Стопански факултет

Социално-икономически анализи

Книга 1/2026 (29)

DOI: 10.54664/AALO1723

**Imed Berkane***
**Souheila Benelmouffok****
**Djamel Mattoug*****
**Amine Aouissi******

# REVISITING THE NON-OIL EXPORT–FDI NEXUS : PANEL EVIDENCE FROM OIL-EXPORTING ARAB ECONOMIES

**Abstract** This study investigates the relationship between non-oil export development and foreign direct investment (FDI) inflows in oil-exporting Arab economies over the period 2005–2023 using panel data techniques. Non-oil exports (NOE) are measured as the value of non-hydrocarbon exports in current U.S. dollars, while FDI inflows are captured by net FDI inflows according to the balance of payments.

The empirical analysis, based on a random-effects specification, reveals a positive and statistically significant association between export diversification and FDI inflows. The findings indicate that the expansion of non-oil exports strengthens investment attractiveness by enhancing productive capacity, improving macroeconomic resilience, and reducing dependence on hydrocarbon revenues. The magnitude of this effect, however, differs across countries and is conditioned by institutional quality, infrastructure development, and trade openness. Economies characterized by stronger governance frameworks and advanced logistical systems exhibit a more pronounced export–FDI linkage.

The results support the view that structural diversification and institutional reform constitute essential components of sustainable investment strategies in oil-dependent Arab economies.

**Keywords:** Non-oil exports; foreign direct investment; oil-exporting Arab countries; random effects model.

## Introduction

Foreign direct investment (FDI) constitutes a central driver of economic growth, as it facilitates technology transfer, enhances productivity, and generates employment opportunities. It also contributes

* **Imed Berkane** (Corresponding Author) – Dr., PhD Researcher at the Faculty of Economics, Business and Management Sciences, Abbes Laghrour University Khenchela, Algeria. e-mail: imed.berkane@univ-khenchela.dz

** **Souheila Benelmouffok** – PhD, Full Professor at the Faculty of Economics, Business and Management Sciences, University of Constantine 2 – Abdelhamid Mehri, Algeria. e-mail: souheila.benelmouffok@univ-constantine2.dz

*** **Djame Mattoug** – PhD, Full Professor at the Faculty of Economics, Business and Management Sciences, University of Constantine 2 – Abdelhamid Mehri, Algeria. e-mail: djamel.mattoug@univ-constantine2.dz

**** **Amine Aouissi** – PhD, Full Professor at the Faculty of Economics, Business and Management Sciences, Setif 1 University- Ferhat Abbas, Algeria. e-mail: amineaouissi@gmail.com

to human capital accumulation and market expansion. A country's ability to attract FDI inflows depends on several structural determinants, most notably political stability, the regulatory framework, infrastructure quality, and investment incentives, as well as overall macroeconomic competitiveness and market potential. Many economies pursue FDI by adopting incentive-based policies, including tax exemptions, the establishment of free zones, and improvements in the business climate, given its role in fostering sustainable development, augmenting capital inflows, and deepening integration into the global economy.

Non-oil exports represent a critical instrument of economic diversification, reducing dependence on hydrocarbon revenues and strengthening long-term economic resilience. Export diversification stimulates industrial expansion, promotes sectoral upgrading, and generates employment, thereby reinforcing the role of the private sector in economic transformation. Moreover, economies with diversified export structures tend to experience higher growth rates and improved financial stability, particularly when exposure to external revenue volatility is mitigated.

The development of non-oil exports typically relies on product diversification, quality upgrading, logistical infrastructure enhancement, and the strategic utilization of free trade agreements, which expand market access and promote deeper global integration. Industrial and trade policies are equally pivotal, as governments implement fiscal incentives, innovation-support programs, and regulatory reforms aimed at facilitating export activities. Such measures strengthen international competitiveness and create favorable conditions for investment in export-oriented industries.

Within this analytical framework, examining the relationship between non-oil export development and FDI inflows is particularly relevant. Export diversification may act as a structural signal of productive capacity and institutional credibility, thereby enhancing investment attractiveness and stimulating capital allocation toward tradable and export-related sectors. Oil-exporting Arab economies provide a compelling empirical setting, given their historical reliance on hydrocarbon revenues and ongoing efforts to diversify their economic base. Investigating this linkage therefore contributes to a clearer understanding of the structural determinants of investment attractiveness and informs policy design in oil-dependent economies.

In light of this discussion, the central research question is formulated as follows: "To what extent does non-oil export development influence FDI inflows in selected oil-exporting Arab countries?"

To address this question, the study tests the following null hypothesis: "There is no statistically significant relationship between non-oil export development and FDI inflows in the selected oil-exporting Arab countries."

**Theoretical Framework of the Study**

Foreign direct investment (FDI) is widely recognized as a key driver of economic growth through technology transfer, productivity enhancement, employment creation, and deeper integration into the global economy[1] . However, the capacity of countries to attract FDI depends not only on traditional determinants such as market size or factor costs, but also on structural characteristics reflecting economic diversification, competitiveness, and macroeconomic stability[2] . In this context, the development of non-oil exports constitutes a central channel through which oil-exporting economies can enhance their attractiveness to foreign investors.

From a theoretical standpoint, the relationship between non-oil export development and FDI inflows should be understood as the outcome of complementary mechanisms**,** rather than a single explanatory theory. The Trade–Investment Nexus provides a first analytical foundation by emphasizing

[1] **Moosa, I.** *International Financial Operations: Arbitrage, Hedging, Speculation*. (1st edition) Financing and Investment. Palgrave Macmillan, 2003, p. 318.

**Kurtishi-Kastrati, S.** Impact of FDI on economic growth: An overview of the main theories of FDI and empirical research. *European Scientific Journal*, Vol. 9 (7), 2013, p. 64.

[2] **Rani, D.** Determining Factors of FDI inflow in a Country : A Theoretical Perspective. *International Journal of Innovative Research in Technology*, Vol. 9 (11), 2023, p. 168.

the mutually reinforcing relationship between international trade and foreign investment[3]. Export expansion signals productive capacity, openness to international markets, and institutional credibility, thereby reducing uncertainty and informational asymmetries faced by multinational enterprises. In oil-dependent economies, export diversification away from hydrocarbons further reduces vulnerability to commodity price volatility and strengthens macroeconomic resilience, which enhances investor confidence[4] . Accordingly, higher levels of non-oil exports are theoretically expected to exert a positive effect on FDI inflows.

Market-seeking FDI theory reinforces this argument by linking export diversification to domestic market depth and long-term growth potential[5]. Economies capable of producing and exporting a wide range of non-oil goods tend to exhibit broader industrial bases and more stable demand structures. Such characteristics signal market sustainability and profitability, encouraging multinational enterprises to establish a local presence rather than relying exclusively on exports. In this perspective, non-oil export development serves as an indicator of market maturity and expansion, implying a positive expected relationship between non-oil exports and FDI inflows [6].

Efficiency-seeking FDI theory further explains how export-oriented development enhances investment attractiveness. Multinational firms seeking to minimize production costs and improve efficiency favor economies with competitive industrial structures, skilled labor, reliable infrastructure, and openness to trade[7]. The expansion of non-oil exports reflects precisely these conditions, as it requires improvements in logistics, production efficiency, and integration into international markets. As a result, export diversification strengthens the structural foundations that attract efficiency-seeking FDI, supporting the expectation of a positive coefficient for non-oil exports in the empirical model.

Location theory complements these perspectives by emphasizing the role of infrastructure quality, market accessibility, institutional stability, and geographic advantages in shaping FDI location decisions[8]. Sustained growth in non-oil exports contributes directly to these location advantages by encouraging investments in transport networks, industrial zones, and trade facilitation mechanisms. Export-oriented economies thus become more attractive as production and distribution hubs, reinforcing the positive relationship between non-oil export development and FDI inflows.

The Global Value Chains (GVCs) framework provides a dynamic interpretation of this relationship in the context of fragmented global production. Integration into GVCs requires competitive export industries capable of meeting international standards and participating in cross-border production networks[9] . Non-oil export diversification facilitates such integration by promoting industrial upgrading, technological diffusion, and stronger linkages between domestic firms and multinational enterprises. FDI plays a crucial role in this process by transferring knowledge and capital, while export diversification

---

[3] **Sakyi, D., J. Egir.** Effects of trade and FDI on economic growth in Africa : an empirical investigation. *Transnational Corporations Review*, Vol. 9 (2), 2017, p. 69.

[4] **Delechat, C. et al.** *Economic Diversification in Developing Countries : Lessons from Country Experiences with Broad-Based and Industrial Policies*. International Monetary Fund eLibrary, DP 2024/006, p.3 https://doi.org/10.5089/9798400240201.087

[5] **Kavita, W., R. Sudhakara.** Foreign Direct Investment into Developing Asian Countries: The Role of Market Seeking, Resource Seeking and Efficiency Seeking Factors. *International Journal of Business and Management*, Vol. 6 (11), 2011, p. 221.

[6] **Wilson, M. K.** The relevance of theories of foreign direct investment to mergers and acquisitions in Africa. *Theoretical and Applied Economics*, Vol. 3 (640), 2024, p. 125. (pp.119-136 Available at: https://store.ectap.ro/articole/1769.pdf)

[7] **Kavita, W., R. Sudhakara.** Op cit, p. 221.

**Kurtishi-Kastrati, S.** Op. cit, p. 64.

[8] **Popovici, O. C., A.C. Călin.** FDI Theories. A Location-Based Approach. *The Romanian Economic Journal*, vol. 17 (53), 2014, p. 6.

[9] **Adarov, A., R. Stehrer.** Implications of Foreign Direct Investment, Capital Formation and its Structure for Global Value Chains. *The World Economy*, vol. 44 (11), 2021, p. 3246.

**Qiang, C. Z., et al.** Foreign Direct Investment and Global Value Chains. In: *An Investment Perspective on Global Value Chains*. World Bank. 2021, pp. 34–36.

enhances the host country's absorptive capacity[10]. Within this framework, non-oil exports and FDI are jointly determined and mutually reinforcing.

Finally, economic diversification theory emphasizes that a broader export base reduces vulnerability to sector-specific shocks and enhances long-term economic resilience[11]. Dependence on oil exports exposes economies to external volatility and discourages long-term investment, whereas diversified non-oil exports promote stability, sustained growth, and institutional strengthening. By shifting toward manufacturing and value-added activities, countries increase participation in global value chains and signal sustainable development potential to foreign investors.

Taken together, these theoretical perspectives converge toward a unified analytical framework in which non-oil export development captures multiple dimensions of investment attractiveness: macroeconomic stability, market depth, production efficiency, location advantages, and integration into global value chains. This integrated framework directly informs the empirical specification adopted in this study. Accordingly, non-oil exports are included as the key explanatory variable in the panel data model, with a positive expected sign**,** reflecting their role as a structural driver of foreign direct investment inflows in oil-exporting Arab economies.

**Methodology and Tools**

This section of the study is dedicated to outlining the study population and sample, the study variables, and the data collection sources. Additionally, it details the statistical programs and tools employed in processing the extracted data.

***Study Population and Sample***

This study examines the impact of non-hydrocarbon export development on FDI inflows in oil-dependent Arab economies over the period 2005–2023. The study population comprises Arab countries whose economic structures are characterized by a significant reliance on hydrocarbon revenues. For the empirical analysis, the sample includes 12 countries: Algeria, Bahrain, Kuwait, Egypt, Iraq, Qatar, Saudi Arabia, the United Arab Emirates, Tunisia, Oman, Libya, and Sudan.

These countries were selected based on data availability for the full study period and the comparability of macroeconomic indicators, as well as variation in the degree of dependence on oil exports and progress in non-oil export diversification. This heterogeneity enhances the empirical identification of the relationship between non-hydrocarbon export development and FDI inflows.

Furthermore, the sample reflects both regional dispersion and structural economic diversity within the Arab world, allowing for a more nuanced assessment of how diversification strategies interact with investment dynamics across different institutional and macroeconomic environments.

***Study Variables and Data Sources***

This study relies on two key variables. The independent variable is non-oil export development, measured as the value of non-oil exports in millions of U.S. dollars, with data sourced from the World Trade Organization (WTO) database. The dependent variable is foreign direct investment (FDI) inflows, measured as net FDI inflows according to the balance of payments, expressed in current U.S. dollars (Foreign Direct Investment, Net Inflows – BoP, Current US$), based on data from the World Bank.

Non-Oil Export Development (NOE): Non-oil export development is defined as the total value of exported goods excluding hydrocarbon products. This variable captures a broad range of tradable sectors, including agricultural products, manufactured goods, machinery and equipment, chemical products, textiles, and other non-hydrocarbon commodities.

Data on non-oil exports were extracted from the WTO trade statistics database, which provides comprehensive merchandise trade data. The database reports total merchandise exports under the

[10] **Crescenzi, R., O. Harman.** Climbing up global value chains: Leveraging FDI for economic development. *LSE Research Online Documents on Economics* 115552 The London School of Economics and Political Science. 2022, p. 21.https://doi.org/10.13140/RG.2.2.31576.57606. Uinted kingdom. 2022, p. 21. [Accessed: 25 September 2025]. Available at: https://doi.org/10.54664/RDPD3350

[11] **Delechat, C. et al.** Op. cit., pp. 3–4.

classification SI3_AGG – TO – Total merchandise, which includes hydrocarbon exports categorized under MIFU (Fuels).

In the absence of a directly reported non-oil export series, the value of non-oil exports was constructed by subtracting exports classified under MIFU (Fuels) from total merchandise exports (SI3_AGG – TO – Total merchandise). This computation yields the value of non-oil merchandise exports used as the primary explanatory variable in the empirical analysis, expressed in millions of U.S. dollars[12].

This procedure was implemented using the available data from the World Trade Organization (WTO) database for the specified time period, with careful verification of data consistency across years and countries.

Foreign Direct Investment – Net Inflows (FDI_NI): This indicator represents the net difference between capital inflows from foreign investors into the domestic economy and capital outflows associated with the repatriation of investments abroad. In accordance with international statistical standards, a foreign direct investment relationship is established when a foreign investor holds at least 10% of the voting shares in an enterprise.

FDI inflows comprise equity capital, reinvested earnings, and intra-company debt transactions between affiliated enterprises. The indicator is calculated following the balance of payments methodology, which ensures international comparability. It is widely employed in empirical analyses of capital mobility, technology transfer, and employment generation, and is expressed in current U.S. dollars[13].

***Study Programs and Tools***

The empirical objective of this study is to estimate the impact of non-oil export development on FDI inflows in oil-dependent Arab economies over the period 2005–2023. The dataset was structured in panel format and analyzed using EViews 13 econometric software. Estimation procedures include pooled regression, fixed-effects, and random-effects specifications, complemented by model selection and diagnostic tests to ensure statistical validity.

**Results**

This section presents the empirical findings of the study. It begins with the results of the stationarity tests applied to the time series data, with the aim of verifying the suitability of the variables for panel data analysis. Subsequently, the estimation results obtained from the three panel data models (the pooled regression model, the fixed-effects model, and the random-effects model) are presented and discussed. This is followed by the statistical tests employed to identify the most appropriate model for interpreting the empirical relationships among the study variables. Finally, the section addresses the model diagnostic tests, which aim to assess the adequacy and statistical soundness of the estimated models.

***Time Series Stationarity Analysis***

It is important to note that time series stationarity tests are conducted in this study, given that the number of years covered exceeds the number of study units (countries). According to most researchers and econometric specialists, this necessitates performing stationarity tests, as the dataset falls under the category of "long panel data"[14].

In this context, econometric theory encompasses various tests specifically designed to assess the stationarity of time series, commonly referred to as unit root tests. Within the framework of this study, emphasis is placed on the most significant of these tests: ADF-Fisher Chi-square test (ADF), Phillips-Perron Fisher Chi-square test (PP), Im–Pesaran–Shin (IPS) test, and Levin–Lin–Chu (LLC) test[15].

These tests are based on verifying the following hypotheses:

– Null hypothesis ($H_0$): The time series contains a unit root, indicating that it is non-stationary;

– Alternative hypothesis ($H_1$): The time series does not contain a unit root, implying that it is stationary.

The following table presents the results of the time series stationarity tests for the study variables:

[12] **World Trade Organization.** [online] [Accessed: 29 september 2025]. Available at https://stats.wto.org/

[13] **World Bank.** [online] [Accessed: 29 september 2025]. Available at https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD

[14] **Baltagi, B.** *Econometric Analysis of Panel data*. (6th edition). Springer. 2021, p. 1.

[15] **Baltagi, B.** *Econometric Analysis of panel data*. (3d edition). Jhon wiley and Sons, LTD. 2005, pp. 239–248.

**Table 1.** Results of Time Series Stationarity Tests for the Study Variables

| Variables | PP | | | |
|---|---|---|---|---|
| | LLC | IPS | ADF | PP |
| FDI_NI | 0.0013 | 0.0010 | 0.0016 | 0.0223 |
| NOE | 0.0000 | 0.0185 | 0.0007 | 0.0000 |

**Source:** Prepared by the researchers, based on EViews 13 outputs.

Based on the EViews 13 output, the results indicate that:

– The p-values of all tests for the dependent variable, FDI inflows (FDI_NI), at level I(0), are below 5%, indicating that the series is stationary at level I(0);

– The p-values of all tests for the independent variable, non-oil export development (NOE), at level I(0) are below 5%, confirming that the time series is also stationary at level I(0).

Accordingly, the null hypothesis ($H_0$) is rejected, and the alternative hypothesis ($H_1$) is accepted, indicating that the time series does not contain a unit root and, therefore, exhibits stationarity.

***Estimated Results of the Impact of Non-Oil Export Development on Foreign Direct Investment Inflows in Oil-Exporting Arab Countries for the Period 2005–2023***

The following section presents the estimation results of the impact of non-oil export development on FDI inflows in the oil-exporting Arab countries under study for the period 2005–2023, based on the pooled regression model, the fixed-effects model, and the random-effects model.

**Table 2.** Results of the Impact of Non-Oil Export Development on Net Inflows of Foreign Direct Investment in the Oil-Exporting Arab Countries Under Study for the Period (2005–2023)

| Dependent Variable: Foreign Direct Investment – Net Inflows (FDI_NI) | | | |
|---|---|---|---|
| Period (2005–2023) N=12 T=19 Number of Observations: 12*19=228 | | | |
| Explanatory Variables | Pooled Regression Model | Fixed-Effects Model | Random-Effects Model |
| Constant | 1343.046<br>(0.0000)*** | 1747.542<br>(0.0000)*** | 1506.510<br>(0.0229)** |
| NOE | 0.066007<br>(0.0000)*** | 0.050657<br>(0.0001)*** | 0.059804<br>(0.0000)*** |
| $R^2$ | 0.433104 | 0.566693 | 0.168518 |
| $R^2$ Adj | 0.430595 | 0.542509 | 0.164839 |
| F-statistic | 172.6621 | 23.43203 | 45.80375 |
| Prob (F-statistic) | 0.000000 | 0.000000 | 0.000000 |
| (*, **, *** denote statistical significance of the t-statistic at the 10%, 5%, and 1% levels, respectively.) | | | |

**Source:** Prepared by the researchers, based on the outputs of EViews 13.

The results presented in the table above indicate that:

*Pooled Regression Model:*

– The probability value of the constant term (CONS) indicates statistical significance at the 1% level, highlighting the importance of the intercept in the model;

– The coefficient of determination $R^2$, which reflects the explanatory power of the model, is estimated at 0.433104. This implies that the independent variable, non-oil export development (NOE), explains 43.3104% of the variations in the dependent variable, net inflows of foreign direct investment (FDI_NI), while the remaining 56.6896% is attributed to other factors beyond the scope of this study;

– The probability value of the t-statistic confirms the statistical significance of non-oil export development (NOE) at the 1% level, reinforcing the relevance of this variable within the model;

– The probability of the F-statistic (Prob(F-statistic)), which assesses the overall significance of the model, is below the 1% significance level. This leads to the rejection of the null hypothesis ($H_0$)

and the acceptance of the alternative hypothesis ($H_1$), confirming that the model is statistically valid in explaining the relationship between FDI inflows (FDI_NI) and non-oil exports (NOE).

*Fixed-Effects Model:*

– The probability value of the constant term (CONS) indicates statistical significance at the 1% level;

– The coefficient of determination ($R^2$) is estimated at 0.566693, indicating that non-oil export development (NOE) explains 56.6693% of the variation in FDI inflows (FDI_NI), while 43.3307% is attributable to other unobserved factors;

– The probability value of the t-statistic confirms the statistical significance of non-oil export development (NOE) at the 1% level;

– The probability of the F-statistic (Prob(F-statistic)) is below the 1% significance level, leading to the rejection of the null hypothesis ($H_0$) and confirming the overall significance of the model ;

– Each country has a unique intercept term that captures unobserved, time-invariant heterogeneity across countries.

*Random-Effects Model:*

– The probability value of the constant term (CONS) indicates statistical significance at the 5% level.

– The coefficient of determination ($R^2$) is estimated at 0.168518, indicating that non-oil export development (NOE) explains 16.8518% of the variation in FDI inflows (FDI_NI), while 83.1482% is attributable to other factors not included in the model.

– The probability value of the t-statistic confirms the statistical significance of non-oil export development (NOE) at the 1% level.

– The probability of the F-statistic (Prob(F-statistic)) is below the 1% significance level, leading to the rejection of the null hypothesis ($H_0$) and confirming the overall significance of the model.

– Under the random-effects specification, country-specific effects are treated as stochastic components, capturing cross-country heterogeneity that varies randomly across the sample.

***Model Comparison Tests***

To determine the optimal model for estimating the impact of non-oil export development on FDI inflows in the Arab countries covered in the study during the period 2005–2023, a comparison among the three models was conducted using two main tests:

*Poolability Test (F-Test)*

Also known as the restricted Fisher (F) test, this test evaluates whether the pooled regression model is appropriate. The null hypothesis ($H_0$) assumes that the pooled regression model is the correct specification, while the alternative hypothesis ($H_1$) suggests that the fixed-effects model is more suitable for the study[16].

*Hausman Test*

This test assesses whether the random-effects model or the fixed-effects model is more appropriate. The null hypothesis ($H_0$) posits that the random-effects model is the correct specification, while the alternative hypothesis ($H_1$) indicates that the fixed-effects model provides a better fit for the study[17].

The following table presents the results of these tests to determine the optimal model in each case:

[16] **Xu, H., S. Hwan Lee, T. Ho Eom.** Introduction to Panel Data Analysis. *In Miller/Handbook of Research Methods in Public Administration*. (2nd edition). 2007, p 585.

[17] **Hall, S., D. Asteriou.** *Applied econometrics : A modern approach using eviews and microfit. (Revised edition)*. Palgrave Macmillan. 2007, p 348.

**Table 3.** Model Comparison Results for the Impact of Non-Oil Export Development on Net Inflows of Foreign Direct Investment in the Oil-Exporting Arab Countries Under Study for the Period (2005–2023)

| F Test | | | |
|---|---|---|---|
| Tests | Statistic | d.f | Prob. |
| Cross-section F | 6.025908 | (11.215) | 0.0000 |
| Cross-section Chi-square | 61.270509 | 11 | 0.0000 |
| Hausman Test | | | |
| Tests | Chi-square. Statistic | Chi-Sq. d.f. | Prob. |
| Cross-section random | 0.197635 | 1 | 0.3219 |

**Source:** Prepared by the researchers, based on the outputs of EViews 13.

Using EViews 13, the results of the Fisher test presented in the table above indicate that the probability value is below the 1% significance level, implying that the computed F-statistic exceeds the critical value. Consequently, the null hypothesis ($H_0$) is rejected in favor of the alternative hypothesis ($H_1$), suggesting that the data are not poolable and that the fixed-effects model is the more appropriate specification for the study.

The results of the Hausman test, as presented in the same table, indicate that the probability value (Prob = 0.3219) exceeds the 5% significance level. Consequently, the null hypothesis ($H_0$) is accepted, while the alternative hypothesis ($H_1$) is rejected. This suggests that the random-effects model is the most appropriate specification for explaining the relationship between the explanatory variable, non-oil export development, and the dependent variable, FDI inflows (FDI_NI), in the oil-exporting Arab countries under study during the period **2005–2023**).

**Model Diagnostic Tests (Model Adequacy)**

After determining that the random-effects model is the most appropriate specification, the adequacy of the estimated model was examined using the following tests: the Breusch–Pagan LM test, the Pesaran scaled LM test, and the Pesaran CD test. The results are summarized in the following table:

**Table 4.** Autocorrelation Tests for Residuals of the Random Effects Model

| p-value | Test Statistic | Test’s |
|---|---|---|
| 0.0000 | 165.2989 | Breusch-Pagan LM |
| 0.0000 | 8.642861 | Pesaran scaled LM |
| 0.0023 | 3.052241 | Pesaran CD |

**Source :** Prepared by the authors based on EViews 13 outputs

As shown in the table above, the p-values of all three tests are less than 5%, indicating the presence of cross-sectional dependence in the random error terms (residuals). This implies that the assumption of cross-sectional independence is rejected. Consequently, the random-effects model should be interpreted with caution, and appropriate corrections may be required to ensure robust inference.

**Discussion**

Based on the results of the Fisher and Hausman tests, the random-effects model was found to be the most suitable specification for estimating the relationship between non-oil export development and FDI inflows (FDI_NI) in oil-exporting Arab countries over the period 2005–2023. The final model indicates that a one-million-dollar increase in non-oil exports is associated with an increase of USD 59.8 thousand in FDI inflows, significant at the 1 percent level. This finding indicates a positive and statistically significant effect of non-oil export growth on attracting foreign investment.

This result is consistent with recent empirical evidence emphasizing the structural interaction between export diversification and foreign direct investment in developing and resource-dependent economies. Adarov and Stehrer (2021) demonstrate that deeper integration into global value chains,

often facilitated by diversified export structures, strengthens the capacity of countries to attract foreign capital. Similarly[18], Alfalih and Bel Hadj (2020), in the context of an oil-abundant economy, show that FDI responsiveness depends not only on resource endowments but also on structural and institutional conditions that support diversification[19]. Our findings therefore confirm and extend this recent panel evidence within the context of oil-exporting Arab countries.

The results highlight the role of export diversification in strengthening economic competitiveness and fostering a stable business environment. Countries with well-defined economic policies and advanced infrastructure, such as the United Arab Emirates, Saudi Arabia, and Qatar, have expanded their non-oil exports while attracting substantial FDI inflows. In contrast, countries such as Libya, Sudan, and Iraq continue to face difficulties in attracting FDI despite some growth in non-oil exports, largely due to weak infrastructure, bureaucratic inefficiency, and political instability. Algeria, although it possesses a developed industrial base and significant productive capacity, has been constrained by ownership restrictions (the 51–49 percent rule) and regulatory ambiguity, limiting its ability to fully benefit from FDI inflows.

This cross-country heterogeneity aligns with recent IMF analyses, which emphasize that diversification strategies in resource-dependent economies yield stronger investment outcomes when accompanied by institutional reform, macroeconomic stability, and improvements in governance quality[20]. The variation observed in our sample thus supports the view that export diversification operates through institutional and structural transmission channels rather than through a purely mechanical effect.

The findings further show that non-oil exports not only enhance FDI attractiveness but also contribute to restructuring the national economic base by generating investment opportunities in non-oil sectors. As exports expand, demand for foreign capital within production chains increases, encouraging multinational corporations to invest in environments where they can leverage comparative advantages. This outcome is consistent with the Trade–Investment Nexus theory, which posits that export expansion strengthens investor confidence and creates sustainable investment opportunities.

Recent World Bank evidence similarly argues that economies that successfully diversify exports and integrate into global production networks experience stronger complementarities between trade performance and foreign investment inflows[21]. In this regard, our results reinforce contemporary findings that export diversification enhances both productive upgrading and investment attractiveness.

This dynamic is evident in the UAE and Qatar, where investment in logistics, renewable energy, and manufacturing has expanded alongside non-oil export growth. Conversely, countries that have not achieved alignment between export performance and investment policy, such as Iraq and Libya, continue to experience weak FDI inflows due to the absence of coherent long-term economic strategies.

The results also align with efficiency-seeking FDI theory, which suggests that multinational enterprises invest in economies offering competitive production costs, reliable infrastructure, and access to regional markets. Gulf countries have leveraged these advantages by developing free zones, reducing operational costs, and improving the investment climate, thereby enhancing their attractiveness to foreign investors. Other Arab countries, including Tunisia, Libya, Algeria, Sudan, and Iraq, despite their economic potential, remain constrained by labor market inefficiencies, opaque tax frameworks, and administrative complexity, which limit their capacity to attract foreign capital.

In addition, the findings are consistent with the Global Value Chains (GVCs) framework, which argues that economies more deeply integrated into global production networks are more attractive to FDI. Multinational firms prefer locations characterized by export competitiveness, skilled labor, and supportive trade infrastructure. This is particularly evident in the UAE, where diversified export industries in manufacturing, logistics, and renewable energy have facilitated deeper integration into GVCs and

[18] **Adarov, A., R. Stehrer.** Op. cit.

[19] **Alfalih, A. A., T. Bel Hadj.** Foreign Direct Investment Determinants in an Oil Abundant Host Country: Short and Long-Run Approach for Saudi Arabia. *Resources Policy*, Vol. 66, 2020, 101616. https://doi.org/10.1016/j.resourpol.2020.101616

[20] **Delechat, C. et al.** Op.cit.

[21] **Qiang, C. Z., et al.,** Op. cit., pp. 34–36.

increased FDI inflows. By contrast, countries lacking clear integration strategies, such as Sudan, remain dependent on low-value raw material exports, which constrain their investment attractiveness.

The analysis also reinforces insights from location theory and market-seeking FDI theory, emphasizing the role of geographic position, infrastructure quality, market size, and purchasing power in attracting foreign investment. Saudi Arabia, for example, has capitalized on its strategic location linking Asia, Europe, and Africa, strengthening its position as a regional logistics hub through substantial investments in ports and special economic zones under Vision 2030. Conversely, countries such as Iraq and Sudan face persistent constraints in leveraging similar advantages due to infrastructure deficiencies, despite their significant economic potential.

The evidence indicates that the relationship between non-oil exports and FDI inflows is mediated by structural and institutional conditions rather than operating mechanically. Economic policy consistency, infrastructure development, political stability, and integration into global value chains play decisive roles in determining the extent to which oil-exporting Arab economies can translate export diversification into sustained investment inflows. Enhancing FDI through non-oil export development therefore requires coordinated strategies aimed at strengthening the investment climate, promoting higher value-added industries, and deepening global integration to secure durable capital inflows and long-term growth.

In summary, the study confirms a statistically significant positive relationship between non-oil export development and FDI inflows in oil-exporting Arab countries during 2005–2023. A one-million-dollar increase in non-oil exports is associated with an additional USD 59.8 thousand in FDI inflows, leading to the rejection of the null hypothesis and supporting the existence of a positive linkage between export diversification and foreign direct investment**.**

**Conclusion**

Through this study, we analyzed the relationship between non-oil export development and FDI inflows in oil-exporting Arab countries by conducting an econometric analysis using panel data models over the period 2005–2023. The findings indicate that diversification of non-oil exports plays a crucial role in enhancing a country's attractiveness to foreign direct investment; however, it does not operate in isolation. Other structural factors, including political stability, investment climate quality, labor market efficiency, and infrastructure development, interact with this relationship. Moreover, cross-country variation in the magnitude of the export–FDI linkage reflects differences in economic policy orientation, institutional frameworks, and degrees of integration into global markets. The study yields several key findings, summarized as follows**:**

– There is a statistically significant positive relationship between non-oil export development and FDI inflows, underscoring the importance of export base diversification in enhancing investment attractiveness;

– The impact of non-oil exports on FDI inflows varies across countries, with those characterized by institutional stability and advanced infrastructure deriving stronger benefits compared to economies facing governance constraints or political instability;

– Gulf economies, particularly the United Arab Emirates, Saudi Arabia, and Qatar, have successfully integrated non-oil export development with FDI attraction through proactive economic policies, large-scale infrastructure investment, and regulatory reforms that have improved the business environment;

– Countries experiencing political instability, such as Libya, Sudan, and Iraq, exhibit a weaker transmission from export diversification to FDI inflows, as policy uncertainty and institutional fragility deter foreign investors;

– Non-oil export development facilitates deeper integration into global value chains, enhancing investment attractiveness, as illustrated by the UAE's expansion in advanced manufacturing and logistics services;

– Location-specific advantages remain critical determinants of FDI inflows. Countries with strategic geographic positioning and strong logistical infrastructure, such as Saudi Arabia, have strengthened their capacity to attract foreign capital;

– Rentier economies, including Algeria, remain vulnerable to fluctuations in FDI inflows due to persistent dependence on hydrocarbon revenues, rendering investment dynamics sensitive to oil price volatility relative to more diversified economies.

In light of the above findings, the study proposes the following recommendations:

Economies with Advanced Diversification and Strong Institutions (e.g., UAE, Saudi Arabia, Qatar).

For countries that have already achieved significant non-oil export diversification and institutional maturity, policy priorities should focus on structural upgrading rather than basic diversification. This includes:

– Deepening integration into global value chains through higher value-added manufacturing and knowledge-intensive services;

– Expanding innovation ecosystems via R&D incentives and technology partnerships;

– Enhancing regulatory predictability to attract long-term strategic FDI.

In these economies, export diversification should evolve toward technological upgrading and productivity enhancement.

Economies with Moderate Diversification but Institutional Gaps (e.g., Tunisia, Algeria, Oman).

For countries that have made partial progress but face regulatory or institutional rigidities, priorities should include:

– Reforming administrative and legal frameworks to reduce uncertainty;

– Liberalizing ownership restrictions and simplifying investment procedures;

– Improving trade logistics and export infrastructure.

In this group, diversification can more effectively attract FDI if institutional reforms reduce transaction costs and investment risk.

Economies Facing Structural or Political Constraints (e.g., Libya, Sudan, Iraq).

For economies characterized by instability or weak governance, diversification policies must be accompanied by foundational reforms:

– Strengthening governance and policy continuity;

– Restoring macroeconomic stability;

– Rehabilitating infrastructure and trade facilitation systems.

In these contexts, export diversification alone is insufficient to stimulate FDI without institutional stabilization.

**REFERENCES**

**Adarov, A., R. Stehrer.** Implications of Foreign Direct Investment, Capital Formation and its Structure for Global Value Chains. *The World Economy*, vol. 44 (11), 2021, pp. 3246–3299. https://doi.org/10.1111/twec.13160

**Alfalih, A. A., T. Bel Hadj.** Foreign Direct Investment Determinants in an Oil Abundant Host Country: Short and Long-Run Approach for Saudi Arabia. *Resources Policy*, Vol. 66, 2020, 101616. https://doi.org/10.1016/j.resourpol.2020.101616

**Baltagi, B.** *Econometric Analysis of panel data*. (3d edition). Jhon wiley and Sons, LTD. 2005. Available at : https://www.researchgate.net/profile/Ayoub-Zeraibi/publication/334319198_Econometric_Analysis_of_Panel_Data/links/5d246d30299bf1547ca51cd5/Econometric-Analysis-of-Panel-Data.pdf

**Baltagi, B.** *Econometric Analysis of Panel data*. (6th edition). Springer. 2021.

**Crescenzi, R., O. Harman.** Climbing up global value chains: Leveraging FDI for economic development. *LSE Research Online Documents on Economics* 115552 The London School of Economics and Political Science. 2022, p. 21.https://doi.org/10.13140/RG.2.2.31576.57606

**Delechat, C., G. Melina, M. Newiak, C. Papageorgiou, K. Wang, N. Spatafora.** *Economic Diversification in Developing Countries : Lessons from Country Experiences with Broad-Based and Industrial Policies*. International Monetary Fund eLibrary, DP 2024/006, p.3 https://doi.org/10.5089/9798400240201.087

**Hall, S., D. Asteriou.** *Applied econometrics : A modern approach using eviews and microfit. (Revised edition)*. Palgrave Macmillan. 2007.

**Kavita, W., R. Sudhakara.** Foreign Direct Investment into Developing Asian Countries: The Role of Market Seeking, Resource Seeking and Efficiency Seeking Factors. *International Journal of Business and Management*, Vol. 6 (11), 2011, pp.219 -226, https://doi.org/10.5539/ijbm.v6n11p219

**Kurtishi-Kastrati, S.** Impact of FDI on economic growth: An overview of the main theories of FDI and empirical research. *European Scientific Journal*, Vol. 9 (7), 2013, pp. 56–78. Available at: https://eujournal.org/index.php/esj/article/view/855/898

**Moosa, I.** *International Financial Operations: Arbitrage, Hedging, Speculation*. (1st edition) Financing and Investment. Palgrave Macmillan, 2003.

**Popovici, O. C., A.C. Călin.** FDI Theories. A Location-Based Approach. *The Romanian Economic Journal*, vol. 17 (53), 2014, pp. 3-24. Available at: https://ideas.repec.org/a/rej/journl/v17y2014i53p3-24.html

Qiang, C. Z., Y. Liu, V. Steenbergen. *Foreign Direct Investment and Global Value Chains*. In: *An Investment Perspective on Global Value Chains*. World Bank. 2021. Available at: https://documents1.worldbank.org/curated/en/442061621002318640/pdf/An-Investment-Perspective-on-Global-Value-Chains.pdf

**Rani, D.** Determining Factors of FDI inflow in a Country : A Theoretical Perspective. *International Journal of Innovative Research in Technology*, Vol. 9 (11), 2023, pp. 167–174. Available at: https://www.researchgate.net/publication/369795437_Determining_Factors_of_FDI_inflow_in_a_Country_A_Theoretical_Perspective

**Sakyi, D., J. Egir.** Effects of trade and FDI on economic growth in Africa : an empirical investigation. *Transnational Corporations Review*, Vol. 9 (2), 2017, pp. 66–87. https://doi.org/10.1080/19186444.2017.1326717 )

**Wilson, M. K.** The relevance of theories of foreign direct investment to mergers and acquisitions in Africa. *Theoretical and Applied Economics*, Vol. 3 (640), 2024, pp. 119–136 Available at: https://store.ectap.ro/articole/1769.pdf.

**World Bank.** [online] [Accessed: 29 september 2025]. Available at https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD

**World Trade Organization.** [online] [Accessed: 29 september 2025]. Available at https://stats.wto.org/

**Xu, H., S. Hwan Lee, T. Ho Eom.** Introduction to Panel Data Analysis. In *Miller/Handbook of Research Methods in Public Administration*. (2nd edition). 2007, pp. 571–590. https://doi.org/10.1201/9781420013276.ch32)