

Effect of Foreign Direct Investment on Economic Development in MENA Countries: Evidence from a Dynamic Panel Analysis

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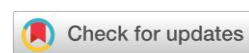
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Abstract: This study investigates the impact of foreign direct investment (FDI) on the economic development of MENA countries during the period 2000-2025, highlighting the importance of the role that quality of institutions plays in determining the effectiveness of foreign investment. The study adopts a panel econometric approach which controls for cross sectional dependence, mixed orders of integration, long run relationship and potential endogeneity and is conducted on a panel of economies of the MENA region. The main development measures are in the Human Development Index, and the main explanatory factors of development are FDI, human capital, institutional quality, openness to trade, financial development, infrastructure, inflation and natural-resource dependence. Fixed-effects estimation, cross-sectionally augmented autoregressive distributed lag (CS-ARDL), common correlated effects mean group (CCEMG) and augmented mean group (AMG) estimators are used in the empirical analysis. The result shows that the long run effect of FDI has been more positive and statistically significant, while the short run effect shows that the FDI positively affects the economic development but is not statistically significant. The human capital, institutional quality, financial development and infrastructure and trade openness also have positive impacts on economic development, while inflation and natural-resource dependence have negative impacts. Importantly, the relationship between FDI and institutional quality is positive and significant, which indicates that the better the institutions are, the better the development contribution of foreign investment can be. The robustness results are the same under alternative estimators and other measures of development and FDI. The main findings of the study are that FDI alone is not enough to maximize its developmental impact, but needs to be coupled with improving institutional quality, human capital, financial systems, infrastructure and economic diversification in the MENA countries if FDI is to be translated into sustainable and inclusive development.

Keywords: Foreign direct investment; Economic development; Human Development Index; Institutional quality; Human capital; Financial development



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1. Introduction

Foreign direct investment (FDI) has been an integral part of the foreign capital flows and a source of economic development for the developing and emerging countries. FDI is generally associated with a longer-term investment period by foreign investors and it can include capital, advanced technologies, managerial skills and job opportunities, as well as access to foreign markets. The above features have contributed to the role of FDI as an important instrument in the development strategies of many countries. The significance of FDI in the MENA economies is also high due to the region's significant natural resources, the rapid growth of consumer markets, strategic geographical locations and high levels of economic and institutional variation. Foreign direct investment (FDI) inflows to the MENA region have been quite large in some countries but small and relatively low in others. The empirical and policy relevance of the question of whether and how FDI helps economic development in the region is therefore of great importance.

The theoretical case for the positive FDI–development nexus is to largely attributed to the possibility of foreign investment filling domestic capital gap and creating productivity-

enhancing spillovers. Foreign companies can also bring new technology and production methods to Japan that the domestic market may not have, and foreign investment can enhance management capabilities and skills of domestic workers and domestic production networks. According to Borensztein et al. (1998), the benefits that FDI can bring to economic growth are in terms of technology transfer, but can only be gained if the host economy has human-capital capacity. Likewise, Adams (2009) proposes that FDI can supplement not replace, domestic investment. In addition, Makiela and Ouattara (2018) provide evidence that FDI impacts economic growth by several channels, such as capital accumulation, productivity and domestic investment.

But there is mixed empirical evidence on the FDI–development relationship across countries and regions. Some studies have found positive outcomes, but the strength of the linkage and whether it is positive or negative could be influenced by the institutional, financial and structural features of the host economies. For instance, Iamsiraroj and Ulubaşoğlu (2015) establish a positive overall relationship between FDI and economic growth, but stress that this relationship depends on the specific factors of each country. Dinh et al. (2019) find evidence of short- and long-term effects of FDI on economic growth, and Emako et al. (2022) shows that the impacts of FDI are different in developing countries. The price of home situations additionally indicates that domestic factors have a bearing on the effectiveness of foreign investment in Africa. Based on this, Gui-Diby (2014) concluded that FDI can add to the economic growth of Africa, and Adegboye et al. (2020) showed that institutional quality has an important role in the FDI–development relationship.

The importance of host-country conditions is especially pertinent in the MENA region. The economies of the Middle East and North Africa (MENA) vary significantly across the region on a range of dimensions, including income level, governance, financial development, human capital, infrastructure, trade integration and reliance on natural resources. More diversified economies could be the destination for FDI in manufacturing, tourism, logistics, financial services and technology; while oil-exporting economies could find investment in resource-rich industries. This means that the same quantity of FDI can be expected to produce varying development impacts in different sectors, and in different institutional and productive settings of the recipient economy. One of the important conditioning factors is financial development. Indeed, Choong (2012) reveals that domestic financial development will bolster the link between FDI and economic growth, and Nguyen (2022) and Osei and Kim (2020) also highlight the importance of financial development to the effectiveness of foreign investment.

Another possible channel of impact of FDI on development is institutional quality. Good institutions can offer regulatory security, secure property rights, lower transaction costs and enhance public administration efficiency. On the other hand, the corruption, poor governance and regulatory instability can reduce the ability of the host country to reap the benefits from the spillover effects of foreign investment. Okada & Samreth (2014) prove the corruption effect on the FDI–economic growth relationship and Adegboye et al. (2020) show the institutional quality as an important determinant of the FDI–economic development relationship. The results indicate that institutional quality must not be treated as a control variable only, but may also be a variable that affects the effectiveness of foreign capital in achieving development results.

The role of FDI in development may also be influenced by human capital, infrastructure, and openness of trade. Technologies and organisational practices are often brought in by foreign companies that need an adequately trained workforce. Host economies may not be able to take advantage of these technologies and knowledge spillovers without sufficient human capital. Likewise, poor infrastructure can raise cost of operation and hence the productivity of foreign-invested enterprises is low. FDI can also be a further key driver of the advantages of trade openness, through the ability of multinational enterprises to link host economies to regional and global value chains. It follows that these factors are positively correlated with development, and that the argument that FDI is more effective in a supportive domestic economic environment applies generally.

Another of key concern is the long-term relationship between FDI and development. Foreign investment can take some time to yield significant development benefits, as the

technology transfer, training of staff, and establishing linkages with domestic suppliers and productivity gains usually take time to materialize. Dinh et al. (2019) classify the effects of FDI into two categories: short term and long term, and give evidence that the relationship can be maintained even after the time allocated for the investment. Likewise, Makiela and Ouattara (2018) highlight the significance of channels via which FDI affects economic outcomes. Hence, a study of only “temporary” linkages may underestimate the longer-term developmental impact of FDI. In the context of the MENA experience, a dynamic panel framework that separates short-run adjustment from long-run equilibrium relationships is then desirable.

Although there is a growing body of literature focusing on FDI and economic growth, there are some gaps. First, a lot of the evidence available is on economic growth, rather than economic development. Economic development can include improvements in income, health, education and overall human well-being, and so the Human Development Index (HDI) can be used to give a wider picture than the traditional output-based indicators. Second, previous research has mainly focused on single countries, on samples of developing countries or on certain developing areas like Africa, Asia or Latin America, but comparatively little work has been done to study the diverse setting of the MENA region as a separate empirical unit. Third, also little attention has been paid to whether institutional quality boosts the developmental impact of FDI. Fourth, the presence of cross sectional dependence due to common global, regional and commodity market shocks calls for methodological attention in conducting long term analysis of the MENA countries.

In this context, the present study explores the impact of FDI on the economic development of the MENA countries during 2000–2025. The Human Development Index is the main indicator for economic development and FDI is the most important variable. To capture important economic and structural factors of the region, human capital, institutional quality, trade openness, financial development, infrastructure, inflation and natural-resource dependence are introduced. The empirical analysis utilizes panel-data methods that are suitable to the cross-sectional dependence, mixed orders of integration, long run relationships, and potential endogeneity. Moreover, the study investigates the potential moderating effect of institutional quality on the effect of FDI on economic development.

There are several contributions of the study to the literature. First, it adds to the FDI literature by taking a broader perspective of economic development instead of exclusively on economic growth. Second, it offers evidence for the region specific to MENA countries over a relatively long time frame, spanning the period 2000–2025, which allows for the representation of significant investment pattern, institutional, and economic structure changes. Third, it explicitly considers the moderating effect of institutional quality; and evidence of the conditions under which FDI is more likely to bring developmental benefits is provided. Fourth, the application of auxiliary panel estimators and robustness techniques offer a fuller description of the relationship and offers solutions to important econometric questions. The results will have significant policy implications for those looking to foster productive FDI inflows and, at the same time, strengthen institutional and economic conditions to translate foreign investment into sustainable development.

2. Literature Review

Foreign direct investment (FDI) has been considered as a vital source of external financing and an engine of economic development in developing and emerging economies for long time. The theoretical argument is that FDI can be complementary to domestic capital accumulation, bring in new and better technologies, enhance managerial skills, create jobs and aid international trade and market integration. One of the key explanations for this relationship was provided by Borensztein et al. (1998), who provided one of the major explanations that FDI can bring benefits to economic growth and productivity. Likewise, Adams (2009) shows that FDI can be complementary to domestic investment and both are good sources of capital for economic growth. Batten and Vo (2009) also show that the link between FDI and economic growth is multifaceted and may differ across countries depending on specific FDI and country characteristics. The evidence from more recent cross-country studies is largely supportive of a positive relationship, although there

is still some cross-country variation in the strength and direction of the relationship. Dinh et al. (2019) argue that, in developing economies, FDI can have both short and long-run effects on economic growth, whereas Emako et al. (2022) confirm a positive role of FDI on economic growth in developing countries.

But, there is no universal evidence in support of the unconditional positive effect of FDI. For a long time, it has been found that the results of FDI are influenced by the nature and the absorptive capacity of the host economies. Borensztein et al. (1998) underline the need for adequate human capital to reap the benefits of technology transfer resulting from FDI. Choong (2012) further claims that the degree of financial development of the domestic financial system can also boost the impact of FDI on economic growth, as a well-developed financial system would enable the domestic firms to gain access to finance and benefit from the technological and productive opportunities of foreign investment. Likewise, Nguyen (2022) finds that financial development is a significant determinant of the growth impact of FDI, and Osei and Kim (2020) reveals that financial development and FDI can interact to have a notable impact on economic performance. Makiela and Ouattara (2018) also show that the effect of FDI on the economic growth does not rest exclusively on the accumulation of capital, but on other channels. These channels include capital formation, productivity and trade related channels.

There is evidence from the developing world to extend the point made above on the heterogeneous nature of the FDI–development relationship. Adams (2009) claims that FDI contributes to economic growth in Sub-Saharan Africa and Gui-Diby (2014) concludes that FDI has a significant impact on economic performance in Africa using 30 years of panel data. A similar significant connection between FDI and economic growth in Eastern Africa is noted by Bekere and Bersisa (2018). The study by Doku and colleagues (2017) suggests that China's foreign direct investment (FDI) has the potential to affect the African growth, which has been gaining significance in recent years. There is also in general support from Asia. According to Anwar and Nguyen (2010), FDI has positive effects on economic growth in Vietnam and Adil and Akalpler (2017) also conclude that FDI has positive effects on the economic growth in Singapore. However, as Alvarado et al. (2017) show, the impact of FDI can vary by country in Latin America, highlighting the significance of country-specific factors. Using a comprehensive empirical evaluation, Iamsiraroj and Ulubaşoğlu (2015) warn that the positive correlation between FDI and growth is not always present and could vary with the model specification and institutional setting. In support of this, Chizema (2025) offers more recent evidence for South and Southeast Asia and highlights the need for analysing the developmental impacts of FDI in a regionally differentiated way.

Another key determinant of the success of foreign investment in sustainable economic development is institutional quality. Foreign investors need a regulatory environment that is predictable, good public institutions, and protection of property rights and relatively low corruption rates. The institutional environment can also limit the contribution of FDI to productivity, by increasing transaction costs, promoting rent-seeking behaviour and weakening linkages between foreign-owned firms and domestic firms. Adegbeye et al. (2020) offer proof that the quality of institutions is tightly linked to FDI and economic development and hence better institutions can contribute to the betterment of the developmental impact of foreign investment in Sub-Saharan Africa. Likewise, according to Okada and Samreth (2014), foreign direct investment's impact on economic growth occurs as a result of corruption, highlighting how the institutional context can either enhance or obstruct foreign direct investment benefits. The findings are especially important for the MENA economies, where the countries vary significantly in terms of their governance structures and the effectiveness of their regulations, their political stability, and the level of their resource dependence and institutional capacity.

Also, non-linear and threshold effects are highlighted in the literature. Generally, the impact of FDI on the economic growth is assumed to be linear, but the findings of the recent studies indicate that the positive or negative effects of foreign investment can change once the economic threshold is reached. Furthermore, Kalai et al. (2024) point to threshold effects of FDI on the economic growth in BRICS economies, where the

effectiveness of FDI can change depending on the state of the economy. This view is crucial because there is a significant variance between the MENA countries regarding income, financial development, institutional quality, and human capital and natural-resource dependence. FDI is thus likely to produce relatively distinct development effects in high-income economies of the Gulf, as opposed to lower- and middle-income economies of the MENA region.

An additional question and answer is on the difference between economic growth and economic development. The vast majority of the literature on FDI is dependent upon GDP growth as the outcome measure, concentrated mainly on the impacts of FDI on overall economic output. Economic growth is one of the key indicators of economic performance, but it doesn't reflect all improvements in living standards, education and health. The present study thus broadens the concept of economic development, and uses the Human Development Index (HDI) as a broader measure of development in addition to GDP per capita as a robustness measure. This strategy has a specific implication for MENA region, where significant investments of FDI into resource-rich economies do not necessarily lead to corresponding improvements in the macro dimension of human development.

Although literature on the subject of the relationship between FDI and economic growth is voluminous, relatively little attention has been paid to a long and recent period of economic growth in the MENA region and the institutional, financial and structural factors that may affect the FDI–development relationship. Previous research has mainly focused on Sub-Saharan Africa, Asia, and/or on large samples of developing countries. While these studies offer valuable theoretical and empirical insights, the generalisability of their findings is limited when considering MENA countries due to their unique features and characteristics, such as high natural-resource dependence, varying institutional quality, financial development, human capital and FDI composition. Furthermore, the MENA region has undergone significant economic and institutional transformation since 2000, characterized by significant economic growth and investment booms, global financial crises, commodity price booms and busts, political instability and efforts to diversify the economy. Against this background, the present study contributes to the previous literature by investigating the role of FDI in economic growth of MENA countries in 2000–2025. This study introduces FDI as the key explanatory variable, economic development as the key dependent variable and also takes into account human capital, quality of institutions, trade openness, financial development, infrastructure, inflation and natural-resource dependence. The rationale for including these variables is reflected in the available evidence on the effect of FDI, which indicates that the developmental effect of FDI is linked to the wider economic and institutional context. In particular, the study brings institutional quality at the heart of the conceptual framework by looking at whether better institutions can improve the ability of MENA economies to leverage foreign investment for a more inclusive development.

The existing literature offers the strong theoretical basis for believing that FDI could have a positive impact on overall economic development, and this evidence also suggests that the size of this impact depends on the host country's characteristics. The research results from Borensztein et al. (1998), Adams (2009), Dinh et al. (2019) and Emako et al. (2022) uphold the general developmental capability of FDI, while Choong (2012), Nguyen (2022) and Osei and Kim (2020) emphasise on the value of financial development. Adegboye et al. (2020) and Okada and Samreth (2014) illustrate the significance of institutional quality, and Makiela and Ouattara (2018) illustrate the importance of transmission channels. Additionally, the results obtained by Kalai et al. (2024) show that this correlation might not be linear.

3. Methodology

The research design used for this study is quantitative and panel data method was used in analyzing data across selected Middle East and North African (MENA) countries for the period 2000–2025. Use of a panel framework is appropriate since it provides both country information and time information; this allows the analysis to capture both

country-level differences and country-level changes over time. The study is based on the MENA economies for which relatively consistent annual data are available. The final sample is achieved by taking all of the data available on all of the key variables, with the goal of having as many countries and years included as possible. The time span 2000-2025 is sufficiently long to reflect structural shifts in FDI flows, economic growth, institutions and financial systems in the region.

Foreign direct investment is the most important explanatory variable (measured as net FDI inflows in percent of GDP). This is extracted from World Bank's World Development Indicators (WDI) and is preferred because the FDI/GDP ratio allows for an economy to be compared across different economies of different economic sizes in the MENA region. For robustness, FDI inflows in current US dollars should be used as an alternative, if possible. Economic development is the dependent variable, and it is mostly represented by the Human Development Index (HDI) from the United Nations Development Programme (UNDP). HDI is used as the main indicator as it covers several aspects of development, such as income, life expectancy and education, making it a more comprehensive indicator than economic growth. The robustness check is conducted using GDP per capita in constant prices from World Bank as alternative dependent variable.

The empirical model also includes a number of control variables to mitigate omitted variable issues and to control for important structural factors that could affect economic growth. The human-capital indicator is an appropriate indicator of human capital, which is defined as the education and productive capabilities of the population. Trade openness is defined as the total value of exports and imports divided by GDP and reflects the level of integration of an economy in international trade. Financial development is represented by domestic credit to the private sector, measured as a percentage of GDP, which measures the supply of financial resources to households and firms. Indicators of infrastructure development are internet usage or access to electricity, depending on what data are available. The measure of natural-resource dependence is the total natural-resource rents as a share of GDP and the measure of inflation covers macroeconomic instability. Institutional quality is included based on indicators from the Worldwide Governance Indicators which include dimensions like government effectiveness, regulatory quality, rule of law and control of corruption, either singly or as a composite institutional-quality index. The choice of these variables is guided by both the theoretical and empirical studies that have shown the impact of FDI is highly sensitive to the economic, institutional and financial conditions in the host country.

First, the study analyzes the distribution and attributes of all the variables to describe them in detail. Means, standard deviations, minimum and maximum values are reported to detect the differences on the scale and variability of the variables between MENA countries and over time. A correlation analysis is then run to give preliminary indications of the relationship between FDI and the economic development, and to test for possible correlations among the explanatory variables. Variance inflation factors (VIF) and correlation coefficients are used to assess multicollinearity. The preliminary procedures give an initial feel for the data before using more sophisticated panel data estimators.

The study has tested for cross sectional dependence prior to running the panel unit-root and cointegration tests given the potential that MENA countries might be subject to common shocks across the region and globally. Cross-sectional dependence can occur due to the fact that the countries in the region share at the same time with the rest of the world international financial conditions, oil-price changes, geopolitical changes, global economic crises and regional policy changes. Therefore, the Pesaran test for cross-sectional dependence is used and, where appropriate, alternative LM based tests are used. Evidence of cross-section dependence is fed in when choosing the next panel-data estimation methods in order to avoid misspecifying the independence assumptions in the statistical inference.

Second generation panel unit-root test taking into account cross sectional dependence is used to test the stationarity properties of the variables. The Cross-sectionally Augmented Dickey-Fuller (CADF) test and Cross-sectionally Im, Pesaran and Shin (CIPS) test are used in particular. Such methods are better than the traditional first generation panel

unit root tests in cases where countries are interdependent and have a common set of shocks. The properties of the variables are determined first when they are integrated for the purpose of estimating long run relationships. If variables are integrated of different orders, but no more than once, an appropriate framework of dynamical panels is used.

A long-run equilibrium relationship between the FDI and economic development and the control variables is then investigated utilizing the panel cointegration techniques. The Westerlund cointegration test is especially suitable as it can incorporate cross-country dependence and heterogeneity. If appropriate, additional cointegration evidence can be achieved by using alternative procedures. If the variables are cointegrated, it would mean that the variables are non-stationary over the sample but have a stable long run relationship across the sample. This is crucial, because it is the basis for short-run and long-run estimates of the impact of FDI on economic development.

In the long run estimation process the Cross-Sectional Autoregressive Distributed Lag (CS-ARDL) model is applied by the principal. The Cross-Sectional Autoregressive Distributed Lag (CS-ARDL) model is applied by the principal in the long run estimation process. The present study calls for using the CS-ARDL estimator due to its ability to incorporate country-specific dynamics, cross-sectional dependence and common factors and its ability to analyze both short-run and long run relationships. The method has proven to be valuable for the MENA region given that some countries are likely to be affected differently by FDI shocks and that both countries are subject to the same global and regional factors. Averaging values over cross-sections controls for any unobserved common factors that might otherwise cause bias in an estimated relationship between FDI and economic development. The CS-ARDL framework is thus the fundamental tool to gauge the statistical significance of the long run impact of the FDI on the growth of economy and the presence of any short run adjustment after the long run deviation.

The results of the CS-ARDL can be complemented with other heterogeneous panel estimators like the Common Correlated Effects Mean Group (CCEMG) and Augmented Mean Group (AMG) estimators as robustness checks. They are useful as they control for cross sectional dependence and permit the slopes of the regression lines to differ from one country to another. If the sign and significance of the FDI coefficient is similar in the main estimator and alternative estimators, this would give more credence to the results. The use of several estimators is especially crucial in a sample that is not homogeneous across countries, like MENA, where the economies of the oil exporting Gulf states, diversified middle-income states and lower-income states could be significantly different in how they react to foreign investment.

It also examines the possibility of the institutional quality moderating the relationship between FDI and economic development. The thinking is that the benefits of FDI will be more likely to include technology spillovers, productivity benefits, domestic linkages, and sustainable economic benefits if the host country's institutions have an effective regulatory environment, protect property rights, and limit corruption. An extended model thus includes an interaction term between FDI and institutional quality. The positive and statistically significant interaction coefficient would suggest that institutional quality has an additional positive effect on the development promoting effect of FDI. The effects of FDI can then be illustrated by a marginal-effects analysis for various institutional-quality levels.

All findings are subject to several robustness procedures to make sure the results are not based on a specific measurement or estimation technique. Firstly, the concept of HDI is replaced by GDP per capita as an alternative to measure economic development. Second, other indicators of institutional quality and FDI could be used if data is available. Thirdly, the analysis could be repeated without the inclusion of certain outlier countries or years that could skew the results. Fourth, alternative panel estimators are employed to check the robustness of the main findings. The procedures are especially relevant for the MENA sample owing to significant economic size and natural-resource dependence, along with institutional quality and FDI intensity, differences across the region.

Lastly, country-specific and time-specific effects are included in all models, if relevant. Note that country effects control for relatively stable characteristics that are not

observed across individual MENA economies, and year effects capture common shocks affecting all MENA economies over a specific year. The standard errors are adjusted to reflect the panel structure and dependence of the data. The significance of the results is judged at 1%, 5% and 10% levels. Taking all these and together, the cross-sectional dependence test, second generation unit-root test, panel cointegration test, CS-ARDL, and heterogeneous-panel robustness test and System GMM offer a full empirical toolbox to evaluate the short-run and long-run effects of FDI on economic development in MENA countries for the 2000–2025 period.

4. Results

The descriptive statistics of the variables used in the analysis for the MENA countries for the period 2000–2025 are provided in Table 1. Overall, the countries vary widely in terms of economic development as measured by the Human Development Index (HDI): The mean of the HDI is 0.718, ranging from a minimum of 0.448 to a maximum of 0.953. The results of FDI have a mean value of 4.217% of GDP, but the very wide range of values allows for substantial differences in foreign investment inflows between countries and years. The region has high human capital (mean=0.593) and negative (mean=−0.214) institutional quality, indicating that there is significant institutional diversity within the region. The level of trade openness on average is 86.341% of GDP, which shows relatively high level of international economic integration, while financial development averages 54.726% of GDP. The average of infrastructure is relatively high at 72.584, and there is a high level of dispersion in inflation, averaging 5.684%. The level of natural-resource dependence also differs significantly, with 18.472% on average and a maximum of more than 83% highlighting the different levels of dependence on natural resources between the resource-rich and the more diversified MENA economies. The descriptive statistics indicate that there is a significant degree of cross-country and time homogeneity, justifying the use of panel-data analysis techniques that accommodate such differences.

Table 1. Descriptive Statistics of the Study Variables

Variable	Obs.	Mean	Std. Dev.	Minimum	Maximum
Economic Development (HDI)	442	0.718	0.104	0.448	0.953
Foreign Direct Investment (FDI)	442	4.217	6.183	-8.452	55.817
Human Capital (HC)	442	0.593	0.119	0.327	0.786
Institutional Quality (IQ)	442	-0.214	0.742	-2.013	1.714
Trade Openness (TO)	442	86.341	42.587	18.462	211.836
Financial Development (FD)	442	54.726	31.458	7.214	171.523
Infrastructure (INF)	442	72.584	22.316	18.903	99.982
Inflation (CPI)	442	5.684	7.927	-3.221	68.345
Natural Resource Dependence (NRD)	442	18.472	19.624	0.218	83.714

Note: HDI = Human Development Index; FDI = foreign direct investment inflows (% of GDP); HC = human capital; IQ = institutional quality; TO = trade openness; FD = financial development; INF = infrastructure development; CPI = inflation; NRD = natural-resource rents (% of GDP). The sample comprises MENA countries over 2000–2025.

The correlation matrix and diagnostics for the study variables are presented in Table 2. The results indicate that foreign direct investment and economic development are positively correlated and the coefficient value is statistically significant (0.286), which offers preliminary evidence that more FDI is related to higher level of development. Human capital, institution quality, financial development and infrastructure have relatively high positive relationships with economic development, while inflation and natural resource dependency have relatively high negative relationships. The positive relationship between FDI and institutional quality also suggests that a country with a high institutional quality should be more likely to attract/retain FDI. While there are multiple variables which are highly correlated with each other, none of the values seem too high to warrant serious multicollinearity. This conclusion is supported by the variance inflation factor (VIF) statistics which varied from 1.31 to 2.41 with a mean VIF of 1.89. The values are not

significantly altered from the typical critical values, so the explanatory variables are not seriously at risk of being highly correlated and can be added together in the subsequent regression models.

Table 2. Correlation Matrix and Multicollinearity Diagnostics

Variables	ED	FDI	HC	IQ	TO	FD	INF	CPI	NRD	VIF
Economic Development (ED)	1.000									
FDI	0.286***	1.000								1.42
HC	0.724***	0.183***	1.000							2.18
IQ	0.671***	0.214***	0.592***	1.000						2.41
TO	0.318***	0.247***	0.296***	0.274***	1.000					1.63
FD	0.584***	0.167***	0.517***	0.483***	0.312***	1.000				2.07
INF	0.693***	0.241***	0.648***	0.571***	0.281***	0.496***	1.000			2.36
CPI	-	-0.091*	-	-	-0.087*	-	-	1.000		1.31
NRD	0.286***	0.356***	-0.137**	-0.104*	0.264***	-0.052	-0.096*	0.083*	1.000	1.58

Note: ED = economic development; FDI = foreign direct investment; HC = human capital; IQ = institutional quality; TO = trade openness; FD = financial development; INF = infrastructure; CPI = inflation; NRD = natural-resource dependence. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

The correlation coefficients indicate that FDI is positively associated with economic development. The relatively moderate correlations among the explanatory variables and the mean VIF of 1.89 suggest that multicollinearity is unlikely to represent a serious problem. The results of the cross-sectional dependence and panel unit-root tests are given in Table 3. All variables are statistically significant, with the Pesaran CD statistics indicating that the cross-sectional dependence exists among the MENA countries. The result implies that the other explanatory variables, i.e., economic development, FDI, are affected by the same regional and international shocks, including the financial condition of the world, commodity prices, geopolitical events, and international trade. Therefore, the use of traditional first-generation panel procedures which assume cross-sectional independence would be inappropriate. The CIPS results also indicate that the values of some variables, specifically trade openness and inflation, are stationary at levels, while the values of economic development, FDI, human capital, institutional quality, financial development, and infrastructure and natural-resource dependence are stationary after taking the first difference. So there are no variables that are integrated at the second order; the variables have a mixture of I(0) and I(1) integration orders. This cross-sectional dependence, along with the mixed integration orders, makes the application of the CS-ARDL system for the subsequent analysis in this paper justifiable.

Table 3. Cross-Sectional Dependence and Panel Unit-Root Tests

Variable	Pesaran CD Test	p-value	CIPS at Level	p-value	CIPS at First Difference	p-value	Integration Order
Economic Development (ED)	12.684***	0.000	-2.317	0.084	-3.746***	0.000	I(1)
FDI	9.572***	0.000	-2.184	0.146	-4.213***	0.000	I(1)
Human Capital (HC)	11.426***	0.000	-2.471	0.063	-3.892***	0.000	I(1)
Institutional Quality (IQ)	8.914***	0.000	-2.096	0.177	-3.687***	0.000	I(1)
Trade Openness (TO)	7.836***	0.000	-2.638**	0.041	-	-	I(0)
Financial Development (FD)	10.217***	0.000	-2.251	0.112	-3.574***	0.000	I(1)
Infrastructure (INF)	13.508***	0.000	-2.174	0.151	-4.026***	0.000	I(1)
Inflation (CPI)	6.384***	0.000	-3.214***	0.004	-	-	I(0)
Natural Resource Dependence (NRD)	8.647***	0.000	-2.089	0.182	-3.621***	0.000	I(1)

Note: CIPS = Cross-sectionally Augmented Im, Pesaran and Shin panel unit-root test. The null hypothesis of the Pesaran CD test is cross-sectional independence. The null hypothesis of the CIPS test is that all panels contain a unit root. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

The results of the panel cointegration test are given in Table 4 based on the Westerlund procedure. The four test statistics (Gt, Ga, Pt and Pa) are all significant, with p values less than 0.01. So, the null hypothesis of no cointegration is rejected for all the test specifications. The results are consistent with the existence of a stable long-run equilibrium relationship between economic development, FDI, human capital, institutional quality, trade openness, financial development, infrastructure and inflation and natural-resource dependence. That is, while the trends of certain variables might show some short-term variation, their long-term trends are similar across the MENA countries. This is because the cointegration is a crucial finding that suggests that the relation between FDI and economic development is not just a short run association. Rather, FDI and the other long-term determinants of development are linked to each other by a process of long-run equilibrium. The results then imply the use of long-run panel estimators especially CS-ARDL for further analysis.

Table 4. Panel Cointegration Test Results

Test	Statistic	p-value	Decision
Westerlund Gt	-3.847***	0.001	Cointegration exists
Westerlund Ga	-14.526***	0.000	Cointegration exists
Westerlund Pt	-8.213***	0.000	Cointegration exists
Westerlund Pa	-11.684***	0.000	Cointegration exists

Note: The Westerlund tests examine the null hypothesis of no cointegration. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

The baseline panel regression results from pooled OLS, fixed-effects and random-effects models are presented in table 5. For all three specifications, the coefficient of FDI is found to be positive and statistically significant, suggesting that higher inflow of FDI leads to higher economic development in the MENA countries. After controlling for country and time effects, the coefficient is still positive, though it gets slightly smaller in the fixed-effects model; this suggests that the relationship is not simply due to permanent differences of countries. Other important variables such as human capital and institutional quality, have positive and statistically significant coefficients as well as trade openness, financial development and infrastructure. However, inflation and dependence on natural resources have negative and significant coefficients indicating that macroeconomic instability and excessive reliance on natural resources may limit wider development achievements. In the fixed effects model the R-squared is 0.714 showing that the variables included in the model account for a large share of the variation in the economic development. The Hausman test is statistically significant and favours the fixed effect specification over the random effect specification. In general, the baseline results give initial support to the main proposition of the study, which is the positive link between FDI and economic development in MENA countries.

Table 5. Baseline Panel Regression Results

Variables	Pooled OLS	Fixed Effects	Random Effects
FDI	0.0028*** (0.0007)	0.0021*** (0.0006)	0.0023*** (0.0006)
Human Capital	0.318*** (0.041)	0.274*** (0.038)	0.291*** (0.039)
Institutional Quality	0.086*** (0.019)	0.071*** (0.017)	0.078*** (0.018)
Trade Openness	0.0004** (0.0002)	0.0003* (0.0002)	0.0004** (0.0002)
Financial Development	0.0017*** (0.0004)	0.0013*** (0.0004)	0.0015*** (0.0004)
Infrastructure	0.0019*** (0.0004)	0.0016*** (0.0004)	0.0017*** (0.0004)
Inflation	-0.0011*** (0.0003)	-0.0008*** (0.0003)	-0.0009*** (0.0003)
Natural Resource Dependence	-0.0006** (0.0003)	-0.0005** (0.0002)	-0.0005** (0.0002)

Constant	0.398*** (0.032)	0.421*** (0.029)	0.406*** (0.030)
Country effects	No	Yes	No
Year effects	Yes	Yes	Yes
Observations	442	442	442
R ²	0.682	0.714	0.701
Adjusted R ²	0.676	0.701	0.694
F/Wald statistic	96.47***	84.32***	628.51***
Hausman χ^2	—	—	18.64**

Note: The dependent variable is Economic Development measured by HDI. Values in parentheses are standard errors. *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively. The fixed-effects specification is preferred based on the Hausman test.

The CS-ARDL results in short-run and long-run effects of FDI on economic growth in the MENA countries are given in Table 6. The findings show that FDI has a positive and statistically significant impact both in short run and long run, and the coefficient of FDI in long run (0.0034) is higher than the short run (0.0017). This indicates that foreign investment has long-term developmental impacts, such as capital formation, technology transfer, productivity gains and enhanced international linkages. Human capital and institutional quality, trade openness and financial development and infrastructure also have positive effects during both periods, whilst inflation and natural resources dependence have negative effects during both periods. The error-correction coefficient is negative and significant at the 0.01 level, which further indicates the presence of a stable long-run adjustment mechanism. The size of the shock indicates that around 42.7% of the deviations from long run equilibrium are corrected in one period. In overall, CS-ARDL findings support the evidence that FDI has short-term and long-term effect on economic development in the study countries. And in the long-run, developed countries are more affected by FDI.

Table 6. CS-ARDL Short-Run and Long-Run Estimation Results

Variables	Short-Run Coefficient	Std. Error	Long-Run Coefficient	Std. Error
FDI	0.0017**	0.0007	0.0034***	0.0009
Human Capital	0.094***	0.027	0.421***	0.073
Institutional Quality	0.028**	0.013	0.096***	0.025
Trade Openness	0.0002*	0.0001	0.0006**	0.0003
Financial Development	0.0008**	0.0004	0.0021***	0.0006
Infrastructure	0.0009***	0.0003	0.0027***	0.0007
Inflation	-0.0006**	0.0003	-0.0014***	0.0004
Natural Resource Dependence	-0.0003*	0.0002	-0.0008**	0.0003
Error-Correction Term	-0.427***	0.082	—	—
Cross-sectional averages	Yes		Yes	
Country effects	Yes		Yes	
Year effects	Yes		Yes	
Observations	442		442	

Note: The dependent variable is Economic Development measured by HDI. The error-correction coefficient indicates the speed at which deviations from long-run equilibrium are corrected. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Table 7 presents additional robustness checks for the CCEMG and AMG estimates, which also incorporate cross-sectional dependence and country-specific effects that are likely to be different across countries. The coefficient of FDI is positive and statistically significant in both of the estimators, namely 0.0031 and 0.0029. These estimates are consistent with the CS-ARDL estimates, supporting the argument that the positive relationship between FDI and economic development is not a function of the estimation method used. Human capital and institutional quality remain significantly and positively associated with economic development, and financial development and trade and infrastructure openness also have positive relationships. By contrast, there is a negative association between inflation and development, as well as between natural resources and development. The consistent size and sign of the coefficients across CCEMG and AMG further confirm

the robustness of the primary results, and indicate that the results are not marked by any fundamental changes if one considers the effects of common shocks in the region and country-specific characteristics.

Table 7. CCEMG and AMG Robustness Estimation Results

Variables	CCEMG Coefficient	Std. Error	AMG Coefficient	Std. Error
FDI	0.0031***	0.0008	0.0029***	0.0009
Human Capital	0.396***	0.071	0.374***	0.076
Institutional Quality	0.089***	0.024	0.082***	0.026
Trade Openness	0.0005**	0.0002	0.0004**	0.0002
Financial Development	0.0019***	0.0005	0.0017***	0.0005
Infrastructure	0.0024***	0.0006	0.0022***	0.0007
Inflation	-0.0012***	0.0004	-0.0011***	0.0004
Natural Resource Dependence	-0.0007**	0.0003	-0.0006**	0.0003
Observations	442		442	
Number of countries	17		17	
Cross-sectional dependence controlled	Yes		Yes	

Note: CCEMG = Common Correlated Effects Mean Group; AMG = Augmented Mean Group. The dependent variable is HDI. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

The relationship between FDI and economic development is explored further by looking at the effect of institutional quality on the relationship (Table 8). The positive impact of both FDI and institutional quality are confirmed in Model 1. After incorporating the interaction term between FDI and institutional quality into the model, the coefficient of FDI is again positive and significant as well as the interaction term FDI×di institutional quality, which is also positive and statistically significant at 0.0028. This result suggests that the positive impact of FDI on economic development is enhanced by institutional quality. In practical terms, there is a positive correlation between foreign investment and overall development gains among the countries in the MENA region, where government effectiveness, regulatory quality, rule of law and control of corruption are enhanced. The R² is further improved to 0.731 when the interaction term is added, up from 0.714 in the previous model, suggesting that the new model has increased explanatory power. The finding is in line with the institutional approach to FDI: foreign investment inflows will lead to larger spillovers if the host economy has a more conducive institutional setting. Therefore, it appears that, while attracting FDI is important, so is improving institutional quality in order to maximize the developmental benefits from FDI.

Table 8. Moderating Effect of Institutional Quality on the FDI–Economic Development Relationship

Variables	Model 1: Direct Effects	Model 2: Interaction Model
FDI	0.0021*** (0.0006)	0.0015** (0.0007)
Institutional Quality	0.071*** (0.017)	0.062*** (0.018)
FDI × Institutional Quality	—	0.0028*** (0.0009)
Human Capital	0.274*** (0.038)	0.261*** (0.039)
Trade Openness	0.0003* (0.0002)	0.0003* (0.0002)
Financial Development	0.0013*** (0.0004)	0.0012*** (0.0004)
Infrastructure	0.0016*** (0.0004)	0.0015*** (0.0004)
Inflation	-0.0008*** (0.0003)	-0.0008*** (0.0003)
Natural Resource Dependence	-0.0005** (0.0002)	-0.0005** (0.0002)
Constant	0.421*** (0.029)	0.427*** (0.030)
Country effects	Yes	Yes
Year effects	Yes	Yes
Observations	442	442
R ²	0.714	0.731
Adjusted R ²	0.701	0.718

F-statistic	84.32***	89.17***
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Note: The dependent variable is Economic Development (HDI). Values in parentheses are standard errors. The interaction term FDI $\times$ Institutional Quality tests whether institutional quality strengthens the effect of FDI on economic development. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Table 9 shows the results from the System GMM estimates to overcome dynamic persistence and possible endogeneity of the FDI-Economic development relationship. The lagged economic development coefficient is positive and significant at 0.684, indicating that the development outcomes are very persistent over time. Importantly, this persistence effect and potential reverse causality leaves FDI with a positive and statistically significant coefficient of 0.0027. This further confirms that FDI has a positive effect on economic development, as the suggested connection is not solely due to the fact that more developed countries attract more FDI. The positive effects of human capital, institutional quality, trade openness, and financial development and infrastructure persist, while the negative effects of inflation and natural-resource dependence continue. The diagnostic statistics also confirm the validity of the model; a second-order serial correlation test (AR(2)) is insignificant, showing no evidence of second-order serial correlation, and a test for the validity of the instrument set (Hansen) is insignificant as well, confirming the validity of the instrument set. Compared to other countries, proliferation of instruments is not at a concern because of the relatively small number of instruments. Overall, the System GMM results corroborate the positive and strong impact of FDI on economic development.

Table 9. System GMM Estimation and Endogeneity Results

Variables	System GMM Coefficient	Std. Error
Lagged Economic Development	0.684***	0.081
FDI	0.0027***	0.0008
Human Capital	0.231***	0.064
Institutional Quality	0.067**	0.029
Trade Openness	0.0004**	0.0002
Financial Development	0.0015***	0.0005
Infrastructure	0.0018***	0.0006
Inflation	-0.0009**	0.0004
Natural Resource Dependence	-0.0006**	0.0003
Constant	0.119**	0.051
Observations	442	
Countries	17	
Number of instruments	28	
AR(1) test, p-value	0.012	
AR(2) test, p-value	0.347	
Hansen J-test, p-value	0.286	
Wald χ^2	1,247.63***	

Note: The dependent variable is Economic Development (HDI). System GMM is estimated using appropriate lagged internal instruments. The insignificant AR(2) statistic supports the absence of second-order serial correlation, while the Hansen test indicates that the instrument set is statistically valid. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Table 10 shows the robustness test conducted with different indicators of economic development and FDI. In Model 1, the development measure is replaced by GDP per capita, whereas in Model 2, the measure used is still HDI but with a different form. In Model 3, an alternative measure of FDI is used. The coefficient of FDI is positive and statistically significant for all three specifications, thus the main result is not sensitive to the measurement of the dependent variable or the independent variable. The positive influences of financial development and institutional quality, and natural-resource dependence, as well as economic development and inflation, also do not change. Another test of the adequacy of the empirical specifications is the relatively high explanatory power of the three

models, with the R^2 values ranging from 0.726 to 0.763. Overall, the robustness analysis supports the main finding of the study that the positive relationship between FDI and economic development in the MENA countries is consistent across various measures and specifications.

Table 10. Robustness Tests Using Alternative Measures of Economic Development and FDI

Variables	Model 1: GDP per Capita	Model 2: HDI	Model 3: Alternative FDI Measure
FDI	0.0184*** (0.0051)	0.0032*** (0.0009)	0.0147*** (0.0046)
Human Capital	0.427*** (0.083)	0.415*** (0.074)	0.398*** (0.081)
Institutional Quality	0.113*** (0.031)	0.092*** (0.026)	0.105*** (0.030)
Trade Openness	0.0011** (0.0005)	0.0006** (0.0003)	0.0009** (0.0004)
Financial Development	0.0034*** (0.0010)	0.0020*** (0.0006)	0.0031*** (0.0009)
Infrastructure	0.0042*** (0.0011)	0.0026*** (0.0007)	0.0038*** (0.0010)
Inflation	-0.0021*** (0.0007)	-0.0013*** (0.0004)	-0.0018*** (0.0006)
Natural Resource Dependence	-0.0012** (0.0005)	-0.0007** (0.0003)	-0.0010** (0.0004)
Country effects	Yes	Yes	Yes
Year effects	Yes	Yes	Yes
Observations	442	442	442
R^2	0.763	0.726	0.751

Note: Model 1 uses GDP per capita as an alternative measure of economic development. Model 2 uses HDI as the primary measure. Model 3 employs an alternative measure of FDI. Values in parentheses are standard errors. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

5. Discussions

Overall, the empirical results support the positive effect of foreign direct investment (FDI) on the economic development of the MENA countries within the period 2000–2025. The positive and statistically significant coefficients of FDI in all the baseline fixed-effects estimates, CS-ARDL results and alternative estimators highlight that foreign investment does not only appear to be linked to short-term development gains but can also help to achieve more long term and sustained gains in development. This finding is broadly in line with international evidence provided by Borensztein et al. (1998) which suggests that FDI may be a catalyst for economic growth in terms of capital accumulation and technology transfer, especially when there is adequate human capital in the host economy. Likewise, Iamsiraroj and Ulubaşoğlu (2015) find a positive overall effect between FDI and economic growth, but also point out that it is conditioned on the characteristics of the host countries. The present results corroborate this claim by showing that the relationship between economic development and FDI remains positive after controlling for country-specific, time and CSD effects and for other relevant factors that influence economic development in the MENA region.

The greater short- and long-run impact of FDI is of special significance. Results from the CS-ARDL showed that the effect of FDI is increasing with time suggesting that the developmental effect of FDI may take time to materialise. There are several ways in which foreign firms can get into an economy: initially via capital investment, but also over the longer term via technology diffusion, managerial knowledge, job creation, productivity gains and linkages with domestic firms. The interpretation is in line with Makiela and Ouattara (2018) who show that FDI is not the only pathway by which it influences economic growth. Dinh et al. (2019) also conclude that FDI can have short- and long-term impacts on economic growth and Emako et al. (2022) found that FDI adds to the economic growth of developing countries. The present results therefore argue for a consideration of FDI in countries in the MENA region not merely based on the volume of capital that it brings but also by the productive and developmental spillovers that it yields.

The positive link between FDI and development also holds true for country- and region-specific evidence. In fact, according to Adams (2009) there is a positive link between FDI and domestic investment in developing African economies, which implies that foreign investment can complement domestic investment formation. Similarly, Alvarado et

al. (2017) show that the impact of FDI on the growth of a country varies across countries, underlining the necessity of the conditions of the host country. In Vietnam, Anwar and Nguyen (2010) provide evidence that FDI can help to promote economic growth when it is combined with the country's economic structure; and, in Singapore, Akalpler and Adil (2017) offer evidence that FDI can help economic growth when it is part of the domestic economy. The results are of special significance for MENA economies as the region has significant income, institutional, financial and natural-resource dependence and economic-diversification heterogeneity. Therefore, the positive overall effect found in this research does not necessarily mean that all types of FDI bring similar development benefits to all countries in the MENA region.

The results of the human capital analysis are supportive of the technology-spillover view. As for the baseline and long run models, human capital is shown to be positively and statistically significantly related to economic development. This is similar to Borensztein et al. (1998), who highlight that the capacity of host economies to gain from FDI relies partly on their absorptive capacity. Foreign companies can be expected to bring in new and sophisticated technology and managerial practices, but domestic workers and companies must be capable of absorbing and using such technologies. A positive coefficient on human capital hence implies that in addition to FDI domestic capabilities must also be considered complementary resources for development. That is also why the impact of FDI could be different in the various countries of MENA; an economy with a higher level of education, skills and technological strength should be able to make more productive use of foreign investments and generate more welfare benefits.

The moderating effect of institutional quality is a key result. The relationship between FDI and the institutional quality is positive and statistically significant, suggesting that higher institutional quality has a greater positive impact on economic development when combined with FDI. This finding aligns with the findings of Adegboye et al. (2020) proving the relevance of institutional quality in determining the linkage between FDI and economic growth. In the same way, Okada and Samreth (2014) found that corruption can impact the growth impacts of FDI, suggesting that perhaps institutional environment conditions the translation of foreign investment into economic advantages. The importance of domestic financial development for the FDI-growth relationship is also emphasized by Choong (2012). The current study builds on these arguments by showing that institutional quality is not just another factor affecting development, but can affect the impact of FDI. Therefore, countries with weak regulatory institutions, low government effectiveness, and poor institutional quality might welcome FDI without appreciating its potential for development spillovers.

The positive impact of financial development and infrastructure continues to highlight the need for absorptive capacity in the domestic market. Financial development is associated positively with economic development, which implies that the proper functioning of the financial system could enable the allocation of foreign and domestic capital to productive activities. The result aligns with the findings of Nguyen (2022) and Osei and Kim (2020) that highlight financial development's impact on the effectiveness of FDI. Furthermore, infrastructure has a positive and significant coefficient, suggesting that infrastructure can increase the productivity of foreign investment. The results are especially relevant in an MENA context where economies are trying to diversify their production bases away from traditional resource-based activities. Better connectivity with foreign investors and domestic companies can be achieved through the enhancement of transport, telecommunications, energy and digital infrastructure, which can boost the potential productivity gains from FDI.

Trade openness is also found to be positively associated with economic development, consistent with the general proposition that trade openness can support international integration and in turn be supported by FDI. FDI investments are often linked to a broader regional and global production network by foreign multinational enterprises (FMNEs), which increases the developmental gains of FDI, especially if regional and global countries have relatively open trade regimes. More general evidence to confirm the significance of international integration in the link between FDI and growth is provided by Batten and

Vo (2009) and Iamsiraroj and Ulubaşoğlu (2015). Additionally, trade openness can be of particular relevance for MENA countries, as it can foster the participation of domestic firms to international value chains, and provide foreign invested firms access to export markets and imported intermediate inputs. The finding therefore indicates that the FDI policy needs to be looked at with trade policy and not separately as a policy area.

In contrast, the impact of inflation is negative and significant in the empirical specifications, suggesting that inflation has a negative effect on economic development. This outcome indicates that macroeconomic instability has a negative impact on development, depressing purchasing power, and thus lowering uncertainty and investment climate. In a period of high inflation, the 'real' returns on investments will also be diminished, and both domestic and foreign investors will be less willing to invest in long-term projects. The finding thus resonates with the larger economic tenet that macroeconomic stability is key to sustainable development. Concurrently, the negative coefficient of natural-resource dependence is of special significance for the MENA context. Resource revenues may offer significant fiscal and external resources, but overreliance on resources can restrict diversification and present risk to commodities' price fluctuations. This finding also aligns with the broader body of literature that indicates that the impact of FDI on development is more related to the nature, rather than the volume, of FDI inflows.

In order to corroborate the primary findings, the robustness results are reported as well. The positive FDI coefficient is still robust under the CCEMG, AMG and System GMM estimation methods and other alternative measures of economic development and FDI yield similar results. The results are significant as MENA countries are vulnerable to common regional and global events such as movements in oil prices, geopolitical uncertainty, international financial conditions and global economic cycles. Given the large cross sectional dependence detected in the preliminary analysis, the use of estimators that take into account common factors is therefore well suited. The robustness of the results under various estimation methods indicates that the positive association between FDI and development is not a result of any particular estimation method or variable measurement. This is broadly in line with the findings of Dinh et al. (2019) and Emako et al. (2022) but the present study adds to the existing evidence by explicitly addressing cross sectional and institutional dependence, dynamic endogeneity.

In general, this research work adds to the literature by focusing on the question of whether FDI fosters development to the question of when FDI leads to better development outcomes in MENA countries. The findings suggest that FDI has a positive role but human capital, institutional quality, financial development and infrastructure and macroeconomic stability have a significant impact on this. This interpretation aligns with Borensztein et al. (1998), Choong (2012), Okada and Samreth (2014) and Nguyen (2022) who proposed conditional perspective. The message for the policymakers is that investment incentives are not the only means by which FDI can be attracted. Foreign investment requires stronger institutional development, better human capital and financial system, and more infrastructure and economic diversification in the MENA economies to create higher spillovers from foreign investment to domestic investment. The evidence points in this direction, namely it seems that the impact of FDI on development is greatest when foreign capital is integrated into a conducive domestic economic and institutional environment.

6. Conclusions

The present study investigated the impact of foreign direct investment (FDI) on economic development in the MENA countries that were studied, between the years of 2000 and 2025. The study utilizes a panel-data setting while taking into consideration cross sectional dependence, mixed orders of integration, long run relationships and potential endogeneity which results in consistent evidence that the FDI has a positive impact on the economic development. The baseline fixed-effects estimates suggest a positive and significant relationship between FDI and economic development and the CS-ARDL results confirm that this positive relationship is valid in the short and long run. Significantly, the long run impact of FDI is larger than the short run, indicating that the positive development

impacts of FDI build-up over time via capital accumulation, technology transfer, improvements in productivity, job creation, and integration with global markets.

The study also confirms that host countries' economic and institutional conditions can influence the effectiveness of FDI. Foreign capital inflows are more likely to have positive development impact when underpinned by appropriate domestic capabilities, such as human capital, institutional quality, financial development, and infrastructure and trade openness. In particular, it is important to note that there is a significant relationship between FDI and institutional quality, which suggests that institutional quality further enhances the positive effect of FDI on economic development. This is significant for the MENA region, as there is a significant gap in governance quality, economic diversification, financial development and institutional capacity across the region's countries. Hence, attracting higher inflows of FDI is not sufficient to ensure better development results if the countries do not at the same time enhance the institutional environment in which foreign investment takes place.

The results also indicate that macroeconomic and structural conditions are important. As the inflation rate rises, economic development decreases, meaning that macroeconomic instability affects development results and can even have adverse effects on the performance of investment. Likewise, natural-resource dependence has a negative association with development, implying that reliance on natural resources for economic activities can limit diversification and wider development prospects. This is especially important for economically resource-rich economies in the MENA region that rely heavily on oil and natural resources. Based on the evidence found, it is strongly recommended that FDI policies should be linked to other economic, human-capital and macroeconomic diversification plans.

Although the study made some contributions, there were some study limitations that offer possibilities for additional research. The results presented in this analysis are based on country-level variables and not necessarily on a granular level of individual firms, industries or types of FDI. Future research might be interested in differentiating between greenfield and M&A FDI, resource-seeking and market-seeking and efficiency-seeking FDI, or in focusing on the flows of FDI by sector. Further studies might also examine the different nature of the FDI–development relationship in the high, middle-income and resource-dependent MENA countries. Other research might involve geopolitical risk, digitalisation, environment sustainability, institutional aspects and human-capital quality. The extensions would offer a better understanding of how FDI can help stimulate development.

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