

# Firms' Leverage: Pre and Post CPEC Announcement Comparison

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## Abstract

*In the last few years, Economic corridors have been the primary concern of the Chinese government, whereby the government of China decided to commence a mega project by the name of One Belt One Road (OBOR) in the year 2013. This grand scheme consisted of several projects, including a project named China Pakistan economic corridor (CPEC), which was viewed as a turning point not only for the economy of Pakistan but for the regions nearby. This research study primarily focuses on the CPEC instead of the whole OBOR project, where the study aims to compare the firms' leverage before CPEC announcement and after CPEC announcement and, more particularly, to see whether CPEC has any impact on firm's leverage or not, ratios of leverage for firms are the same? Or has been increased to avail benefits from CPEC. Sectors chosen for the study are Automobile, Cement and Steel. The study used secondary data of eight years, where four years were taken before the CPEC announcement and four years were taken after the CPEC announcement of fifteen listed companies; the criteria for choosing the top five companies from these three sectors for analysis was based on market capitalisation. Furthermore, data were collected from the annual statements of these companies. The study used SPSS 23 for the analysis and the results of the study state that CPEC impacts firms' leverage for the Cement and Automobile sector. In contrast, the results for the Steel sector are non-significant means the leverage size of the steel sector is the same before the CPEC announcement and after the CPEC announcement.*

**Keywords:** *Firms leverage, CPEC, Automobile industry, Steel industry. Cement industry.*

**JEL Classification:** *C12, L61, L62*

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## INTRODUCTION

If we look back to the recent past, then According to the Economic Survey of Pakistan for the year 2014-15, trading between Pakistan and China has extended to \$16 billion. China's exports to Pakistan expanded by 10% amid the five years from 2009-10 to 2014-15. Subsequently, overall exports between China and Pakistan have slowly increased from 4 % in 2009-to 10 to 9 % from 2014-to 15. The latest turning point in this two-sided relationship is signing a Memorandum of Understanding on developing the China-Pakistan Economic Corridor (CPEC). China and Pakistan in the year 2013 declared their plans to build an economic corridor which will link China's region Kashgar in Xinjiang Uygur with the south-western port, namely Gwadar of Pakistan. Because of CPEC, various opportunities, especially economic opportunities, will knock on the door of Pakistan and turn out beneficial for china as well, as it connects the European and Asian markets to china.

For CPEC, it is assumed that the project will be a game-changer for Pakistan and the entire region. The consequences of CPEC for the region will come out in the shape of improved trade, better economy, availability of oil, resolved energy crises, and improved infrastructure (Zafar & Ahmad, 2017)

The CPEC is a long road route of approximately 3,218-kilometers that needs to be worked over for the next somewhat many years encompassing roads, railroads, pipelines and highways. The real assessed budget of the project is about US\$75 billion, from a total budget of 75billion, of which US\$45 billion or more will promise that the corridor will be functional by 2020. The rest of the financing will be used for power creation, development, and growth of local infrastructure.

The much-promoted US\$45 billion China-Pakistan Economic Corridor will go through the delightful Gilgit Baltistan territory in the north, which will associate Kashgar in China's western area Xinjiang to the rest of the world through the Chinese-worked Gwadar port in the nation's south. This mammoth venture is relied upon to take the two-sided connection between Pakistan and China higher than ever; it's a start of an adventure which wants to change the economy and support to generate Pakistan's energy deficit.

This Chinese supported multi-dollar infrastructure venture goes for setting up a system of roadways, railroads, electrical electricity networks, oil pipelines, fibre optic links and exceptional monetary sectors/zones, connecting the Chinese exchanging centre point of Kashgar in Xinjiang territory with the Pakistani port city of Gwadar in the Balochistan region, which is situated close to the vital Straits of Hormuz. (Znews 2016, September 22).

The CPEC will significantly influence Pakistan's economy; the primary sectors contributing to the plan are Cement, steel, and automobile. These three sectors collectively make up the project's backbone because almost all of the projects will be based on the materials provided by these sectors. Let's look at the financial leverage of these sectors. There must be a significant impact on the financial leverage of these sectors before the CPEC announcement and after the CPEC announcement. If we look at Financial leverage, it can be described as the degree to which a commerce industry or sponsor is utilising the obtained cash. Financial leverage measures how much a company utilises equity and debt to fund its assets. As debt inclines, financial leverage declines.

Likewise, it can be characterised as the proportion of liabilities to resources utilised as a foundation for deciding an organisation's capital structure. This portion, known as financial leverage, is a pointer to financial danger and the capacity to reimburse debt (ADENUGBA, IGE, & KESINRO, 2016). Let's look at how firm leverage can impact its performance. We can analyse how crucial this is for firm profitability and how the CPEC has impacted the company's leverage, which must have been added to its profitability. Financial leverage has a huge affirmative association with the execution of test organisations. Companies with greater debt levels are more beneficial or into money-making (Cheng & Tzeng, 2011). From the date of announcement till today, there has been a considerable volume of work done on the plans of CPEC. The sectors that are highly involved in it are the Cement sector, steel and automobile sector. This study will compare the firm's leverage before Cthe PEC announcement and after the CPEC announcement.

### ***Objective of the study***

This research study looks at the firm's leverage before the CPEC announcement and after the CPEC announcement. More particularly, the study will compare the firm's leverage before and after the CPEC announcement to see whether there is any change in firms' leverage or not.

### ***Scope of the study***

The study is comparative, which will analyse the firm's leverage before and after the CPEC announcement, because of which we will be able to see the impact of CPEC on firm leverage.

### ***Problem statement***

A comparative study to examine whether firms' leverage selected industries before and after the declaration of CPEC are alike or if there is any difference. Furthermore, no particular study has been conducted to compare firms' leverage before and after the CPEC announcement.

### ***Research Questions***

- Q1: Is there any change in the average firm's leverage in the cement sector for pre and post CPEC announcement tenure?
- Q 2: Is there any change in the average firm's leverage in the automobile sector for pre and post CPEC announcement tenure?
- Q 3: Is there any change in the average firm's leverage in the steel sector for pre and post CPEC announcement tenure?

### ***Hypotheses***

**H1:** There is no difference between the average firm's leverage in the cement sector for pre and post CPEC announcement tenure.

**H2:** There is no difference between the average firm's leverage in the automobile sector for pre and post CPEC announcement tenure.

**H3:** There is no difference between the average firm's leverage in the steel sector for pre and post CPEC announcement tenure.

## LITERATURE REVIEW

### *Financial Leverage*

Generally, debt utilisation in a company's capital structure is called financial leverage. The capital structure of any organisation indicates how much of its assets are backed through a mix of equity, financial debt or mixed securities. A company's capital structure is the point of creating its burdens or liabilities. For instance, a company that offers N20 billion in value and N80 billion in debt is said to be 20% value financed. In this instance, the company's proportion of obligation should aggregate financing of 80% will be alluded to concerning the illustration of those companies' leverage. Therefore, a company's capital structure will interfere with the extent of financial debt to equity. (Ross, Westerfield, & Jordan, 2010)

Thus, the higher the company's financial debt, the more massive its degree of financial leverage is (Roet al. al 1998). Financial debt works as a pedal in the utilising process. It could extraordinarily amplify profits and losses. Therefore, financial leverage builds the possibility of reim of uses shareholders, but it also expands the possibility of deficit and business breakdowns. (Enekwe, Agu, & Eziedo, 2014) says that the development in capital structure whiggered by an incline or decline in the proportion of financial debt to equity is stated financial leverage. While a company incorporates debt like a ratio of financial directed to fund its project, financial leverage will be carried into existence. Financial leverage may be an exercise of the firm to possess a portion of the firm's assets with steady interest capital with the chance of inclining final results of the general stakeholders.

Adenugba, Ige, and Kand (2016) researched uncovered a critical association between financial leverage and companies' worth. Furthermore, financial leverage has a critical impact on firms' worth. That research f concludes that financial leverage may be a preferred foundation of funding rather than equity to organisations when a need to fund long-term ventures. Discoveries demonstrate that financial leverage has a huge affirmative association with the functioning of sample firms. In other words, companies with greater debt levels need aid and a more significant amount of moneymaking. Some studies show a negative relationship between the firm's financial leverage and performance; according to their finding, high leverage leads to lower profitability (N. Ahmad, Salman, & Shamsi, 2015).

Rehman's outcomes of the research indicate the mixed outcomes. The outcomes indicate the affirmative relationships between debt-equity proportion with profit on assets and growing sales, a negative association for debt-equity proportion with procuring for every share, margin of net profit and profit on equity.

BAI & BUVANESVARAN (2015) research demonstrated that the financial leverage has a significant affirmative association with the performance of the more excellent companies competing for a pet with the little companies.

### *China Pakistan Economic Corridor (CPEC)*

Can CPEC initiate with OBOR? Which is termed as (One Belt One Road) since it comes to transportation and connected groundwork or infrastructure. CPEC is OBOR's initiative. Whole ventures need of id about 54 billion USD, but inclusive worth is over \$900bn and more than 20

nations are sponsors of China Pakistan Economic Corridor. OBOR include several corridors, including below.

The first one is China and Pakistan (China Pakistan Economic Corridor (CPEC,)) and the second one is China Myanmar Thailand Corridor. Nowadays, it is assumed that CPEC will be a game-changer for Pakistan and that locale. In general, CPEC comprises for below entire projects: Gwadar Port (Estimated Cost US \$ 800 million), Energy Projects (24) (Estimated Cost US \$ 34.4 billion), Thermal and Renewable infrastructure (4 projects) (Estimated Cost US \$9.8 billion), 30 Special Economic Zones (SEZ). (Singh & Magray, 2016).

The overall assessed period for the conclusion of CPEC is 15 years. Experts have forecast that CPEC will support and enhance Pakistan's GDP by 2%. Furthermore, the GDP development rate by 5% (IMF). Due to higher exports, equalisation of instalments will be gradually increased. FDI will build because imports for hefty machinery will close an estimation of 10% or additional (Hashmeyer, 2016; Mahmood & Nawaz, 2017).

Butt and Abid Butt's (2015) Research outcomes indicate that CPEC is a very comprehensive developmental deal which will favour Pakistan in terms of economic and strategic growth and bring prosperity to Asia's sub-region. The study also reveals that some countries significantly criticise the projects as they thought this would bring difficulty in their business and criticised political level.

Miller's research says that any country's geography describes its importance for its world affairs, and there is no doubt that Pakistan is located at a critical juncture because of its Gwadar port; Pakistan is going to see a significant shift in the economy if it is CPEC project came to completion on the desired time. Because of this project, the fate of Pakistan's primary sector will change, but it will also link China with Central Asia, the Middle East and South Asia.

Ranjan, (2015) study shows the importance of CPEC on Pakistan's economy. It discusses how India is seeing the CPEC as a geopolitical issue rather than seeing it as a geo-economic development; the research is also giving the details through what phases this project will take place, and if it is appropriately handled, it will turn out to be a game-changer for Pakistan as well as for the other countries in the region.

Haq & Farooq (2016) analyse the impact of CPEC on all provinces of Pakistan for improving the short term in particular dimensions like health, housing and education collectively making up the social welfare. According to the results of this study, CPEC will show a growth of around 5.1% in social welfare by the period 2020. Further, the study reveals that the growth potential will be there in each province, so the results are Sindh 6.31 per cent, Baluchistan 6.4 per cent, KP 5 per cent, Panjab 3.5 per cent. Its three scopes of social welfare can also portray CPEC: education 3.85%, health 4.74%, and housing 8.6%. The study also indicates results of CPEC, which develops in expressions of living standards.

Ahmed & Mustafa (2014) conducted a study which is based on the fact that because of the CPEC, there will be development in the infrastructure of energy and because of this, the agriculture sector will uplift; the study suggests that it is vital that governments should support at all levels to this kind of projects and support these plans through development of institutions and governing mechanism as best of economic benefits can be gained.

Ahmed, Arshad, Mahmood and Akhtar (2016) also acknowledged the importance of CPEC on the economic growth of Pakistan and the rest of the region. Still, they are raising the negligence of human resource development in the whole scenario.

Ramay (2016) study discusses the CPEC's long-standing infrastructural development as a breakthrough of the One Belt One Road (OBOR), as it is a significant global ingenuity by the government of China, which is programmed to be completed by the year 2030. The funding of the CPEC is being done jointly. Islamabad and Beijing have agreed to invest via Chinese investments consuming investment loans mainly from Chinese monetary organisations; nonetheless, Pakistan is capitalising on around 15 billion dollars on the grand developmental project. According to the research, the project has been hailed by Eurasia, which includes Russia, Central Asia and Iran. Several countries even oppose the project, but if the project goes on completion by its estimated time, there will be significant impacts on the entire region.

Ahmad & Mi (2017) conducted a study focusing on the CPEC as a long-term project that will be completed in the year 2030 by the collaboration of Beijing and Islamabad, who decided to finance the project over Chinese investments by employing investment finances primarily by financial institutions of China. The Pakistani investment will be approximately 15 billion dollars; this project will be an excellent opportunity for Pakistan and the entire region; along with benefits, there will be some challenges that the project will face ranging from internal politics and quality labour forces supply etc.

## **IMPACT OF CPEC**

### ***Impact of CPEC on the Sector of Cement***

Due to the CPEC declaration, bunches of development work have been begun, which provided a blast to the major business sectors of Pakistan, including the cement sector. Specialists/Experts have anticipated that China, Pakistan Economic Corridor will raise the demand for concrete by 1.5 to 3.0 million tons each year. As universally, the principal item price of Coal in concrete manufacturing has been diminished by \$50 per ton. This decline in power charges depicts a positive picture of the increase in the concrete industry. In the firstly half of 2016the, the concrete industry a saw 15-16% development of around two million. For the second half of 2016, specialists have anticipated that concrete manufacturing will develop by 15 to 15 s, 4 million tons. A, according to the CEO of Lucky Cement, Mr Muhammad AU Tabba. "CPEC isn't a three yet a ten-year venture and, it's not simply lane availability, there are Special Economic Zones, new businesses, moving of enterprises from China to Pakistan according to capita level increases, individuals would request all the more residential houses, more foundations, new schools, universities, hospitals, because the purchasing power will increase which prompts higher request of concrete". He also said that his organisation would plane its concrete manufacturing from 7.5 million tons to 15 million tons by 2020. Lucky Cement has invested \$ 200 million in its new plant to meet its future requirements (Mahmood & Ahmad, 2017)

### ***Impact of CPEC on the Automobile Sector***

As the present manufacturing of automobile industry of Pakistan is around 225,000 units every year, after CPEC declaration, it is evaluated to develop by 500,000 units inside next

five years. PAAPAM administrator gave the case of motorbike industry which saw blasts of twenty-two times development from 87,000 units to 21,000,000 units. Because of low labour, Chinese Automobile organisations can begin manufacturing at the native level in Pakistan. The legislature of Pakistan has attempted to offer enormous tax reductions to Chinese organisations to work in Gwadar and will get tax exclusions for up to 40 years. Chinese automobile goliath, The Foton Group, will put resources into the automobile manufacturing sector of Pakistan. An agent from Foton gathered with Finance Minister and demonstrated their distinct fascination with contributing Pakistani automobile sector. Another Chinese accomplice to German's BMW Brilliance China Auto said that Chinese automobile organisations intend to put resources into Pakistan and outline arrangements to introduce manufacturing plants there. It will profit from investigating more as it will give more straightforward access to the native sector than working it from China (N. Ahmad & Ansari, 2017)

### ***Impact of CPEC on Steel Sector***

Zafar and Ahmad (2017) reveal that because of the CPEC, there is a tremendous impact on the steel sector. As per the general estimation of the research, steel product demand will go high as to six million tons from four million tons; research also identifies that a total of 475 steel units are working in the company, but after CPEC, they are unable to meet the demand, and there is need of more large scale units that can meet the demands of steel requirement to the overall demand in the country.

## **METHODOLOGY**

### ***Data***

The nature of the data is secondary for this research study. The study will use the panel data for eight years ranging from 2009 to 2017; for three industries, the Automobile, Cement, and Steel are the more significant contributors to the CPEC project; the required data will be collected through the financial reports of the selected firms. The top five firms were selected based on their market capitalisation.

### ***Variables***

Since the study is a comparative study, the independent variables are firm leverage and CPEC.

### ***Statistical technique***

To test this comparison study, the panel data was run on SPSS version 23 by applying the paired sample T-test to compare firms' leverage in different sectors of the economy.

## **RESULTS AND DISCUSSION**

### ***Descriptive Analysis***

**Table 1: Paired Samples Statistics**

Firm			Mean	N	Std. Deviation	Std. Error Mean
Cement	Pair 1	pre	.4723	20	.20631	.04613
		post	.3312	20	.15724	.03516
Automobile	Pair 1	pre	.4407	20	.21725	.04858
		post	.5725	20	.38982	.08717
Steel	Pair 1	pre	2.2633	20	7.62582	1.70519
		post	.5245	20	.16557	.03702

Paired sample statistics have been applied to three individual samples of 20 observations to compare firms' leverage concerning Pre and Post CPEC announcements. This analysis of firms' leverage in different sectors has been done to see whether there is a statistically significant mean difference in three pairs of firms' leverage for Pre and post CPEC announcements. In pair 1 for the cement sector, Pre CPEC firm's leverage shows growth at  $(0.4723 \pm 0.20631)$ ; however, post CPEC firm leverage shows the growth rate of  $(0.3312 \pm 0.15724)$ . By concluding this, we know that growth in firms' leverage for Pre CPEC is more than compared post-CPEC. In the second pair for the Automobile sector, Pre CPEC firm's leverage shows growth at  $(0.4407 \pm 0.21725)$ ; however, post CPEC firm's leverage shows the growth rate of  $(0.5725 \pm 0.38982)$ . By concluding this, we know that growth in firms' leverage for the automobile sector in post-CPEC is more than in pre-CPEC. In the third pair for the steel sector Pre, CPEC firm's leverage shows growth at  $(2.2633 \pm 7.62582)$ ; however, post CPEC firm leverage shows the growth rate of  $(0.5245 \pm 0.16557)$ . By concluding this, we know that growth in firms' leverage for the steel sector in pre-CPEC is more than as compared post-CPEC.

### Paired Sample Correlations

**Table 2: Paired Samples Correlations**

Firm			N	Correlation	Sig.
Cement	Pair 1	pre & post	20	.540	.014
Automobile	Pair 1	pre & post	20	.493	.027
Steel	Pair 1	pre & post	20	.200	.398

Results of the correlation state that there is 54% interdependence in the firm's leverage before and after the CPEC announcement in the Cement sector of Pakistan. Furthermore, the correlation is significant as their P-value is less than 1. Correlation results for the Automobile sector show a positive interdependence of 49%. They are also significantly correlated, whereas Firms' leverage before and after the CPEC announcement for the Steel industry shows only the interdependence of 20%. They are not significantly correlated as their P-value is greater than 1.

### Paired Sample T-Test

**Table 3: Paired Samples Test**

Firm	Paired Differences			95% Confidence Interval of the Difference		t	df	Sig. 2-tailed
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper			



Cement	Pair 1	pre - post	.14111	.17952	.04014	.05709	.22512	3.515	19	.002
Automobile	Pair 1	Pre-post	-.1317	.34005	.07604	-.29087	.02743	-1.732	19	.099
Steel	Pair 1	Pre-post	1.7387	7.59446	1.69817	-1.81556	5.29308	1.024	19	.319

Results of Paired sample test in table 3 conclude that there is a statistically significant mean difference of 0.14111 in pair 1 (Cement sector) and significant mean difference of -0.13172 in the second pair (Automobile sector) and a significant mean difference of 1.73876 in the second, third pair of (steel sector). Paired sample T-test results show that average leverage of the cement sector is significantly higher with the value of sig as 0.002 with (CI as 95%, 0.05709 to 0.22512),  $t(19)=3.515$  in Pre CPEC announcement tenure compared with Post CPEC announcement tenure, While Automobile sectors average leverage is also significant with the value of sig as 0.099 with (CI as 95%, -0.29087 to 0.2743),  $t(19)=-1.732$  in Post CPEC announcement tenure compared with Pre CPEC announcement tenure. Whereas steel sectors' average leverage is non-significant with the value of sig as 0.319 with (CI as 95%, -1.81556 to 5.29308),  $t(19)=1.024$ , by concluding this result, we can say that no difference can be seen in firms average leverage for the steel industry before CPEC announcement and after CPEC announcement.

**Discussion**

The findings of the study reveal that there is a significant mean difference in the average leverage of the cement industry before the announcement of CPEC as compared to after the CPEC announcement since this can be seen that the results are significantly high, as there is a tremendous impact on CPEC can be seen on Cement sector, As the firm's leverage before the announcement of CPEC was high. It reduced after the announcement of CPEC; this can be observed that because of CPEC, firms are gaining more profitability because of which they are financing the future coming projects with their equity instead of using external funds to finance their future projects, as declared by the lucky cement, that they are going to invest \$200 million for their new plant of cement just to overcome the future needs of cement (Pakistan China news., 2016).

Furthermore, the average leverage for an automobile sector is high post CPEC compared to pre CPEC announcement since the automobile sector will enjoy the perks of CPEC by increasing its leverage ratio. On the other hand, no significant difference can be observed in the steel sector. It is also an important industry that has its importance in this grand project, as proved by literature; further studies can find the cause and factors of this insignificance.

**Hypotheses Assessment Summary**

S.No	Hypotheses	Sig.	Decision
1	There is no difference between the average firm's leverage in the cement sector for pre and post CPEC announcement tenure.	0.02	Rejected
2	There is no difference between the average firm's leverage in the automobile sector for pre and post CPEC announcement tenure.	0.099	Rejected
3	There is no difference between the average firm's leverage in the steel sector for pre and post CPEC announcement tenure.	0.319	Retained

## CONCLUSION, LIMITATIONS AND RECOMMENDATION

### **Conclusion**

This research study analysed the firm's leverage before the CPEC announcement and after the CPEC announcement. This analysis was done on the firm's leverage in different sectors of Pakistan to see the impact of CPEC on the leverage. The study results showed that CPEC impacts firms' leverage for the Cement and automobile sector, but no impact can be seen on the steel industry. Since it is observed that firms used leverage to gain the benefits from the CPEC project, the only sector where the impact is insignificant is Steel. Future research can also determine what causes make this impact significant for the steel sector and Significant for other sectors to have a clear vision of the concept.

### **Limitations**

No research study is free from limitations; the same goes for this study. On one side, where there are some practical and theoretical implications of this research study, on the other hand, there are some limitations as well. First, only three sectors' leverage has been taken for comparison, while future research can cover the other sectors to see the big and clear picture. The second limitation faced was the non-availability of literature on CPEC's impact on firms' leverage.

### **Recommendations**

After analysing the study's results, the following recommendations are suggested for future research. Firstly, there is a non-availability of literature covering the part of financial leverage from the perspective of CPEC so that more literature review studies can be done. Secondly, Researchers can see the impact of CPAC on firms' leverage for other sectors. Lastly, future research can see if CPEC positively impacts firms' leverage and how it affects their financial performance.

### **Practical and Theoretical implications**

This research study has theoretical and some practical implications; if we look at the theoretical contribution, this study is adding its part to the literature by putting light on the impact of CPEC on the firm's leverage. Whereas, the study reveals some facts that can help policymakers grab the opportunity that CPEC is offering; if they increase their leverage ratio to gain the benefits that CPEC is offering, they can undoubtedly have the perks of CPEC. Furthermore, they can enjoy the tax shield because of the high leverage ratio.

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