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# THE BELT AND ROAD INITIATIVE'S CONSTRUCTION PROJECTS EXERT A SUBSTANTIAL INFLUENCE ON PARTICIPATING COUNTRIES' ECONOMIC LANDSCAPES, ELICITING A NOTEWORTHY IMPACT ON THEIR FINANCIAL STABILITY, INFRASTRUCTURE INVESTMENTS, AND FISCAL GROWTH

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## ABSTRACT

The one belt one road initiative, spearheaded by China, stands as a monumental foreign policy endeavour designed to strengthen ties with 146 nations. The construction projects within this initiative wield a substantial influence on the economic landscapes of participating countries, significantly affecting financial stability, infrastructure investments, and fiscal expansion. Studies utilizing $CO_2$ emissions as a function of financial data (FD), Foreign Direct Investment (FDI), Gross Domestic Product (GDP), squared Gross Domestic Product ($GDP^2$), economic indicators (EC), and trade-related factors (TR) have demonstrated a statistically positive relationship between these variables. The study spans from 2014 to 2021, employing panel data regression techniques to analyze the impact of the One Belt One Road initiative on participating countries' economic landscapes. Utilizing dynamic seemingly unrelated regression (DSUR) panel estimation, the study assesses the initiative's impact on macroeconomic factors such as GDP, FDI, EPI, trade, and FDPS. Statistical significance tests, including p-values and F-statistics, are employed to gauge the significance of the relationship between these factors and the initiative. Null hypothesis testing is utilized to determine whether a variable Granger causes another variable, providing further insights into causal relationships. $R^2$ values are employed to quantify the proportion of variance in the dependent variable attributable to the independent factors. These statistical methodologies offer a robust and empirical approach to comprehending the one belt one road initiative's profound impact on the economic landscapes of participating nations.

*Keywords: One belt one road; Infrastructure development; Energy development; Cultural development; Social and economic development.*
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## INTRODUCTION

China's president, Xi Jinping, launched one of his nation's most impressive foreign policies in 2013, aiming to strengthen ties with its 146 neighbouring nations in terms of trade, employment, investment, social activities, political alliances, infrastructure development, education, and sustainable development in some regions of the world. The Belt and Road Initiative (BRI) has a significant influence on each member nation's economy and social transformation. African sub-Saharan nations total, including 25 nations total, including 25 from Latin America and the Caribbean, 20 from the Middle East and North Africa, 34 from Europe and Central Asia, and 25 from East Asia and the Pacific, 18 nations, 6 of which are in South East Asia. Trade between nations is essential to the expansion of any economy. Previous research suggests that because of their capacity to impact economic growth and lessen poverty, exports are viewed as a catalyst for social and economic development in every nation. Therefore, imports and

exports both impact a nation's trade balance and act as significant accelerators for economic growth. Strong bilateral trade links have been shown to benefit the economic development of the host nation positively, according to numerous studies (Yamin & Sinkovics, 2009).

There is a favourable correlation between economic growth and imports and exports. Sometimes, imports and exports are used to gauge "Trade Openness." A positive association between exports and imports and macroeconomic variables like GDP and FDI flows is theorized (Awokuse, 2008; Sunde et al., 2023). A thorough examination of the literature reveals that a nation's growth and development are based on a sound financial structure. Finance that is available at a lower cost opens doors for the company and creates jobs. Financial development (FDP) can positively impact economic growth through many avenues, as suggested by economic theory (Guru & Yadav, 2019).

**Belt and Road Initiative (BRI)**

The Chinese government's Belt and Road Initiative (BRI) is built on a significant model. The name "Silk Road" was first used by a German businessman in the 18th century to describe the commercial route from China to Europe, where camels were utilized to transport various commodities and services rather than using vehicles. High-speed rail has taken the place of camels for the conveyance of goods and services, making BRI a new iteration of the project. Global diplomatic and commercial ties with neighbouring nations (Larçon, 2017; Chan & Gunasekaran, 2020; Rana & Ji, 2020).


Figure 1. One belt one road (http://www.insightsonindia.com).

**Belt and Road Initiative**

***Components***

The Belt and Road Initiative (BRI) is a brand-new project launched by the Chinese government to connect China and the rest of the globe. Through the Maritime Silk Road (MSR), Silk Road Economic Belt (SREB), and Digital Silk Road (DSR), China communicates with other nations of the world. The Belt and Road Initiative (BRI) is comprised of the elements shown in Figure 2.

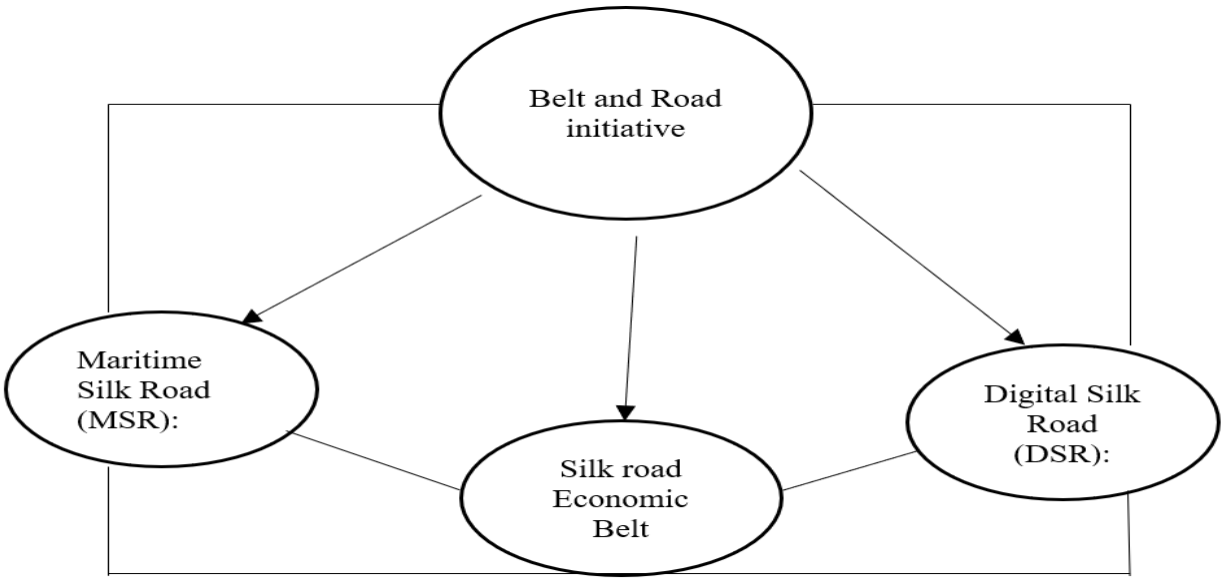


Figure 2. Belt and road initiative.

***Silk Road Economic Belt (SREB)***

The following economic corridors are being discussed: the China-Pakistan Economic Corridor (CPEC), the China-Indochina Peninsula Economic Corridor (CICPEC), the China-Mongolia-Russia Economic Corridor (CMREC), the Bangladesh-China-Myanmar Economic Corridor, the China-Central Asia-West Asia Economic Corridor, and the New Eurasia Land Bridge Economic Corridor (NELBEC).

The term "economic corridor" (EC) was originally introduced by the Asian Development Bank (ADB) in 1998, and it was also defined as a link or arrangement between two agents within a geographical region that deals with market demand and supply sectors (Brunner, 2013; Dannenberg, Revilla et al., 2018).

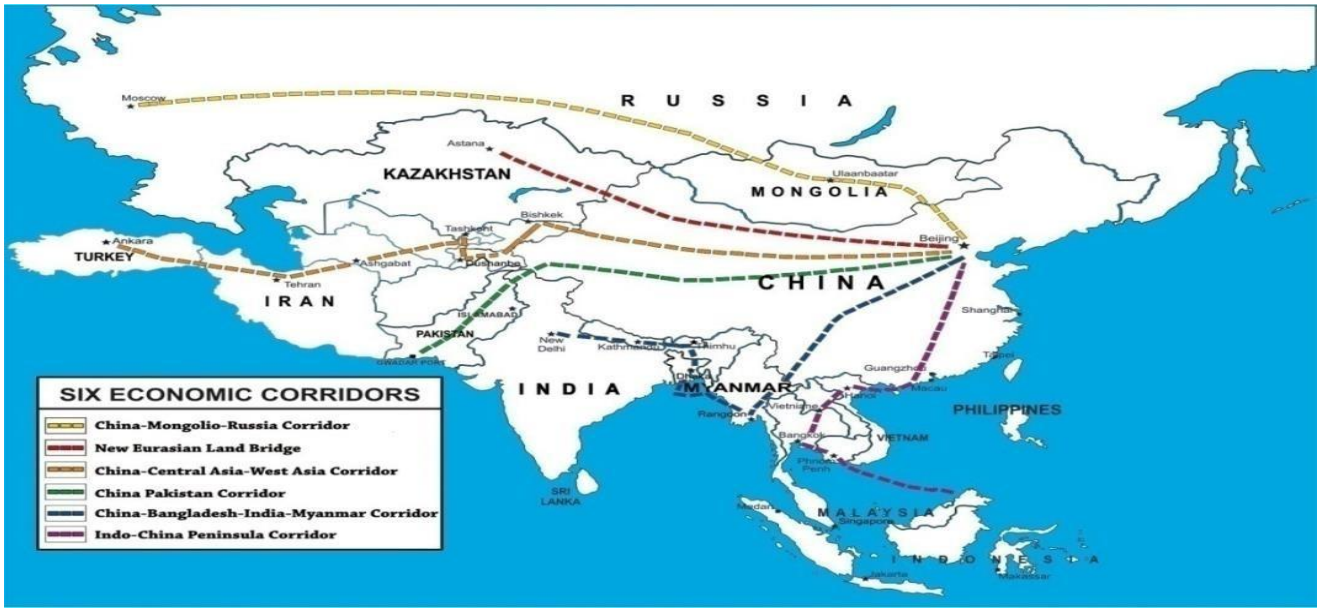


Figure 3. Six economic corridors (https://www.gica.global/content/china's-economic-corridor).

***Maritime Silk Road (MSR)***

During Chinese President Xi Jinping's first trip to Southeast Asia, the idea of MSR initially appeared. MSR has a comprehensive plan for developing maritime organisations in diverse contributing nations. According to private research, economic corridors play major roles in improving the economy and stability

of the country (Li et al., 2021). The Chinese government is expanding the numerous ports under the MSR and is maintaining touch with the Chinese (Tiezzi, 2017).

***Digital Silk Road (DSR)***

The State Council released the thirteenth five-year plan for "National Information" in 2016. Building an "online silk road" to assist domestic information enterprises in making a contribution to the global community was the goal of the "National Information" (Triolo et al., 2020).

**Research goals**

Belt and Road Initiative's impact on participating countries' economic landscapes, including its influence on financial stability, infrastructure investments, and fiscal growth. It also explores the various components of the initiative, such as the Silk Road Economic Belt, Maritime Silk Road, and Digital Silk Road, and their impact on national economies, societal activities, individual families, employment, investments, political affiliations, and infrastructural development on a global scale. Additionally, the document presents several hypotheses to consider when analyzing the initiative's influence on a country's economy and social development.

**Hypothesis**

When analysing the influence of the Belt and Road construction on a country's economy and social development, several hypotheses can be formulated based on existing research and observations. It is significant to note that the real impact may vary significantly depending on the specific circumstances of each country and the implementation of BRI projects. Here are some hypotheses to consider:

Hypothesis 1: Enhanced Infrastructure Leads to Economic Growth

Hypothesis: Improved transportation and communication infrastructure from BRI projects will stimulate economic growth in participating countries.

Hypothesis 2: Increased Trade and Investment Opportunities

Hypothesis: The BRI will increase trade volumes and foreign direct investment (FDI) for countries along the Belt and Road routes.

Hypothesis 3: Job Creation and Poverty Reduction

Hypothesis: BRI projects will create employment opportunities, reduce unemployment rates and contribute to poverty alleviation.

Hypothesis 4: Cultural Exchange and Mutual Understanding

Hypothesis: The Belt and Road Initiative will foster cultural exchange and improve people-to-people connectivity, leading to enhanced mutual understanding.

Hypothesis 5: Environmental Sustainability

Hypothesis: Some BRI projects will prioritize environmental sustainability, contributing to conservation efforts.

Hypothesis 6: Debt Sustainability Challenges

Hypothesis: Some countries may face challenges in managing the debt incurred from BRI projects, potentially leading to economic vulnerabilities.

Hypothesis 7: Geopolitical Implications

Hypothesis: The Belt and Road Initiative may have geopolitical insinuations, contributing to tensions between countries and affecting regional stability.

Hypothesis 8: Transparency and Governance Concerns

Hypothesis: Concerns about transparency and governance in BRI project implementation can lead to corruption, inefficiencies, and social discontent.

It is essential to empirically assess these hypotheses by examining specific case studies and conducting rigorous research to better comprehend the actual effect of the Belt and Road construction on a country's economy and social development. Each country's experience may differ, and outcomes can be influenced by factors such as project quality, governance, and local economic conditions.

**Countries along the Belt and Road Route**

As of my last knowledge update in September 2021, the Belt and Road Initiative involves a massive system of countries spanning Asia, Europe, and Africa. Keep in mind that the list of countries involved may evolve over time due to new agreements or changes in geopolitical dynamics. Here is a table listing some of the countries along the Belt and Road route.

Table 1. Countries along the belt and road route.

| Region | Countries Along the Belt and Road Route |
|---|---|
| East Asia | China, Mongolia, North Korea, South Korea, Japan |
| Southeast Asia | Vietnam, Laos, Cambodia, Thailand, Malaysia, Singapore, Indonesia, Myanmar |
| South Asia | India, Pakistan, Bangladesh, Nepal, Sri Lanka, Maldives |
| Central Asia | Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan, Tajikistan |
| Middle East | Iran, Iraq, Syria, Turkey, Saudi Arabia, United Arab Emirates |
| Eastern Europe | Russia, Belarus, Ukraine, Moldova |
| South Caucasus | Armenia, Azerbaijan, Georgia |
| Western Balkans | Serbia, Montenegro, Bosnia and Herzegovina, North Macedonia |
| Central Europe | Hungary, Czech Republic, Slovakia, Poland |
| Northern Europe | Estonia, Latvia, Lithuania |
| Southern Europe | Greece, Slovenia, Croatia, Bulgaria, Romania |
| Africa | Egypt, Sudan, Kenya, Ethiopia, Djibouti, Tanzania, Nigeria, South Africa, Morocco, Algeria, Tunisia |

This list is not exhaustive, and the Belt and Road Initiative involves numerous other countries to varying degrees. Additionally, there may have been changes or developments since my last update, so it is advisable to check the latest information from reputable sources for the most current list of countries contributing to the Belt and Road Initiative.

Below is a simplified table containing some key information for selected Asian countries along the Belt and Road Initiative, including their region, GDP (Gross Domestic Product), land area, and estimated population as of 2021.

Table 2. Key Information for selected Asian countries.

| Region | Country | GDP (USD Trillion) | Land Area (sq. km) | Population (2021, millions) |
|---|---|---|---|---|
| East Asia | China | 16.6 | 9,596,960 | 1,411 |
| Southeast Asia | Vietnam | 0.3 | 331,210 | 97 |
| Southeast Asia | Indonesia | 1.1 | 1,904,569 | 273 |
| South Asia | India | 2.9 | 3,287,590 | 1,366 |
| Central Asia | Kazakhstan | 0.2 | 2,724,900 | 19 |
| Central Asia | Uzbekistan | 0.06 | 448,978 | 34 |
| Middle East | Iran | 0.7 | 1,648,195 | 85 |
| Middle East | Saudi Arabia | 0.8 | 2,149,690 | 35 |

Source: World Bank database.

**REVIEW OF LITERATURE**

Deepak (2020) investigated the significance of South Asia to China's MSR effort as well as how the BRI plan affects China’s relation with the South Asian nations along the MSR route, namely Sri Lanka, India, the

Maldives, Bangladesh, and Pakistan. He investigated the goals and progress of China's MSR initiatives in South Asia. This included assessing the economic and party-political controls made by the area governments to participate and defining the potential course of action for success. According to South Asian countries' political responses to the BRI, China would compete with India in the region, which is a major worry for India. Positive economic responses indicate that commerce and infrastructure investments will take place in the region.

**What is the China-Pakistan Economic Corridor (CPEC)?**

The China-Pakistan Economic Corridor, often recognized as CPEC, is a project that encompasses several forms of energy production, transportation, and communications. It also contributes to Pakistan's free economic zones (Ali, 2020). China and Pakistan have been close friends since the beginning and have long supported one another on a home and international level. From the Kashghar Karakorum Highway (KKH) to Islamabad, they are connected side by side and share geographic borders. Additionally, this route, also recognized as the China-Pakistan Relationship Freeway, is expanding to facilitate travel, communication, and trade between Pakistan and China (Fazzini, 2018). China-Pakistan relations will be reinforced jointly in the future after the CPEC project is completed, further altering the geographic politics of South Asia (Wolf, 2020). The expansion of the Gwadar port, which China permits to admittance the Indian Ocean, is part of the CPEC strategy to exert control over the Chinese government. Future phases will see the Chinese government's maritime capabilities at the port of Gwadar transform into a reliable business in the Indian Ocean (White, 2020). The One Belt, One Road Initiative embraces the China-Pakistan Economic Corridor (CPEC), a proposal to advance Pakistan's economic growth. Additionally, the project not only expedites China and Pakistani collaboration but also contributes significantly to regional growth. Additionally, CPEC will provide Kazakhstan, Uzbekistan, Turkmenistan, and Azerbaijan with a new power route (Hussain, 2017).

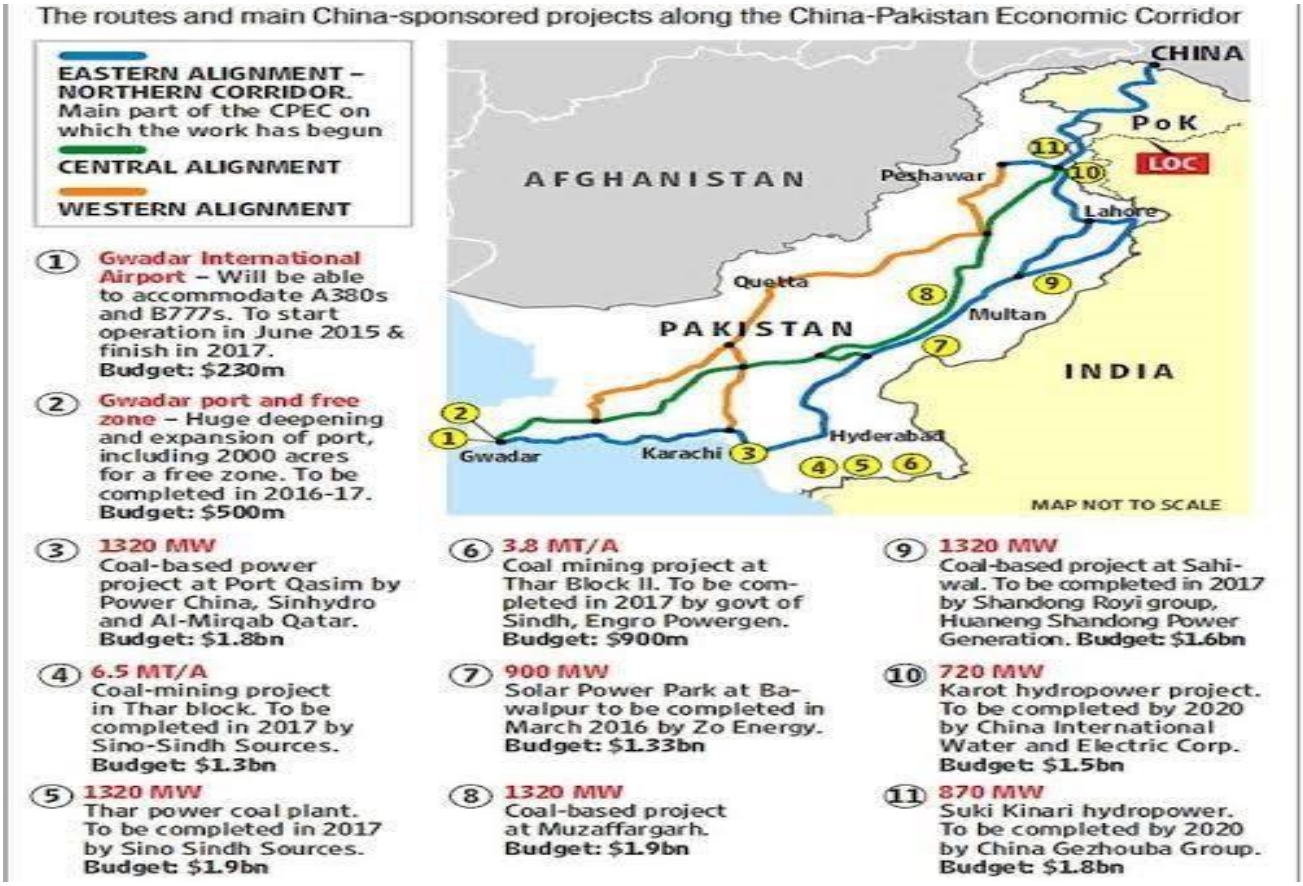


Figure 4. China-Pakistan Economic Corridor (www.cpec.gov.pk).

**CPEC approved project in Pakistan**

The CPEC projects will be carried out between 2017 and 2030 over long, medium, and short time frames. The main objective of CPEC projects is to completely satisfy the increasing energy demand in China and Pakistan. 21,000 MW of energy will be produced as strategic for the projects, and in light of this, power projects in Pakistan must be put into action right away (Sial, 2014). With the CPEC projects, China is on track to make the largest $46 billion foreign investment in Pakistan, which will account for nearly 20% of Pakistan's GDP.

Table 3. Division Projects (Rafiq, 2016).

| Projects | Cost M. USA |
|---|---|
| Energy Sector | 33,826 |
| Transportation and Infrastructure Development | 11,735 |
| Development Gwadar Port | 792.7 |
| Optical Fiber | 45 |
| Total | 46,211.0 |

CPIC is a significant plan, not just a road construction plan, that focuses on improving regional connectivity, building infrastructure, and energy production, as well as improving the industrial, agricultural, and public health and educational sectors and reducing poverty from side-to-side living conditions. Additionally, three CPEC alignments will traverse through each of Pakistan's provinces (Seponski et al., 2014).

**Development from side-to-side Infrastructure Led Development**

The major economy in the world borders Pakistan. China. The concept of an economic corridor is similar to that of Exclusive Economic Zones (EEZ) (Husnain, 2021). The China-Pakistan Economic Corridor's main goal is to play a significant role in the development of socio-economic conditions throughout Pakistan (Hussain & Hussain, 2017). The infrastructure of construction and energy production set up to join Gwadar port's expansion and organise the specific economic zones is a crucial component of this project (Rizvi, 2015). A currency exchange agreement was concluded in 2014 between the governments of China and Pakistan. Pakistan was the first nation to formally ratify the agreement among South Asian nations. The Chinese government and business sector aim to invest 20 billion USD in infrastructure, ports, trade, telecommunications, and energy production, making China and Pakistan the largest partners and stakeholders in these areas. Pakistan will become a South Asian transportation hub thanks to CPIC (Nilofar et al., 2014). A further benefit of the CPEC is the development of a road and rail network to address Pakistan's concerns with poverty alleviation, energy deficit, prosperity, and peace. The Chinese investors in the CPEC project will be crucial to the enhanced health, education, and skill development of the country (Shaikh et al., 2016).

There are numerous beneficial duties that CPIC performs for Pakistan. Pakistan is currently dealing with a significant energy crisis that is causing economic instability. With the increasing unemployment rate in the industrial sector, energy is a crucial requirement. CPIC is a conduit that will help in Pakistan's economic development. Furthermore, CPEC will see an increase in foreign direct investment. After the CPEC project is finished, Pakistan will be successful in the energy industry and have no issues with energy lack. In particular, for Khyber Pakhtunkhwa and Gilgit Baltistan in these regions, the CPEC project creates millions of prospects for youth employment and education tourism (Zaheer, 2018).

There is not just one Belt and Road project for building roads. It is a major economic enterprise on a regional scale. Intercommunication, the development of infrastructure, the generation of energy, the building of industries, the reduction of poverty by enhancing agriculture and livelihoods, and the provision of education and public health facilities (Srinivasu & Rao, 2013).

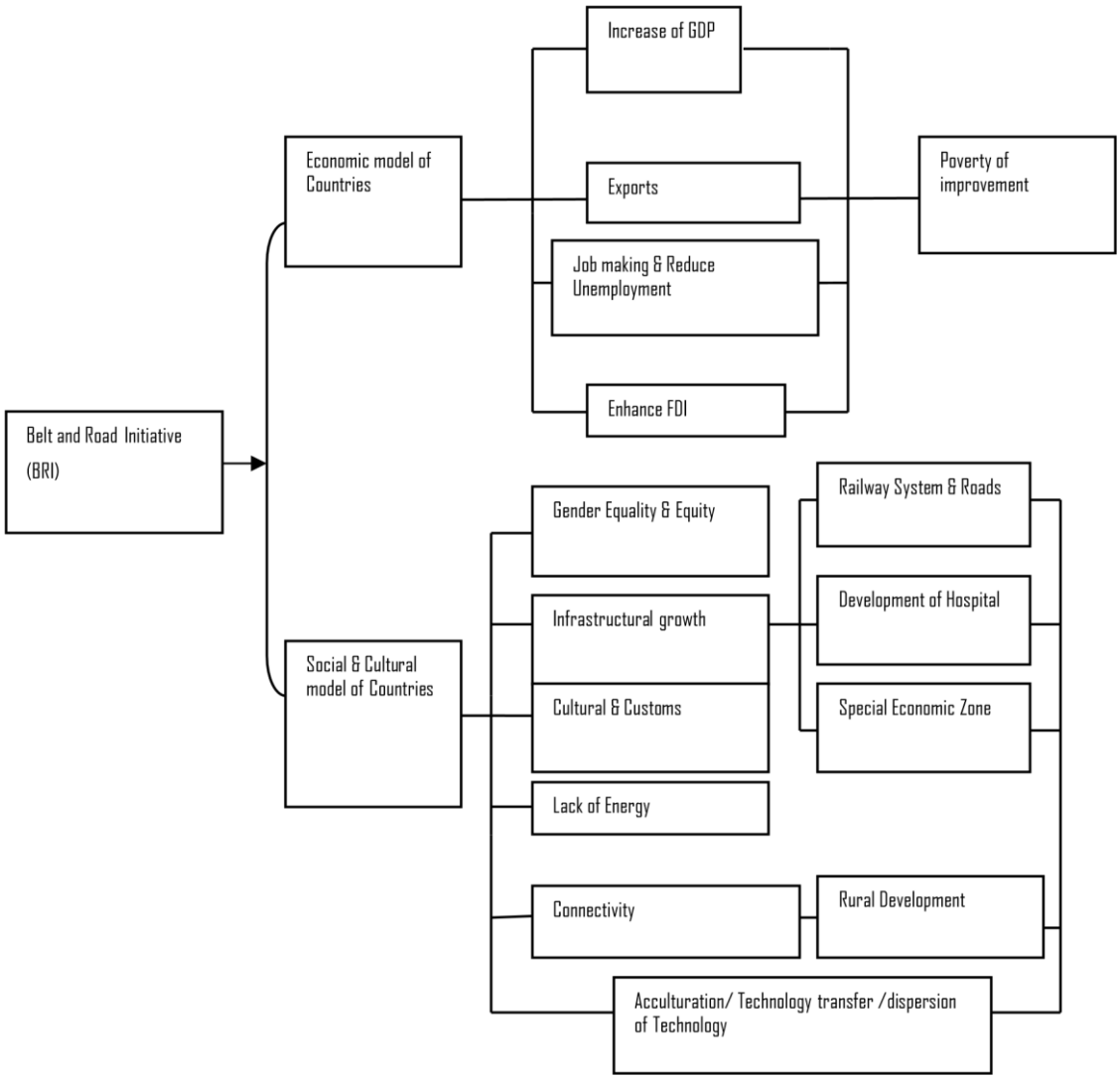


Figure 5. Multifaceted Infrastructure-led Development Leads to Sustainable Development in Neighboring Countries.

**METHODOLOGY**

Several crucial macroeconomic factors were utilized to measure the impact of the BRI program in the Asian area. The information was taken from a number of publicly accessible official websites. In the panel data set, which includes observations from 25 nations (Mongolia, Afghanistan, Korea, Bangladesh, Cambodia, Hong Kong, Jordan, India, Indonesia, Iraq, Kazakhstan, Malaysia, Kuwait, Macau, Myanmar, Nepal, Oman, Pakistan, Vietnam, Singapore, Sri Lanka, Thailand, Turkey, the Philippines), there are a total of 2,300 observations. The sample's whole coverage period runs from 2014 to 2021. With the use of the panel data regression technique, this article makes an effort to examine how the BRI has affected the economic development of Asian nations that are located along its path. Studies utilizing CO2 emissions as a function of financial data (FD), Foreign Direct Investment (FDI), Gross Domestic Product (GDP), squared Gross Domestic Product (GDP2), economic indicators (EC), and trade-related factors (TR). The study spans from employing panel data regression techniques to analyze the impact of the One Belt One Road initiative on participating countries' economic landscapes. Utilizing dynamic seemingly unrelated regression (DSUR) panel estimation, the study assesses the initiative's impact on macroeconomic factors such as GDP, FDI, EPI, trade, and FDPS.

Table 4. Measure of variables.

| Type | Variables | Measure | symbol |
|---|---|---|---|
| Dependent | Gross domestic | US dollars millions | GDP |
| Independent | product | US dollars millions (National Bureau of China) | EXP |
| Independent | Exports of China | US dollars millions (National Bureau of China) | IMP |
| Independent | Imports of China | Domestic credit to private sector by banks as | FDP |
| Independent | Financial | percentage | POL |
| Independent | development | Log of political stability | COR |
| Dummy | Political stability | Log of level of corruption | BRI |
| Controllable | Corruption | Different values assigned | FDI |
| Controllable | Belt and road | US dollar millions (UNCTAD Database) FDI | PGT |
| | initiative | Annual average growth rate | CAB |
| Controllable | Foreign direct | | CPI |
| Controllable | investment | US dollar millions | |
| | Population growth | Annual price index on base 2005 | |
| | Current account | | |
| | balance | | |
| | Inflation | | |

**Econometric Model**

Equation 1: CO2=f (FD, FDI, GDP, GDP2, EC, TR)

This study suggests that CO2 emissions are a function of financial data (FD), Foreign Direct Investment (FDI), Gross Domestic Product (GDP), squared Gross Domestic Product (GDP^2), economic indicators (EC), and trade-related factors (TR).

The expression is provided below to represent a regression model where Log CO2it is regressed on various independent variables.

Equation 2: $\text{Log CO2}_{it}=\beta 0+\beta 1+\beta 2\text{Log EC}_{it}+\beta 3\text{Log GDP}_{it}+\beta 4\text{Log GDP}_{it2}+\beta 5\text{Log FD}_{it}+\beta 6\text{Log FDI}_{it}+\beta 7\text{Log TR}_{it}+\lambda it$
Log CO2 represents the logarithm of CO2 emissions at time t for observation i.

$\beta 0$ is the intercept term.

$\beta 1$ is a constant term.

$\beta 2$ to $\beta 7$ are coefficients associated with the respective independent variables.

Log EC$it$ represents the logarithm of economic indicators at time $t$ for observation $i$.

Log GDP$it$ represents the logarithm of GDP at time $t$ for observation $i$.

Log GDP$it2$ represents the squared term of the logarithm of GDP at time $t$ for observation $i$.

Log FD$it$ represents the logarithm of financial data at time $t$ for observation $i$.

Log FDI$it$ represents the logarithm of FDI at time $t$ for observation $i$.

Log TR$it$ represents the logarithm of trade − related factors at time $t$ for observation $i$

$\lambda it$ represents the error term.

This model suggests that the logarithm of CO2 emissions is linearly related to the logarithm of economic indicators, GDP, the squared term of GDP, financial data, FDI, and trade-related factors, along with intercept and constant terms. The error term ($\lambda it$) captures unobserved factors influencing CO2 emissions that are not accounted for by the included variable

**RESULT AND DISCUSSIONS**

The table 5 provided seems to be the output of a Dumitrescu-Hurlin (DH) panel causality test. This test is used to examine the causality between variables in a panel dataset.

Table 5. Dumitrescu-Hurlin panel causality test.

| Variables | Log CO2 | Log GDP | Log GDP2 | Log FDPS | Log FDI | Log EPC | Log Trade |
|---|---|---|---|---|---|---|---|
| Log CO2 | - | 3.7465a | 3.7247a | 3.1752a | 1.5037a | 1.7770a | 2.7730a |
| Log GDP | 4.4984a | - | 2.7971a | 5.1396a | 1.7011a | 4.5666a | 4.6220a |
| Log GDP2 | 4.4894a | 2.7771a | - | 5.1122a | 1.7000a | 6.1221a | 4.50000a |
| Log FDPS | 1.5960a | 4.1149a | 5.2350a | - | 2.1500a | 2.2355a | 2.4420a |
| Log FDI | 1.3538a | 5.5498a | 5.5850a | 2.5770a | - | 2.9153a | 1.4470a |
| Log EPC | 4.0628a | 6.5474a | 6.6888a | 3.5723a | 1.6656a | - | 2.5248a |
| Log Trade | 2.6597a | 4.1847a | 4.1968a | 3.7660a | 1.5222a | 3.7013a | - |

Note: "a" represents a 1% level of significance, and the values in parentheses represent Z-stats.

This section lists the variables involved in the analysis: Log CO2, Log GDP, Log GDP2, Log FDPS, Log FDI, Log EPC, and Log Trade. The table contains coefficients along the diagonal and p-values indicated by "a" off the diagonal. Each cell represents the results of testing whether the variable in the corresponding row causes the variable in the corresponding column. The coefficients are 3.7465a, 4.4984a, Indicate the forte and path of the causal association. The "a" denotes a 1% level of significance. The cell at the intersection of the "Log CO2" row and "Log GDP" column has a coefficient of 4.4984a. This suggests that Log GDP Granger causes Log CO2 with statistical significance at the 1% level. Statistical Significance: The p-values related to the coefficients are typically compared to a significance level (e.g., 1% or 5%). If the p-value is less than the chosen significance level, you reject the null hypothesis of no causality. Null hypothesis for each test is that the variable in the row does not Granger cause the variable in the column.

If you look at the cell where "Log GDP" intersects with "Log CO2," the coefficient is 4.4984a. This suggests that past values of Log GDP cause Log CO2, and the relationship is statistically significant at the 1% level.

Table 6. Results of dynamic seemingly unrelated regression (DSUR) panel estimation.

| Variables | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| Log GDP | 1.346730a | 1.3188242a | 1.4571230a |
| | (11.00) | (11.002) | (11.23) |
| Log GDP2 | − 0.1278405a | − 0.1278405a | − 0.1278405a |
| Log FDI | − 0.0308394a | − 0.0308394a | − 0.0308394a |
| Log EPI | 0.5901918a | 0.5901918a | 0.5901918a |
| Log Trade | − 0.0207214 | − 0.0207214 | − 0.0207214 |
| Log FDPS | − 0.0544436a | - | - |
| | | - | - |
| Log FDFS | - | -0.100054 | - |
| | - | (-3.43) | - |
| Log FDB | - | - | -0.0617543 |
| | - | - | (-4.33) |
| Constant | − 4.526862a | -3’778865a | 4.5230a |
| | (-22.002) | (-22.31) | (-22.45) |
| R2 | 0.77.63 | 0.7664 | o.77.62 |
| F statistic | 2160.42 | 2190.20 | 2156.80 |
| (Prob) | (0.0001) | (0.0001) | (0.0001) |

Note: Coefficients are presented with their t-values in parentheses; The superscript lowercase letters (a, b, c) indicate the level of rejection at 1%, 5%, and 10%, respectively; Probabilities are provided in parentheses for the F statistic.

Log GDP: Model 1: The coefficient for log GDP is 1.346730a, and the t-value is 11.00. This designates a statistically important positive association between log GDP and CO2 emissions at the 1% level of significance.

Model 2: The coefficient is 1.3188242a, and the t-value is 11.002. Similar to Model 1, there is a statistically important positive association between log GDP and CO2 emissions at the 1% level.

Model 3: The coefficient is 1.4571230a, and the t-value is 11.23. Again, there is a statistically significant positive relationship between log GDP and CO2 emissions at the 1% level.

Log GDP2: The coefficient is -0.1278405a, indicating a statistically significant negative relationship with CO2 emissions at the 1% level in all three models.

Log FDI: The coefficient is -0.0308394a, indicating a statistically significant negative relationship with CO2 emissions at the 1% level in all three models.

Log EPI: The coefficient is 0.5901918a, indicating a statistically significant positive relationship with CO2 emissions at the 1% level in all three models.

Log Trade: The coefficient is -0.0207214, but it is not statistically important (p-value greater than 0.05) in any of the models.

Log FDPS: In Model 1, the coefficient is -0.0544436a, indicating a statistically significant negative relationship with CO2 emissions at the 1% level.

Log FDFS: In Model 2, the coefficient is -0.100054, and the t-value is -3.43. This indicates a statistically important negative relationship with CO2 emissions at the 1% level.

Log FDB: In Model 3, the coefficient is -0.0617543, and the t-value is -4.33. This indicates a statistically significant negative relationship with CO2 emissions at the 1% level.

Constant: In Model 1, the constant is -4.526862a, and it is statistically important at the 1% level. In Model 2, the constant is -3.778865a, and it is statistically important at the 1% level. In Model 3, the constant is 4.5230a, and it is statistically important at the 1% level.

R2: The R2 values show how much of the variance in the dependent variable can be attributed to the independent factors. They are 0.7763, 0.7664, and 0.7762 for Models 1, 2, and 3, respectively.

F statistic (prob): The F statistic tests the general importance of the model. The probabilities are all close to zero, indicating that the models are statistically significant.

## CONCLUSIONS

In conclusion, the One Belt One Road initiative, led by China, has a significant impact on participating countries' economic landscapes. The initiative's construction projects influence financial stability, infrastructure investments, and fiscal growth, shaping the trajectory of these countries' economic landscapes. The initiative's impact extends to various facets, including national economies, societal activities, individual families, employment, investments, political affiliations, and infrastructural development on a global scale. The study highlights the multidimensional impact of the initiative on cultural, educational, and socio-economic landscapes globally, emphasizing the need for empirical assessment and in-depth research to comprehend its full effect. The study's statistical methods provide a rigorous and empirical approach to understanding the initiative's impact on participating countries' economic landscapes. Overall, the One Belt One Road initiative is a significant foreign policy endeavour that has the potential to shape the global economic landscape for years to come.

The Chinese government launched the (OBOR) in recent years as a growth strategy to promote connectivity and cooperation among Eurasian nations. China also intends to improve its influence in world affairs and channel its resources into a commerce network that is centered on the country. The Maritime Silk Road

and the Silk Road Economic Belt are the two key mechanisms of One Belt, One Road. The financial industries of Asia-Pacific and Europe are linked through the 21st-century maritime Silk Road in the east. The Silk Road Economic Belt is a continuation of the Silk Road, which Zhang Kayan established during the Western Han period in China. From Central Asian nations like Kazakhstan and Afghanistan, the strip travels south. Israel, Kenya, Indonesia, and many more Asian and African nations are under the authority of One Belt One Road. Their energy production, trade, transportation, education, economy, and way of life all benefit from One Belt, One Road.

Through One Belt One Road, many nations are constructing infrastructure worth $14 billion in everything from transportation to electrical power. Chinese capital made an Eastern. The most significant project for Kenya after becoming independent in 1963 was the 485-km single track known as the Africa Standard Gauge Railway (SGR). To expand SGR further to Naivasha in the northwest, Kenya received a $1.5 billion loan from China. SGR is also advantageous for trade and local businesses between China and Africa. The SGR runs from Mombasa to Nairobi, the capital of Kenya. The Nehru Tim Jielu Mu Hydropower Station is a project funded by the "Belt, and Road Initiative" in Pakistan. In Pakistan, the national grid is 500 million MG short during the summer, which is a major issue. Trade between nations and the One Belt, One Road development industry generates mutual economic profit. Kazakhstan is a landlocked nation in Central Asia, and due to its bitterly severe winters, virtually little product is grown there.

One Belt One Road connected Kazakhstan's Uygur autonomous region and northwest China's Xinjiang. The basic needs of Kazakhstani inhabitants are met through cross-border vegetable trading. More than $11 billion in trade occurs annually between Xinjiang and Kazakhstan, accounting for 40% of all trade between the two countries. Halo Dao City Steel Pipe Industrial Company Ltd. produces 100,000 tonnes of gas and oil pipes, and China lends Liaoning Province $2.123 million. This initiative is a significant investment that will bring in $100 million and create 300 jobs for unemployed people. One Belt One Road shortens the distance between all nations and strengthens the global economy. It is hoped that it will continue to develop and benefit all nations.

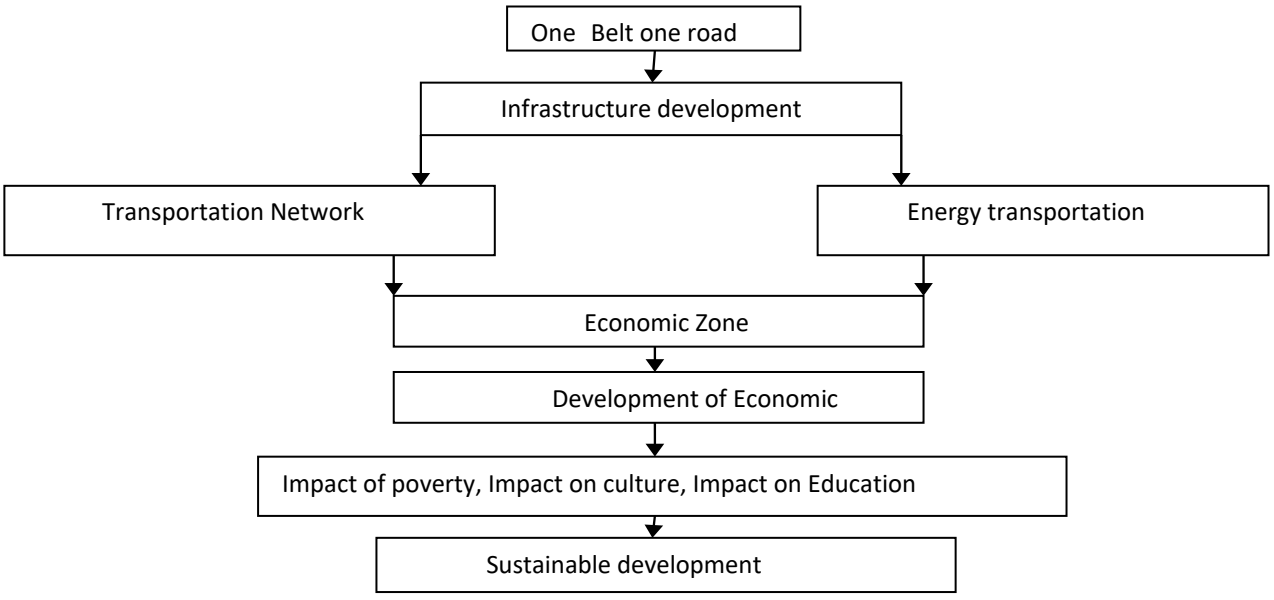


Figure 6. Process of One Belt One Road Development.

Transportation Network: The crucial component of CPAC is the development of Pakistan's transportation and infrastructure, which has been budgeted at roughly USD 12 billion from CPIC's USD 46 billion investment. In many countries, infrastructure is crucial to economic development. China's CPEC project in Pakistan is modernizing the country's infrastructure and transportation network (Jalal, 2014).

Energy transportation: Through the development and installation of coal and gas-generating resources, CPAC will invest USD 34 billion in Pakistan's energy industry (Ogle, 2014).

Economic Zones: SEZs and industrial clusters are crucial to the industrialization process. SEZ has been suggested as a share of the CPEC project in a number of Pakistani cities, which will hasten Pakistan's industrialization process further (Jahangir et al., 2020).

Economic Development: The CPEC initiative presents numerous opportunities for China and Pakistan. The CPIC will be crucial to the improvement of Pakistan's financial position and would also boost social and transportation development. However, CPEC would also increase China's employment with Pakistan and other nations since it will provide China with a cost-effective and secure shipping route (Alam et al., 2019).

Poverty Alleviation and Social Development: Locals in Pakistan will find several employment and business opportunities along the CPIC's various routes, which will help them further, raise their standard of living. Additionally, the CPEC will result in significant changes in Pakistan's rural areas, as well as increased infrastructure and prosperity (Rashid & Shirazi, 2023).

Sustainable Development: Due to their positive effects on the environment, human health, economic growth sustainability, quality of life, and social life, central focus has been placed on them throughout the world (Portney, 2013).

**Recommendations and Future Considerations**

The Belt and Road Initiative has generated together opportunities and challenges for countries involved. Here's an overview of its impact on economies, social development, recommendations and future considerations.

BRI projects have enhanced connectivity through roads, ports, and railways, stimulating trade and economic growth. Increased trade opportunities have positively influenced GDP growth and foreign direct investment. Infrastructure projects have created jobs, benefiting local economies. There are concerns about debt sustainability due to the scale and financing models of some BRI projects. Some BRI projects include social development initiatives, improving education and healthcare facilities. The initiative encourages people-to-people connectivity, fostering mutual understanding. Positive impacts on local communities through employment and improved access to services.

Ensuring sustainable financing models to prevent overburdening countries with debt. Implementing eco-friendly practices in infrastructure development to mitigate environmental impact. Promoting transparency in project execution and enhancing governance standards. Involving local communities in project planning and decision-making for better outcomes.

Prioritize balanced development across economic, social, and environmental aspects. Foster partnerships between participating countries, international organizations, and private sectors for effective implementation. Invest in local capacity building and skill development to maximize benefits for local populations. Develop risk assessment frameworks to address potential challenges and uncertainties. The BRI has the possible to transport substantial economic and social benefits, but challenges such as debt sustainability, environmental impact, and governance issues need attention. Emphasizing balanced development, local participation, and effective risk management will be crucial for ensuring the BRI's positive impacts on economies and societies in the future.

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