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CPEC and Structural Economic Dependence: A Dependency Theory Analysis of Chinese FDI and Pakistan's Growth Trajectory (2020-2025)

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ABSTRACT

This paper analyzes the economic consequences of the Chinese investment in Pakistan within the framework of the China-Pakistan Economic Corridor (CPEC) between the years 2020 and 2025 The results show that Chinese FDI has emerged as the major source of foreign capital and thus restrict diversification of investments and reduce bargaining power of Pakistan. Sectoral patterns indicate a strong focus on investment in the energy and transport infrastructure, whereas the pace at which Special Economic Zones (SEZs) are being developed is very slow and the shift to productivity-oriented industrialization is hindered. Taken altogether, these findings support the central thesis of Dependency Theory, which indicate that the process of the inclusion of Pakistan into CPEC is certain to reproduce core periphery relationships more and more. This paper concludes that, unless the institutional reinforcement, diversification of investment partners, and faster industrialization is introduced to the country, long-term economic independence of Pakistan would remain diluted in the growing dependency on China.

Introduction

Another initiative in line with the concepts of the New Deal, a policy that was launched in 2013 by President Xi Jinping, the Belt and Road Initiative (BRI) is one of the most extensive and large-scale global infrastructure and investment projects in the history of the modern world, even more extensive than the Marshall Plan (Barman, 2023). It includes Silk Road Economic Belt (SREB) and the 21st -century Maritime Silk Road (MSR) with the goal of connecting China to Europe, the Middle East, South Asia, and others with effective infrastructure, trade and energy networks (McBride et al., 2023). By 2024, the BRI comprised more than 3000 projects in transportation, energy, trade, and technology in over 150 countries and over 30 international organizations, reflecting the growing political and economic power of China on the global scale (Gilani, 2023).

The China Pakistan Economic Corridor (CPEC) stands out as a marquee project of the six global economic corridors that are being proposed by the BRI. CPEC is estimated to be worth more than US$60 billion 3,000 km, based on energy, transport infrastructure, and industrial development infrastructure, including Special Economic Zones (SEZs) throughout the route, which extends about 3,000km, between Gwadar Port in Pakistan and Kashgar in Xinjiang province, China (Ali, 2019; Shoukat, 2024). The strategic rationale behind it is to increase the connection between China and Pakistan and create a regional business center thus avoids the use of conventional trade routes through the Strait of Malacca and the South China Sea (Rauf & Zeidan, 2025).

First, CPEC created a sense of optimism because of its massive energy projects and infrastructure development as well as job creation. Initial successes included adding some 8,000 MW to the national power grid, building more than 800 kilometers of roads and fiber-optic networks, as well as the creation of some 200,000 jobs (Chu and Xie, 2024; Planning Commission of Pakistan, 2024). CPEC targeted addressing long term energy shortage in Pakistan, which had hampered the rate of growth by 47 percent to 7 percent of the GDP (Government of Pakistan, 2016) in the past 74 percent of investments were made in energy projects.

Nevertheless, after 2020, the direction of the CPEC projects is the increase of the structural dependence on China, as opposed to independent development of the country. The Chinese FDI situation was extremely centralized in the energy and transport industries, and the development of SEZ remained low, limiting industrial diversification (BOI, 2024). At the same time, the level of the external debt of Pakistan increased significantly, and loans related to CPEC only increased the dependence of the country on Chinese funding (Anwar, 2020). These trends indicate that CPEC has ceased to be a bilateral program of development and has become an order of asymmetric economic dependence of Pakistan, whereby the country grows increasingly dependent on Chinese capital, technology and project management, as per Dependency Theory (Frank, 1967; Cardoso and Faletto, 1979).

In that regard, this paper concentrates on the timeframe of 2020-2025, the most crucial period where the economic weaknesses of Pakistan aggravated. Chinese investment activity was relatively stable, but inflows in other countries shrank, the growth of the GDP became unstable, and the country economy was subject to high expectations in external financing. The assessment of the trends in FDI and GDP in terms of the Dependency Theory provides strong grounds as to why CPEC might have strengthened the structural dependence and weakened the economic autonomy of Pakistan.

Research Objectives

The objectives that will guide this study include:

1. To look into the trend of Chinese FDI in Pakistan between the year 2020 to2025 and determine the level of economic reliance.
2. To examine how the sector based CPEC investments strengthened structural dependency in the Pakistani economy.
3. To assess the performance of the GDP in Pakistan between 2020-2025 to identify whether the growth of the economy was

sustainable or dependency-based.

Research Questions

The following research questions are considered in the study:

1. What does Chinese FDI trends between 2020 and 2025 mean to the economy of Pakistan under CPEC?

2. Did the sector-specific allocation of CPEC investments bring about structural economic dependence?

3. How does the trend in Pakistan GDPs between 2020 to 2025 tell us about the sustainability of the economic growth in a dependency model?

Significance of the Study

The study is important as it critically assesses the economic involvement of Pakistan in China under CPEC in 2020 to 2025, a time such as macroeconomic instability, increasing debt and industry-specific concentration of investments. In contrast to the past studies which revolved around first-mover results of CPEC or the immediate effects of infrastructure on economic growth, this study looks at long-term changes in the FDI inflows and the performance of GDP in relation to the Dependency Theory. The study offers empirical data of the capacity of large-scale, foreign-financed projects to create asymmetric power relations and strengthen the periphery core dynamics through the emphasis of the structural dependence on Chinese capital, technology and project management. It is also anticipated that the findings will provide policy makers, academics and development planners with the implications of concentrated foreign investment particularly the economic sovereignty, sector imbalance, and vulnerability in the long run. This emphasis is essential to plan sustainable interaction with China and negotiate the next stages of CPEC that reduce the structural dependence and encourage independent economic development.

Literature Review

As the flagship of China Belt and Road Initiative (BRI), the China-Pakistan Economic Corridor (CPEC) has emerged as a major topic of the discussion regarding the political economy of development, foreign investment, and geopolitical realignments in South Asia. It is a fact that the BRI has been and will continue to be an infrastructure and connectivity network that is based on more than just that, as it is also a means by which China extends its geopolitical reach and reforms the global economic ties (Ferdinand, 2016; Rolland, 2017; Summers, 2016). CPEC is the most strategically important element in this paradigm that connects western China with the Arabian Sea and improves the maritime and energy security of China (Ali, 2019; Shoukat, 2024).

The initial studies on CPEC are indicative of strong development optimism. Research highlights that massive investment in energy and transport infrastructure has alleviated electricity crises in Pakistan, enhanced road connectivity, and triggered short-term economic growth (Akbar et al., 2021; Anwar et al., 2022; Tehsin et al., 2017). Infrastructure experts like Jalee et al., (2019) and Small (2014) emphasise the strategic role of Gwadar Port and how it can transform the patterns of trade in the region. All these pieces of evidence establish CPEC as an economic modernization driver and it is possible that in the hands of Chinese capital, Pakistan can overcome structural constraints that have been impeding its development over the years.

Nevertheless, throughout the spread of CPEC beyond its original period, more and more scholars gained critical political-economic views. Some of the scholars claim that the elite political and military interests influenced project governance, and institutional weaknesses and clouded decision-making procedures inhibited the achievement of equitable outcomes of development (Samad, 2025; Khizar and Ahmad, 2022). This body of literature argues that CPEC can even strengthen the power structures that Pakistan already has as opposed to the development of the nation in a broad-based manner. Similar geopolitical assessments point to the fact that the further intensification of Sino-Pak relations has shifted the strategy of this country out of the circle of traditional partners towards the West and placed it more directly in the zone of

Chinese influence (Ahmad et al., 2024; Fazal et al., 2023).

Research questions the economic conditions of CPEC, especially on the concepts of foreign direct investment (FDI), sectorial distribution and debt sustainability. The empirical studies unanimously support the idea that FDI may also be beneficial to long-term growth (Nadeem et al., 2025; Ullah et al., 2022), but the CPEC-related studies show that Chinese investment continues to be highly concentrated on the energy sector, particularly coal and LNG projects, instead of manufacturing and high-productivity industries (Hussain, 2021; Shaikh et al., 2016). The trend is an issue of concern to technology transfer, export diversification and industrial upgrading. These findings are supplemented by stakeholder studies in that it is clear that local business communities are supportive of infrastructure improvements, but they are also concerned about sovereignty, debt risks, and the overdependence on Chinese capital (Abbas et al., 2019; Ahmad et al., 2025).

The two issues that appear repeatedly throughout the critical CPEC literature are debt and political risk. According to scholars, the Pakistan CPEC financing has led to a greater exposure to the external debt that makes the country more vulnerable to economic shocks and limits fiscal independence (Anwar, 2020; Malik and Afridi, 2020). These weaknesses are aggravated by political risk; Ashraf, (2023) shows that the instability in governance undermines economic and environmental benefits that are expected to be brought by CPEC projects. These issues are easy to match with the Dependency Theory which argues asymmetrical financial and technological ties between the core and peripheral economies create long-term structural dependence (Frank, 1967; Cardoso and Faletto, 1979).

Kanwal et al., (2019) argue that growing dependence on Chinese funding enhances structural asymmetries and prevents the independent policy options in Pakistan. The same is echoed by Shad et al., (2024), who believe that national capacity building is limited by reliance on Chinese imports and skills. Quantitative data support this view and indicate that post-2018, the inflows of FDIs to Western countries and the Gulf countries reduced sharply, making China the major source of foreign funding to Pakistan (BOI, 2024; Nasir, 2022). The gradual development in Special Economic Zones also constraints the chances of changing the face of the industrialization in Pakistan, which prevents the transition of the country out of the infrastructure-based growth and the production that is export-oriented (Naeem et al., 2020; Rauf and Zeidan, 2025).

CPEC as an economic modernization and regional connectivity storey and the other as a debt, imbalance of sectors, elite capture, and dependency issues in the long run. Although the studies provide an important contribution, most of them are limited to the first stages of CPEC (2015-2019), as the influx of investments was at its highest point and developmental optimism was still in the air. There is a significant gap in the analysis of the critical period between 2020 and 2025 that is characterized by critical macroeconomic instability in Pakistan, structural deterioration of the diversified investment, and increased dependence on Chinese funding. In addition, there are not many studies that combine the trends of FDI and GDP in the context of a Dependency Theory to examine how the economic autonomy of Pakistan changed during such years. This paper fulfils a gap in the literature that has stayed unaddressed by the current research by examining the recent trends, providing a current assessment of whether CPEC has established structural dependency at the point when Pakistan is most economically vulnerable.

Research Methodology

The methodological position of this research is the exploratory and descriptive approach to research the role of Chinese investment under the China Pakistan Economic Corridor (CPEC) in Pakistan macro-economic performance, specifically Foreign Direct Investment (FDI) and Gross Domestic Product (GDP) between the years 2020 and 2025. The first is to clarify how sector-specific Chinese investments can have strengthened structural economic dependence which can be viewed through the theoretical prism of the

Dependency Theory. Unlike causal or predictive research, this question does not focus on testing hypotheses, but finding pattern and conceptualizing.

Research Design

The design of the research was an exploratory one, chosen on the basis of the need to explore the hidden, long-term dynamics of CPEC investment and its effects on economic dependence. This method is appropriate to complex development projects whereby structural effects change with time and where systemic effects can only be represented through a quantitative approach. The study presents descriptive analysis as a foreground, in which it is going to trace trends of Chinese FDI and GDP in the broader political and economic situation of external financing of Pakistan. Through the comparison of the initial and subsequent stages of CPEC implementation, the specific 2020-2025 period in particular, the study hopes to explain how investment patterns are an indication of asymmetries in economic sovereignty and structural dependency.

Nature of Data and Sources

The investigation is based solely on the official data that is publicly available and secondary. The use of primary methods like surveys, interviews or field observations was not used. Data were then chosen in terms of authenticity, consistency, and directness to the macro-economic indicators of Pakistan and pattern of Chinese investment. The main sources include Macrotrends.net on GDP data, the Board of Investment (BOI) on the specifics of FDI, country-by-country inflows into the industry and project-by-project data on energy, transport, and Special Economic Zones (SEZs). These sources facilitated incorporation of macro- economic trends and sector specific investment trends under CPEC.

Data Collection Procedure

The 2020-2025 data were compiled manually and checked to ensure their accuracy and arranged chronologically. In cases where annual data was not available the latest half-yearly data or other officially updated data was taken. The data gathering process constituted the process of reviewing published economic dashboards, deriving numerical data in office tables, cross-checking the and assembling data in structured form of FDI and GDP. Such a chronological list made it possible to determine trends and patterns that would be required in evaluation of structural economic dependence.

Method of Analysis

The analysis based on macro-economic trends is conducted using the descriptive, qualitative-interpretive methodology. There was no statistical software, econometric modelling. This analysis will focus on the annual observation of GDP and Chinese FDI trend, sector-by-sector distribution of investment, and structural implication interpretation according to the Dependency Theory. The focus is made on centers of concentration in energy and transport, analysis of the development of SEZs, and connecting such developments to possible imbalances in economic self-sufficiency. The conceptual use of Dependency Theory is aimed to evaluate how the Chinese investment organization can enhance the dependence of Pakistan on external funds, technology, and project management.

Theoretical Framework: Dependency Theory

The main analytical tool used in this study is the Dependency Theory. The framework holds that by asymmetric capital, technology, and expertise flows between periphery and core economies, the former can become structurally dependent. This paper uses the theory to find out whether CPEC investments and especially those that are concentrated in energy and transport have created structural dependence on China and thus limiting policy independence of Pakistan, diversification of the state industry, long term economic independence. Dependency Theory is used conceptually but not quantitatively and it provides us with information on the systemic implications of sectoral patterns of investment and macro-economic tendencies.

Scope and Limitations

The analysis is limited to the analysis of two macro-economic variables, FDI and GDP, in as

much as the Chinese investment under CPEC is concerned between 2020 and 2025. Other related variables like employment, the balance of trade and sustainability of debts are not examined. The use of three secondary sources of data restrict the scope of the insights, and no primary data of the policymakers or stakeholders restrict the contextual depth. Moreover, recent years can be supported by provisional or partial data. Nevertheless, the sources chosen are authoritative and sufficient in carrying out descriptive analysis of structural dependence.

Ethical Considerations

The study is not ethically hazardous because it will rely on secondary data which is publicly available. There were no human subjects and no information about any of the participants was confidential. All the sources used have been duly mentioned and this is in line with the academic integrity and transparency.

Data Analysis

This paper reviews the economic trends of Pakistan between the years 2020 and 2025, specifically Chinese investment in the China-Pakistan Economic Corridor (CPEC) considering China as the core and Pakistan as the periphery/semi-periphery using the Dependency Theory. The study evaluates the economic structure of Pakistan based on the Foreign Direct Investment (FDI) and GDP as important indicators to demonstrate how the country can be seen as asymmetric instead of autonomous development. Statistics on the Board of Investment (BOI), Macrotrends.net, and the official CPEC web site are examined both country-wide and sector-wise to find the trend of concentration, dependence and influence over the economic autonomy (Frank, 1967; Cardoso and Faletto, 1979).

Trends in Foreign Direct Investment (2020-2025)

China has been the leading institution of FDI in Pakistan since the year 2020 to 2025 with inflows beginning at US751.6 million in 2020-21 and holding steady at US633.6 million in FY2024-25. This consistent interaction signifies constant investment by China in the form of CPEC, especially in the energy and transport industries (BOI, 2024). Comparatively, the traditional partners like the United States and the United Kingdom investment recorded a volatility. In FY2021-22, U.S. inflows reached their highest point of US 249,6 million but dropped to US 59 million by FY2024-25 but U.K. has been fluctuating with a temporary recovery in FY2023-24. Other donors, Hong Kong, Switzerland and UAE contributed rather low and irregular amounts.

The high level of concentration of Chinese investment in major capital-intensive industries, as well as, made Pakistan even more structural by relying on one external actor. Although total FDI fluctuated between US$1.46 billion in 2022-23 and US$1.90 billion in 2023-24, the unchanged prevalence of Chinese capital became a trend of dependency-related growth that had certain consequences on Pakistan in the context of its economic self-sufficiency and long-term sustainability of GDP (Kanwal et al., 2019).

Following 2020, general FDI inflow of Western and Gulf economies slowed down, hampered by macroeconomic instability of Pakistan, currency pressures and unstable policy environment. Conversely, the Chinese inflows were resilient and usually constituted 30-40% of the overall annual FDI and almost half of the total inflows in FY2024-25 (BOI, 2024; Planning Commission of Pakistan, 2025).

In the light of Dependency Theory, such a concentration has led to a diminishing bargaining capacity of Pakistan as it has restricted diversification. This dependence on China to fund big projects places Pakistan in an asymmetric system of the economy where Beijing has already amassed a substantial amount of leverage, as has happened on the core-periphery relationships (Frank, 1967; Cardoso and Faletto, 1979).

Table 1: *Country-wise Net FDI Inflows to Pakistan (2020–2025, USD Million)*

Country	2020–21	2021–22	2022–23	2023–24	2024–25 (Jul–Jan)
China	751.6	531.6	432.2	568.2	633.6
UK	141.0	31.8	65.0	268.2	148.2
USA	166.4	249.6	89.3	137.3	59.0
Hong Kong	157.2	137.7	101.0	358.5	154.7
Switzerland	61.7	146.2	134.0	28.7	115.7
UAE	115.7	143.9	180.1	87.3	68.2
Others	247.4	226.6	198.0	627.5	50.7
Total	1,820.5	1,867.8	1,455.8	1,901.6	1,523.6

Source: Board of Investment (BOI), Pakistan

Sector-wise FDI Analysis

The recent sectoral data (as of 2020) demonstrates clearly that the FDI inflows have been in a heavy concentration in the power, oil and gas and financial services sector, with the power sector alone receiving the largest inflows each year ranging between US $911.7 million in 2020-21 and 551.2 million in FY2024-25 (Jul-Jan). Oil and gas continued with a moderate consistent investment, whereas the financial business enjoyed a high growth of US$414.4 million in FY2024-25. On the contrary, other industries performed poorly or fluctuated with regards to inflows, including textiles, construction, trade, transport, and IT & telecom, and even IT & telecom registered a negative FDI in 2023-24 and 2024-25.

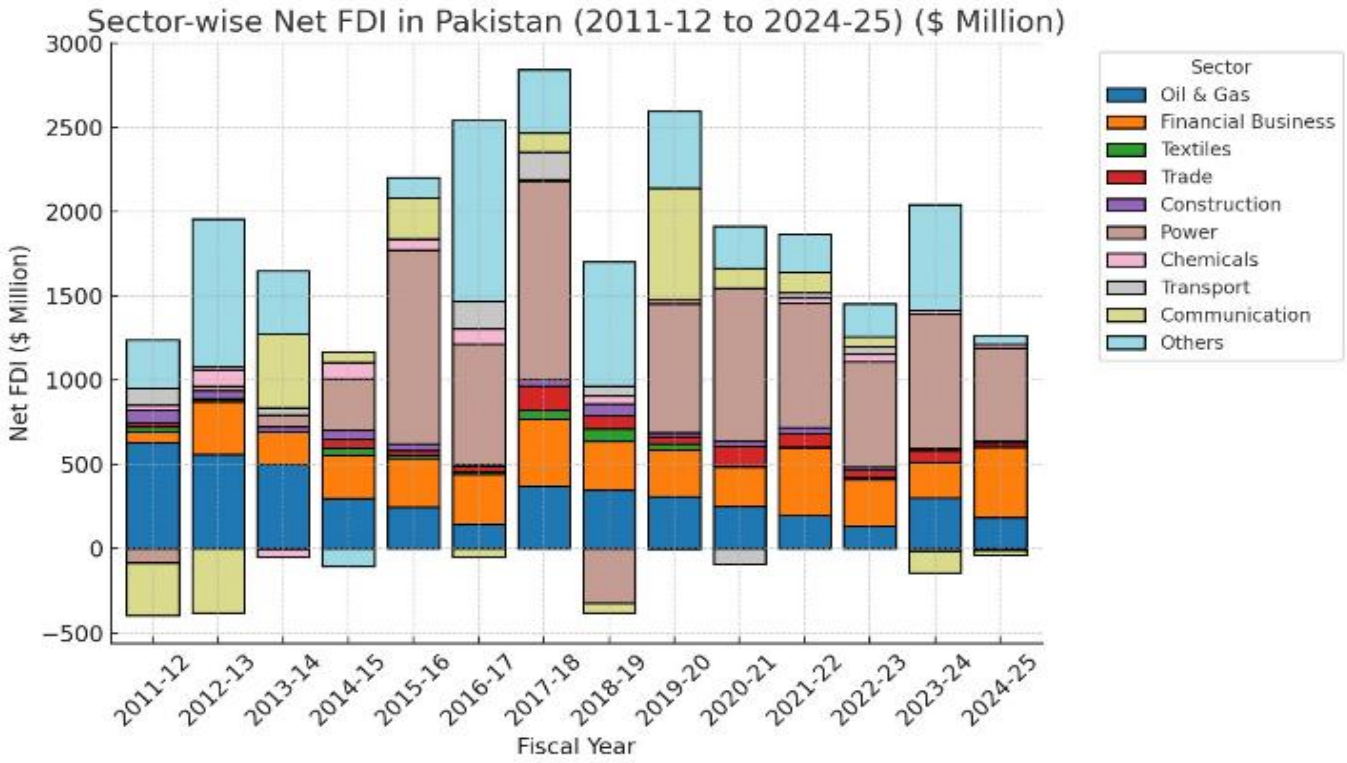
Table 2: *Sector-wise Net FDI in Pakistan (2020–2025, USD Million)*

Sector	2020–21	2021–22	2022–23	2023–24	2024–25 (Jul–Jan)
Power	911.7	737.6	622.6	799.9	551.2
Oil & Gas	251.0	195.3	135.1	303.6	187.0
Financial Business	236.4	405.3	275.1	208.0	414.4
Textiles	2.6	3.6	11.5	2.4	-5.1
Trade	115.9	79.9	45.3	68.0	26.6
Construction	31.1	36.5	19.0	15.2	13.2
Transport	-93.6	34.8	40.2	-12.8	-4.2
Communication (IT & Telecom)	117.1	118.9	59.3	-129.9	-26.5
Others	247.4	226.6	198.0	627.5	50.7
Total	1,820.5	1,867.8	1,455.8	1,901.6	1,523.6

Source: *Board of Investment (BOI), Pakistan*

This is a result of the concentration of investment in few capital-intensive sectors- reflecting the overall pattern in the longer run graph of 2011-2012 to 2024-2025- thus indicating a lack of diversification in Pakistan. The majority of inflows are directed to energy and infrastructure as opposed to manufacturing and technology-oriented industries. In the Dependency Theory sense of this statement, China-funded energy and infrastructure projects are in the lead and therefore, Pakistan gets the necessary capacity upgrading without having to be dependent on external forces in technology, high-value production, and project know-how. This strengthens structural dependence, in which domestic industries fail to convert into competitive producers and are stuck on the lower end of the value chain (Shad et al.,2024; Kanwal, Chong & Pitafi, 2019).

Figure 1: *Sector-wise Chinese FDI Allocation*



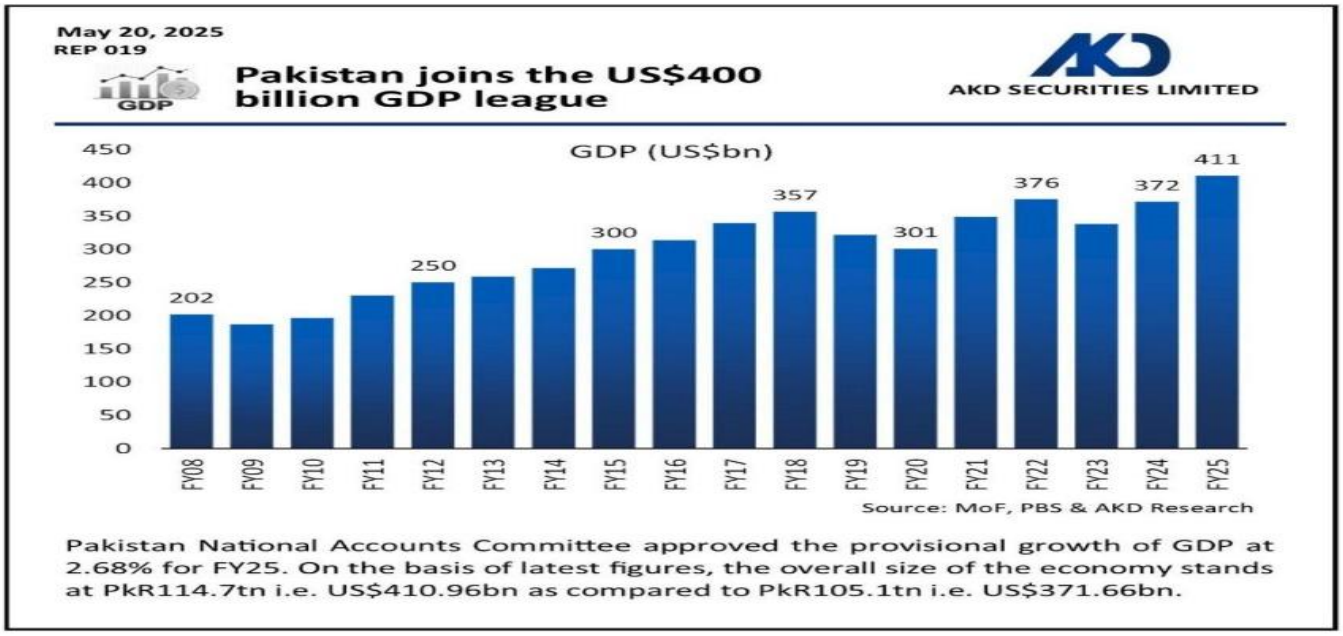
Source: *Board of Investment (BOI), Pakistan (Author's own computation)*

GDP Trends (2020-2025)

GDP projections of the country indicate that there will be a tendency towards fast rebounds and fast decelerations in the year 2020-2025. Even when the pandemic-induced contraction in 2020 was marked, growth soared to 5.8% in 2021 and 6.2% in 2022 due to the support of CPEC-linked energy and infrastructure expenditures (Rauf & Zeidan, 2025). However, the revival was not very strong: the growth slowed to -0.2 in 2023 and only in 2024-2025, the GDP per capita was more or less the same, which indicates structural weaknesses and inconsistency of policies. This means that investments remained concentrated in sectors that were capital intensive and had minimal effect on the welfare of the households. Through a dependency theory, this is a sign of dependent accumulation, which entails temporary jumps in production without self-sustaining growth (Malik and Afridi, 2020).

Some of its previous works were valuable, particularly its estimated contribution to the GDP of 2% and 3,240 MW of added capacity to the grid in 2015-2018 (CPEC Secretariat, 2019). However, since 2019, the growth has been decreasing sharply, and the provisional 2.68% indicates that the economy is still fragile (Pakistan Bureau of Statistics & Ministry of Finance, 2025).

Figure 3: *Trends of Pakistan GDP Growth (FY2020-FY2025)*



Source: *Web Desk. (2025, May 21)*

External Debt and Financial Dependence

China is still the largest bilateral creditor of Pakistan with an amount of about US28.8b or about 22 percent of the total Pakistan external debt. The World Bank International Debt Report 2024 claims that in 2023, the external debt of Pakistan totaled US130.85 billion (Pakistan Today, 2024). According to the fact that the external debt servicing took up 43 percent of export revenues and about 5 percent of the GNI of Pakistan the increasing level of repayment is reflected.

Pakistan owes Chinese CPEC power projects outstanding dues amounting to Rs 423 billion (approximately US$1.4 billion) by the FY 2024-25 (The Express Tribune, 2025). Under CPEC, Pakistan has since 2017 paid some 5.1 trillion Rupees to 18 Chinese power plants–payments that are heavily motivated by binding take-or-pay agreements (Pakistan Today, 2025).

In terms of a Dependency Theory, this debt-based dependency gives China structural power over Pakistan. The dynamic reflects archetypal core-periphery it entraps Pakistan in high-cost repayment obligations and restricted fiscal freedom, restricting, in effect, the Pakistan economy to economic freedom (Frank, 1967; Malik and Afridi, 2020).

Labor Dependence and Technology

The use of Chinese technology and skilled labor by CPEC in Pakistan is quite documented. According to the State Bank of Pakistan, Chinese nationals constituted 58 percent of the construction workforce and 37 percent of the staff of operation in major CPEC projects, which is mainly due to the fact that Pakistan does not have enough medium and high-skilled technical labour (State Bank of Pakistan, 2019). Studies conducted by the Institute of Strategic Studies Islamabad (ISSI) also discover the same result, with the lack of capacity-building efforts in this country maintaining Pakistan's reliance on Chinese engineers, machinery, and technical infrastructure, particularly energy and infrastructure (ISSI, 2024). The scholarly literature also demonstrates that even high-skilled roles at CPEC projects remain dominated by Chinese experts because of the absence of the engineering and vocation training base in Pakistan (Rauf, 2019).

Dependency Theory proposes that this technological dependency creates a core-periphery dynamic whereby China continues to hold on to the high-level expertise and technology, whereas Pakistan will be left as a consumer instead of producer of high-value technology. This

model limits the ability of Pakistan to develop independently in industrial and technological spheres.

These patterns verify the key assumption of the Dependency Theory namely that Pakistan economic system is structurally dependent, where China is the core player dictating the direction of investment flows as well as development agenda (Frank, 1967; Cardoso and Faletto, 1979).

Discussion

Economic Dependence and Chinese FDI Trends (2020-2025).

The primary reason for this is that it might overlook certain key areas that could greatly enhance the study. This is mainly because it may fail to capture some of the important areas that could add a lot to the study. The results indicate that the Chinese FDI continued to be the largest and most consistent inflow received in Pakistan in the period between 2020 to 2025, whereas the contributions of other significant economies became significantly lower. This tendency proves to be a growing structural dependence on China which proves the main point of the Dependency Theory according to which the peripheries are bound to the capital flows of one central actor (Frank, 1967; Cardoso and Faletto, 1979). The continued Chinese FDI focus (almost half of all inflows by FY2024-25) can be attributed to the argument of Kanwal et al., (2019), who contend that the economic bargaining power of Pakistan is low because investment origin is not diversified. Such findings contradict previous positive sources that highlight the potential of CPEC to develop (Bacha et al., 2023; Khan et al., 2023). Although the studies of 2020-2025 reveal an inverse trend compared to the past: the period of Chinese investment did not experience general growth, but further increasing the dependence of Pakistan on this neighbor country reduced other FDI partners because of macroeconomic instability and uncertainty about policies. This finding is quite consistent with the recent critical literature emphasizing that the structural weaknesses of Pakistan and the problem of its governance support its dependence on the Chinese capital (Anwar, 2020; Ahmad et al., 2022).

The implications are great. The fixed Chinese FDI offered Pakistan much needed financial stability through the crisis conditions though at a price of loss of autonomy. The fact that Pakistan has a weak bargaining power to negotiate terms of investments or diversification of partners, puts the Pak government at an unequal economic relationship (Bacha et al., 2023). The results thus highlight the fact that CPEC has now turned into a dependency-based investment vehicle and is no longer a bilateral developmental platform, but rather the determinant in the long-term economic direction of Pakistan.

In this way, RQ1 is answered positively. Pakistan became highly dependent on China because of the FDI activities that occurred in the country in 2020-2025.

The Sector-Wise Investment and Structural Dependency

As disaggregated by the sector, FDI inflows in Pakistan are still by far skewed towards the capital-intensive industries- particularly the power sector, then oil and gas, as well as financial services. This trend is in line with the argument that CPEC strengthened the dependency of the sector through infrastructure and energy as opposed to manufacturing, technology, or export-led industries. As Shad et al., (2024) noted, this kind of concentration curtails domestic technological learning and does not allow the country to be upgraded to more productive sectors.

These results are in line with the critical literature that criticizes the limited scope of CPEC investments. Experts like Hussain, (2021) and Shaikh et al. (2016) warn against concentration of energy to imply sustainable industrial capacity. The results of the study prove these fears: strong capital inflows did not result in strong or negative trends in the sectors such as the textile, IT and telecom, construction, and transport. Such deviation off the diversified investment shows and indicates minimal structural change and perpetuation of reliance on Chinese-financed infrastructure projects.

The data and the subsequent constraints to the

possibility of an industrial upgrading are the slow pace of Special Economic Zones (SEZs) development, as Naeem (2020) and Rauf and Zeidan (2025) note. Pakistan would be left in the same rut of energy-driven growth without SEZ-based manufacturing growth that would mean the country is able to become a competitive producer.

The implication is obvious: concentration in the sector does not allow Pakistan to have economic freedom, with the national industries unable to obtain technological autonomy or create high-value manufacturing. Although energy infrastructure plays an important role, its primacy guarantees that the economic system of Pakistan remains a reflection of the core-periphery relationships, with the local economy being a consumer of technology produced by the outside world, as opposed to being one that develops the technology.

Thus, the second research question is answered: the sectoral allocation of the CPEC investment contributed to strengthening the structural dependency of Pakistan and not its decline.

GDP Trends and Dependency Driven Growth (2020-2025)

GDP trend 2020-2025 indicates that there is a volatile and unsustainable growth. Even though in 2021 and 2022, there were robust rebounds in Pakistan, the increases were brief, and the country is in contraction in 2023 and is recording slight improvement in 2024-25. This path is aligned to the argument put forward by Arsalan (2025) that dependency-based growth would result in short-term growth without solving structural limitations.

The statistics also show that although the Chinese had continued to invest in the economy, the GDP per capita had not increased, implying that the FDI inflow in capital-intensive industries failed to reflect on to the general economic welfare. The result does not coincide with the previous literature in which the CPEC investments were associated with long-term growth and structural development (Jaleel et al., 2019; Small, 2015). Rather, it conforms to more recent research on governance flaws, political instability, and debt loads that undermine CPEC economic boons (Samad, 2025).

It is worrying in terms of economic sovereignty. The spurt in growth of Pakistan seems to be closely linked to Chinese financed infrastructure expenditure which is a kind of dependent accumulation. When the injections slow or macroeconomic conditions worsen, growth befalls in a short period. These trends indicate that Pakistan has remained unchanged towards independent or self-driven economic growth. Instead, its GDP performance is becoming more influenced by the accessibility, conditions and sustainability of Chinese capital.

Therefore, RQ3 is answered: GDP trends are not associated with sustainable development but rather with externally-driven, unsustainable, and dependency-based growth.

As the reinforcing mechanisms, there are Debt, Technology, and Labor Dependence. Though this is not explicitly a research question, the discussion of external debt, dependency on technology and labor patterns shows significant contextual support to the dependency argument of the entire study. The emergence of the situation where Pakistan owes China more than US 28 billion is typical of dependency processes, where the central actor gets power by means of creditor power. CPEC-related energy repayment in the form of binding take-or-pay and burdens the fiscal flexibility, which is in tandem with the global trends in other BRI economies (Arsalan, 2025; Ali et al., 2023; Ahmad et al., 2025).

Likewise, the aspect of Pakistan depending on Chinese engineers, equipment, and technical infrastructure is the concern of a lack of domestic development of capabilities, which was reflected in ISSI (2024) and State Bank of Pakistan. This can be incurred in line with the statement of the Dependency Theory that peripheral economies continue to be consumers of advanced technologies, and thus, it is not easy for them to make independent technological advancements.

The reinforcing mechanisms help to sustain the overall conclusion of the study: Pakistan is not only financially but also structurally dependent,

which is evidenced in its technological infrastructure, skills of its labor force, and the developmental trends in the industry.

In all the indicators, FDI concentration, sectoral pattern, volatility of GDP, debt exposure and technological dependence, the results are narrowing down to show that CPEC has moved Pakistan economy towards more structural dependence on China. This result is well conformed to the Dependency Theory and to modern critical theory. Although CPEC provided much needed infrastructure and alleviated short-term crises, it failed to bring about diversified, autonomous and sustainable economic growth within the period between 2020 and 2025.

The findings also fill the voids in the current literature by providing a recent, post-2020 analysis, a period of macroeconomic uncertainty, diminished Western investment, and increased dependency on strategic relations with China. This paper thus builds on previous criticisms by demonstrating how dependency was exacerbated during one time when the vulnerabilities of Pakistan were the greatest.

Recommendations

Foreign Diversification of Investment

Since Pakistan is highly dependent on Chinese capital, it should be diversified to ensure that structural dependency outlined in the findings and confirmed in the existing literature (Kanwal et al., 2019; Anwar, 2020). Pakistan needs to intensify its relations with other investment partners such as the EU, GCC and ASEAN so as to provide more investment options and dependence on one other large power.

Boosting SEZ-Based Industrialization

The gradual development of Special Economic Zones (SEZs) has hindered the capacity of Pakistan to become infrastructure-based to industry-based growth, an issue that various authors have identified in CPEC in terms of its industrial aspect (Naeem et al., 2020; Rauf and Zeidan, 2025). Predominantly, enhancing coordination, transparent processes as well as incentives to export-oriented industries will accelerate the development of SEZs to establish the domestic productive capacity and reduce reliance on foreign expertise.

Increase in Science and Proficient Workforce

In line with the reports that Chinese workers and technology prevail in CPEC projects (State Bank of Pakistan, 2019; ISSI, 2024), Pakistan has to build its technical and engineering foundation. Long-term technological dependence on China can be minimized by expanding vocational training, modernizing engineering courses, and implementing provisions on technology transfer in future agreements (Shad et al., 2024).

Better Debt Management and Renewal of Costly Contracts

Increased repayments, particularly in the energy industry have limited fiscal independence of Pakistan (Malik & Afridi, 2020). Pakistan needs to increase its debt management capabilities; concessional financing should be given priority and high-cost power purchase agreement should be renegotiated. Clear and good judgmental approaches to debts will aid in avoiding the entrenchment relationships as per predictions of the Dependency Theory (Frank, 1967).

Reforms of Governance and Strengthening of Institutions

Ineffective governance and the choice of projects that are led by the elite are found to be significant constraints to CPEC (Samad, 2025; Khizar and Ahmad, 2022). Enhanced institutional control, reduced political influence and enhanced transparency in the foreign-funded projects will strengthen national control over the success of development and reduce the leverage on the side of the outside.

Rebalancing CPEC to High-value sector

Since Chinese investment is still being centralized in capital-intensive energy and infrastructure (BOI, 2024; Hussain, 2021), future CPEC phases should be redirected to renewable energy, advanced manufacturing, IT, and digital infrastructures by Pakistan. Capability-building and discrimination of asymmetric technological reliance may be encouraged by expanding domestic involvement and developing

collaborative research, as well as building up the domestic base.

Enhancing Competitiveness in Exports

Lack of diversification in the export and inadequate industrial upgrading in Pakistan limit the possibility to be able to sustain growth and the economic trends toward dependency (Shaikh et al., 2016; Nadeem et al., 2025). Competitiveness in exports via better logistic system, sector upgrading, and diversification of markets will result in the generation of stable foreign exchange earnings, and minimize the dependence on external finance to stabilize the economy.

Conclusion

The discussion of CPEC in 2020-2025 shows that, although the initiative remained a source of important infrastructure and stable foreign investment to Pakistan, it was also causing the deepening of structural dependence on China. Chinese FDI continued to dominate and be the most reliable source of external capital but the investment by the Western and Gulf partners dropped by a significant margin, forming an asymmetric economic relationship. The concentration of power and infrastructure sector, lack of diversification of industries, the slow pace of development of SEZ and the continuous dependence on Chinese technology and skilled workforce hindered the ability of Pakistan to develop independent productive forces. The GDP trends also indicated volatility and externality-based growth as opposed to structural transformation. These trends are quite consistent with Dependency Theory that suggests that the development pattern in Pakistan through CPEC has only strengthened the core-periphery relations instead of providing the country with an opportunity to become economically self-reliant in the long run. Generally, the results indicate that Pakistan will continue to be largely dependent on outside influences instead of developing independently, unless it continues to diversify, build capacity, and provide more effective institutional changes.

Limitations and Future Directions

The research is limited in few ways. It based itself on a secondary source of data covering 2020-2025 which primarily concentrated on FDI and GDP, and applied the Dependency Theory without considering other viewpoints. The areas of employment, trade and disparities in the region were not entirely examined. Further studies may incorporate primary stakeholder data, focus more on the economic and social indicators, investigate the provincial effects, and implement alternative theories to understand the long-term results of CPEC after 2025.

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