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Article

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Energy Cost Saving and Economic Prospective of China Pakistan Economic Corridor

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ABSTRACT

The China Pakistan economic corridor (CPEC) is a landmark project in the history of Pakistan. It is the largest investment Pakistan has ever attracted since independence and largest by China in any foreign country. This research article examines the energy cost saving and trade prospective in terms of shortest trade route for China and toll income generated through this transit corridor for Pakistan. The first part of the article discusses the prospective advantages for China while transporting oil and doing trade with Middle East and North Africa under CPEC route. Second part highlights the estimated toll income which Pakistan can get through the use of CPEC trade routes from Khunjrab to Gwadar Sea port. Third part provides analytical study among current and prospective CPEC trading route and shipping cost between China and Middle East. Finally, this study provides recommendations for the ultimate success of CPEC transit trade and mutual benefits of Pakistan and China. This study further reveals and concludes that China through CPEC has tremendous opportunity to lowering energy cost and gets shortest route for trade with Middle East and Africa; hence China can reduce transit time and shipping cost significantly, while Pakistan can generate revenue about thrice of its current budget from toll taxes income.

Keywords: China Pakistan Economic Corridor, Low Energy Cost, Toll Income
JEL Classifications: Q43, Q52

1. INTRODUCTION

Pakistan is situated at a place that is strategically important for international trade. This geographical position provides easy and short access to Central Asian countries and also Middle East countries, hence offers best transit opportunities for trade among such states. This important geographical situation further offers China nearest and most economical trade route for Middle East and North African states. China depends a lot on Middle Eastern states to provide and supply oil for its large energy needs (Figure 1). For the purpose of seeking shortest trade route to lowering energy, road and shipping cost, China has further built economic corridors with neighboring countries and invests $63 billion for China Pakistan economic corridor (CPEC) an offshoot of one belt one road initiative (Ali, 2015). This huge foreign investment will surely help China to find out best solutions in terms of high profit and minimum expense. In CPEC, China has the highest investment in any foreign country as it did in past. Furthermore, the ongoing trade route among China and Middle East countries and also North African countries is more energy and time consuming and insecure.

This study further provides the discussion over CPEC benefits for Pakistan. In this part of study, authors analyze the impacts of CPEC on economy of Pakistan and how such projects can be fruitful. The foremost and most significant economic impact of CPEC will be in the form of self-sufficient in energy and toll taxes and road charges fee that Pakistan will receive from the vehicles coming from and going in to China carrying goods and commodities along with CPEC corridor which is also known as transit corridor. In this context, such economic activity gives same impression as we can observe the financial gain by Egypt and Panama through saving

Figure 1: China Pakistan economic corridor route (National Highway Authority (NHA), Pakistan, 2016)

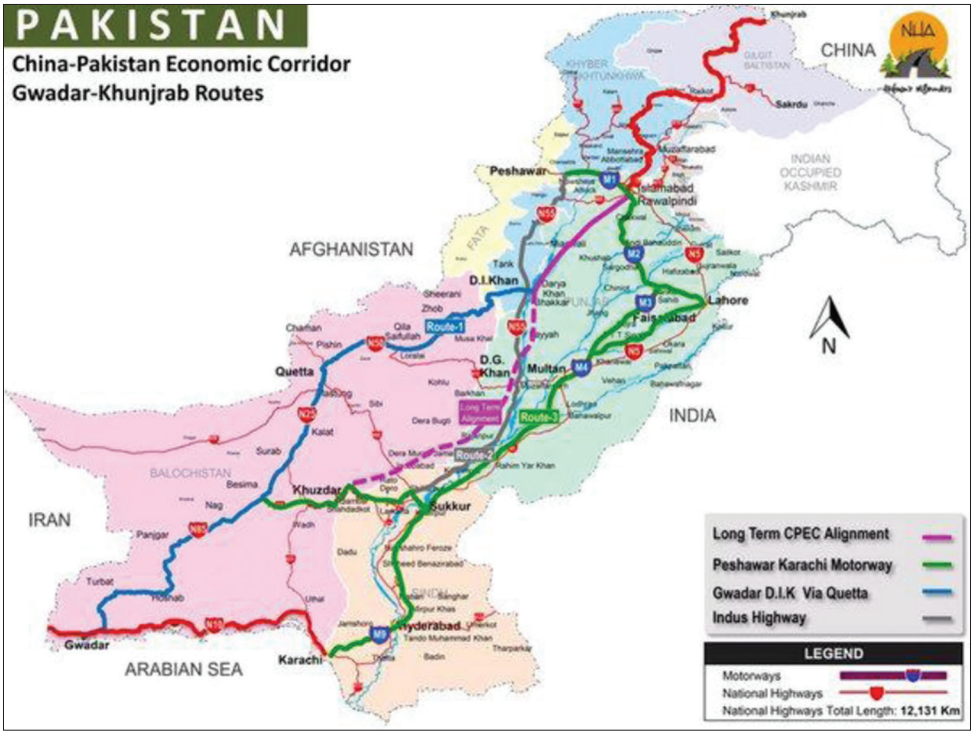


Table 1: Trade handling by panama and suez canal

Panama canal	Suez canal
Handles 5% of all seaborne trade	Handles 10% of all seaborne trade
Panama canal authority earns over 2.5 billion US dollar per annum	Egypt earns over 5 billion US dollar per annum directly from tolling revenues

oil energy cost and toll income and transit fee respectively from Suez canal and panama canal (Gilani, 2016) (Table 1 and Figure 2).

Furthermore, if Pakistan succeeds to develop a constructive and satisfactory situation for China in terms of repositioning its industries that are labor based and gets enough resources for electricity generation may consequently improves economy of the country (Ahmed, 2017). To achieve the idea of sustainable economic growth in the country, CPEC provides Pakistan number of skilled labor and further anticipates massive investments including the technology related industries in Pakistan. CPEC is a striking opportunity for businessmen, importers and exporters throughout the world due to unique functions such as reduced time and lowering cost for the cross border trade as opposite to current trade routes which provide long distance and high cost trading between China, Pakistan and Middle East countries. This opportunity takes Pakistan towards the sustainable economic growth as it envisages by CPEC goals. Furthermore, China is the biggest importer of oil from highly rich Middle East region consequently adds high number of shipments to and from the United Arab Emirates and Middle East region. CPEC trading route offers visibly reduced transit time and shipping cost from Gwadar port to destination ports. Moreover, CPEC in addition offers an imperative situation for Afghanistan to becoming a transit hub between energy deficient South Asia and energy well off central Asia (Rana, 2015). Pakistan can get high number of toll taxes and road fee by the vehicles coming and going in to central Asian states using CPEC route.

2. CPEC AS TRANSIT CORRIDOR

This study argues and maintains the idea that international trade is more viable through short distance and less expense on transportation of goods. These are the key considerations which the companies and traders always follow. In this context, the object of the CPEC is to link the Gwadar Port of Pakistan with Kashgar port a main trading centre in Western China. At present, China conducts nearly 70% of its international trade through passing Indian Ocean (Jamil, 2015). This trade route shares highly pirated sea region the Strait of Malacca. Consequently, such trade route is always monitored by U.S and Indian navies to guard and protect the movement of cargo ships in that region (Saunders, 2014). Due to international conflicts and geo politics strategies, in case of any dispute between China and other states, this trade shipping route may obstructed and disconnected and also oil supply to China may be stopped. CPEC lessens the transportation journey by more than 10,000 kilometres to China by sea. Moreover, importing of oil from Middle East will take only 10 days as an alternate of 45 days (Chowdhary, 2015).

3. OIL TRADE BETWEEN CHINA AND MIDDLE EAST

The information in this part of research paper receives from magazine article publishes in Arab News in 2017 and author further formulates that information for the purpose of better understanding

of the situation. For the success of CPEC trading route in terms of transportation of goods and income from toll taxes, it depends upon the volume of trade between China and its trade partners. Authors in this research willfully choose Middle Eastern region as trade partner of China and presumes such trade will be conducted through CPEC route. In this part of research an overview of current trade situation between two regions is presented. China seeks to increase its economical and regional power in the Middle East as strategy to further strengthen trade policies and national interests (Wachman, 2017).

In the light of these facts, it is clear that CPEC does not only provide an economical trading route to China but also secure strategic policy for China. In future, due to the dispute with the West, the US could barricade the current Strait of Malacca route and consequently cut off the energy supplies to the China. This is referred to as the "Malacca Dilemma" where 80 percent of China's oil imports pass through this significant sea way. Furthermore, CPEC route provides the Chinese a substitute for current long journey (Malik, 2013).

This part of research also includes observations and opinions by economists and observers published through Arab news (Wachman, 2017). Jie, head of China foresight at the London School of economics states that China is the world's top importer of oil and the Middle East is the best region for market access, and area of major energy reserves to fulfill the demand of China's economic growth. She further argues that China was already setting its position in the Middle East, with strategy of massive investments. Jie also reveals that Sinopec a Chinese state owned oil company is interested for the upcoming initial public offering of Saudi state owned oil company Aramco (CNBC, 2018). International energy agency recently announces that China will be the biggest single user of oil in the world by 2030. Another significant reason for Chinese high volume of oil import is continuous decrease in domestic production from long established Daqing and Shengli fields with in China (World Energy Outlook, 2017). In the same context, China's wide spread international strategic interests compels to restructure and redefine its policies and relationships with in region and nationwide. China for example, intends to wider its financial circle by adding more circulation of Remnimbi; the Chinese currency, in the Middle East.

There is strong indication that China is involved in strong and active commercial activity in Middle East. For example, China's Jiangsu province already signed a $300 million deal with the UAE's Abu Dhabi ports to create a manufacturing centre in the free trade zone of Khalifa port (Figure 3). In this deal, five big Chinese firms have on board in variety of sectors which include, clean energy, mining, construction materials, steel and environmental cleanup technologies (Trade Arabia, 2017). Another sign of Chinese growing interests in Middle East region is COSCO shipping company's deal to build and operate a new container terminal at Khalifa Port under $700 million worth (Nanji, 2017). Christian Zhang of BMI research, the global geopolitics and country risk consultancy suggests that "there are advantages for China to further develop relations in the Middle East, which accounts for about $200 billion worth of trade, making the region China's fourth largest trading partner after the US, Japan and South Korea (Figure 4). When CPEC is up and running, that will offer more opportunity for trade with the Middle East, and Europe, through Pakistan". In such situation, China seems to assist Pakistan and get it developed through foreign investment and energy projects, which obviously takes time to be happened. Chinese companies look more interested to invest in Pakistan due to the cheap and marginal production opportunities here as against China where wage inflation has taken off. Furthermore, goods produced in Pakistan could be available in domestic market and also export to the Europe and Middle East regions. Among some significant benefits of CPEC to China, one is exclusive control over its imports and exports transit through friendly Pakistan. China's high ambition to accelerate its trade and investment with Middle East and particularly with Saudi Arabia can be judged in situation where 140 Chinese companies are involved in contracts and progress worth $18 billion in Saudi Arabia since 2013 and includes construction, telecommunications, and infrastructure and petrochemicals sectors (Dusek and Kairouz, 2017).

Moreover, apart from economical and financial relationship with Middle East and Gulf, China is also willing to start cultural links and for this reason open the first Confucius Institutes which is China's equivalent of Britain's British Council or France's Alliance Francaise (The Economist, 2014).

4. ENERGY UPGRADATION IN PAKISTAN

This part of research envisages the current situation of CPEC and finds out the benefits and margins to the Pakistan. CPEC comprised of

Figure 2: Panama canal and Suez canal world map (Gilani, 2016)

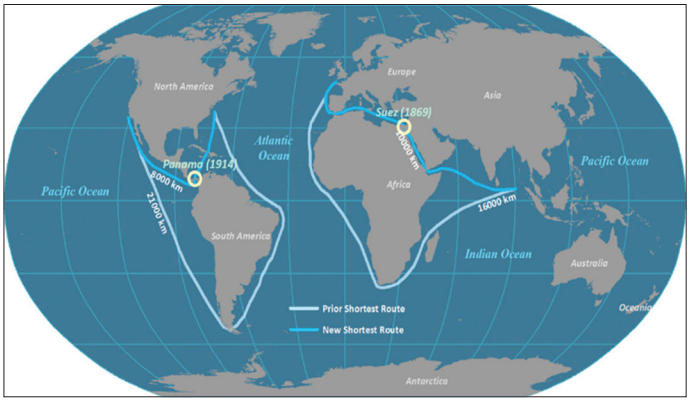
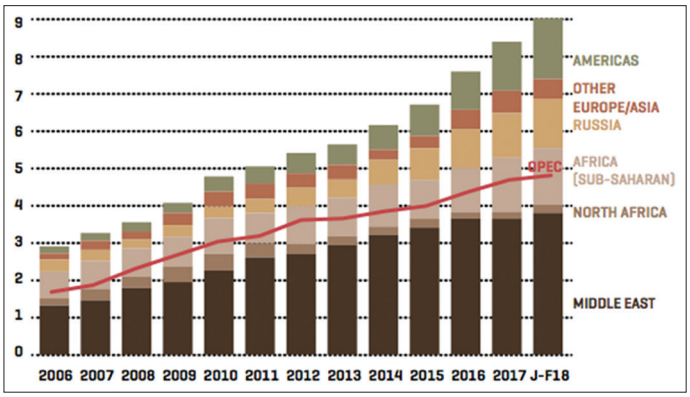


Figure 3: China's oil trade with Middle East (Wachman, 2017)



total 3,218 kilometre extended route, to be completed and operational over next several years, with construction of highways, railway tracks and oil gas pipelines. The genuine figured cost of the scheme is anticipated to be US$75 billion and apart of such investment, US$45 billion are already released for projects to make CPEC functional about 2020. The rest of the amount will be used for enhancing energy production and fulfilling infrastructure needs (Sial, 2016).

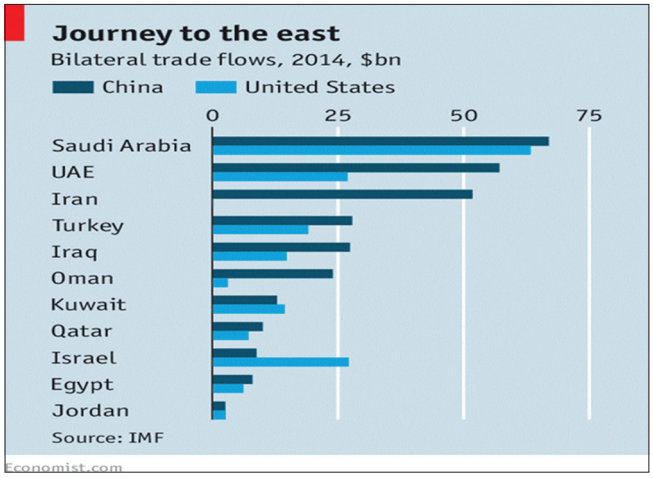
The highly publicized US$45 billion China-Pakistan Economic Corridor will surpass through the nature bestowed fabulous Gilgit-Baltistan province in the northern part and this province will play a part of bridge between Xinjiang to the other parts of the world by using Gwadar port in the south of Pakistan. CPEC will further boost up the bilateral relations between China and Pakistan through mutual benefits and cooperation which both the countries have in power sector, industrial zones, and Gwadar port construction and infrastructure development.

In the light of basic guidelines of the contracts, the CPEC scheme is segregated into different stages; the first stage is comprised of construction of Gwadar International Airport and completion of primary work of Gwadar port to get it operationalized. With a positive effort, this task has been achieved and port is in working condition now as the task was fixed to be achieved in 2017. The project in addition contains the development of Karakoram Highway the road that connect China with Pakistan and providing fibre optic line confirming advanced communication among China and Pakistan (Irshad, 2015).

Furthermore, it anticipates that if all the designed schemes are executed in the same manner, the worth of these schemes would surpass the entire foreign direct investment in Pakistan since 1970 and estimated to be equivalent to 17% of Pakistan's 2016 gross domestic product. Moreover, the successful completion of CPEC projects consequently produce 700,000 direct new placements for the people in different sectors within the time period from 2015 to 2030 and further enhance the progress ratio up to 2.5% with positive margins (Ahmed, 2016).

In energy sector, through different MOUs, both countries have signed 21 agreements and will get 16, 400 MW energy in total. Out of these 21 agreements, with sincere efforts 14 agreements with 10, 400 MW productions will start functioning in early 2018. For the purpose of infrastructure development under CPEC project, huge investment of about $11 billion is reserved. Among such development projects, motorway between Lahore and Karachi approximately 1,100 km distance is scheduled to be constructed (Staff Reporter, 2014), and the most important and historical road link between China and Pakistan known as Karakoram highway is scheduled to be rebuild and repaired. CPEC projects are also anticipating upgradation of central railway line between Lahore and Karachi with elevated travel speed 160 km/hour to be completed in 2019. At present there is no railway link between China and Pakistan but the future plan is made under CPEC to connect Pakistan with Xinjiang in Kashgar through railway line (Pakistan News Service, 2015). Apart from energy and infrastructure projects, oil and gas will also be transported through pipelines between two countries as part of CPEC mega projects and these also include $2.5 billion pipeline to transport gas from Iran in to Pakistan city of Gwadar (Shah, 2015).

Figure 4: China's bilateral trade flows with gulf (Dusek and Kairouz, 2017)



The sea map shows the current trade route between China and Middle East and European states (Figure 5). This route as mentioned in previous parts is much longer and expensive in terms of shipment cost and transit time. Under CPEC plan oil transported from the Middle East through sea could be relieve of at Gwadar and further heading towards China by using CPEC land route. The use of land route in to Pakistan will consequently reduce the present 12,000 km distance to 2,395 km. This CPEC route through Pakistan is considered and performs as a link of Chinese highly ambitious Maritime Silk Route which foresees connecting 3 billion people in Asia, Africa and Europe and will become component of trans-Eurasian plan. Moreover the moment when completely functional, Gwadar upholds the economic growth of Pakistan and turn out to be a most attractive place for Central Asian countries, including Afghanistan, Uzbekistan, linking Sri Lanka, Iran and Xinjiang to take on sea transportation of goods (Reeves and Sagita, 2017).

It is pertinent to mention here that more than $33 billion value of energy infrastructure will be developed by private associations to assist get rid of Pakistan's long back energy deficiency (Malik, 2015), that is commonly raised 4,500 MW or above (Dunya News, 2015), and have drop off 2-2.5% of Pakistan's annual gross domestic products (Kugelman, 2015). While considering the significance of power and energy sectors, around $33 billion likely to be put in by CPEC projects. Furthermore, approximately 10,400MW of energy production capability is to be generated through CPEC early harvest scheme between 2018 and 2020 (The Dawn, 2015).

5. REPAYMENT OF LOAN BY PAKISTAN

Pakistan's debt and other repayments against CPEC projects will rise up to $5 billion in 2022, but income through international import and export trade using CPEC corridor will be higher than total investment by transit fees imposed on the developed transport corridor announced by the Pakistan government's chief economist.

China has recently declared to invest up to $75 billion in Pakistan's road, rail and energy infrastructure development with its huge

and innovative economic corridors arrangement of land and sea linkages that ties Asia with Europe and Africa (The Express Tribune, 2017).

The work at Gwadar port and linked motorways is expected to be completed soon that will allow both countries to enhance trade and movement of the goods at CPEC route by China's western Xinjiang province. The CPEC, an offshoot of Belt and Road scheme, will assist stimulate struggling economy of Pakistan. However, economy of Pakistan could shatter and consequently currency becomes weaker at the moment when Chinese firms begin receiving their share of profits home and debt repayments start.

Gwadar-Xinjiang corridor expected to be functional from 2018, and Pakistan anticipates approximately 4 per cent of international trade to use CPEC route by 2020. Moreover, the toll taxes and road charges and transit fees that Pakistani officials will get is about $6–$8bn per year.

China has massive benefits to bring oil and other commodities exclusively for its western parts through Pakistan as the Gwadar-Xinjiang corridor reduces some 15,000 km off other established routes. Consequently, this will also save million liters of oil in this way.

China will start debt receiving and profit sharing from CPEC projects in 2019, accumulating about $1.5–$1.9 bn, and increasing to $3–$3.5 bn by the following year. In start, such results may drop but in 2022 it will rise at around $5 bn.

CPEC should improve economic development, which he expects to reach 5.2 pc in 2016–17. For exports sector, CPEC power projects will add 7,000 megawatts in to national grid and provide industrial sector opportunity to produce exports on immense level with excess of electricity (Malik, 2017).

6. TOLL INCOME FOR PAKISTAN

Board of investment in Pakistan reveals that estimated completion time of CPEC is 2030 and at that time the total toll income from CPEC will be thrice of its current financial budget. This announcement further mathematically analyses by Khawar through opinion section published in The Express Tribune on October 26, 2007 and authors attribute such information for this research article. The authors attempt to formulate and get findings on the basis of such calculations used within this publishing. The maximum trade volume which will pass through CPEC transit route is between China on one side and Middle East and North Africa on the other side. The calculations to conclude maximum toll income is basically drawn from such trade partners in the context of CPEC route. For instance, rate of toll taxes in Africa, China and Pakistan, and also what is trade volume of imports and exports by China with Africa and Middle East. The total budget of Pakistan in 2017 is Rs. 4.75 trillion and if we assume thrice of it as predicted by board of investment, this would be Rs. 14 trillion plus approximately $145 billion. This means that such expected toll income is twice or thrice of total amount proposed for all CPEC projects in Pakistan (62 billion $). Apparently, this calculation and estimation looks fictitious and difficult to believe. However, this estimation needs close analysis within current trade situation and relevant facts. In Pakistan, toll rate for a 40 feet articulated truck between Peshawar and Islamabad is Rs. 1745. It means 3$ per 100 km. In Africa, for same distance the toll rate is 10 $. For future CPEC trade route, high expectation from Pakistan government to charge same toll rate like $ 10 per 100 km. The total distance from Khunjrab to Gwadar is 2600 kms. This estimates $ 260 toll charges for single 40 feet articulated truck. The UN Comtrade data for 2016 reports that China exported $12.8 billion worth of goods to South Africa, weighing approximately 5.3 billion kgs and imported $22.2 billion worth of goods, weighing 63.4 billion kgs. This means $2.4 per kg worth of exports and 35 cents per kg for imports (World Integrated Trade Solution, 2016). The maximum weight allowed on a 40-feet container approximately is 26,500kgs. China's trade with South Africa can therefore be encapsulated in 2.5 million containers or more. Using the same value-weight proportions, China's total trade with all of Africa and the Middle East of $356 billion would mean 18+ million containers. At $260 apiece, this means $4.8 billion of toll income per year for Pakistan.

While considering huge toll income from CPEC route, the maintenance expense of such route will also keep in mind. For such

Figure 5: Beijing to Middle East sea route (BMA Capital, 2015)

reason maintenance and reconstruction cost would be required from profit as well. Furthermore, along with CPEC route, some portion of trade between China and its partners will also be continued through sea route. Therefore all the trade of goods and movement will not be shifted on CPEC route at once, although Pakistan much anticipates for this immediate shift. Furthermore, $ 11 billion out of total CPEC investment in Pakistan which is $62 billion will be used for construction and maintenance of roads. This would also heavily increased number of trucks for said purpose which ultimately generates huge toll income in Pakistan. Out of $62 billion CPEC portfolio, the bulk is for energy projects and about $11 billion is allocated for roads. Much of the road infrastructure is reportedly financed through concessional government to government borrowing, with 2% interest to be repaid over a 20–25-year period. An $11 billion loan for 20 years would therefore need $672 million debt servicing payment every year. For the purpose of loan re payment, Pakistan can efficiently do that from toll income if 30% of trade between China and its partners gone through CPEC route. Although CPEC estimated toll income is huge but still not enough for Pakistan to fulfill its social and economical needs. However, considering above percentage of trade through CPEC route, it would be enough to repay all the debts on road projects and maintenance expense in the future. To get sustainable economic growth and to achieve better situation, Pakistan has to keep and built more industries and develop exports sector. In this way, Pakistan can get better trade environment with other countries and can enter in to international markets through selling its products. This will also drop the imports expense in Pakistan. Currently Pakistan sells raw material of cotton, leather, wheat, rice and exports such goods to other countries mainly to central Asia and Middle East. Pakistan can improve its exports by preparing certain products of these raw materials and earn profit by selling these in international market. This development further increase numbers of jobs and opportunities for local manufacturers and labor and this will also give raise the business sector in the country. Pakistan needs to provide further facilities and opportunities on CPEC trade route like warehouses, hotels, workshops and institutes for intermodal transport and transit trade system. Furthermore, CPEC trade route would generate more toll income, if Pakistan successfully convinces central Asian land locked countries to use this route for trade and even Russia seems to be interested in this trade route. For all these benefits, efficiency with good planning is required by Pakistan to achieve these benefits.

In Pakistan the current NHA receives RS.330 approximately 3$/100 km for articulated heavy goods vehicle. China pay 4.8 billion $ to Pakistan for Africa and Middle East trade on each truck and Pakistan receive three times more such as 10$ from china on each truck (Khawar, 2017).

Road distance: 2600 km
Per 100 km: 10$
Toll tax: 260 $ per truck.

7. HOW CHINA WILL SAVE ENERGY COST IN CPEC

In previous section, we discuss and analyze the prospective benefits for Pakistan through CPEC trading route. In this section of study, we anticipate the energy cost saving and outcome of CPEC trading route for China in terms of shortest route and minimum shipping cost to conduct trade with Middle East using CPEC route.

Figures 6 and 7 shows the trading route difference among current and proposed CPEC transit routes.

7.1. CPEC Route and Energy Cost Comparison

The findings and results in this section are based upon the research and formulas by Muhammad Aqeel (Aqeel, 2016). The authors of this research paper incorporate below calculations as an attributes from Aqeel research contribution. The 3, 218 km long CPEC route connecting Xinjiang (Kashgar) with Pakistan Gwadar port and is shortest for china's energy import from the Middle East by about 12000 km. Approximately 900 km on china's side and 1600 on Pakistan side and Motorway is also a part of CPEC which will be about 1100 km from Lahore to Karachi. China import 80% of oil from Strait of Malacca and cover 10,000 miles. One third of world traded oil supplies pass through Strait of Hormuz, if china imports 50% oil from CPEC route; it may save 2 billion dollars every year (Aqeel, 2016).

The total road distance is 2600 km and cost is $3 per km. To calculate the road cost multiply the road distance with per kilometer cost. Per kilometer cost may be different, which is based on transporters and on size of truck.

$$\text{Total distance} = \text{Per Kilometer cost} \times \text{Total distance} \quad (1)$$

(Aqeel, 2016)

The following Table 2 shows that the total kilometer is 2600 and per km cost is 3$ and each truck pays 780$ road cost from Kashgar to Gwadar.

The speed of each truck to complete distance is 79–81 km per hour, but at mountain side it is reduced by 30–29 km per hour. Due to this, the average speed of each truck is 40 km per hour. The total transit time which is used by local transporters to complete the requirement is 70 h or 3 days.

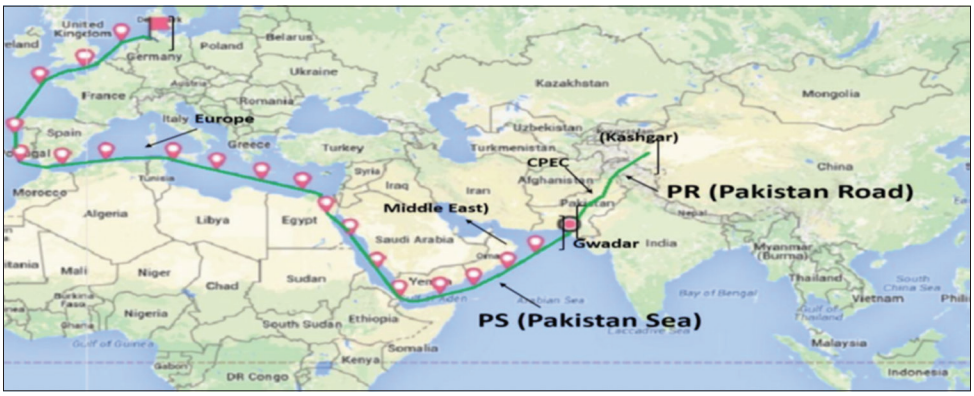
$$\text{Transit time} = \frac{\text{Total Distance}}{\text{Average Truck Speed}} \quad (2)$$ (Aqeel, 2016)

In Pakistan the political condition is not good as compared to China; suddenly the Pakistan road (PR) condition is change due to strikes and law and order situation. Because of this the transit time might be increased by 70–96 h which show 26 h average delay in trading. The Table 3 shows that in case of any factor each truck takes 26 hours extra time from Kashgar to Gwadar. This time calculation is derived from CMA CGM, a worldwide shipping group and can be found on CMA CGM website (www.cma-cgm.com).

As per this calculated total transit time, following table shows the difference of transit period among current trade route and proposed CPEC route while considering PR, Pakistan Sea (PS) and China road (CR), CS. Using CPEC route, China can save 19 days on Kuwait route, 14 days on Jeddah route, 23 days on Oman route,

Figure 6: Current route (Aqeel, 2016)

Figure 7: China Pakistan economic corridor proposed route (Aqeel, 2016)



19 days on UAE route and 19 days on Qatar route from current transit period (Table 4 and Figure 8).

7.2. Shipping Cost

A shipping cost from Gwadar to destination port is given in the following table. The calculation of sea freight is checked through this web www.seafreightcalculator.com, because the sea freight cost is change from time to time and the calculation of these rates is on (1 February, 2018).

CPEC route shipping cost = PR road cost + PS sea freight (3)
(Aqeel, 2016)

The following Table 5 clearly shows how much the difference between PR and CR. If China use CPEC route it can save 2000$ on Kuwait route, 2049$ on Jeddah route, 2001$ on Oman route, 1943$ on UAE route and 1934$ on Qatar route for importing oil on each 40 feet container (Table 5 and Figure 9).

8. RECOMMENDATIONS

CPEC undoubtedly brings prosperity through huge international investment in Pakistan. As previously discussed and analysed, it offers striking opportunity to receive enormous revenue through toll taxes and road charges fee charged on Chinese trade with other partners and tremendously save energy cost, transit time and shipping cost using proposed route for trade between China and Middle East. To gain such benefits, CPEC would fundamentally have three phases; at the first phase, there is road link through highways or motorways between Kashgar and Pakistan coastal city Gwadar that means CPEC must be a transport corridor at initial stage, while at the second phase there must be development of rail network and at third stage connect Kashgar through oil and gas pipeline of an oil refinery at Gwadar. Freight terminals built throughout the corridor that will promote logistic business as well as trucks engages freight services, whereas for the promotion and well being of local industry and businessmen, economic zones and industrial parks would be targeted and encouraged at the important points on CPEC route. For the purpose of achieving ultimate goals of CPEC, which are high volume of transit trade on CPEC route and strong economy of Pakistan, following recommendations are suggested through this study.

- CPEC investment schemes carry comprehensive and long term aspect arrangements for duration beyond 10–15 years.
- CPEC schemes require targeting efficiency enhancement, creating modern road and rail network, increasing operational capability of transport structure and improving ways to isolated points, locally as well as region wise.
- CPEC transportation plans require examining critically and considering from the aspect of their importance vis-à-vis practicability and expense; these are some time, subject to wrong estimation and risky investment. In this regard, infrastructure investments based on political motives and personal gain must be put aside and replace with constructive and public interest investments.
- Introduce intermodal transportation scheme on modern lines, progressively move from obsolete, inefficient logistic industry to unique, efficient and completely interconnected logistic management and operational system; provide better

communication and maintain better links between different transportation methods. For these purposes, renowned and qualified international firms can be approached. Furthermore, public private partnership is possibly the way out to maintain transportation projects marginalised.

- Reduce cost of travel to minimize the expenditure of doing business; this will certainly enhance Pakistan's exports competitive in international market.
- Improve connectivity through CPEC transportation projects; remote areas to central markets developing roads and warehouses and also improved facility of cold storage to avoid losses in fruits, vegetables and other perishable commodities.
- To get better connectivity of national highway linkages in the course of a preferred and comprehensive development scheme in line with the objectives put for national trade corridor and CPEC.
- Rearrange freight transportation business as per current demands and international practice on modern lines. Public-Private partnership would be encouraged to set such business on desired level. Established and well invested logistics entrepreneurships are required in current situation.
- Introduce schemes for constructive substitution of outdated truck fleet, providing loans and incentive. This policy fundamentally provides new generation trucks which are not only compatible with environment but in addition decrease transportation time in line with international practices.
- Improve the capacity and efficiency of locomotives to cover up the large number of passengers and freight business.
- To get Gwadar seaport functional on early basis and improved its links with important business hubs to materialise port capabilities.
- Fast development on pipeline scheme between Gwadar and Xinjiang together with project of oil refinery at Gwadar should be commenced immediately.
- To complete CPEC energy projects through early harvest schemes.

Table 2: Total road distance (Aqeel, 2016)

Road distance		
Road charges	**Kilometer**	**Per kilometer cost**
Road charges	2600	3$
Total	780$	

Table 3: CPEC transit time route journey (Aqeel, 2016)

Journey duration	Distance in Kms	Per kilometer Vehicle speed
Journey duration	2600	40
Total	65	
Due to any factor		
Transit time	**Average time**	**Delay**
Transit time	65 h	26 h
Total	91 h	

CPEC: China Pakistan economic corridor

9. CONCLUSION

This study concludes that CPEC transit route is a key concern to China and Pakistan as it envisages the situation similar to Suez Canal and Panama Canal. In the light of the foremost objective of this research that primarily deals with the assumption of whether CPEC deals with toll taxes income for Pakistan and lower energy and shipping cost and shortest trading route for China, authors attempt to calculate both toll taxes revenue for Pakistan vis-à-vis shortest trading route and low shipping cost for China while trading with Middle East countries.

We examine through this research that chosen destination countries are immense trading allies of China. China allows heavy import of oil from Middle East region to overcome ever increasing power and energy demands. We previously observe that China wants an additional route that is quicker, secure and trustworthy. This research further provides CPEC a trading route

Table 4: Transit time difference in Days (Aqeel, 2016)

Destination port	Kashgar to Gwadar	Kashgar to Shanghai	Gwadar to destination port	Shanghai to destination port	Total Transit time	
	PR	CR	PS	CS	CPEC route	Current route
Kuwait	3	6	4	20	7	26
Jeddah	3	6	10	21	13	27
Oman	3	6	4	24	7	30
UAE	3	6	4	20	7	26
Qatar	3	6	4	20	7	26

PR: Pakistan road, CR: China road, PS: Pakistan sea, CS: China Sea, CPEC: China Pakistan economic corridor

Table 5: Energy cost saving analysis (Aqeel, 2016)

Destination port	Kashgar to Gwadar	Kashgar to shanghai	Gwadar to destination port	Shanghai to destination port	Total Freight	
	PR (freight)	CR (freight)	PS (freight)	CS (freight)	CPEC route	Current route
Kuwait	780$	2000$	526$	1350$	1306$	3350$
Jeddah	780$	2000$	602$	1431$	1382$	3431$
Oman	780$	2000$	400$	1181$	1180$	3181$
UAE	780$	2000$	506	1229$	1286$	3229$
Qatar	780$	2000$	570$	1284$	1350$	3284$

Figure 8: Difference in road lengths between China and Pakistan

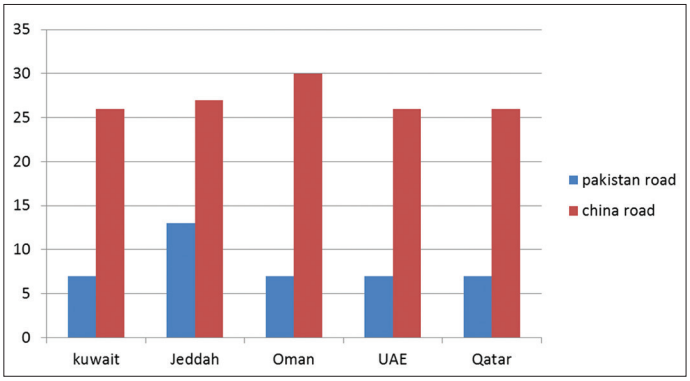
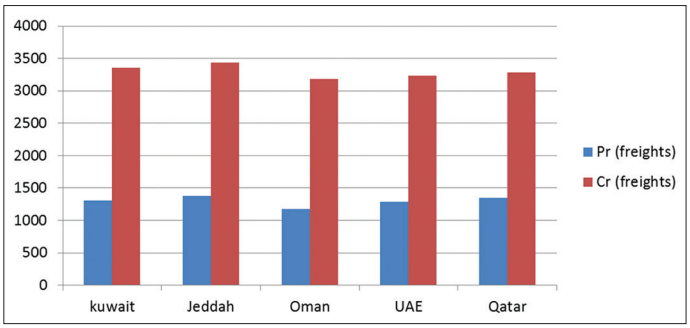


Figure 9: Road freights difference



through that China can reduce huge amount of dollars raised by shipping cost. China will not only reduce the shipping cost but in addition decrease the transit time. From Pakistan's perspective, approximately $4.8 billion of total income per year through toll taxes and road charges fee could be received as 18 plus million containers expected to be involved between China and North Africa and Middle East trade through CPEC route.

CPEC linking Kashgar with Gwadar port of Pakistan would provide two prospects; at trans border level it would be significant international trade route to minimize the transit time and distance among countries and at the same time as national level it would generate more revenue and produce immense employment opportunities to strengthen Pakistan's weaker economic situation. Furthermore, CPEC also offers shortest routes to connect China with far reaching trading partners which are Russia, Central Asian countries and European Union member states. Apart from these countries, some regional trade partners of China includes India, Iran and Afghanistan would be connected through CPEC and consequently generate more revenue for Pakistan in terms of toll taxes and road charges fee.

CPEC plan is committed to minimize the journey time and distance by 50–85% which involves approximately 33% of China's sea transportation engaged with Middle East, Europe and Africa regions. Whereas from this huge transportation, Europe leads with 70 million containers shipped from China and estimated $1 trillion trade conducted by China with these regions. However, Pakistan would receive approximately 10–15% share of trade among China and above mentioned partners and later on it decides by the Pakistan situation to what extent he can handle the volume of transit trade.

Pakistan's current transportation and energy generation system is hardly fulfilling the existing requirements of domestic and cross border transit trade. It is for that reason essential to focus the efficiency of Pakistan's energy and transportation management structure to improve its ability to embrace the task of impending transit trade through China border and Gwadar deep sea port.

Furthermore, Gwadar port of Pakistan through CPEC projects is setup to connect with regional trade partners apart from China and includes Central Asian nations, Afghanistan and Iran. Consequently, such communication network would pave the way not only for mutual trade among these countries but also welcomes trade with other countries of the world.

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