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Inward FDI and Economic Growth in Bulgaria

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ABSTRACT

Inward foreign direct investment (FDI) plays a critical role in stimulating economic growth, serving as a key catalyst in the development of emerging economies. This study investigates the impact of inward FDI on the economic growth of Bulgaria, an emerging economy in Eastern Europe. Utilizing annual time series data from 1991 to 2022, we analyze the relationship between GDP per capita growth and explanatory variables, including inward FDI and employment. The study employs the Autoregressive Distributed Lag (ARDL) bounds test for cointegration to examine the long-run relationship between these variables. The empirical results confirm a significant positive impact of inward FDI on Bulgaria's economic growth, with a robust long-term equilibrium established among the variables. Additionally, the findings reveal a unidirectional causality from FDI to employment, indicating that FDI inflows have contributed to job creation in Bulgaria. The study underscores the critical role of FDI as a catalyst for economic development in Bulgaria, particularly during its transition from a centrally planned to a market-oriented economy and its subsequent integration into the European Union. However, it also highlights the importance of enhancing Bulgaria's absorptive capacity through improvements in institutional quality, political stability, and infrastructure to fully leverage the potential benefits of FDI. These insights offer valuable implications for policymakers aiming to optimize the economic impact of FDI in Bulgaria and other emerging economies in Eastern Europe.

INTRODUCTION

Inward Foreign Direct Investment (FDI) plays a pivotal role in stimulating economic growth, serving as a key catalyst in the economic development, particularly of the emerging economies. This study examines the relationship between inward FDI and economic growth in Bulgaria, an Eastern European country that decided to move away from centrally planned economy to a market-oriented economy in early 1990s and joined the European Union in 2007. This transition period, combined with the integration into the EU, provides a unique context for analysing the effects of FDI on Bulgaria's economic growth. The experience of Central and Eastern European countries (CEECs) with FDI has been diverse, marked by varying degrees of success and challenges. While FDI has facilitated economic restructuring, technology transfer, and job

creation, the extent of these benefits has largely depended on local conditions such as institutional quality, economic policies, income distribution, human capital, and infrastructure (Tintin, 2013; Gherghina et al., 2019). The relationship between FDI and economic growth in Bulgaria might differ from that in other CEECs due to its unique historical, political, and economic context.

The ability to attract, utilize, and strategically employ high-volume but also high-quality FDI has been a decisive factor in the relative success of CEECs in their transformation and EU integration process, positioning some countries significantly ahead of others (Dorozynski et al., 2020). The potential advantages of inward FDI for CEECs and Bulgaria are substantial. FDI can enhance economic growth by introducing advanced technologies, improving managerial skills, and fostering competitive markets. Additionally, FDI can lead to the development of new industries and the modernization of existing ones, thereby creating employment opportunities and boosting productivity. These benefits are expected to contribute significantly to economic growth (Nikolova, 2016). An empirical assessment considering various factors confirmed that for the period 1990 Q1-2019 Q3, the impact of FDI is positively related to growth in Bulgaria and depends on the 'absorptive capacity' of the economy, related to its workforce, trade openness, and financial development (Yotzov, 2020). However, alongside these benefits, the influx of foreign capital also poses certain risks, including potential macro-financial vulnerabilities that can exacerbate the economic fluctuations.

The high volumes of repatriated profits exceeding the received investments can pose new threats to national economies (Rodionova et al., 2019). Furthermore, a host country-specific model for the relationship between inward FDI and GDP growth in Bulgaria found that the growth in FDI inflows is negatively associated with the GDP growth in the previous period (Velushev, 2019). Thus, the extent and nature of the relationship between FDI and economic growth in Bulgaria remain mixed and subject to considerable debate among scholars, underscoring the importance of further studies. Bulgaria's geographical location at the crossroads of Europe and Asia has strategically positioned it as an attractive destination for foreign investors. During the transition period, the country undertook substantial reforms to attract foreign investment, including liberalizing its investment regime, privatizing state-owned enterprises, and implementing policies to stabilize the macroeconomic environment. The attractiveness for foreign investors increased significantly with the country's EU accession in 2007, with inward FDI flows reaching 31% of GDP (Fig. 1). However, after the global financial and economic crisis, the country has struggled to attract high volumes and quality FDI. The appeal for investors is expected to once again significantly increase with Bulgaria's forthcoming Eurozone membership (Gechev et al., 2020). Bulgaria's case deserves specific attention as, in contrast to other CEECs, it has applied an open-door policy for incoming FDI without a strategic focus and prioritization throughout its transition and EU integration process (Zhelev & Kussainova, 2024). This makes a study shedding light on the economic effects of FDI in Bulgaria particularly pertinent.

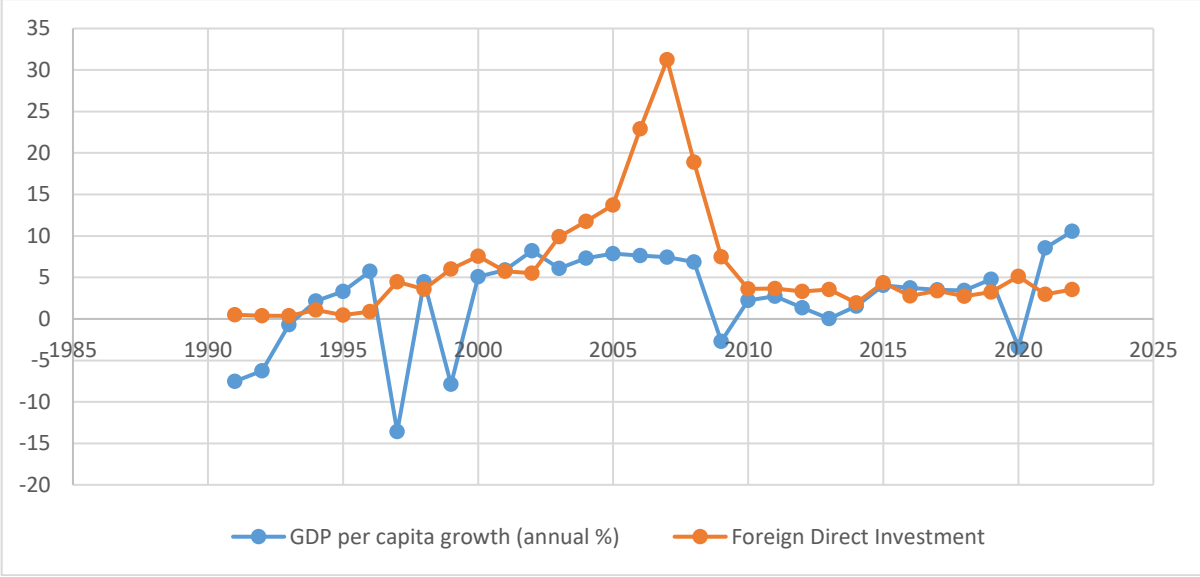

Figure 1. GDP per capita growth rate (Annual %) & Inward FDI flows (% GDP) to Bulgaria (1990-2023)
Source: WB World Development Indicators, 2024

This paper has contributed the existing literature by providing a more comprehensive econometric analysis of the long-term impacts of FDI on Bulgaria's economic growth, considering the unique historical and economic context of the country. The study has evaluated the long-term relationship between FDI and economic growth in case of Bulgaria from 1991 to 2022 by using the Auto-Regressive Distributed Lag (ARDL) bounds test of cointegration. This research has tried to fill a critical gap in the literature and has provided the valuable insights to the policymakers and stakeholders with the aim to leverage FDI to enhance the economic growth in Bulgaria and other emerging economies in Eastern Europe.

The remainder of the paper is organized as follows. In section 1, we discussed the existing literature review, and section 2 refers to the data and methodology. Section 3 shared the results and discussion. Lastly, the conclusion and recommendations for future research are discussed in the final section.

1. LITERATURE REVIEW

The empirical literature has thoroughly examined the correlation between economic development and FDI in both emerging and the industrialized nations. A multitude of empirical studies investigating the effects of FDI in recipient nations demonstrate that FDI plays a substantial role as a capital provider, complements domestic private investment, generally results in the generation of fresh employment prospects, facilitates the technology transfer and the occurrence of spillover effects, fosters the development of human capital by promoting knowledge acquisition and skill enhancement, and contributes in the economic development of recipient countries (Razzaq et al., 2021). Macro-empirical research has extensively investigated the impact of FDI upon economic development. The literature has revealed that the impact of FDI on the economic development of developing countries is contingent upon various crucial factors. These factors include the trade regime, the accessibility of human and labor capital in the host nation, guidelines governing the financial market, the banking system, and the level of economic openness. The findings indicated that FDI has a positive and beneficial effect on the general financial expansion of developing countries.

However, several firm-level research does not provide sufficient evidence for the proposition that FDI promotes economic development. Whereas the academic literature recognizes the importance of FDI in promoting economic development and industrial growth. Additionally, it recognizes that economic growth itself may serve as a crucial determinant in attracting FDI. The strong relationship between economic development and FDI stems from the significant role that FDI plays in the strategic decision-making of investing enterprises (Nguyen et al., 2023). Furthermore, FDI has strong potential to augment the economic development via the introduction of novel technologies, including innovative manufacturing methods and techniques, management expertise, creative ideas, and diverse forms of capital goods. The development rate of less developed nations is often believed to be closely tied to their ability to accept and effectively apply new technologies. According to Razzaq et al. (2021), the adoption of new technologies and ideas, also known as technological diffusion, has the potential to enable countries to bridge the technology gap with emerging nations. FDI is widely believed to promote the economic growth and technological advancement. This is due to the presumed superior productive ability of foreign-controlled companies and superior knowledge and expertise vis-à-vis the enterprises in industrializing economies.

A broad variety of beneficial externalities is associated to cooperation with and the existence of foreign MNEs, such as intellectual property and technology spillovers (Ning et al., 2023). Although complicated, the demonstration-imitation effect, the competitiveness effect, the linking effect, and the training impact are usually regarded inherent in the diffusion of knowledge and innovation to local enterprises (Gao & Yuan, 2022). FDI is often seen as a "perfect substitute" for domestic investment. The conventional literature on growth typically views technology as originating from external sources, such as encoded knowledge manifested in designs and equipment. According to proponents of "endogenous growth," the rate and nature of technological development, as well as the dynamics of capital and knowledge stock accumulation, are all determined by internal forces (Topal, 2023).

The existing body of empirical research on the correlation between FDI and economic development is extensive, as shown by the comprehensive literature review conducted by (Wang et al., 2022). Consequently, the conclusions derived from the empirical study lack consistency and uniformity. These studies suggest that recipient economies have the potential to derive substantial benefits from FDI, particularly

when it complements or stimulates domestic capital formation. However, it is very crucial and important for the host country to possess the adequate absorptive capacities and the capabilities to fully realize the advantages being offered by FDI. Voumik and Ridwan (2023) research showed that FDI has a positive and statistically significant influence on industrializing countries, but only if these countries meet the specified educational thresholds. The findings of the Miao et al. (2021) study further indicated that FDI has a positive impact on the domestic investments and plays more significant role in promoting the economic development as compared to the local investments.

Additionally, the study performed by Joo et al. (2022) reveals that the impact of FDI on the economic development is dependent upon specific attributes of the host country. Human capital, liberalized trade system, and advanced institutional structures are the factors that contribute very strongly in the economic development of any country. Data from a panel study suggests that countries with high human capital, openness to trade, and strong institutions benefit economically from FDI. In another study, Bakhsh et al. (2021) used panel data analysis to investigate the correlation between FDI and economic growth, aligning with the just discussed approach above. The research focuses its attention on a sample involving thirty-two countries, encompassing both industrialized and developing nations. The study revealed that the positive impact of FDI on economic development is dependent on certain characteristics of the recipient nation, such as the level of human resources.

The study conducted by Ashraf et al. (2021) revealed that the impact of FDI on GDP varies depending on the nature of the investment, namely whether it is in the form of greenfield investment or acquisition. Additionally, the study conducted by Vujanovic et al. (2022) yielded varied outcomes in terms of the correlation between FDI and GDP. The authors demonstrated a causal relationship between high GDP and FDI in Bulgaria, establishing that it is the former that influences the latter, rather than the reverse. Burlea-Schiopoiu et al. (2023) showed the existence of a positive relationship between FDI and the economic development in case of Bulgaria. However, they have also found that there is no discernible association between FDI and macroeconomic indicators after the economic crisis.

2. DATA & METHODOLOGY

2.1 Data & Variables

We took Gross Domestic Product per capita (GDP) as dependent variable. The Bulgarian GDP per capita was around 6-7 % before Global financial crisis but it decreased drastically after the crisis to around 2-3%. But it's good to see that it reached the levels of 8% & 10% in the years 2021 & 2022 respectively. We took inward FDI as % of GDP (FDI) & Employment as % of total employment (EMP) as independent variables. We took the annual time series data from 1991 to 2022 from World Development Indicators.

Table 1. Data and Variables Description

Variables	*Symbols*	*Description & Measurement Scale*	*Data Source*
Economic Growth	GDP	GDP per capita growth (annual %)	WDI
Foreign Direct Investment	FDI	Foreign direct investment, net inflows (% of GDP)	WDI
Employment	EMP	Employment in industry (% of total employment)	WDI

Source: own

2.2 Econometric Model

In this study we aim to assess mainly the contribution of inward FDI to the economic growth of Bulgaria. GDP per capita is dependent upon Inward FDI, employment etc.

$$GDP_t = (FDI_t, EMP_t) \quad (1)$$

The general model to be estimated is shared below

$$GDP_t = b_0 + b_1FDI_t + b_2EMP_t + e_t \quad (2)$$

where

GDP = GDP per capita growth (annual %)
FDI = Inward Foreign Direct Investment (% of GDP)
EMP = Employment in industry (% of total employment)
t = time from 1991 - 2022
et = error term

The long-run relationship can be specified via Auto regressive Distributed Lag Model equation as below

$$GDP_t = b_0 + b_1GDP_{t-1} + b_2FDI_{t-1} + b_3EMP_{t-1} + e_t \quad (3)$$

Where GDP_t is the GDP per capita growth from 1991 to 2022. Whereas b_1, b_2 & b_3 are the long-run coefficients and e_t is the error term. We apply ARDL co-integration very happily when the variables have mixed integration. To apply ARDL, the dependent variable must be stationary of level I (1) and the independent variables could be stationary of level I (0) or I (1). But no variable, either dependent or independent should be stationary of level I (2) to avoid the spurious results. The calculated F-Statistics becomes invalid if any of the series is integrated of order I (2) or higher.

3. EMPIRICAL RESULTS & DISCUSSION

3.1 Descriptive Statistics

Initially, we ran the descriptive statistics, and the results are reported below in the Table 2. The data is normal and does not have any issue with outliers.

Table 2. Summary Statistics for the Selected Variables.

Variables	*Mean*	*Median*	*Maximum Value*	*Minimum Value*	*Standard Deviation*
GDP	2.578535	3.625477	10.55972	-13.59092	5.500803
FDI	6.144923	3.602631	31.22753	0.369274	6.906108
EMP	34.06953	32.87386	43.71721	29.78980	4.156731

Source: own

The descriptive statistics of the study are presented in Table 2. The mean value of GDP is 2.57, with a minimum value of -13.59 in 1997 and a maximum of 10.55 in 2022, which indicates significant economic growth in Bulgaria. Inward FDI has a minimum value of 0.36 in 1993 and a maximum value of 31.22 in 2007, indicating a significant increase in FDI but it is also important to mention that Bulgaria experienced a significant decline in FDI from 2007 onwards. Finally, the minimum and maximum values of employment are 29.78 & 43.71 in the years 2016 & 1992 respectively.

3.2 Augmented Dicky Fuller (ADF) Unit Root Test

To check the stationarity of the variables, we used Augmented Dicky Fuller (ADF) unit root test was proposed by Dickey & Fuller (1979). Gauging the stationarity of variables is one of the important

requirement for applying ARDL Bounds test to make sure that none of the variables is integrated of second order I(2). After applying ADF test we found that our variables are stationary at I(0) & I(1). The results of ADF test have been presented below in Table 3.

Table 3. ADF Unit Root Test for Stationarity

Variable	*Symbol*	*ADF (Level)*	*ADF (1st Difference)*
GDP per capita growth	GDP	Non-Stationary	Stationary
Inward Foreign Direct Investment	FDI	Non-Stationary	Stationary
Employment	EMP	Stationary	Non-Stationary

Source: own

3.3 ARDL Bounds Test

The ARDL bounds test helps to estimate the long-run relationship among the variables of a model. Furthermore, the co-integration test also helps to address the issue of spurious regression. The traditional tests for time series data were Engle and Granger (1987) and the Johansen (1988); which was used to be applied only in the case when the variables were integrated of the same order. But the failure of these tests to deal with the variables being integrated of different orders resulted in an introduction of ARDL cointegration model by Pesaran et al. (2001) tests. To avoid the problem of spurious regression caused by non-stationarity, the researchers recommend the ARDL bounds cointegration test.

The ARDL model has been introduced as remedy to the spurious regression and is effective even in the case even when the variables have mixed cointegration. The long-run relationship is said to be found if F-statistic exceeds the value of upper bound. If the F-statistic is below the lower bound, it means that there is no cointegration among the variables. If F-statistic is in between the value of upper bound and lower bound, then the result would be in-conclusive. Table 4 below represents the results regarding the ARDL bounds test, it can be noted that the F-statistics value is greater than both the lower as well as the upper bound value, so co-integration is existing in our model.

Table 4. ARDL Bounds Test Results

Test Statistics	*Value*	*K*
F-statistics	10.59999	2

Critical Value Bounds

Significance level	I (0)	I (1)
10%	3.17	4.14
5%	3.79	4.85
2.5%	4.41	5.52
1%	5.15	6.36

Source: own

3.4 ARDL Long-run Estimates

After employing unit root tests (ADF), we applied the Autoregressive Distributed Lag model (ARDL) to investigate the long-run relationships between the dependent & independent variables (GDP, FDI, CFM, EXP, EMP). Table 5 represents the results generated from applying the ARDL approach and we can see that FDI has significant positive impact upon economic growth of Bulgaria.

Table 5. ARDL Long-run Estimate Results

Variable	*Coefficient*	*Standard Error*	*T-statistics*	*P-value*
FDI	0.264339	0.116679	2.265525	0.0317
EMP	-0.423461	0.207703	-2.038784	0.0514

Note: Dependent variable = GDP & Independent variables = FDI & EMP.

3.5 Stability Diagnostic Test

For gauging the stability of long-run coefficients we used the cumulative sum and cumulative sum of square test of recursive residuals (Brown, Durbin & Ewans 1975). From figures 2 and 3 we can see that coefficients are partially stable at a 5 percent confidence interval.

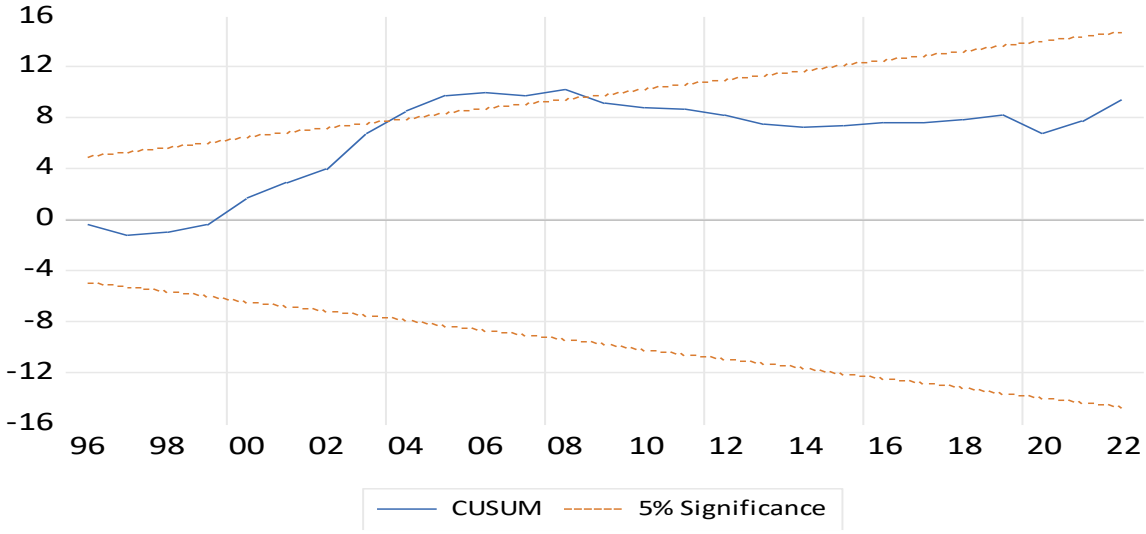

Figure 2. Cumulative Sum of Recursive Residuals
Source: own

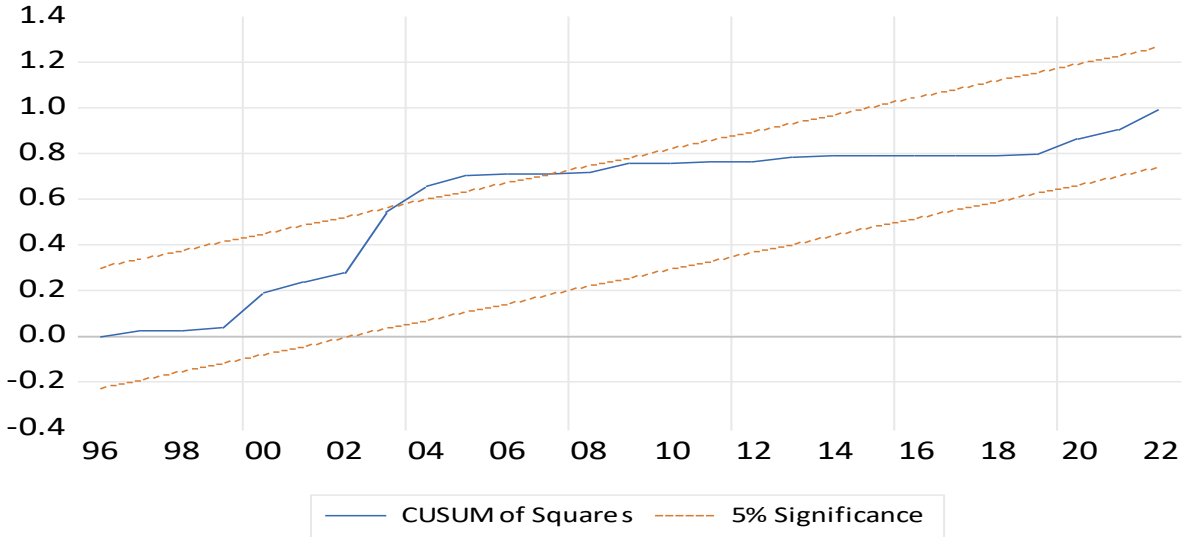

Figure 3. Cumulative Sum of Squares of Recursive Residuals
Source: own

3.6 Granger Causality Test

For gauging the direction of causality we use Granger causality test. The direction of the relationship could be unidirectional, bidirectional or non-causal relationship. Unidirectional causality takes place when

there is only a one-way relationship between the variables; for instance, either GDP is only granger causing FDI or in the other way FDI is only granger causing GDP. The bi-directional causality takes place when a two-way relationship between the variables is determined; GDP is granger causing FDI & FDI is granger causing GDP. Finally, no causality would take place when neither the GDP is granger causing the FDI nor the FDI is granger causing the GDP. In table 6 below, we can see that FDI is unidirectionally causing employment.

Table 6. Granger Causality Test Results

Variables	*F-statistics*	*P-value*	*Causality*
FDI – GDP GDP – FDI	2.14370 2.08329	0.1543 0.1600	No No
EMP – GDP GDP – EMP	3.63890 2.06086	0.0667 0.1622	No No
EMP – FDI FDI – EMP	0.27359 7.52519	0.6050 0.0105	No Yes

Source: own

CONCLUSION & FUTURE DIRECTIONS

The FDI and economic growth in case of Bulgaria for the period ranging from 1991–2022 is examined in this study. We found that there is a valid long-run relationship between the variables of our model under the ARDL-bound testing approach. The results showed that FDI has significant positive impact upon the economic growth of Bulgaria. Furthermore, FDI unidirectionally caused employment. This is a universally accepted and established fact that inward FDI improves and enhances the production capabilities of the host economies; helps in quality exports and overall economic growth. Based on these findings, it is recommended that Bulgaria intensify its efforts to attract more FDI. The country should focus on improving institutional quality, ensuring political stability and maintaining a stable macroeconomic environment.

To harness the full potential of FDI, Bulgaria should invest in enhancing the absorptive capacity of its economy. For this purpose, Bulgaria needs to invest further in the education and training to produce more skilled and semi-skilled workers to cater the demands of the foreign investors. Improved infrastructure, such as transportation networks and communication systems, is also essential for facilitating business operations and connectivity, thereby making the regions more attractive to investors. Given the positive impact of FDI on employment, it is crucial for Bulgaria to strategically direct FDI to less developed regions. This can be achieved through specific policy tools such as tax incentives and grants. Additionally, the country should speed up establishing industrial zones in these regions to attract targeted investments and foster industrial clusters. By channeling FDI into underdeveloped areas, Bulgaria can promote balanced regional development, reduce regional disparities, and stimulate local economies.

This study has a limitation in that it only covers Bulgaria from Eastern Europe. Future research should expand to include other Central and Eastern European countries to provide a comparative analysis of the impact of FDI across the region. Such studies could offer insights into the relative performance and unique challenges faced by different countries, contributing to a more comprehensive understanding of FDI's role in economic growth. Additionally, future research should explore the sector-specific impact of FDI within Bulgaria to identify which sectors benefit the most from foreign investments. This can help policymakers tailor strategies to attract FDI to high-impact sectors, thereby maximizing the benefits of foreign investment. Lastly, analyzing the impact of FDI on regional economic disparities within Bulgaria can help in designing policies that promote balanced regional development. By understanding how FDI affects different regions, policymakers can develop strategies to address local economic needs and reduce regional inequalities.

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