Causality between Greenfield Investments, Regulatory Quality, and Economic Growth: Are the Western Balkans different?

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ABSTRACT

The study aims to examine the causality link between Greenfield Investments, Regulatory Quality, and Economic Growth by using seven Western Balkan countries between 2003 and 2022. Johansen cointegration tests, the VECM model, and multiple empirical unit root tests are the foundation of the empirical analysis. The study’s findings indicate that, in the short run, GFI-led growth in Albania and North Macedonia is supported. In the long run, the analysis backs the growth driven by GFI in Serbia and Montenegro and the growth driven by regulatory quality in Albania, Bosnia and Herzegovina, North Macedonia, Serbia, Montenegro, and Bulgaria. The findings support the growth driven by regulatory quality in most Western Balkan countries, reassuring national policymakers that encouraging improvements in regulatory quality and GFI inflows is warranted and will ultimately spur economic growth.

Keywords: greenfield foreign investments, regulatory quality, growth, VECM model, Western Balkans

JEL Classification: F65, Q56, O16

INTRODUCTION

Although European countries in transition have similar political and economic orientations and serve EU members, foreign investors are not interested in investing in new areas. One of the main economic goals of European transition countries is to stimulate economic growth. The former socialist, now transition economies, have gone through different stages when it comes to perceiving the role of foreign direct investment (FDI) in the process of transforming their economies. In Central and Eastern Europe, where significant changes in the socio-economic structure of ownership and production relations are taking place, the importance of FDI flows is great. Consequently, it makes sense that governments enact laws that establish favorable economic and stable legal conditions, as well as high levels of assurance and safeguards for foreign investors. FDI serves as the cornerstone of the new international economic order and is one of the key elements that affect the internationalization and globalization of world trade and production (Ganić, 2021). For some researchers and scholars, the relationship between Greenfield foreign investments (GFI), the effectiveness of the regulatory system, and economic growth is a key topic. Bertrand (2004) defines green space investment as one of many non-resident investors creating service facilities from scratch. GFI increases production capacity and creates new jobs.

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and facilities in the country. It also has a positive effect on activity levels. Additionally, the introduction of GFI and production methods and technologies can encourage companies to increase production to meet the needs of the market (UNCTAD, 2014).

The literature, however, presents conflicting evidence regarding the effects of GFI on both short-term and long-term economic growth. Although FDI has a large positive impact on growth rates in developing nations according to certain theoretical and empirical studies, other research suggests that these benefits might not be absolute. According to some empirical studies, institutional and regulatory quality can influence economic growth.

Hence, this research aims to respond to the research question: Is there a Granger causality effect between GFI, regulatory quality and economic growth in the Western Balkans? When examining the research question, the following hypothesis will be subjected to testing:

\[ H_0: \text{There is a Granger causality effect between GFI, regulatory quality and economic growth in the Western Balkans.} \]

Based on the findings, the research will identify strategies for luring international investors in and bolstering the nation's finances. Most empirical research that addresses the economic effects of FDI inflows used econometric models that examine total FDI flows without making a distinction between Greenfield and Brownfield investments. However, depending on the industry that draws the foreign investment, these two forms of FDI may have distinct economic effects. Because there is a dearth of pertinent research and theoretical concerns in the literature, this study focuses on the causal relationship between GFI, regulatory quality, and economic growth (Bayaret et al. 2020). This study adds to the body of literature by emphasizing the causality between GFI, regulatory quality, and economic growth, as well as the significance of early detection. The importance of this research analysis lies in the fact that it provides decision-making guidelines for policymakers and practitioners regarding greenfield investments, improving the quality of regulation and assessing their impact on economic growth in the Western Balkans. The contribution of this research is visible in the investigation of Western Balkan countries as transition regions based on the use of GFI and regulatory quality in causality with economic growth. Additionally, panel analysis using the VECM model and the results of the Granger causality test demonstrated the contribution of research, ultimately confirming that higher GFI inflows and better regulatory quality can be factors of economic growth. In fact, the findings of this study have consequences for those who formulate economic policy in addition to adding to the body of scientific knowledge. Accordingly, national policymakers should consider improving the circumstances for GFI inflows since the research has demonstrated that it can spur economic growth in the Western Balkans when combined with improved regulatory quality.

LITERATURE REVIEW

Numerous studies demonstrate how FDI inflows generally help developing market economies flourish. The relationship between greenfield investment, regulatory quality, and economic growth has been extensively studied; nevertheless, the lack of agreement between studies suggests that more research is necessary. The various countries, time periods, and econometric techniques employed in these studies could account for the lack of consensus. There is a wealth of studies on emerging and wealthy nations alike that make use of primary and secondary data. Mathematical equations are widely used in this research. Nevertheless, a few studies that engage with empirical research have limits. Empirical research delves deeply into several facets associated with various problems (Qiu & Wang, 2011). Most people agree that the partial equilibrium model applies to both host and foreign nations. This model considers variables including fixed costs, market size, competition, and cost differentials. The four elements hold significant importance when it comes to green-field investments and merger and acquisition procedures. Multinational corporations aim to maximize efficiency by capitalizing on several aspects, such as cultural norms, institutional setups, economic laws and systems, and market
configurations. This is achieved by centralizing production in specific regions to cater to a variety of markets. (Dunning, 1993). The OLI theory is applied to provide a response to the questions of where, when, and why FDI will occur. As per Dunning’s (1993) OLI theory, companies choose to engage in FDI if they satisfy three essential criteria: (1) they must possess net ownership advantages over rival firms from other nations; (2) it must be advantageous to retain those advantages internally rather than selling them to foreign firms via the market; and (3) there must be a locational advantage in utilizing ownership advantages in a foreign location as opposed to the home country.

This theory holds that the likelihood of domestic governments acting in this way is a positive consequence, ceteris paribus, of the quantity of unique ownership-specific advantages that MNEs possess and their capacity to complement or integrate these assets with local knowledge and resources. This likelihood increases when a nation's location-specific assets become more appealing to foreign investors and when MNEs compete for the resources, skills, or markets of the host nation (Dunning, 2000). Greenfield FDI creates new institutions in the host nation, increases production potential, and hence enhances employment by bringing in new labor prospects. For example, the study done by Peric and Filipovic (2021) examined the link between FDI and labor indicators in 17 transition countries. The findings of the study indicate that wages, salaries, and the employment rate are all positively and significantly impacted by foreign direct investment (FDI); the effect on income inequality is less evident.

Furthermore, the introduction of Greenfield FDI utilizing cutting-edge technologies and sophisticated production techniques may inspire local businesses to increase their productivity (UNCTAD, 2014).

Antonietti&Mondolo (2023) investigated the short-term impact of FDI inflows on the institutional quality of recipient countries. Until then, this issue has not been thoroughly explored in the context of high-quality domestic institutions as attractive factors for FDI. The research covered 102 countries over a 25-year period, providing insight into the dynamics of the relationship between FDI and institutional quality in the short term. The authors found that FDI inflows in transition economies can be explained by Granger causality associated with greater political stability and lower quality of regulation and rule of law. Their research suggests that this may be the result of ‘diminishing returns to institutional quality’, particularly in situations where transition economies are already experiencing significant increases in regulatory quality and the rule of law.

One recent study done by Raza, Shaf & Arif (2019) studied the links between FDI, capital, labor and five key factors of institutional quality in the context of economic expansion of OECD member countries in the period from 1996 to 2013. The study finds a two-way causal relationship between FDI and regulatory quality (REQ) when it comes to economic expansion. Additionally, it demonstrates the unidirectional causal relationship between voice and accountability (VAC), political stability (POS), economic growth, government effectiveness (GOE), and corruption controls. These results imply that FDI and regulatory quality have a reciprocal influence, but that the relationships between economic growth and other variables—such as political stability, voice and accountability, and government efficacy—are unidirectional. In their study, Daude and Stein (2007) examined the connection between FDI and institutional quality, concluding that the two factors were significantly positively correlated. Their research shows that the decrease in FDI inflows is caused by several factors, including unstable governments, unpredictable laws, onerous regulations and policies, and a lack of commitment. Kandil (2009) also studied the association between institutional quality, FDI and economic expansion in the MENA region. His research indicates that there is an association between the WGI indicators and economic growth. However, Kandil (2009) concludes that institutional quality has a negative impact on economic growth and FDI in these countries. Similarly, Hraiba et al. (2019) found an inverse relationship between government effectiveness and FDI outflows in North Africa and the Mideast region after the Arab Spring.
Several studies done by Masron & Abdullah (2010), Buchanan et al. (2012), Ahmed & Ahmed (2014), Economou et al. (2016), Yerrabati & Hawkes (2016), Kayani & Ganić (2021), Ganić (2022) confirmed the connection between institutional quality and FDI.

The host nation's economic growth can benefit from greenfield investments in a number of ways. First, GFI has the potential to greatly expand the nation's capital resources for output by building new facilities. Second, the establishment of these new facilities promotes the nation’s economic growth by increasing the number of companies operating there and by generating new job opportunities. As a result, greenfield investments can boost local businesses’ productivity, which raises the nation’s general level of productivity (Ahmed, et al 2023).

Some recent empirical studies have highlighted a positive relationship between GFI and GDP. For example, this has been done by Gopalan et al. (2018) in developing Asian countries, Wang & Wong (2009) in 84 countries, Harms & Méon, (2018) in 127 countries across the world, Luu (2016) in emerging countries, Neto et al. (2010) in 53 countries, Bayar (2017) in Central European countries. On the contrary, some empirical studies refute the association between GFI and economic growth, not finding a significant relationship thereof (Eren & Zhuang, 2015 in 12 EU member countries, Calderon et al., 2004 in 72 developing and developed countries).

DATA AND METHODOLOGY

For the seven Western Balkan countries, the panel model used in this study utilizes three variables: GFDI, REQ and GDPPC. The study’s data is limited to the time frame for which UNCTAD collected annual data (GFI in million $), from 2003 to 2020. The data related to GFI, economic growth and regulatory quality are derived from the UNCTAD, World Development Indicators (WDI) database managed by the World Bank, and from the Worldwide Governance Indicators (WGI), respectively. The study uses the WGI indicators developed by Kraay and Kaufmann (2010) to gauge the quality of regulations. The perception of the government’s capacity to create and carry out laws and regulations that promote and strengthen market-oriented tactics and private sector growth is known as regulatory quality. The quality of regulation and its relevance is a crucial factor in evaluating the attractiveness of a country for investment. Investor risk and uncertainty are reduced by quality laws, which establish a stable corporate environment. This component evaluates how supportive the regulatory environment is of private sector efforts and how business-friendly it is. Low regulatory quality can make doing business more challenging, discourage investment, and impede economic growth. High regulatory quality, on the other hand, shows the existence of transparent, equitable, and consistent regulations that support economic activities. This view is crucial for luring in foreign capital, promoting entrepreneurship, and fostering a competitive economic climate. The variable of gross domestic product (GDP) per capita is used as a proxy for economic growth, given the fact that it is most often used in the literature as the main indicator for measuring economic development. Since GDP per capita is a measure of GDP relative to the population of a country, it is seen to be a useful indication of economic growth. This statistic makes it possible to evaluate the average economic performance per resident, which offers a clearer picture of the nation’s economic conditions and level of living.

The methodology of this article follows three stages in the field of econometrics. Checking whether a unit root exists in the panel data is the first step in the process. A panel cointegration test is used in the second stage to investigate the long-term cointegration connection between the variables following the determination of the unit roots. Once cointegration has been established, the next step uses the Granger causality test to investigate the causal relationship between the variables.

A variety of empirical tests are used in the methodological approach to investigate the causality and link between exports, foreign direct investment, and economic growth. Time series stationarity is tested using unit fit tests (ADF - Fisher Chi-square, PP Fisher Chi-square, Levin et al. LLC - 2002, and Im et al., 2003 tests). Johansen’s cointegration test is employed to assess the
empirical model. Furthermore, we employed a modified Wald test and the multivariate Granger causality test within the autoregressive model’s vector framework to investigate the direction of the short- and long-term causal components.

The long-term cointegration of greenfield foreign investments, regulatory quality, and economic growth in the Western Balkans was examined using Johansen’s cointegration test. Cointegration suggests that variables may be related, but it does not specify which way the link is causative. Vector autoregression (VAR) after first differencing may be misspecified owing to loss of long-run information if non-stationary variables are cointegrated. However, the VECM model can overcome this problem (Engle & Granger, 1987). Furthermore, the VECM model provides improved results than the traditional Granger causality test by accurately identifying the origin of causality and enabling the differentiation of long-term and short-term correlations in a series (Dritsakis & Stamatiou, 2018).

Three versions of the VECM model were employed to investigate the relationship between Greenfield foreign investments, regulatory quality, and economic growth:

\[
\begin{align*}
\Delta \text{LNGFI}_{it} &= c_{1i} + \sum_{i=1}^{k} \alpha_{1ik} \Delta \text{LNGFI}_{it-k} + \sum_{i=1}^{k} \beta_{1ik} \Delta \text{REQ}_{it-k} + \sum_{i=1}^{k} \gamma_{1ik} \Delta \text{LNGDP}_{it-k} + \epsilon_{1it} \\
\Delta \text{REQ}_{it} &= c_{2i} + \sum_{i=1}^{k} \alpha_{2ik} \Delta \text{LNGFI}_{it-k} + \sum_{i=1}^{k} \beta_{2ik} \Delta \text{REQ}_{it-k} + \sum_{i=1}^{k} \gamma_{2ik} \Delta \text{LNGDP}_{it-k} + \epsilon_{2it} \\
\Delta \text{LNGDP}_{it} &= c_{3i} + \sum_{i=1}^{k} \alpha_{3ik} \Delta \text{LNGFI}_{it-k} + \sum_{i=1}^{k} \beta_{3ik} \Delta \text{REQ}_{it-k} + \sum_{i=1}^{k} \gamma_{3ik} \Delta \text{LNGDP}_{it-k} + \epsilon_{3it}
\end{align*}
\]

\((1)\)

\((2)\)

\((3)\)

The study utilizes a model with a dynamic error correction representation, in which \(\Delta\) stands for the first difference operator, \(k\) represents the lag duration, and \(\epsilon_{it}\) denotes serially uncorrelated error terms, \(i, t\) identify a country and time period, respectively; LNGDPC refers to log of the real gross product per capita of a country \(i\) in year \(t\); REQ is a proxy for regulation quality of a country \(i\) in year \(t\), and LNGFI is log of greenfield foreign investment of a country \(i\) in year \(t\).

RESULTS AND DISCUSSION

The study uses the panel cointegration test to investigate potential long-term correlations between the variables based on the panel unit root test results, which show the non-stationarity of the data series at that level. Granger (1981) showed that a series is considered cointegrated when stationary after the first differentiation, while its linear combination becomes already stationary without additional differentiation. This suggests that there is a long-term relationship among variables. ADF - Fisher Chi-square, Chi-square, Levin et al. LLC -2002; and Im et al. -IPS, 2003 tests were used to determine the sequence in which the variables in our models were integrated, and the findings are shown in Table 1. It can be said that the findings are consistent with economic science theory. The first differences of the three variables are stationary since they are all integrated - I(1).
This research paper applies the Johansen & Juselius (1990) procedure for testing cointegration between the variables under investigation. The largest eigenvalue test ($\lambda_{\text{max}}$-test) and the eigenvalue matrix trace test ($\lambda_{\text{trace}}$-test) results can be used to determine the number of cointegration vectors. The null hypothesis of the trace test is rejected based on the data presented in Table 2, which shows that there is no cointegration relationship between the variables as indicated by the greatest eigenvalue. The Johansen cointegration test shows that GFI, regulatory quality, and economic growth may all be recognized as having long-term cointegration. It is decided to embrace the alternative hypothesis, which affirms cointegration.

Table 2. Unrestricted Cointegration Rank Test (Trace and Maximum Eigenvalue)

<table>
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<tr>
<td>No. of CE(s)</td>
<td>(from trace test)</td>
<td>Prob.</td>
</tr>
<tr>
<td>None*</td>
<td>53.77</td>
<td>0.0000</td>
</tr>
<tr>
<td>At most 1*</td>
<td>22.98</td>
<td>0.0607</td>
</tr>
<tr>
<td>At most 2</td>
<td>17.92</td>
<td>0.2103</td>
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Source: Author's research

The paired Granger Causality test findings for seven Western Balkan countries are shown in Table 3. It sets each variable against every other variable and shows the corresponding estimates of short- and long-term causality.
Table 3. Short run and long run Granger causality test results

<table>
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<tr>
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<th>ALB</th>
<th>B&amp;H</th>
<th>NMAC</th>
<th>MNG</th>
<th>SRB</th>
<th>ROM</th>
<th>BUG</th>
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<tr>
<td><strong>Short-run Granger causality (Wald test)</strong></td>
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<tr>
<td>(\Delta (\text{LNGDP}) \Rightarrow \Delta (\text{REQ}))</td>
<td>0.584617</td>
<td>0.00139</td>
<td>1.118050</td>
<td>0.82515</td>
<td>0.010440</td>
<td>1.031361</td>
<td>3.99356**</td>
</tr>
<tr>
<td>(\Delta (\text{REQ}) \Rightarrow \Delta (\text{LNGDP}))</td>
<td>1.083577</td>
<td>4.8338</td>
<td>2.581393</td>
<td>0.80461</td>
<td>1.864126</td>
<td>0.007017</td>
<td>0.872904</td>
</tr>
<tr>
<td>(\Delta (\text{LNGFI}) \Rightarrow \Delta (\text{REQ}))</td>
<td>6.328283***</td>
<td>1.13793</td>
<td>3.26112*</td>
<td>7.475***</td>
<td>0.554686</td>
<td>1.333142</td>
<td>0.078679</td>
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<tr>
<td>(\Delta (\text{REQ}) \Rightarrow \Delta (\text{LNGFI}))</td>
<td>13.841***</td>
<td>5.9123**</td>
<td>2.244580</td>
<td>33.321***</td>
<td>1.695490</td>
<td>0.147196</td>
<td>12.07950***</td>
</tr>
<tr>
<td>(\Delta (\text{LNGDP}) \Rightarrow \Delta (\text{LNGFI}))</td>
<td>0.56395</td>
<td>0.883227</td>
<td>6.24839**</td>
<td>0.462383</td>
<td>2.253371</td>
<td>0.000113</td>
<td>1.10E-06</td>
</tr>
<tr>
<td>(\Delta (\text{LNGFI}) \Rightarrow \Delta (\text{LNGDP}))</td>
<td>6.9284***</td>
<td>0.19433</td>
<td>5.662125*</td>
<td>0.167097</td>
<td>2.126441</td>
<td>0.312090</td>
<td>0.221869</td>
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<th><strong>Long-run Granger causality (F-statistics)</strong></th>
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<td>(\text{LNGDP} ) does not Granger cause (\text{LNGFI})</td>
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<td>(\text{REQ} ) does not Granger cause (\text{LNGDP})</td>
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<tr>
<td>(\text{LNGDP} ) does not Granger cause (\text{REQ})</td>
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*Source: Author’s research*

The findings shown in Table 3 indicate a strong unidirectional causal link in the long run, ranging from LNGFI to LNGDP in Montenegro and Serbia at 1% significance, and from LNGDP to LNGFI in Albania at 5% significance, and in Bosnia and Herzegovina at 10%. Also, regulatory quality unidirectionally Granger causes LNGDP in the long run in all countries except Romania. For example, the relationships are significant at 1% in Albania and Montenegro, at 5% in Bosnia, Serbia and Bulgaria, and at 10% in North Macedonia. In the short run, there exists a significant causal link between LNGDP and regulatory quality, only in Bulgaria at 5% significance, while LNGFI Granger causes REQ in Montenegro and Albania at 1% and 10%, respectively. In four countries: Albania, Bosnia and Herzegovina, North Macedonia and Bulgaria, the study finds the causal relationship between REQ and LNGFI at 1% and 5% significance. In Albania and Montenegro, there is two-way causality in the short run between LNGFI and REQ. Unlike other relationships in the long run, the link between regulatory quality and green foreign direct investment does not appear to play a major explanatory function for seven Western Balkan countries.

**CONCLUSION**

In the context of the Western Balkan nations, this research aimed to elucidate the current interrelationships between GFI, regulatory quality, and economic growth. We used the VECM model to accomplish this. The interpretation of the study indicates that the data we collected are statistically significant and dependable. These findings offer hints that may be crucial for developing relevant policies in this field.

The study finds two bidirectional causalities between GFI and regulatory quality (Albania and Montenegro), economic growth and GFI (North Macedonia) and four unidirectional causalities, from economic growth to regulatory quality (Bulgaria), from GFI to regulatory quality (North
Macedonia), from regulatory quality to economic growth (Bosnia and Herzegovina, Montenegro and Bulgaria), and from Greenfield investment to economic growth (Albania), in the short run.

In the long run, the results obtained per country indicate that only one bidirectional causality exists between regulatory quality and economic growth (Serbia), and three unidirectional causalities, from economic growth to GFI (Bosnia and Herzegovina, and Bulgaria), from GFI to economic growth (Montenegro and Serbia), and from regulatory quality to economic growth (Albania, Bosnia and Herzegovina, North Macedonia, Montenegro, and Bulgaria).

No significant causality was found between regulatory quality and GFI, and vice versa in the long run. The study's findings indicate that, in the short run, GFI-led growth in Albania and North Macedonia is supported. In the long run, the analysis backs the growth driven by the GFI in Serbia and Montenegro and the growth driven by regulatory quality in Albania, Bosnia and Herzegovina, North Macedonia, Serbia, Montenegro, and Bulgaria. Poor regulation quality can discourage investment, make doing business more difficult, and limit economic progress. The study helps to understand how much effort governments are putting into creating a far better and more alluring environment for foreign investors in the Western Balkans through responsible and high-quality regulation.

The findings indicate that policymakers in the Western Balkans should concentrate on measures that entice GFI into new production. Governments should enact sensible macroeconomic policies, strengthen regulations, and draw in more investment to support economic growth and job creation. The standard of regulation is a crucial factor in growth and FDI. Setting a high standard of regulation is essential in the short run since it can play a significant role in the Western Balkans’ economic development. Also, policymakers in the Western Balkans should focus more on strengthening and implementing fair, transparent and consistent rules that promote economic growth.

REFERENCES


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