena, 2019; Rajapakse, 2018; Pham, Gan, & Hu, 2022). Similarly, our results resonate with panel-based evidence documenting bidirectional or long-run associations between financial development and FDI in emerging and developing economies (Soumare & Tchana, 2015; Kholdy & Sohrabian, 2005).

However, the dominance of long-run effects and the limited short-run responsiveness observed for most MENA countries provide a more nuanced interpretation of the finance–FDI nexus than that offered by several prior studies. In particular, while some country-specific analyses report short-run or mixed temporal effects of financial development on FDI (Mahmood & Tanveer, 2021), the present findings suggest that, in the MENA context, financial market development influences foreign investment primarily through gradual structural and institutional channels rather than through immediate cyclical adjustments.

This interpretation is consistent with the threshold-based arguments advanced in the literature, which posit that financial development begins to exert a meaningful impact on FDI only after reaching a minimum level of depth, efficiency, and institutional quality (Jonathan, 2017). In economies characterized by fragmented or less mature financial systems, short-term improvements may therefore be insufficient to trigger immediate investment responses, as foreign investors tend to prioritize long-term credibility, regulatory stability, and market depth.

Furthermore, the absence of a statistically significant long-run effect of financial globalization contrasts with theoretical expectations and with studies conducted in regions where capital account liberalization is more advanced. This divergence suggests that, for many MENA economies, financial openness alone does not automatically translate into higher FDI inflows unless it is accompanied by robust domestic financial institutions and effective regulatory frameworks. As such, the results support a conditional interpretation of financial globalization, whereby its benefits for FDI are contingent upon the strength of domestic financial market development.

In the short run, the results suggest that financial market development (FMI) does not exert a statistically significant immediate effect on foreign direct investment inflows (FDI) in most countries, which is consistent with the long-term nature of foreign direct investment decisions. The United Arab Emirates represents a notable exception, as short-run improvements in financial market conditions are associated with a significant increase in investment inflows. This exception can be attributed to the UAE's position as a mature financial hub, characterized by advanced infrastructure, high institutional credibility, and a strong level of investor confidence.

5. PMG-Based short-term results for every single nation

The short-run estimates for each MENA country by the Pooled Mean Group (PMG) methodology are presented separately in the next section. The short-run estimates generated by the PMG very simply show the multiplicity of the short-term responses to financial market development in the MENA region shown by the individual country responses. This is important for the MENA region as it illustrates the diversities created by the individual countries which will be influenced by their own institutional mechanism, and policy environment, as well as their investment climate. This type of country-based analysis demonstrates the extent to which reforms made to create financial development by shifts in financial market indicators in the short-term country are associated with FDI inflow, therefore producing contextualized views about how financial development works across the MENA region.

Table 6 PMG Short-term results for individual nations

Countries	Ect	D(FMI)	D(GF)	D(GDPG)
Algeria	-0.3267031 (0.012)	2.313875 (0.390)	2.471361 (0.136)	-0.10596 (0.326)
Bahrain	-0.9943231 (0.000)	0.3664932 (0.406)	0.3728055 (0.743)	0.15219 (0.179)
Egypt	-0.5039826 (0.000)	0.1283798 (0.686)	0.1298794 (0.532)	0.43297 (0.000)
Iran	-0.4405218 (0.001)	-0.2056807 (0.156)	-0.2569363 (0.232)	-0.04981 (0.054)
Jordan	-0.2555041 (0.024)	-0.2673882 (0.681)	0.1157018 (0.756)	-0.14080 (0.416)
Kuwait	-0.5562712 (0.001)	-0.2823413 (0.264)	0.1757342 (0.863)	-0.15536 (0.648)
Morocco	-1.187085 (0.000)	0.0571549 (0.917)	0.0354897 (0.878)	-0.07246 (0.285)
Oman	-0.4788853 (0.000)	0.2212966 (0.495)	1.7841150 (0.001)	-0.05018 (0.485)
Qatar	-0.3537367 (0.010)	0.0268894 (0.938)	0.0159931 (0.982)	-0.20857 (0.057)
Saudi Arabia	-0.8530239 (0.000)	0.5637432 (0.272)	0.2386222 (0.786)	-0.02201 (0.828)
Tunisia	-0.7544915 (0.000)	1.1242570 (0.265)	-0.0597405 (0.724)	-0.04107 (0.613)
United Arab Emirates	-0.1826821 (0.005)	0.4860972 (0.031)	0.5626636 (0.094)	0.13807 (0.006)
Note: those in () are p-Value				

Source: Authors' elaboration based on Stata 15 software output.

The comparison between short-run and long-run estimates provides clear evidence in support of Hypothesis H2.

The short-run results indicate a high degree of heterogeneity across countries, while confirming the existence of a stable long-run equilibrium relationship, as evidenced by the negative and statistically significant error correction terms in all cases. This suggests that short-term deviations in foreign direct investment inflows are temporary and tend to converge toward their long-run equilibrium path.

From an economic perspective, neither financial market development nor financial globalization exhibits a statistically significant short-run effect in most Middle East and North Africa (MENA) countries. This reflects the long-term and largely irreversible nature of foreign direct investment decisions, which are primarily driven by institutional quality and

financial market depth rather than short-term fluctuations. Economic growth displays selective short-run relevance in some cases, indicating that cyclical performance may temporarily influence investment decisions when macroeconomic signals are sufficiently strong.

The United Arab Emirates represents a notable exception, where short-run changes in financial market development, financial globalization, and economic growth are significantly associated with higher foreign direct investment inflows. This highlights the role of market maturity, institutional credibility, and advanced financial infrastructure in enabling short-term improvements to be rapidly translated into investment decisions.

Conclusion

Using the Panel Autoregressive Distributed Lag (Panel ARDL) model, this study validates the basic connection between the growth of financial markets and the allure of FDI in the Middle East and North Africa (MENA) area between 1990 and 2021. The findings indicate a robust, long-term equilibrium relationship between the variables, which is supported by the statistically significant negative coefficient of the Error Correction Term (ECT) in every nation.

In the long run, the findings indicate that financial market development and economic growth are positively associated with FDI inflows. Specifically, the estimated long-run coefficient of FMI (0.4136) indicates that a one-unit increase in the Financial Market Development Index is associated with an approximately 0.414 percentage-point increase in FDI inflows as a share of GDP, holding other factors constant. Conversely, the financial globalization index shows no significant long-run effect, reflecting persistent structural constraints that impede the full benefit of financial openness.

The short-run analysis, however, highlights significant heterogeneity in responsiveness. While the majority of countries do not exhibit an immediate response to annual changes in financial and economic indicators, the United Arab Emirates (UAE) represents a fundamental exception. In the UAE, all included independent variables demonstrate a positive and statistically significant effect on FDI in the short term. This contrast suggests that the effectiveness of financial reforms in attracting FDI is heavily dependent on the maturity of the investment environment and the level of institutional confidence, underscoring the necessity of continuing structural reforms to deepen financial markets as a strategic priority for ensuring sustainable FDI flows.

References

- Alfaro, L., Chanda, A., Kalemli-Ozcan, S., & Sayek, S. (2010). Does foreign direct investment promote growth? Exploring the role of financial markets on linkages. *Journal of Development Economics*, 91(2), 242-256. doi:<https://doi.org/10.1016/j.jdeveco.2009.09.004>
- Acheampong, I. K., & Wiafe, E. A. (2013). Foreign Direct Investment and Stock Market Development: Evidence from Ghana. *International Journal of Finance and Policy Analysis*, 5(1), 1-15. Retrieved from https://www.academia.edu/download/34540496/fdi_and_stock_market_development_new.pdf
- Agbloyor, E. K., Abor, J., Adjasi, C. K., & Yawson, A. (2013). Exploring the causality links between financial markets and foreign direct investment in Africa. *Research in International Business and Finance*, 28, 118-134. doi:<https://doi.org/10.1016/j.ribaf.2012.11.001>
- Alfaro, L. (2003). *Foreign Direct Investment and Growth: Does the Sector Matter?* Harvard Business School. Retrieved from <https://scispace.com/pdf/foreign-direct-investment-and-growth-does-the-sector-matter-12yhymmtf8.pdf>
- Alfaro, L., Chanda, A., Kalemli-Ozcan, S., & Sayek, S. (2004). FDI and Economic Growth: The Role of Local Financial Markets. *Journal of International Economics*, 64(1), 89-112. doi:[https://doi.org/10.1016/S0022-1996\(03\)00081-3](https://doi.org/10.1016/S0022-1996(03)00081-3)

- Bekaert, G., Harvey, C. R., & Lundblad, C. (2010). Financial Openness and Productivity. *American Finance Association (AFA) 2010 – Atlanta Meetings*, (pp. 1-32). doi:http://dx.doi.org/10.2139/ssrn.1358574
- Bekmurodova, G. (2020). Theoretical Features of FDI (Foreign Direct Investment) and its Influence to Economic Growth. *International Journal of Management Science and Business Administration*, 6(2), 33-39. doi:http://dx.doi.org/10.18775/ijmsba.1849-5664-5419.2014.62.1004
- Ezeoha, A. E., & Cattaneo, N. (2011). FDI Flows to Sub-Saharan Africa: The Impact of Finance, Institution and Natural Resource Endowment. *Paper Submission for the CSAE Conference 2011: Economic Development in Africa*, (pp. 1-26). doi:https://doi.org/10.1057/ces.2012.18
- Gygli, S., Haelg, F., Potrafke, N., & Sturm, J.-E. (2019). The KOF Globalisation Index – revisited. *The Review of International Organizations*(14), 543-574. doi:https://doi.org/10.1007/s11558-019-09344-2
- Hajilee, M., & Al Nasser, O. (2015). The Relationship Between Financial Market Development and Foreign Direct Investment in Latin American Countries. *The Journal of Developing Areas*, 49(2), 227-245. doi:https://dx.doi.org/10.1353/jda.2015.0043
- Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica*, 46(6), 1251-1271. doi:https://doi.org/10.2307/1913827
- Ho, C. S., & Booth, L. C. (2019). The Impact of Financial Market Development on FDI in Developed and Emerging Countries. *Global Review of Accounting and Finance*, 10(2), 1-18.
- Im, K. S., Pesaran, M. H., & Shin, Y. (2003). Testing for unit roots in heterogeneous panels. *Journal of Econometrics*, 115(1), 53-74. doi:https://doi.org/10.1016/S0304-4076(03)00092-7
- IMF. (2022). *Financial Development Index Database*. Retrieved from International Monetary Fund: <https://data.imf.org/>
- Kao, C. (1999). Spurious regression and residual-based tests for cointegration in panel data. *Journal of Econometrics*, 90(1), 1-44. doi:https://doi.org/10.1016/S0304-4076(98)00023-2
- Khouldy, S., & Sohrabian, A. (2005). Financial Markets, FDI, and Economic Growth: Granger Causality Tests in Panel Data Model. *Moscow Meetings*, 1-34. doi:https://doi.org/10.2139/ssrn.676085
- KOF Swiss Economic Institute. (2024). *KOF Globalisation Index*. Retrieved from <https://kof.ethz.ch/en/forecasts-and-indicators/indicators/kof-globalisation-index.html>
- Kose, M., Prasad, E. S., Rogoff, K. S., & Wei, S.-J. (2009). Financial Globalization: A Reappraisal. *IMF Staff Papers*, 56(1), 8-62. doi:https://doi.org/10.1057/imfsp.2008.36
- Levin, A., Lin, C.-F., & Chu, C.-S. J. (2002). Unit root tests in panel data: asymptotic and finite-sample properties. *Journal of Econometrics*, 108(1), 1-24. doi:https://doi.org/10.1016/S0304-4076(01)00098-7
- Levine, R. (2005). Finance and Growth: Theory and Evidence. In *Handbook of Economic Growth* (Vol. 1, pp. 865-934). doi:https://doi.org/10.1016/S1574-0684(05)01012-9
- Mahmood, H., & Tanveer, M. (2021). Role of Education and Financial Market Development in Attracting Foreign Direct Investment Inflows in Pakistan. *TEM Journal*, 10(3), 1184-1189. Retrieved from chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.temjournal.com/content/103/TEMJournalAugust2021_1184_1189.pdf
- Munemo, J. (2017). Foreign direct investment and business start-up in developing countries: The role of financial market development. *The Quarterly Review of Economics and Finance*, 65, 97-106. doi:https://doi.org/10.1016/j.qref.2016.08.010
- Nguyen, M.-L. (2022). Foreign direct investment and economic growth: The role of financial development. *Cogent Business & Management*, 9(1), 1-15. doi:https://doi.org/10.1080/23311975.2022.2127193

- Pedroni, P. (2004). Panel cointegration: Asymptotic and finite sample properties of pooled time series tests with an application to the PPP hypothesis. *Econometric Theory*, 20(3), 597-625. doi: <https://doi.org/10.1017/S0266466604203073>
- Pesaran, M. H., Shin, Y., & Smith, R. P. (1999). Pooled Mean Group Estimation of Dynamic Heterogeneous Panels. *Journal of the American Statistical Association*, 94(446), 621-634. doi:<https://doi.org/10.1080/01621459.1999.10474156>
- Pham, T. H., Gan, C., & Hu, B. (2022). Causality between Financial Development and Foreign Direct Investment in Asian Developing Countries. *Risk and Financial Management*, 15(195), 1-26. doi:<https://doi.org/10.3390/jrfm15050195>
- Rajapakse, R. (2018). The Relationship Between the Stock Market and Foreign Direct Investment (FDI) in Sri Lanka-Evidence from VAR and Co-Integration Analysis. *Global Journal of Management and Business Research: B Economics and Commerce*, 18(B5), 9-15. Retrieved from <https://journalofbusiness.org/index.php/GJMBR/article/view/2555>
- Saurav, A., & Kuo, R. (2020). The Voice of Foreign Direct Investment: Foreign Investor Policy Preferences and Experiences in Developing Countries. *Policy Research Working Paper*(9425). Retrieved from <https://hdl.handle.net/10986/34596>
- Soumare, I., & Tchana, F. (2015). Causality between FDI and Financial Market Development: Evidence from Emerging Markets. *The World Bank Economic Review*, 29(1), 205-216. doi:<https://doi.org/10.1093/wber/lhv015>
- Tsaurai, K. (2014). Stock Market and Foreign Direct Investment in Zimbabwe. *Risk governance & control: financial markets & institutions*, 4(2), 53-60. doi:<https://doi.org/10.22495/rgcv4i2art4>
- Westerlund, J. (2005). New Simple Tests for Panel Cointegration. *Econometric Reviews*, 24(3), 297-316. doi:<https://doi.org/10.1080/07474930500243019>
- World Bank. (2024). *World Development Indicators*. Retrieved from The World Bank Group.

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