



## **Impact of FDI on Sustainable Growth in Belt and Road Economies**

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### **Abstract**

This paper investigates the relationship between foreign direct investment and economic growth in Belt and Road countries during 1990-2020. Our findings suggest that a 10% increase in FDI relative to GDP is associated with only 0.9 percentage points increase in GDP growth. The results are held after including control variables. The results can be explained based on the facts that forces investors and companies to invest their money in foreign projects including relatively lower cost of deployment, the access to resources, favorable financial environment and developed financial markets. These elements collectively shape the impact of FDI on economic growth in the Belt and Road countries. Future research on the FDI-growth nexus in Belt and Road countries should concentrate on causal links and potential indirect pathways by which FDI can influence economic growth.

**Keywords:** Foreign Direct Investment; Economic Sustainability; Belt and Road initiative

### **1. Introduction**

The impact of foreign direct investment on host country economic growth has received a great deal of attention. According to the neoclassical growth model [1], FDI increases investment volumes and its efficiency, thereby encouraging economic growth. Endogenous growth model states [2] that FDI brings technological advance from the developed countries to the host country which increases economic growth. FDI improves economic development by adding in existing knowledge stock of the recipient country via human capital development, improving managerial skills and organizational structure, as well as bringing innovation. Thus, there is a widespread belief that FDI positively affects growth yet empirical evidence is ambiguous. While some studies confirm the positive effect of FDI [3], confirming the neoclassical and endogenous growth theories. However, Hobbs et al. [4] challenges the general view by arguing that FDI does not always result in increased economic growth. Some studies observe no causal relationship between the sustainable economic growth and FDI [5]. This highlights the need for a more comprehensive analysis that takes into account the various contextual aspects and complexities of each host country's economic landscape. Moreover, studies that support the positive effect of FDI argue that growth in host economies is promoted either directly or under certain conditions. For example, Wu and Chen [6] find that FDI plays a more significant role in growth of export- rather than import-promoting economies. According to their research, FDI has a greater impact on promoting economic growth when it is directed towards countries that actively support and implement export-oriented programs. In order for FDI to positively impact economic growth, the receiving nation's workforce must meet specific educational, skill, and knowledge requirements. This statement suggests that a crucial factor in maximizing the benefits of foreign direct investment is human capital. Su and Liu [7] argue that FDI can encourage economic growth only if the economy has reached a certain level of human capital. UNCTAD [8] states that FDI may affect economic growth differently depending on the factors including initial per capita GDP, education, domestic investment ratio, political instability, trade, black market premium, and the financial development. Besides that, the degree to which a country participates in trade, investment, and other economic activities with the global economy is referred to in this context as its openness. Some empirical results of Forte and Moura [9] evidencing that openness contributes to the efficiency of FDI in encouraging economic growth. Alfaro et al. [10] state that despite the impact of FDI on growth, financial markets development strengthens gains retained from FDI. In essence, they argue that while FDI alone might

benefit a host country's economic growth, the existence of well-developed financial markets increases and strengthens these benefits.

Amidst these contexts, Belt and Road Initiative, the biggest project ever 21<sup>st</sup> century has gained significant attention in order to promote sustainable economic growth [11]. The BRI expands as a vast network of infrastructure projects, trade agreements, and economic collaborations involving multiple regions and economies [12]. The initiative is fundamentally connected to the discussion of how FDI effects on economic progress. According to the World Economic Forum report [13], the investments under BRI project has surpassed \$1trillion US – an enormous sum of today's any mission. The program empowers a number of countries, particularly developing countries, through infrastructure projects (by connecting economic corridors, seaports, roadways, and railway networks), allowing them to participate in global trade dynamics and progressing sustainable growth. In a recent study, Ahmed and Lambert [14] underscores the BRI as a pivotal effort for fostering regional integration within the context of the current geopolitical landscape. However, Kamal et al. [15] highlights that achieving sustained growth with investments from the BRI is largely dependent on the quality of institutions. Acknowledging the critical role that institutional quality plays, the authors underline the need for strong controls to guarantee that investments are made through the appropriate channels, optimizing their beneficial effects on sustainable development. Similarly, Taqi et al. [16] argue that long-term economic success is reliant on on a variety of factors other than investment alone.

The current state of sustainable economic growth is varied, with numerous research suggesting different agendas. Within this background, the BRI stands out as a massive project involving significant investments to multiple countries. However, the influence of FDI on economic growth in Belt and Road countries is an understudied topic. This information gap emphasizes the importance of study, especially considering the BRI's decade-long existence, making it timely to examine its development among participating countries. The paper fills a significant gap by investigating the relationship between FDI and economic growth using data from 62 Belt and Road countries covering the years 1990 to 2020. Our main hypothesis is that FDI is positively related to economic growth in Belt and Road countries. The next sections of the article provide a complete review of related literature (Section 2), an in-depth empirical analysis (Section 3), a discussion of findings (Section 4), and concluding observations (Section 5). Through this investigation, we believe to provide useful insights on the dynamics of FDI and its impact on the economic growth trajectory of Belt and Road countries.

## **2. Literature review**

The literature review conducts an investigation into the complex relationship that exists between FDI and sustainable development. It attempts to discover a multitude of scholarly results, theoretical viewpoints, and empirical data that contribute to our understanding of how FDI affects and connects with the achievement of sustainable development goals. Numerous scholars investigated the several researches on this relationship. For instance, Borenzstein et al. [17] examined the effect of FDI from OECD countries on economic development of 69 developing countries during 1970-1989. The results showed that FDI from industrial countries can have a positive effect on economic development of host countries if host countries' human capital levels have reached a certain threshold. Also, the study of Zang [18] recognized that in 12 Asian economies over the period of 1987-1997, FDI in the manufacturing sphere has stronger association with economic development of investment receiving countries. Moreover, the results show that FDI inflows to on-manufacturing sectors have not crucial importance in economic development.

Furthermore, Agarwal and Khan [19] explores the relationship between FDI and growth in China and India during 1992-2009. The study relies on conventional growth model and controls for key growth factors. Using, OLS regression model, the study finds that a 10 percent rise in foreign investment leads to 0.7% rise in the GDP growth of China, and 0.2% GDP growth of India. Adhikary [20] investigates the relationship between FDI and economic growth of Bangladesh. The study relies on data covering 1986-2008 from the World Bank. The study uses a vector error correction model (VECM) and vector autoregression (VAR) framework. The results suggest that there is a strong long run positive effect from the FDI to economic growth in Bangladesh. Ruxanda and Muraru [21] investigated the relationship between FDI and economic growth of Romania. Using a simulation growth model, the study documents that there is bi-directional link between foreign capital inflows and economic growth. FDI inflows cause higher GDP growth, while increased GDP further attracts FDI to Romania. The study uses quarterly data from 2000 to 2009.

Zekarias [22] conducted a detailed analysis, emphasizing the beneficial association between foreign investment and economic growth. Their findings revealed that FDI not only promotes capital formation but also serves as a channel for technology transfer and knowledge spillovers, increasing overall economic production. Building on this, Hayat [23] looked at the function of institutional quality in facilitating the FDI-economic growth a link. Their findings revealed that robust institutional frameworks are critical to optimizing the positive impact of FDI and creating a

climate conducive to long-term economic growth. Varamini and Kalash [24] presented opposing viewpoints, recognizing the favorable impact of FDI on economic growth but warning against ignoring potential negative externalities. Their study emphasized the significance of smart policy measures to prevent negative consequences, as well as the need for a balanced approach to maximizing the benefits of FDI. Gupta et al. [25] conducted a comprehensive analysis on the effects the FDI-growth nexus in case of developing countries. Moving on to regional dynamics, Hecock and Jepsen [26] explored the effect of FDI on economic growth in Latin American countries. Their findings emphasized the importance of sectoral composition, suggesting that the sector-specific distribution of FDI in determining its impact on growth.

Despite the great attention paid to the impact of FDI on economic growth, there is a significant study gap on the specific dynamics of FDI and its influence on long-term economic growth in Belt and Road countries. While various studies have looked at the larger relationship between FDI and economic growth, few have focused on how FDI helps to achieve sustainable development goals across the Belt and Road's different economies. The lack of specialized study in this area emphasizes the necessity for a thorough investigation that takes into account the particular difficulties and opportunities. The report addresses a key gap by examining the relationship between FDI and economic growth in 62 Belt and Road nations from 1990 to 2020. The hypothesis aims to determine whether FDI has a favorable impact on economic growth case countries.

### Methodology

#### Dependent variable

Annual percentage growth rate of GDP at market prices based on constant local currency. The data comes from the World Bank. Our sample of Belt and Road countries ranges from -64% to 88.9% and the average value for the period is 4.7%.

#### FDI

Foreign direct investment is measured by the net inflows (% of GDP). The data also comes from the World Bank. According to our data, the FDI net inflows range from -46% to 58% of GDP in Belt and Road countries. Figure 1 plots top FDI receivers among BRI countries (red line) and non-BRI countries (blue line) in 2020. According to the report, Hong-Kong ranked number 1 with nearly 24% of GDP.

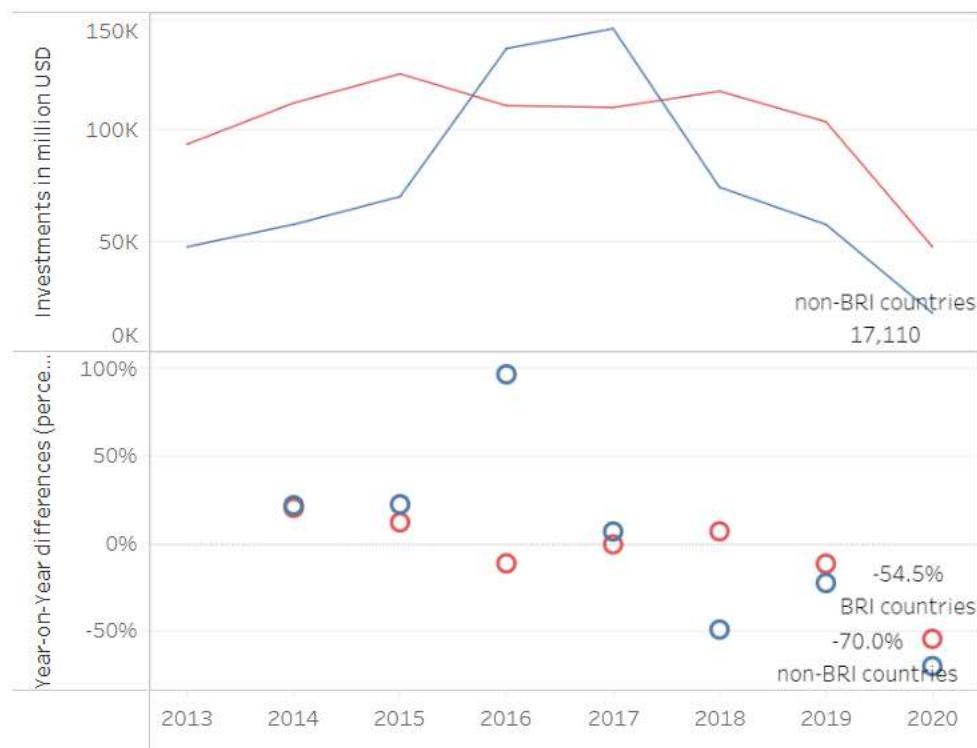


Figure 1: FDI receivers among BRI and non-BRI countries, 2020

### Control variables

We also include a set of conventional control variables that are used in the empirical growth models. First, we include a lagged log of GDP per capita adjusted by PPP to capture the convergence effect among Belt and Road countries. Second, we include investment rates measured by gross fixed capital formation as % of GDP to capture the link between investment and GDP growth. Next, we include the Human Development Index (HDI) to account for the role of human capital in economic growth. The impact of institutions on economic growth is resolved by inclusion of the rule of law index from the World Bank in our model. Finally, we also include trade openness as % of GDP. The data for our variables comes from the World Bank.

### Model Construction

To assess the role of FDI on economic growth among Belt and Road countries we estimate the following econometric model:

$$growth = \alpha + \beta FDI + \gamma X + \epsilon$$

where growth is the rate of GDP growth, FDI is FDI as % of GDP, X is a set of controls and  $\epsilon$  is an error term satisfying normality assumptions. We estimate Eq. (1) using Fixed effects regression estimator for panel data. This method allows us to take into account the time invariant unobserved factors that are not included in our model but may have an effect on growth.

Table 1: Descriptive statistics

Variable	Description	Mean	Std. Dev.	Min	Max
GDP growth	GDP growth, % World Bank	4.3	7.1	-64.0	89.0
FDI	FDI net inflows, % of GDP World Bank	4.1	6.2	-46.1	58.5
GDP per capita	Lagged log of GDP per capita World Bank	9.2	1.1	6.6	11.7
Rule of Law	Rule of law index Worldwide Governance Indicators	-0.2	0.8	-2.1	1.9
Trade	Trade as % of GDP World Bank	95.7	59.9	0.0	442.6
HDI	Human development index UN	0.7	0.1	0.4	0.9
Investment	Investment rate, % of GDP World Bank	24.1	7.5	2.0	68.0

Source: Author's calculations

### Results and Discussion

The main results are reported in Table 2. Column 1 offers the simple regression between GDP growth and FDI in Belt and Road countries. The coefficient is positive and significant at the 1% level. This coefficient suggests that 10% increase in FDI relative to GDP is associated with 1.9 percentage points increase in GDP growth. However, this coefficient captures direct and indirect effects. Therefore, in Column 2, we include remaining controls. We now see that a 10% increase in FDI relative to GDP is associated with only 0.9 percentage points increase in GDP growth. Looking at control variables we may find the following:

- GDP per capita is negative and significant, suggesting the existence of convergence effect among Belt and Road countries in their levels of economic development.
- The rule of law and trade openness are insignificant in our model.
- Countries with higher levels of human development index are associated with higher rates of GDP growth. Thus, investment in human capital seems to be again important for Belt and Road countries.
- Investment rate is positive and significant which confirms the assumptions of the Solow growth model.

Table 2: Main results

	I	II
FDI as % of GDP	0.192 (6.73)***	0.093 (3.56)***
GDP per capita, lag		-8.536 (8.00)***
Rule of Law		0.382 (0.55)
Trade as % of GDP		0.009 (1.32)
HDI		39.249 (5.70)***
Investment rates		0.055 (2.00)**
Constant	3.616 (20.39)***	52.943 (8.73)***
$R^2$	0.03	0.08
$N$	1,768	1,310

\*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$

The reported results in Table 2 shed light on the relationship between FDI and GDP growth in Belt and Road countries. Similar researchers have found a positive relationship between FDI and economic growth, which supports our findings. For example, Shahriar et al. [27] discovered a substantial positive association in their study of the impact of FDI on GDP growth in a variety of nations. Our results in Column 1 are consistent with their findings, validating the view that FDI tends to contribute favorably to GDP growth. However, as we move on to Column 2 and incorporate additional control factors, our observed coefficient for FDI drops to 0.9 percentage points, which is consistent with Mehic et al. [28] findings. Their study, which included control variables, also found a reduced but still favorable impact of FDI on GDP growth. The analysis incorporation of control variables enables us to handle the relationship's complexity. This is consistent with the findings of Gui-Diby research [29], which stressed the significance of taking into account variables like starting per capita GDP, education, domestic investment ratio, political stability, trade dynamics, financial development when analyzing how FDI affects economic growth. The robustness of our findings is reinforced by these consistent trends across different research, which also highlight the need for a thorough approach to comprehending the complex relationship between FDI and GDP development in the context of Belt and Road countries (Liu et al. [30]; Aibai et al. [31]; Chen et al. [32]; Li et al. [33]). As we work through the nuances of these findings, it is clear that a wide range of factors influence the relationship between FDI and sustainable economic development, which is consistent with the larger body of research in this area.

### 3. Conclusion

This paper aims to contribute to the ongoing global research concerning the relationship between FDI and economic growth. While previous studies have examined various regions such as China, transitional markets, developing regions, and others (Basu et al. [34]; Cicak and Soric [35]; Yalta [36]), there remains an unexplored area regarding the role of FDI in the GDP growth of Belt and Road nations. Addressing this gap, this research investigates the impact of FDI on economic growth with the case of BRI countries. We utilize data from 62 nations comprising the list of Belt and Road countries for the period spanning 1990-2018. The findings reveal that a 10% increase in FDI relative to GDP corresponds to only a 0.9 percentage point increase in GDP growth. These results remain consistent even when conventional controls are included.

The results can be explained based on the facts that forces investors and companies to invest their money in foreign projects. The reasons for it include the relatively lower cost of deployment, the access to resources, favorable financial environment and developed financial markets. However, the current analysis does not explain the specific mechanism of the impact of FDI on economic performance which creates the noticeable limitation of the work. The future investigations of the FDI-growth nexus should focus on the character of the relationships between the observed variables and possible channels through which FDI can affect economic growth.

These results have a number of policy implications. First, in order to boost GDP growth in the next decade Belt and Road countries need to attract higher volumes of FDI relative to GDP. This could be achieved by greater tax benefits for investors, improvements in business climate and other incentives that attract investors to emerging markets. Second, our results also show that the effect of FDI on growth should be followed by greater investments in human capital, as HDI in our model is positive and significant. Future studies should explore the drivers of FDI to Belt and Road nations and the role that FDI may play in reduction of income inequality in these countries. On the other hand, the improvement of the above-mentioned socio-economic indicators would be beneficial not only for the foreign investors, but for the domestic ones as well. The effective cooperation of foreign and domestic capital and its successful accumulation can have a multiplicative effect on the economic growth. The FDI development is closely related to the transfer of the technology. The investment friendly environment forces the foreign producers to deploy their production lines in other countries. Considering the foreign investors, the reliable investment environment, high institutional development and powerful legal system will significantly increase their trust and interests in the investment projects in a particular country.

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