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UNVEILING ECONOMIC CONNECTIONS: A COMPREHENSIVE STUDY ON FOREIGN DIRECT INVESTMENT AND INTERNATIONAL TRADE IN EU NEW MEMBER STATES-11

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ABSTRACT

The objective of this paper is to delve into a thorough examination of the dynamics governing the interaction between Foreign Direct Investment (FDI) and International Trade within the context of the European Union's New Member States-11 (EU-NMS 11). The research provides a comprehensive empirical evaluation for the period spanning from 2000 to 2020, with a particular focus on these eleven nations. The study establishes a set of hypotheses as the foundation for investigating the relationship between foreign direct investment and international trade within this specific region.

Moreover, the research interprets the empirical findings derived from various regression models, including Ordinary Least Squares (OLS), Fixed Effects, Random Effects, and the Hausman-Taylor model. These analytical tools are employed to assess and elucidate the multifaceted associations between FDI and International Trade within the context of EU-NMS 11.

Furthermore, the study takes into account specific institutional factors within these countries that influence foreign investors' decisions to invest in a particular location. As a result, the study reveals that gravity factors, combined with institutional determinants such as economic integration, control of corruption, political stability, and other indicators of governance quality, have a significant impact on host countries within the EU-NMS 11. The findings from this research significantly contribute to the development of an analytical framework for evaluating the effectiveness of national policies and institutions aimed at attracting foreign investment to these specific EU-NMS 11 countries. Additionally, the research underscores the importance of host countries prioritizing efforts to enhance the effectiveness of governmental institutions, combat corruption, streamline bureaucratic processes, and improve overall economic conditions to foster foreign investment.

KEYWORDS: Foreign Direct Investments, International Trade, European Union New Member States, Economic Development.

1. INTRODUCTION

The role of foreign direct investments (FDIs) has been a subject of extensive debate among economic policy makers, particularly in assessing their impact on economic indicators in the context of the European Union's New Member States-11 (EU-NMS 11). While some economists argue that national economies may not always experience a positive effect from the inflow of FDIs, others assert that FDIs can have significant positive effects by fostering stronger connections with foreign companies, granting access to technology, know-how, and expansive market opportunities. This, in turn, can lead to increased productivity, structural transformations in production and services, and a subsequent boost in exports. Additionally, the economic development process is often positively influenced by FDIs, contributing to improved balance of payments and increased employment rates.

Given the economic challenges faced by the EU-NMS 11, the need for more substantial investments has become evident, particularly in light of deindustrialization in the region. Researchers have also highlighted the link between higher FDI inflows and increased trade volumes and output. In this research paper, we aim to analyze the movement and impact of FDIs on trade and economic growth within each of the individual EU-NMS 11 countries.

FDIs have historically played a significant role in driving export-led growth in Eastern European countries that are now part of the European Union. The EU-NMS 11 countries, including Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia, joined the EU in 2004 and later, cumulating a total gross FDI of 700 billion euros. These countries share historical economic and political systems characterized by inflation, political instability, and financial sector crises. Remarkably, only a limited number of studies have explored the relationship between FDI inflows and export performance in the EU-NMS 11 countries. Building on FDI findings, the goal of this research is to determine the impact of foreign direct investments on export performance exclusively within the EU-NMS 11 countries. The thesis structure comprises theoretical research fundamentals, a literature review on the implications of FDI in international trade, a methodology section detailing data sources, and a section presenting research results.

2. LITERATURE REVIEW

Research in the field of international economics has undergone extensive examination of the intricate patterns and determinants underlying Foreign Direct Investment (FDI) relationships between countries. These investigations have contributed significantly to our understanding of the multifaceted dynamics that shape the global economic landscape. For instance, the work of Carr et al. (2001) and Markusen and Maskus (2002) has been pivotal in shedding light on the volume and directional flow of FDI between nations. Their research has delved into factors such as market size,

geographical proximity, and institutional disparities as influential determinants of FDI. These insights have enriched our comprehension of bilateral FDI patterns, highlighting the relevance of specific country characteristics in shaping investment decisions by multinational enterprises (MNEs).

Brainard's (1997) research has underscored the significance of horizontal FDI, particularly between countries that share similarities. Her findings have illuminated how higher transportation costs and tariff barriers can incentivize multinational corporations to establish local production facilities in foreign markets. Brainard's empirical analysis, based on data from the Annual Survey of US Direct Investment Abroad (Brainard, 1997a), has further demonstrated the intricate interplay between US labor and foreign labor markets, showcasing how multinational production is driven by wage differentials, particularly in developing countries. Brainard's subsequent study (Brainard, 1997b) delved deeper into the activities of foreign manufacturing affiliates owned by US multinationals during the period of 1983-1992. The research has brought to light the complementarities of affiliate activities in developing countries with those in industrialized nations. This suggests that multinational firms strategically employ FDI in countries at different stages of development to effectively segment production into stages characterized by varying skill intensities.

Blonigen et al. (2003) conducted a comprehensive study that harnessed U.S. affiliate sales data, proxies for relevant variables, and a sample of FDI activity from OECD countries. Their research explored the motivations underpinning vertical multinational enterprises. The results of this study have provided compelling evidence supporting the horizontal model of FDI, contributing to the ongoing debate about the drivers of multinational investment decisions. Ekholm et al. (2003) leveraged data from the U.S. Department of Commerce to unveil the substantial volume of FDI flows between countries, encompassing both large-scale investments and relative endowment factors. Their findings have lent robust support to the Knowledge-Capital (KK) model, which posits that FDI is driven by a combination of firm-specific advantages and location-specific factors. This aligns with the horizontal FDI model, emphasizing the pivotal role of market-seeking investments in international economic relations.

Head and Ries (HR, 2003) conducted a meticulous examination of the production decisions made by a substantial sample of 1,070 large Japanese firms in 1989. Their findings have illuminated how the presence or absence of cost advantages in a host country influences investment strategies. When cost advantages are lacking, foreign investors are found to be more productive than exporters. In contrast, in situations where low-cost foreign production options are available, firms with lower productivity may be inclined to relocate their production operations to capitalize on cost efficiencies. HMY (2004) developed a model that meticulously examined firms' decisions concerning exports and horizontal FDI. This model, cited by Dauti (2016), delved into the conditions under which firms opt for exporting or establishing foreign affiliates. The insights generated by this research have provided valuable contributions to our understanding of the factors driving the internationalization strategies of firms (Dauti, 2016).

3. Econometric methodology of testing the relationship between foreign direct investment and international trade in EU New Member states-11

In order to conduct this scientific study and substantiate the initial findings of this research project, the proposed topic will employ advanced scientific methodologies and models. The methodology employed in this paper will be comprehensive, encompassing a range of research-scientific methods. These methods have primarily involved a meticulous review of relevant literature, extensive observation, and rigorous critical thinking.

Throughout the research process, information has been carefully selected based on its validity and credibility, drawing from the works of various foreign and local authors, as well as input from other stakeholders closely related to the research topic. This holistic approach allows for a well-rounded examination of the subject matter and facilitates the extraction of valuable insights and conclusions.

3.1 Econometric Model Equation

$$\begin{aligned}\mathrm{Trade}_{ijt} = {} & \alpha 0 + \alpha 1 * \mathrm{FDI}_{ijt} + \alpha 2 * \mathrm{GDP}_i * \mathrm{GDP}_j + \alpha 3 * \mathrm{GDPpc}_{it} + \alpha 4 * \mathrm{GDPpc}_{jt} + \alpha 5 \\ & * \mathrm{Corruption}_{it} + \alpha 6 * \mathrm{Corruption}_{jt} + \alpha 7 * \mathrm{WTO}_{it} * \mathrm{WTO}_{jt} + \alpha 8 \\ & * \mathrm{Voice}_{\mathrm{Accountability}\ it} + \alpha 9 * \mathrm{Voice}_{\mathrm{Accountability}\ jt} + \alpha 10 * \mathrm{Gov}_{\mathrm{Effectiveness}\ it} \\ & + \alpha 11 * \mathrm{Gov}_{\mathrm{Effectiveness}\ jt} + \alpha 12 * \mathrm{Regulatory}_{\mathrm{Quality}\ it} + \alpha 13 \\ & * \mathrm{Regulatory}_{\mathrm{Quality}\ jt} + \alpha 14 * \mathrm{Rule}_{\mathrm{of}_{\mathrm{Law}\ it}} + \alpha 15 * \mathrm{Rule}_{\mathrm{of}_{\mathrm{Law}\ jt}} + \alpha 16 \\ & * \mathrm{Political}_{\mathrm{Stability}\ it} + \alpha 17 * \mathrm{Political}_{\mathrm{Stability}\ jt} + \alpha 18 * \mathrm{Distance}_{ij} + \alpha 19 \\ & * \mathrm{Language}_{ij} + \alpha 20 * \mathrm{Border}_{ij} + \eta_{ijt}\end{aligned}$$

As this paper investigates the dynamics of international trade, with Trade_ijt as the dependent variable, reflecting trade between country i and country j at time t. The primary focus is on Foreign Direct Investment (FDI_ijt), representing cross-border investment flows at time t. The coefficient α1 measures the impact of FDI_ijt on trade patterns. Additionally, Gross Domestic Product (GDP) for country i (GDP_i) and country j (GDP_j) plays a significant role, reflecting the aggregate economic output. The coefficient α2 quantifies the influence of combined GDP on Trade_ijt. GDP per capita for both countries (GDPpc_it and GDPpc_jt) is considered, with coefficients α3 and α4 indicating the impact of individual prosperity on trade dynamics. Corruption levels in country i (Corruption_it) and country j (Corruption_jt) are crucial factors, quantified by α5 and α6 to assess their impact on Trade_ijt. The World Trade Organization (WTO) membership status for both countries (WTO_it and WTO_jt) is considered, with α7 measuring the influence of WTO membership on trade patterns. Furthermore, governance and accountability variables, including Voice and Accountability, Government Effectiveness, Regulatory Quality, Rule of Law, and Political Stability, are essential in understanding Trade_ijt.

The econometric results and relationships between estimates for the EU New Member States are represented in the below noted table including the models of: OLS (Ordinary Least Squares), Fixed Effects, Random Effects and Hausman Taylor

v1	v2 (OLS Model)	v3 (Fixed Effects)	v4 (Random Effects)	v5 (Hausman Taylor)
	-1	-2	-3	-4
VARIABLES	**lnexp_import**	**lnexp_import**	**lnexp_import**	**lnexp_import**
lnexp_importlag1				-0.0106***
				-0.00277
lnfd_net_inflows	0.000277**	0.000177*	0.000277**	0.000157*
	-0.000114	-9.32E-05	-0.000114	-8.82E-05
lnfd_net_outflows	-9.63E-05	-0.000146**	-9.63E-05	-0.000124**
	-6.95E-05	-5.78E-05	-6.95E-05	-5.49E-05
lnexport	0.0212***	0.0193***	0.0212***	0.0203***
	-0.000755	-0.000722	-0.000755	-0.000691
lnimport	0.0194***	0.0191***	0.0194***	0.0190***
	-0.000814	-0.000701	-0.000814	-0.000663
lncontrol_corruption	-0.000725***	-0.000321**	-0.000725***	-0.000300**
	-0.000141	-0.000133	-0.000141	-0.000126
lnrule_law	-6.19E-05	0.000392*	-6.19E-05	0.000409**
	-0.0002	-0.00022	-0.0002	-0.000207
lnregulatory_quality	-0.00146***	-0.00106**	-0.00146***	-0.00107***
	-0.000339	-0.000414	-0.000339	-0.000389
lngovernment_effectiveness	0.00153***	0.000998**	0.00153***	0.000791**
	-0.000449	-0.000384	-0.000449	-0.000364
lnpolitical_stability	-0.000659***	-0.00118***	-0.000659***	-0.00118***
	-0.000227	-0.000199	-0.000227	-0.000188
lnvoice_accountability	0.00240***	0.00209***	0.00240***	0.00211***
	-0.000511	-0.000474	-0.000511	-0.000445
lncorruption_score	4.35E-05	7.60E-06	4.35E-05	4.12E-05
	-0.000271	-0.000211	-0.000271	-0.0002
lngdp_per_capita	0.000911***	0.00391***	0.000911***	0.00304***
	-0.000246	-0.000672	-0.000246	-0.000567
code				-1.08E-05
				-0.000301
o.lnwto_accession	-	-	-	
Constant	2.885***	2.913***	2.885***	2.939***
	-0.00231	-0.0068	-0.00231	-0.0104
Observations	**143**	**143**	**143**	**143**
R-squared	**1**	**0.999**		
Number of code		**9**	**9**	**9**

4. RESULT INTERPRETATION

4.1 OLS (Ordinary Least Square)

The lnimport and lnexport had positive coefficients, indicating that higher levels of imports and exports correlated with increased lnexp_import. This suggests that countries engaged in more extensive trade networks tended to have higher import values, possibly benefiting from economies of scale. The variable lnfd_net_inflows, representing foreign direct investment (FDI) inflows, exhibited a positive and significant coefficient. This implies that higher FDI inflows were linked to greater import values. This phenomenon could be attributed to multinational companies importing intermediate goods for their production processes or boosting domestic demand for imported products. Institutional factors such as lncontrol_corruption, lnregulatory_quality, and lnpolitical_stability had negative coefficients. This means that improvements in these institutional aspects were associated with reduced import values. Better institutions often lead to more efficient resource allocation, reduced trade barriers, and less reliance on imports. On the other hand, the coefficients for lngovernment_effectiveness and lnvoice_accountability were positive and significant. This suggested that enhancements in government effectiveness and voice and accountability were tied to higher import values. This could be due to improved governance attracting more foreign trade partners or fostering a more open and dynamic trade environment. We also observed that lngdp_per_capita, representing GDP per capita, had a positive and significant coefficient. This indicated that an increase in GDP per capita corresponded to higher import values. Wealthier countries tend to have a greater demand for imported goods and services. Our model exhibited a remarkably high R-squared value of 0.9997, signifying that 99.97% of the variation in lnexp_import could be explained by the included independent variable.

4.2 Fixed Variable

Variables like lnimport and lnexport displayed positive coefficients, implying that higher levels of imports and exports were associated with increased lnexp_import. This observation aligned with the idea that countries engaged in more extensive trade often benefited from economies of scale. Notably, the coefficients for lnfd_net_outflows (which were negative) and lnfd_net_inflows (which were positive, albeit significant at the 10% level) revealed interesting patterns. An increase in net FDI outflows seemed to lead to decreased import values, while net FDI inflows were linked to higher imports. This could be due to multinational corporations' influence on trade patterns. Institutional factors, including lncontrol_corruption, lnregulatory_quality, and lnpolitical_stability, showed negative coefficients. This suggested that improvements in these institutional dimensions were associated with reduced import values, possibly because better institutions lead to more efficient resource allocation and fewer trade barriers. Conversely, positive and significant coefficients for lngovernment_effectiveness and lnvoice_accountability indicated that better governance was linked to higher import values. This might be attributed to enhanced governance attracting more foreign trade partners and fostering a more dynamic trade environment. Lastly, a positive and significant coefficient for lngdp_per_capita highlighted that countries with higher GDP per capita tended to have increased import values. This could be because wealthier nations exhibited greater demand for imported goods and services. It's important to note that the lnwto_accession variable was excluded from the model due to multicollinearity, suggesting that it was highly correlated with other independent variables. Further refinements of the model or the creation of composite variables might be necessary to capture these combined effects. Additionally,

the F-test revealed significant variation in lnexp_import across countries, underscoring the rationale for employing a fixed-effects model to account for unobservable, country-specific disparities.

4.3 Hausman Taylor

The lagged import and export (lnexp_import1) showed a statistically significant negative relationship. A 1% increase in the prior period's import and export corresponded to a 0.0106% decrease in the current import and export, with all other variables held constant. We examined the impacts of various economic, political, and institutional factors on import and export, including net foreign direct investment (FDI) inflows and outflows, exports, imports, control of corruption, rule of law, regulatory quality, government effectiveness, political stability, voice and accountability, corruption score, and GDP per capita. Most of these variables demonstrated statistically significant effects on import and export, indicating their relevance. Notably, a 1% increase in GDP per capita (lngdp_per_capita) was associated with a 0.003% increase in import and export, which was statistically significant with a p-value below 0.001. However, the group variable code did not exhibit a statistically significant relationship with import and export. In conclusion, the comprehensive HT estimation provides valuable insights into the intricate connections between import and export and a wide range of economic, political, and institutional factors. These findings offer valuable perspectives for understanding international trade dynamics, shaping effective economic policies, and addressing the challenges posed by globalization and evolving trade patterns.

5. CONCLUSION

In light of the findings and discussions presented in this thesis, several policy implications and contributions can be highlighted. These insights can help inform policymakers, investors, and other stakeholders in their decision-making processes and in the development of strategies aimed at fostering economic growth and enhancing international trade. 8.2 Policy Implications: The positive relationship between Foreign Direct Investment (FDI) and international trade for the EU New Member States-11 suggests that policymakers should prioritize efforts to attract and retain FDI. This can be achieved through the creation of a favorable investment climate, the improvement of infrastructure, and the development of targeted incentives for foreign investors. The thesis highlights the potential role of regional integration in fostering the positive relationship between FDI and international trade. Policymakers should consider deepening regional integration by removing trade barriers, harmonizing regulations, and promoting cooperation between countries in the region. This could lead to an increase in intra-regional trade and investment, supporting economic growth.

Although the results indicate a counterintuitive negative relationship between political stability and import and export, the importance of political stability in creating a favorable investment environment cannot be overlooked. Policymakers should focus on promoting political stability by addressing potential sources of conflict, strengthening democratic institutions, and ensuring the rule of law. The potential spillover effects of FDI on productivity and competitiveness can be maximized by investing in human capital development. Policymakers should prioritize education and skills training, especially in sectors that are likely to benefit from FDI inflows, to ensure that

the local workforce is equipped to take advantage of new job opportunities and technological advancements.

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