# IMPACT OF ONE BELT ONE ROAD STRATEGIC INITIATIVE ON ECONOMIC WELL-BEING AND INTERNATIONAL TRADE INTEGRATION: THE SOUTH ASIAN CASE

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## Abstract

The Belt Road Initiative (BRI) is one of the main plans by the Chinese government where the objective is to expand the trade routes of China with the rest of the world. The initiative took effect on 7 September 2013, when the country stated the action plan to the extent of the link between China and Europe across many countries in the Eurasia and Indian Ocean (Cubbert & Chaudhary, 2018). The extensive investment by China in other countries has paved the way for effective growth in the future for the host countries. However, it has also raised concerns in the global economy where authorities have claimed that the initiative is intended to extend the political influence of China and is a form of economic imperialism practiced by the country. In this sense, it becomes important to assess the effect of this initiative on the sustainability of the host nations, especially the poor countries that face greater consequences due to their inability to pay back their debt. The underlying study aims to explore this case where the effect of the BRI on the trade integration and economic well-being of the South Asian nations are assessed. This means that the study explores the changes in the nexus of foreign direct investment (FDI), trade, and growth in South Asia due to the BRI involvement. It stated that the BRI has been effective in facilitating higher growth in the recipient nations, however, their trade relationship with the rest of the world has been questionable since their participation in the initiative. The government in South Asia needs to closely monitor the investment opportunities and the corresponding risks of retaliation by other nations to effectively facilitate a sustainable growth rate and trade integration.

**Keywords:** Belt Road Initiative, South Asia, Trade Integration, Foreign Direct Investment

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## 1. INTRODUCTION

The Belt Road Initiative (BRI) is stated as one of the most aspiring plans of the Chinese government that aims to develop trading routes for China with the world. A report by Kuo and Kommenda (2018) proclaims it as the Marshall Plan of China, where the campaign is backed by the state for global dominance and push for massive Chinese investment that was already happening. The initiative began on 7 September 2013 while the country issued an action plan in March 2015 to link Europe to China through countries across Eurasia and the Indian Ocean. The World Bank (2018) estimates the project to cost around US$575 billion for 70 BRI "corridor economies". The initiative foresees the development of the economic cooperation corridors and various key maritime pivotal points across Eurasia. Formally the One Belt One Road (OBOR) focuses on five core areas of cooperation:

1. Coordination of developmental policies.
2. Facilitating infrastructure and facilities network.
3. Strengthening investment and trading relationships.
4. Enhancements of financial cooperation.
5. Further deepening of social and cultural exchanges.

The core objective of the OBOR is to create a gateway for the nation's burgeoning capital and other resources in a way that has not been seen before. Once the platform is established, it will function as the basis for large-scale investments across all sectors, but with an inclination towards infrastructure and trade (Cubbert & Chaudhary, 2018). The initiative has also sparked global concern where countries have dictated it as a form of economic imperialism where China receives excessive influence over the economies. While some researchers worry about the political influence of the initiative, others are wary of the expanded military presence and the corresponding threat to national security. Since the initiation of the BRI, a large pool of literature has been directed to analyze the topic, especially in the fields of international relationships, political science, and international business environment. In terms of countries engaged in BRI, scholars indicate that it has led to significant promotion of economic growth and regional economic integration between China and the BRI countries (Xie et al., 2023). Other studies have depicted a varying degree of impact on economic well-being and trade for distinct countries. The analysis of regional integration and its impact on BRI countries is an important topic that needs substantial attention. Since the beginning of the initiative, different scholars have had varying concerns in the long and short run. As a result, both aspects need to be addressed where gross domestic product (GDP) growth rate and trade, two of the core factors essential for quantifying the country's welfare must be given exclusive attention. The main concern arises for the relatively poor countries and the ones that have been extensively integrated with China in terms of trade. This concerns the South-Asian region where the effect of BRI on economic well-being and international integration must be closely analyzed. The underlying study uses panel data analysis where trade and development economics are the theoretical framework. The regression indicated that BRI had initiated higher economic well-being compared to the years when the country was not engaged in the initiative. In addition, the economies had faced lower trade integration over the years when they decided to participate in the initiative. These results have led to specific policy implications for the host countries that have been explored in the later sections.

The underlying study aims to assess the impact of the BRI or OBOR initiative on economic well-being and trade in the South-Asian BRI countries. The objectives have been listed below:

1. The effect of foreign direct investment (FDI) against the backdrop of BRI on the economic well-being of South Asian nations from 2004 to 2018.
2. The effect of FDI against the backdrop of BRI on the international trade integration of South Asian nations from 2004 to 2018.

The structure of the paper is as follows. Section 2 reviews relevant literature related to BRI and its economic impacts. Section 3 elaborates on the methodology that has been used to conduct the empirical research. Section 4 presents the result of the data analysis and its interpretation regarding the research questions. Section 5 includes a brief conclusion and policy implications of the derived results.

## 2. LITERATURE REVIEW AND HYPOTHESES CONSTRUCTION

### 2.1. Previous studies on economic well-being and trade openness in South Asian One Belt One Road countries

Economic well-being and the trading pattern in South Asia have been largely analyzed by researchers due to the rapid expansion of the trading relations of the regions with the world. On the other hand, the region is highly populated with a large section of this population living in poverty hence paving the way for economists and policymakers to analyze the underlying causes. Devaranjan and Nabi (2006) study the economic growth in South Asia where countries achieved impressive economic growth despite hindrances such as disputes, corruption, and high fiscal deficits. However, the study highlights the low productivity growth which has led to the countries facing low literacy rates hence discouraging investment-led growth. The study also highlights the reoccurrences of civil unrest amongst the economies that lead to the draining of the already thin administrative abilities of respective nations to build an effective constituency for reforms. Furthermore, macroeconomic uncertainty stimulates investment uncertainty while the lack of fiscal space leads to lower public expenditures. Kumar (2020) also highlighted the rapid deregulation of the economic structure in the South Asian Association of Regional Cooperation (SAARC) within the last decade. The impressive growth witnessed by India is found to be the major stimulus for the rising exports and imports to/from South Asia. Furthermore, the interlinkage of the South Asian nations is depicted in the findings where economic growth and regional integration in India have had a long and short-term spillover effect on the economic growth of other South Asian countries. The included nations are Bangladesh, Sri Lanka, Nepal, and Bhutan where it is indicated that the region needs higher trade openness and economic development.

Zafar et al. (2015) state that the benefits of the trade before the 1980s were largely skeptically viewed when the countries had initially begun to

develop an interest in multilateral trade. The study aims to find if fewer hindrances to international trade and higher external debt induce a positive effect on economic growth between 1980 to 2012. The study indicates that there is a positive relationship between the level of trade openness and economic well-being while external debt induces an adverse effect on the growth rate. As a result, the study implies that the government within the South Asian, East Asian, and Middle Eastern regions must promote trade openness while also forming effective debt policies that facilitate repayment and economic growth. A similar study by Rahman et al. (2019) assesses the stimuli of economic well-being in the South Asian region for the period ranging from 1975 to 2016. The generalized method of moments (GMM) is used to study the panel data, and the corresponding results state that the level of energy use, formation of the gross capital, and aid are the significant factors stimulating economic well-being in the region where energy use is found to have the most prominent effect. On the other hand, Kumari and Bharti (2020) indicate that there exist high trading costs in developing countries which acts as a hindrance to trade integration. The study also highlights the importance of analyzing the factors responsible for these higher trade costs. Empirical findings suggest that trade facilitation, corruption level, and development of financial systems are the significant factors affecting trade costs in South Asia. In addition, trade facilitation is also found to have a significant effect between South Asia and ASEAN's trade costs. This means that to induce higher regional and international integration, the region must push the ongoing efforts that are aimed at unlocking the overall potential of the region to further open its domestic boundaries. Therefore, it can be concluded that the existing studies largely state that the South Asian region has been successful in achieving a tremendous growth rate in past decades. However, the region suffers from substantial hindrances related to the demographic and the social environment that needs reforms in government policies (Sattar et al., 2022). In addition, the region dictates a high dependency where spillovers of development and growth from one country to others occur. Finally, although regional and global integration has strengthened, there is further scope to reduce trading costs within the region.

## 2.2. Hypotheses development

The previous section explored the articles and studies that analyzed the condition of economic well-being and trading patterns in South Asia in general. The underlying study's objective is to assess the economic well-being and trade integration of the region with the background of BRI. Iqbal et al. (2019) state that the BRI is one of the most ambitious policies of President Xi Jinping. The initiative is dictated as an opportunity for economies that can benefit from the support they receive through higher consumption, development of infrastructure, political associations, and so on. However, there exist concerns regarding environmental well-being, social standards, and labor policies. In the case of the South-Asian region, China has been successful in initiating different projects that facilitate better trade and investments hence leading to the countries achieving positive economic growth (He et al., 2021). Furthermore, empirical results show that factors associated with China such as its imported volume, stability of the political system, and corruption level have an equally prominent influence on the economic well-being of the South-Asian nations.

Wang et al. (2020) study the BRI from the perspective of infrastructure (railways and roadways) development and its impact on 65 BRI countries using the data from 2007 to 2016. The national-level estimates indicate that the transportation infrastructure development within BRI economies plays an important part in the economic well-being of these countries. Furthermore, the empirical results highlight that factors such as shorter geographical distance, and similarities within the countries' economic, ethnic, and conventional aspects further induce common economic growth. A similar study by Chen and Li (2021) also highlights the fact that the initiative was primarily implemented through investment across transportation and other infrastructure. However, it also indicates that the regional level estimation predicts negative spatial spillover effects on regions including East Asia, Central Asia, and South Asia. Khan et al. (2020) analyze the specific case of the China-Pakistan Economic Corridor, which acts as the iconic model of the BRI plan and its impact on regional economic growth. The corridor is laid at the intersection of the three regions i.e., China, Central Asian Republic, and South Asia. The core objective of the corridor is to promote easier movement of products and masses, along with the integration of trade within the region. The study sheds light on the positive aspect of the corridor where the position of Pakistan is deemed as topographically ideal due to it sharing boundaries with major economies. Furthermore, evidence shows close interlinkage of economic well-being of the economic centers and corridors (Wang, et al., 2024). In other words, the corridor is stated to have a positive effect on not only Pakistan but also the regions including South Asia. As a result, the articles and research largely indicate that there is a positive effect of BRI on the economic well-being of the South Asian region which leads to the following hypothesis for the study.

*H1: There is a positive effect of foreign direct investment from China on the economic well-being of the South Asian nations against the backdrop of the Belt Road Initiative.*

BRI and its expansion within the South Asian region can be seen as the further strengthening of trading relations of China with the BRI countries. The study by Wang and Tian (2022) states that the BRI has been effective in strengthening China's position in terms of global trade while also benefitting its trading partners. A study by Mahbub (2021) studies the international trade between China and South Asia under the BRI framework. The author highlights the almost similar social and social foundations between the South Asian nations and the initiation of trade agreements since the SAARC. The gravity model equation dictates that there has been a positive and significant effect on trade integration between China and South Asia since the initiation of BRI. However, there still exists huge trade deficits between China and some of the Asian economies as exports from China are very high relative to the imports from South Asia. In addition, there have also been cases where the Chinese government faced controversies regarding acquiring large amounts of land for building economic areas as these economic zones will be operated by China. However, such issues

could be liberalized by the generation of local employment and joint ownership. Although the trade relationship between China and South Asia has strengthened, it is equally important to assess the trade pattern within these countries in general. This means analyzing the trading pattern of the South Asian economies with the rest of the world and how has it been affected as a result of BRI.

Butt and Shah (2021) explore the potential opportunities and challenges posed by the BRI within the supply chain of five South Asian economies. The results indicate the existence of opportunities and challenges for supply chain resilience within the BRI context. Exclusively, it is highlighted that BRI can improve the quality of infrastructure within these nations while also facilitating greater connectivity for the firms engaging in logistics, hence enhancing the consumer market. However, there also exists potential challenges for these firms as it becomes difficult to manage large-scale logistics infrastructure while it faces issues during conflicts within the participating BRI economies. However, further analysis must be conducted to generalize the findings to other South Asian economies and firms which poses as one of the research limitations of the study. Papatheologou (2019) highlights that the BRI initiated by China has set in motion a process of cross-regional connectivity that fosters bilateral and multilateral cooperation. This, in turn, paves the way for the creation of a platform through which there is a better understanding and awareness of Chinese culture, hence creating a channel for communication between China and its neighboring region including South Asia. The research dictates that the effective implementation of BRI needs a high level of cooperation between China and the BRI nations which may further strengthen the economic development and linkages between the countries. Although the study mentions several projects undertaken by China within Asia, it still talks about the projects and their prospective effect in future tense. In other words, the author proclaims that the project is expected to strengthen economic ties, diplomatic relationships, and infrastructural partnerships between nations in the future. Since South Asia and China had previously practiced close economic and political ties, the initiative is expected to further strengthen the regional integration between the countries with improved international linkages. As a result, although a strong analysis highlighting the effect of BRI on the international integration of South Asian nations is absent, the existing studies somewhat indicate a positive effect on the same. As a result, the following hypothesis is formed:

*H2: There is a positive impact of foreign direct investment in the country on the international trade integration of the South Asian nations at the backdrop of the Belt Road Initiative.*

## 3. METHODOLOGY

The research study analyzes the effect of FDI on economic well-being and international trade integration across South Asian countries. The analysis stresses the important role induced by the initiative on the overall well-being of the developing countries where a large portion of the global population resides. The early 2000s marks an important period for China-South Asia relations due to the leading emergence of China as a global power. The country was also beginning to enter into agreements with several South Asian economies and organizations. A prominent step in this context was the foundation of the Bangladesh-China-India-Myanmar (BCIM) Economic Corridor initiative whose groundwork began around 2004 signaling the interest of China in fostering closer economic relations with its South Asian regions (Sharma & Rathore, 2015). China also began its regional connectivity initiatives around this time aiming to enhance infrastructure connectivity and economic cooperation in South Asia. The underlying analysis induces a panel data analysis for the period ranging from 2004 to 2018 where countries for analysis include India, Bangladesh, Sri Lanka, Pakistan, Afghanistan, and Maldives.

### 3.1. Research method

The research induces a quantitative method to fulfill the outlined research objectives where descriptive and regression analysis will be undertaken. The quantitative method facilitates direct interpretation for inferential analysis which helps the researcher to make a compelling conjecture (Asmus & Radocy, 2012). Quantitative analysis includes significance testing, regression analysis, multivariate analysis, and so on. With the underlying objective outlined in the previous sections, it is effective to use quantitative analysis where the effect of one stimulus on other factors must be assessed. The following section will discuss the factors in extensive detail. Furthermore, the analysis will also include a series of statistical tests which will also be explained further in the chapter.

### 3.2. Research strategy

It is important to outline the research strategy before explaining the model. This includes selecting appropriate paradigms, designs, and approaches to satisfy the aims and objectives of the research. As discussed in the previous section, a quantitative analysis will be used in the study leading to the use of the positivism paradigm. Positivism stems from ontology, where the objective physical and social realm is not dependent on human know-how. Therefore, the common laws that are looked over by the principle of cause and effect make it easier to quantify the behavior of the individual objectively. Reliable secondary sources will be used to fulfill the objectives while STATA as a statistical tool is used to induce compelling inferences. The data so retrieved will be a panel, where seven countries are the subject matter, and data regarding these panel variables are retrieved across the selected years i.e., 2004 to 2018.

### 3.3. Econometric model construction

A panel data analysis will be undertaken to assess the effect of FDI on economic well-being and trade. To do so, the panel data will be retrieved for seven South Asian economies across the stated period. To undertake the analysis, three-panel models will be run which include pooled, fixed effect (FE), and random effect (RE) regression. The model that best fits out of the three will be decided through statistical tests. The initial test will be the Hausmann test which will help in deciding on RE or FE model specification with the help of the p-value. If it is less than 0.05, the FE model is chosen as the best fit. Furthermore, if the test leads to the selection of RE

model specification, then the Breusch-Pagan Lagrange Multiplier (BPLM) test will be undertaken which will help in deciding between the RE and pooled regression model. If the p-value. is lower than 0.05, RE will be chosen as the best fit.

Since the research objective outlines the effect to be quantified for two factors i.e., economic well-being and international trade integration, the underlying analysis will induce two distinct models. The equational form of the two models is outlined as follows.

*Model 1*

$$log(GDP)_{it} = \beta_0 + \beta_1 FDI_{1,it} + \beta_2 BRI_{2,it} + \beta_3 FDI * BRI_{3,it} + \beta_4 Exchange\ rate_{4,it} + \beta_5 Domest\ credit_{5,it} + \alpha + \mu_{it} + \varepsilon_{it} \quad (1)$$

*Model 2*

$$Trade_{it} = \beta_0 + \beta_1 FDI_{1,it} + \beta_2 BRI_{2,it} + \beta_3 FDI * BRI_{3,it} + \beta_4 Capital\ stock_{4,it} + \beta_5 HCI_{it} + \alpha + \mu_{it} + \varepsilon_{it} \quad (2)$$

## 3.4. Variable selection

### *3.4.1. Dependent variables*

For Model 1, the dependent variable will be the *log of GDP* so that the variance is stabilized while providing meaningful insight into the underlying association between the explanatory and the explained variables. For the case of Model 2, the dependent variable will be *trade integration* (*trade*) as a percentage of GDP that will represent the level of international trade integration of the selected countries. However, due to the unavailability of data, Afghanistan and Maldives have been dropped out of the model. This means that Model 2 will include India, Bangladesh, Pakistan, and Sri Lanka as the panel identities.

### *3.4.2. Independent variables*

Since the underlying analysis includes two models, the different sets of independent variables are selected which are expected to induce a prominent effect on the respective dependent variables.

For Model 1, the main independent variables include *scaled FDI* (*FDI*) to the South Asian countries for each year and the dummy variable for *BRI* engagement of the respective country. In addition, an interaction variable of the dummy i.e., *BRI* and *FDI* is included in the model. This will further help policymakers to segregate the distinct effects of *FDI* on economic well-being during the years when the country decided to participate in the initiative. Furthermore, control variables are included i.e., *exchange rate* and *domestic credit to the private sector* (*domestic credit*) sanctioned to the private sector (represented as a percentage of GDP). Both factors are expected to have a prominent impact on the economic well-being of the country, which in this case is represented by the log transformation of GDP.

For Model 2, the main independent variables include *FDI* to the South Asian countries for each year and the dummy variable for *BRI* engagement of the respective country. In addition, an interaction variable of the dummy i.e., *BRI* and *FDI* is included in the model. This will further help policymakers to segregate the distinct effects of *FDI* on trade integration during the years when the country decided to participate in the initiative. Furthermore, control variables are included i.e., *scaled capital stock* (*capital stock*) and real domestic absorption. All factors are expected to have a significant effect on the level of trade integration of the country, which in this case is represented by trade as a percentage of GDP.

**Table 1.** Variable description

| *Variables* | *Variable description* | *Symbol* |
|---|---|---|
| *Log GDP* | Log transformation of GDP (constant 2015 US$). | *LN(GDP)* |
| *Trade integration* | Trade as a percentage of GDP. | *TR* |
| *Scaled FDI* | FDI, net inflows (BOP, current US$) divided by 100,000,000. | *SC(FDI)* |
| *BRI* | Dummy for the country participating in the BRI. | *BRI* |
| *FDI*BRI* | Dummy interaction of scaled FDI and BRI. | *FDI_BRI* |
| *Exchange rate* | Official exchange rate (LCU US$, period average). | *EXC* |
| *Domestic credit to the private sector* | Domestic credit to the private sector as a percentage of GDP. | *DC* |
| *Scaled capital stock* | Capital stock at current purchasing power parities (PPPs) (in mil. 2017 US$) divided by 100,000. | *SC(CS)* |
| *Scaled real domestic absorption* | Real domestic absorption, (real consumption plus investment), at current PPPs (in mil. 2017 US$) divided by 100,000. | *SC(RDA)* |

## 3.5. Data sources

The data for the research is collected from reputable secondary sources. This includes:

- The World Bank;
- The Penn World Table.

The variables *LN(GDP)*, *FDI*, *trade integration*, *exchange rate*, and *domestic credit to the private sector* are retrieved from the World Bank while the data for capital stock and real domestic absorption is retrieved from the Penn World Table. Furthermore, the dummy data i.e., the engagement of the respective countries with the BRI is retrieved from distinct news and official articles highlighting the date and year in which the respective countries signed a specific investment deal under BRI with China.

The underlying study bases its analysis on a series of data, followed by an interpretation of the results. Another alternative methodology to study the impact of the BRI on South Asian countries can follow a case study analysis. In-depth,

qualitative case studies of specific countries in the region can facilitate detailed insights into the effects of the BRI on the respective countries' economies and trade integration. This case study analysis can focus on the specific projects under the BRI such as infrastructure investments or trade deals and how they affect specific countries' overall economic well-being and trade patterns. However, despite the efficiency of a qualitative analysis, a quantitative analysis facilitates a specific outcome and relevant policy implications which is the reason for the underlying panel data analysis.

## 4. REGRESSION RESULTS AND ANALYSIS

### 4.1. Descriptive statistics

Table 2 provides a visual presentation of the descriptive statistics for Model 1 while Table 3 presents for Model 2. The tables dictate statistics such as mean, median, and standard deviation, providing basic indicators of the data's central tendency and variability.

**Table 2.** Results of descriptive statistics for Model 1

| *Variables* | *Mean* | *Std. Dev.* | *Min* | *Max* |
|---|---|---|---|---|
| *LN(GDP)* | 25.070 | 2.022 | 21.506 | 28.582 |
| *SC(FDI)* | 59.501 | 121.758 | 0.4297 | 444.585 |
| *BRI* | 0.233 | 0.425 | 0.000 | 1 |
| *FDI_BRI* | 2.646 | 6.303 | 0.000 | 25.76 |
| *EXC* | 67.499 | 35.869 | 12.800 | 162.464 |
| *DC* | 31.098 | 15.155 | 3.512 | 57.734 |

**Table 3.** Results of descriptive statistics for Model 2

| *Variables* | *Mean* | *Std. Dev.* | *Min* | *Max* |
|---|---|---|---|---|
| *TR* | 42.272 | 12.600 | 24.70158 | 79.48294 |
| *SC(FDI)* | 88.284 | 140.835 | 2.328 | 444.5857 |
| *BRI* | 0.216 | 0.415 | 0 | 1 |
| *FDI_BRI* | 3.572 | 7.482 | 0 | 25.76 |
| *SC(CS)* | 63.143 | 99.676 | 1.675 | 334.945 |
| *SC(RDA)* | 18.619 | 25.580 | 1.146 | 88.122 |

Following the descriptive statistics, it is equally important to analyze the existing correlation between the independent variables in both models. There must be an overall weak correlation between the independent variables which in turn, is depicted by the lower values of the correlation coefficient. Tables 4 and 5 present the correlation coefficient between the models where it can be stated that the independent variables are weakly correlated with each other for both models. This validates the model so created inducing further analysis of the same.

**Table 4.** Correlation analysis for Model 1

| *Variables* | *SC(FDI)* | *BRI* | *EXC* | *DC* |
|---|---|---|---|---|
| ***SC(FDI)*** | 1.000 | | | |
| ***BRI*** | -0.226 | 1.000 | | |
| ***EXC*** | -0.117 | 0.290 | 1.000 | |
| ***DC*** | 0.510 | -0.127 | -0.101 | 1.000 |

**Table 5.** Correlation analysis for Model 2

| *Variables* | *SC(FDI)* | *BRI* | *SC(CS)* | *SC(RDA)* |
|---|---|---|---|---|
| ***SC(FDI)*** | 1.000 | | | |
| ***BRI*** | -0.270 | 1.000 | | |
| ***SC(CS)*** | 0.954 | -0.263 | 1.000 | |
| ***SC(RDA)*** | 0.954 | -0.262 | 0.995 | 1.000 |

### 4.1. Empirical tests

Following the descriptive statistics and the correlation analysis, the panel regression models are run in STATA where three models i.e., pooled ordinary least-square (OLS), RE, and FE specifications are undertaken. To decide upon the best-fit model out of three, empirical tests are run. For the case of Model 1, where the aim is to assess the effect of FDI on the GDP of the South Asian economies against the backdrop of BRI is to be assessed, the Hausmann test is initially undertaken to choose between the RE and FE specifications. The result for Model 1 is presented in Table 6. The corresponding p-value is less than 0.05 which results in the conclusion that the FE model is a better-fit model than the RE specification.

**Table 6.** Hausmann test for Model 1

| *Variables* | *(b)* | *(B)* | *(b-B)* | *sqrt(diag(V_b-V_B))* |
|---|---|---|---|---|
| | *FE* | *RE* | *Difference* | *SE* |
| *SC(FDI)* | 0.001 | 0.011 | -0.010 | 0.002 |
| *BRI* | 0.275 | -1.480 | 1.755 | 0.272 |
| *FDI_BRI* | -0.004 | 0.086 | -0.090 | 0.014 |
| *EXC* | 0.008 | 0.026 | -0.017 | 0.011 |
| *DC* | 0.002 | -0.007 | 0.010 | 0.018 |
| chi2(5) = (b-B)'[(V_b-V_B) ^ (-1)] (b-B) | | | | |
| 80.570 | | | | |
| Prob > chi2 = 0.000 | | | | |

*Note: b = consistent under $H_0$ and Ha; obtained from xtreg, inconsistent under Ha, efficient under $H_0$; obtained from xtreg. The difference in coefficients is not systematic.*

A similar set of empirical tests is undertaken for the case of Model 2 where the aim is to analyze the effect of FDI on international trade integration of the South Asian economies against the backdrop of FDI. The Hausmann test is run for the case of Model 2 as well which is presented in Table 7. The corresponding p-value in the Hausmann test is less than 0.05 which results in the conclusion that the FE model is a better-fit model than the RE specification.

**Table 7.** Hausmann test for Model 2

| *Variables* | *(b)* | *(B)* | *(b-B)* | *sqrt(diag(V_b-V_B))* |
|---|---|---|---|---|
| | *FE* | *RE* | *Difference* | *SE* |
| *SC(FDI)* | 0.009 | 0.018 | -0.009 | 0.004 |
| *BRI* | -23.732 | 8.177 | -31.910 | 5.711 |
| *BRI_FDI* | 0.701 | -0.870 | 1.572 | 0.279 |
| *SC(CS)* | 0.0466 | 0.496 | -0.449 | 0.275 |
| *SC(RDA)* | -0.218 | -1.989 | 1.771 | 1.254 |
| chi2(3) = (b-B)'[(V_b-V_B) ^ (-1)] (b-B) | | | | |
| 35.66 | | | | |
| Prob > chi2 = 0.0000 | | | | |
| (V_b-V_B is not positive definite) | | | | |

*Note: b = consistent under $H_0$ and Ha; obtained from xtreg, inconsistent under Ha, efficient under $H_0$; obtained from xtreg. The difference in coefficients is not systematic.*

As a result, it can be stated that for the case of Model 1 with a log transformation of GDP used, the FE model specification is chosen as the best-fit model. Correspondingly, the FE model specification is chosen as the best-fit model for the case where *trade* is the dependent variable.

### 4.3. Regression results analysis

The resulting FE model specification for the case with *LN(GDP)* as the dependent variable is presented in Table 8 below.

**Table 8.** Fixed effect specification for Model 1

| *LN(GDP)* | *Coef.* | *t* | *P > t* | *[95% Conf.* | *Interval]* |
|---|---|---|---|---|---|
| *SC(FDI)* | 0.001*** (0.000) | 4.370 | 0.000 | 0.001 | 0.002 |
| *BRI* | 0.275*** (0.068) | 4.010 | 0.000 | 0.138 | 0.411 |
| *FDI_BRI* | -0.004 (0.004) | -0.960 | 0.339 | -0.013 | 0.004 |
| *EXC* | 0.008*** (0.001) | 5.380 | 0.000 | 0.005 | 0.012 |
| *DC* | 0.002 (0.353) | 0.940 | 0.353 | -0.003 | 0.008 |
| _cons | 24.299*** (0.121) | 200.640 | 0.000 | 24.057 | 24.540 |

*Note: Robust standard errors in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.*

The interpretation for the case of Model 1 is as follows:

- On average, a 100 million increase in FDI induces a rise in GDP by 0.1% for the selected South Asian economies which is significant at a 1% significance level, *ceteris paribus*. This interpretation is due to the scaling of the FDI for easier interpretation and the log transformation of GDP;
- In the years, when the respective country engaged with the initiative, the country had attained an average higher GDP by 27.5% which is significant at a 1% significance level, *ceteris paribus*;
- The dummy interaction term for *BRI_FDI* indicates that over the years when the recipient country was engaging in BRI activities, FDI had a negative influence on the economic well-being factor. This can be stated as a 100 million rise in FDI dictates a 0.4% decline in FDI during the year it engaged in BRI, however, it is insignificant;
- The control variables i.e., *exchange rate* and *domestic credit to the private sector* indicate that the *exchange rate* has a positive effect on GDP. A 1 unit rise in *exchange rate* induces a 0.8% rise in GDP, which is significant at a 1% level, *ceteris paribus*. On the other hand, a 1 unit rise in the level of domestic credit directed towards the private sector leads to a 0.2% rise in GDP, *ceteris paribus*. However, the coefficient is found to be insignificant.

The resulting FE model specification for the case with *trade* as a percentage of GDP as the dependent variable is presented in Table 9 below.

**Table 9.** Fixed effect specification for Model 2

| *TR* | *Coef.* | *t* | *P>t* | *[95% Conf.* | *Interval]* |
|---|---|---|---|---|---|
| *SC(FDI)* | 0.009<br>(0.018) | 0.510 | 0.614 | -0.028 | 0.047 |
| *BRI* | -23.732***<br>(6.563) | -3.620 | 0.001 | -36.945 | -10.520 |
| *BRI_FDI* | 0.701**<br>(0.338) | 2.070 | 0.044 | 0.020 | 1.382 |
| *SC(CS)* | 0.046<br>(0.173) | 0.270 | 0.789 | -0.302 | 0.395 |
| *SC(RDA)* | -0.218<br>(0.761) | -0.290 | 0.776 | -1.750 | 1.314 |
| _cons | 44.791***<br>(3.902) | 11.480 | 0.000 | 36.935 | 52.647 |

*Note: Robust standard errors in parentheses; *** p < 0.01, ** p < 0.05, * p < 0.1.*

The interpretation for the case of Model 2 is as follows:

- On average, a 100 million increase in FDI induces a 0.009% rise in trade integration for the selected South Asian economies, however, the coefficient is insignificant, *ceteris paribus*;
- In the years, when the respective country engaged with the initiative, the country had attained an average lower trade integration by 23.732%, *ceteris paribus*. The resulting coefficient is significant at the 1% level;
- The dummy interaction term for *BRI_FDI* indicates that over the years when the recipient country was engaging in BRI activities, FDI has harmed trade integration, which is significant at a 5% level. It indicates that FDI has harmed trade integration by 0.701%, *ceteris paribus*;
- The control variables i.e., capital stock and real domestic absorption that capital stock have a positive effect on trade integration. Each 100,000 million rise in capital stock induces a 0.046% rise in trade integration, which is insignificant, ceteris paribus. In addition, each 100,000 million rises in real domestic absorption induces a 0.218% decline in trade integration, which again, is insignificant, ceteris paribus.

### 4.4. Discussion

The findings provide valuable insights into the association between FDI, BRI, and key economic outcomes for the South Asian region. The regression suggests that FDI inflows play a crucial role in fostering economic growth in the region. The significance of the same highlights the importance of FDI as a catalyst for economic well-being, highlighting the fact that policies aimed at attracting FDI in the region can have effective macroeconomic benefits for the countries. The average increase in GDP by 27.5% indicates that this substantial positive effect underscores the potential benefits of participation in BRI for the South Asian economies as an initiative to benefit from improved infrastructure and investment flows. While FDI significantly contributed to the growth in GDP, its impact on trade integration is less encouraging. It suggests that FDI alone may not be sufficient to drive a higher level of trade integration. Moreover, during the years of engagement with the BRI, the countries experienced an average decline in trade integration by 23.73%. This means that it may be necessary to consider other factors such as the quality of infrastructure or trade integration to improve trade integration outcomes in the region.

## 5. CONCLUSION

The analysis provided important insights for policy implications while paving the way for future analysis. FDI has a positive impact on the overall economic well-being of South Asia. The years when the countries decided to participate in the initiative have also been the years when the economic well-being had been relatively higher compared to the years when the country was not engaged in the initiative. However, it can be seen that FDI directed by China has hurt the economic well-being of the country. Although the magnitude of this negative effect is insignificant, further analysis is needed to explore the relationship further. It could be that there have been other indirect factors during the BRI engagement years that resulted in the recipient countries benefitting and hence experiencing higher GDP. In addition, exchange rate and domestic credit to the private sector induces higher economic growth and well-being. This indicates that the country must invest further in facilitating financial efficiency by setting up influential and efficient financial institutions and regulatory systems. The study asserting a positive effect of FDI on the overall economic well-being of South Asian countries resonates with the findings of Zafar et al. (2015), who also identified this positive relationship between trade openness and economic growth. Similarly, Rahman et al. (2019) also noted that energy use, gross capital formation, and aid contribute significantly to economic well-being. However, while past studies have predominantly highlighted the direct benefits of FDI, this analysis highlights a more complex relationship where FDI from China appears to exert a slight negative effect on economic well-being.

The regression result for Model 2 indicated that FDI has facilitated trade integration over the years in South Asia. However, the economies had faced lower trade integration over the years when they decided to participate in the initiative. The negative effect of BRI on trade integration predicts the possibility that although the South Asian economies' trade relationship with China has further strengthened, its overall positive effect on trade relations with the rest of the world is rather questionable. Furthermore, capital stock has a positive and significant impact on trade integration. In addition, a higher real domestic absorption is detrimental to the economies, especially those that are a significant exporter of many primary and intermediary goods at the global scale. The findings state that while FDI facilitates trade integration, the participation of the South Asian economies in the BRI has resulted in low trade integration over the years. This result aligns with the findings by Kumari and Bharti (2020)

who pointed out high trading costs as a hindrance to trade integration. However, the results also contradict the positive trade effects as suggested by Mahbub (2021), who had observed a significant trade integration between China and South Asia post-BRI. Such a divergence may be reflecting the fact that the intra-regional trade with China has improved, however, it has not translated to better trade relations with other global partners, highlighting the complexity of the regional trade landscape.

To promote overall economic growth, the South Asian nations must further participate in BRI. The direction of the flow of FDI into distinct sectors must also be closely monitored by the policymakers. In addition, the policymakers must establish efficient financial institutions and regulatory bodies to promote higher economic well-being. While engaging itself with the BRI has been effective in consolidating trade relations with China, the overall effect on trade relations with the rest of the world stands to be ambiguous and needs more attentive analysis. Effective investments in improving the quality of physical and human capital within these economies will further help promote higher international integration.

The prominent limitation of the underlying analysis is its inapplicability to other BRI countries that are characterized by distinct political and economic attributes than the South Asian nations. Future Research can be conducted for different countries or a group of countries with similar attributes. This may help generalize the result for the BRI nations. The negative effect of BRI on trade integration needs further attention and hence can be further elaborated in the context of South Asia. The sign may also be due to the unavailability of data for trade between Afghanistan and Maldives. The analysis can be undertaken for the group of BRI countries on whom data is readily available which in turn, can help in providing robust results.

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