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Challenges and  
Solutions In Building  
CPEC-A Flagship  
of BRI

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# Challenges and Solutions in Building CPEC-A Flagship of BRI

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**Abstract-**One of the OBOR pilot corridors out of the six corridors is CPEC. The CPEC has been initiated in 2013 and due to its speedy progress, CPEC is now vastly considered as the “flagship” project among the OBOR projects. The CPEC initiatives include; development of Gwadar Port, road, rail and optical fiber connectivity, energy corridor and Special Economic Zones development for bilateral benefits to attain inclusive growth and regional harmonization. Before the inception of CPEC, the growth of Pakistan was curtailed by two major bottlenecks; acute energy shortages and weak local and regional connectivity infrastructures. In 2013, CPEC came with 59 billion USDs under OBOR and it has been eliminating all major economic bottlenecks. This paper sheds light on the BRI with deep focusing on CPEC. It further represents the Pakistan’s improving economic indicators through CPEC. This paper will also examine some key challenges and their solutions in building CPEC.

**Key Words-**BRI, Challenges, Connectivity, Corridors, CPEC, Global Competitive Index (GCI), Investment, Infrastructure, OBOR

## I. INTRODUCTION

The Globalization has brought vast changes in global economy and has directed the evolution to a boundary less development. This phenomenon has significantly amplified the maritime trade from 2.37 billion tons of freight to 5.88 billion tons of freight moving through maritime routes. China is taking lead in these lines and converting the whole world into one economy through OBOR / BRI.

This paper examines the CPEC portfolio as a flagship of Chinese OBOR / BRI, connectivity infrastructure investment plans, six economic corridors of BRI, deep details of one plus four (1+4) portfolio including Gwadar Port, Road, Rail, Optical Fiber, Energy and Special Economic Zones(SEZ’s) projects, major challenges in building CPEC. It also examines the impact of improved connectivity infrastructure on Pakistan’s economy at large.

The paper uses primary and secondary data and other research done by top-notch research institutes such as World Bank (WB), World Economic Forum (WEF) and data from official ministries. Connectivity infrastructure has been linked with market access, regional competitiveness and economic growth. According to prominent researches, there is a positive correlation among road, rail, ports and energy with social and economic development. However, due to the current level of connectivity infrastructure, there are inefficiencies and delays which increase the cost of production and subsequently the cost of doing business. Logistical issues and supply chain problems that are prevalent in the country make doing business difficult within Pakistan, thereby resulting into poor business development which leads to a lack of investment within various crucial sectors such as hospitals, schools, communication and others.

To that end, this paper focuses at the connectivity infrastructure development under the CPEC and how it affects the development and growth of the economy. The report explains the impact of a structured connectivity network on emerging economy of Pakistan in terms of the CPEC portfolio. Under this CPEC umbrella, 59 billion US dollars are being invested to improve the supply chain connectivity in terms of road, rail, ports and energy. This study shows the micro and macro improvements in different pillars of ease of doing business (EODB) indicators and global competitive index (GCI). How Pakistan has improved its rank exponentially in a short period of time.

The findings of this report show some major challenges with their sustainable solutions in building CPEC in multiple directions; 1) Infrastructural mismatches 2) Internal and external exclusive growth 3) Institutional capacity gaps 4) Awareness lack 5) Governance laps 6) Free trade agreements negotiations 7) Irrelevant currency conversion exercise 8) Sustainable habilitation of special SEZ's. And connectivity infrastructure improvement has a positive relationship with economic development.

## II. MODELS FOR REGIONAL COOPERATION AND INTEGRATION

The European Union with its 28 countries (Austria, Italy, Belgium, Latvia, Bulgaria, Lithuania, Croatia, Luxembourg, Cyprus, Malta, Czech Republic, Netherland, Denmark, Poland, Estonia, Portugal, Finland, Romania, France, Slovakia, Germany, Slovenia, Greece, Spain, Hungary, Sweden, Ireland and United Kingdom) is considered as the prime model for regional cooperation and integration. There have been many attempts made to replicate the model, policies and methods adopted by the European Union (EU) over the years. Simply copying the model is not be ideal for developing countries as certain aspects of the model will not be compatible. The European Commission strongly believes in regional integration and provides support for such endeavors. The most successful attempt to achieve regional integration was done by the Association of South East Asian Nations (ASEAN) including Myanmar, Thailand, Cambodia, Singapore, Indonesia, Vietnam, Laos, Malaysia, Brunei and Philippines. Recent events of Brexit in the EU have casted doubts over the strength and validity of the model especially regarding its sustainable continuity.

There are four possible models for regional integration; 1) Free trade agreements 2) Single market 3) Common currency area 4) Merger of above three. Each having their own pros and cons. According to the Asian Development Bank (ADB) free trade agreements were found to be the most effective model.

### *Regional Integration and Pakistan under CPEC*

China's BRI is leading the regional integration and corporation. Seeing the potential benefits, multiple world leaders have expressed their interest and support. It is by China's commitment that the project has been able to move ahead with such pace and ease. China's new development vision has been seen as an alternative to regional trade agreements.

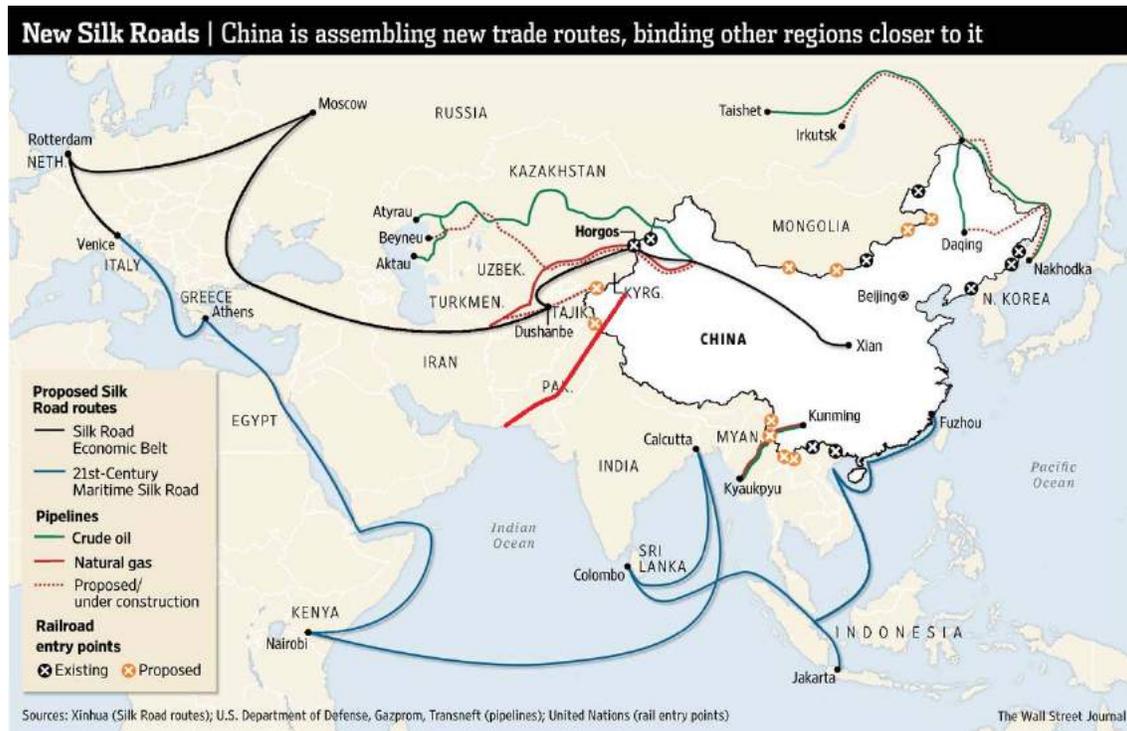
The BRI has the potential to create the world's largest platform for economic cooperation, financial integration, trade and the integration of markets (*Federal Finance Minister, 2017*). It is stated that OBOR provides a unique opportunity to connect countries and achieve higher growth in the region. Pakistan is actively engaged and investing in such initiatives, including Central Asia Regional Economic Cooperation (CAREC). The Chinese President has said that the BRI originate from China, but it belongs to the world.

BRI will open regional and connect previously untapped areas within and outside of Pakistan. Road, Rail, Air and Sea linkages will provide new opportunities in trade and investment. Regional integration and cooperation won't just ensure a more peaceful coexistence between regional nations but also provide for a platform to discuss trade and security potential and concerns. China is set to spend more than 1 trillion US dollars (*WEF*) on the BRI of which Pakistan and Gwadar remain the flagship project.

### III. CPEC AND OBOR / BRI

CPEC is a framework of regional connectivity. It was practically executed by Chinese President Xi Jinping during visit to Pakistan in April, 2015. It is the flagship project of OBOR / BRI which was initiated by President Xi Jinping in 2013 and termed as “Project of the Century”. OBOR / BRI has 6 major economic corridors which hold around 65 countries of Asia, Europe and Africa, 3 billion people which is 40 percent of Global Gross Domestic Product(GDP). (Figure 1)

**FIGURE 1: SIX ECONOMIC CORRIDORS OF OBOR / BRI**



#### *Economic Corridors of OBOR / BRI*

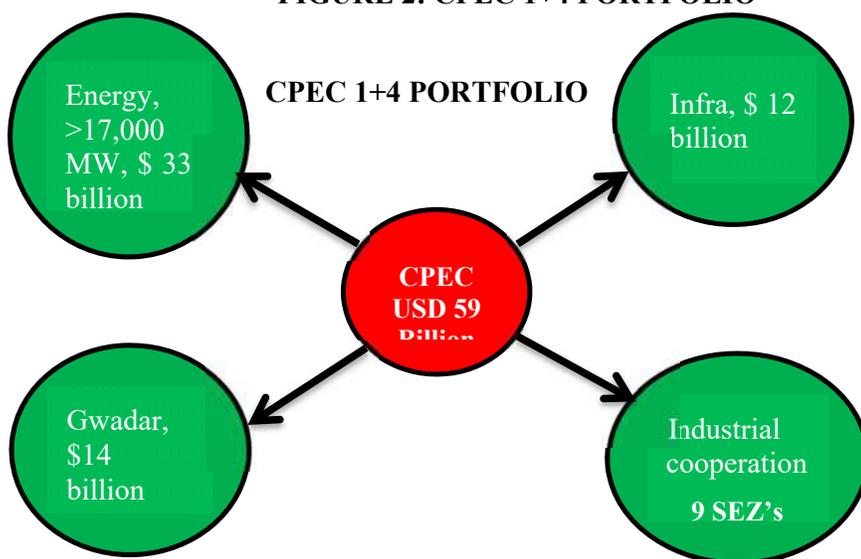
- **CPEC:** Connect China (Xinjiang) with Pakistan & there onwards by road, rail, sea, optical fibre, people to people linkages
- **New Eurasian land bridge to run from Jiangsu Province to Rotterdam:** China–Mongolia- Kazakhstan- Russia- Belarus- Poland- Germany-Netherlands would extend existing route to Kazakhstan freight railways
- **China-Mongolia-Russia Corridor:** High speed rail and road links, freight trains are already running along this route
- **China-Central Asia-Western Asia Corridor:** mostly for energy, China-Central Asia gas pipeline already exists (world’s longest) Turkmenistan, Uzbekistan, Kazakhstan, Xinjiang plans to link Middle East with this pipeline as well
- **China-Southeast Asia Corridors:** three lines coming through Vietnam, Laos, Myanmar also connect through Nanning to Guangdong Province
- **Bangladesh-China-India-Myanmar Corridor:** rail construction, road construction, industrial parks
- **China-Myanmar Corridor:** pipelines, highways, rail

Similarly Pakistan has its own vision 2025 which is “To make Pakistan the next ASIAN TIGER”. This vision has seven pillars; 1) Sustained Indigenous Inclusive Growth 2) Energy Food and Water Security 3) Democratic Governance Institutional Reform and Modernization of Public Sector 4) Human and Social Capital 5) Private Sector Lead Growth 6) Developing A Competitive Knowledge Economy through Value Addition and 7) Modernizing Infrastructure and Strengthening Regional Connectivity”. In light of these seven pillars, CPEC under OBOR / BRI and Vision 2025 are rightly calibrated with each other to achieve their goals.

#### IV. CPEC PORTFOLIO

As discussed, this portfolio has four parts; 1) Energy, 2) Infrastructure, 3) Gwadar Port, 4) Industrial Cooperation. Its estimated cost up till now is 59 billion US dollars and according to research it will be crossing up to 100 billion US dollars by the financial closing (FC) of all infra projects. The CPEC one plus four portfolio has been shown in figure 2.

**FIGURE 2: CPEC 1+4 PORTFOLIO**



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

In order to address the acute energy shortages, around 56 percent of CPEC portfolio is based on energy projects amounting 33 billion US dollars. And this energy portfolio is very diverse in terms of energy mix, financing, regulatory regimes, tariffs, profit sharing and operations. These are all in Independent Power Producer (IPP) mode and regulated by National Electric Power Regulatory Authority (NEPRA). Details of energy projects are given in table 1.

**TABLE 1: CPEC ENERGY PROJECTS**

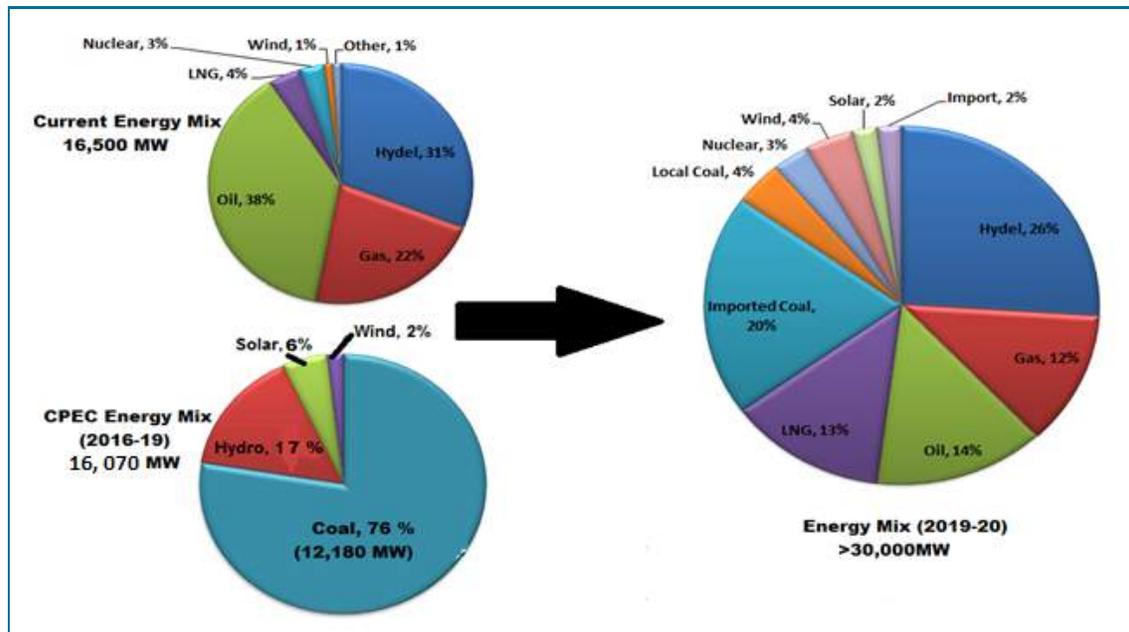
CPEC-Energy Priority Projects				
#	Project Name	MW	Cost (\$, M)	NEPRA Levelized Tariffs Rs./KWH
1	Port Qasim Electric Company Coal Fired, 2x660, Sindh	1,320	1,980	8.1176

2	Sahiwal 2x660MW Coal-fired Power Plant, Punjab	1,320	1,600	8.1176
3	Engro thar 4x330MW Coal-fired, Thar, Sindh	1,320	2,000	8.255
	Surface mine in Block II of Thar Coal field, 6.5 metric ton per annum (mtpa), Thar Sindh			
4	Gwadar Coal /LNG / Oil Power Project	300	600	8.1176
5	HUBCO coal power plant, Hub Balochistan	660	970	8.1176
6	Rahimyar Khan Coal Power Project, Punjab	1,320	1,600	8.1176
7	SSRL Thar Coal Block 1 - 6.5 metric ton per annum(mtpa) Thar, Sindh	1,320	1,300	8.0924
	SSRL 2x660 MW Mine Mouth Power Plant, Sindh			
8	Zonergy Solar Park, Bahawalpur, Punjab	900	1,215	19.3326
9	Dawood wind Farm, Bhambore, Sindh	50	125	13.1998
10	UEP 100MW wind Farm, Jhimpir, Sindh	100	250	13.1998
11	Sachal 50MW Wind Farm, Jhimpir, Sindh	50	134	13.1998
12	Suki Kinari Hydro power Station, KPK	870	1,802	8.5853
13	Karot Hydropower Station, AJK & Punjab	720	1,420	7.737
14	Matiari to Lahore Transmission		1,500	
15	Matiari to Faisalabad Transmission		1,500	
<b>Total</b>		<b>10,250</b>	<b>21,466</b>	
<b>CPEC-Energy Actively Promoted Projects</b>				
#	Project Name	MW	Cost (USD, M)	NEPRA Levelized Tariffs Rs./KWH
16	Gaddani Power Park Project (2x660MW)	1,320	3,960	8.255
	Gaddani Power Park Project (Jetty + Infrastructure)		1,200	
17	HUBCO coal power plant 1X660 MW, Hub Balochistan	660	970	8.1176
18	Kohala Hydel Project, AJK	1,100	2,397	7.737
19	Pakistan Wind Farm II 2X50 MW(Jhampir, Thatta, Sindh)	100	150	13.3756
20	Thar mine mouth oracle, Thar Sindh	1,320	1,300	8.255
21	Muzaffargarh Coal Power Project, Punjab	1,320	1,600	8.255
<b>Total</b>		<b>5,820</b>	<b>11,577</b>	

Source: CPECS, NEPRA

CPEC Energy portfolio is very diverse in terms of input content of power plants it has four renewable energy projects (one solar + three wind), three hydro projects and twelve coal energy projects. It also has two transmission line projects. These plants will be adding more than 16,000 megawatts (MW) in national grid by 2020. Details of energy mix before and after CPEC Energy portfolio can be seen in figure 3.

**FIGURE 3: PAKISTAN’S ENERGY MIX BEFORE AND AFTER CPEC**



CPEC energy portfolio has been rightly addressing the serious bottleneck of Pakistan’s economy and adding bulk of energy in next couple of years. Before the inception of CPEC energy portfolio per unit cost of electricity was PKR 9.69 in 2014 but it is expected to be less than PKR 9.10 by 2020 (*Chief Economist of Pakistan, Dr. Nadeem Javaid, 2017*).

Energy and development has pure link for economic and as well for social development including health sector, education and better quality of life. Today, CPEC is going to add more than 10,000 MW in national grid within three years. If we look into the history, from 1947 to 2013 (66 years) we had built the capacity of only 16,000 MW and now we are going to more than 10,000 MW in next three years, and 50 percent is from CPEC projects. Pakistan has never imagine this mega investment in energy ever before.

Pakistan is the 7<sup>th</sup> biggest coal reserves country in the world and blessed with the enormous resources of coal with volume of 186 billion tons (*Business Recorder, 2013*). It is the first time in the history of the country that a significant efforts are in progress for scaled use of coal to generate electricity under CPEC. US, China and India are producing more than 50 percent of its electricity from coal and in some states of USA e.g. West Virginia up to 95.6 percent of the electricity were produced in 2014 by using coal (*The-us-states-most-dependent-on-coal, Statista, 2017*).

The CPEC energy portfolio of 16,070 MW transformed the fuel mix pie for electricity generation from oil based expensive production (NEPRA Tariff: PKR. 10.4506 /KWH) to coal based (NEPRA Tariff: PKR. 8.117/KWH). Up to 76 percent of the electricity under CPEC IPPs is coal based (12,180 MW) which would significantly help in decreasing the cost of per unit of electricity.

Availability of uninterrupted electricity due to Chinese IPP's under CPEC at cheap rates would significantly relief the domestic and commercial consumers, and would support the competitiveness of small and medium industries in particular and large industries in general.

#### *CPEC, Gwadar and Baluchistan*

Almost 14 billion US dollars out of 59 billion US dollars are allocated to Gwadar Port and Gwadar Smart City. These two projects are going to compete with Dubai and Middle East region. Gwadar is the deepest and largest port in the region with depth of 18 meters and 120 berths respectively (when fully operational). (*Centre for Strategic & Contemporary Research, CSCR*).

Baluchistan is the largest province of Pakistan with 43 percent of land share but smallest in population. Baluchistan is full of natural resources including gas, minerals, coal, fishery and fruits are major economical capitals. But due to lack of focus, its Human Development Index (HDI) was 0.556 in 2009, which was lowest among all other provinces. In 2012 employment index was 20 percent, which was hampering the economic growth of in all canals. But with the help of CPEC, more than 14 billion US dollars are being invested for the economic and social uplift of the region for its inclusive growth at par with world class standards. And now its name is "The Golden Bird" of Pakistan (*Centre for Strategic & Contemporary Research, CSCR*).

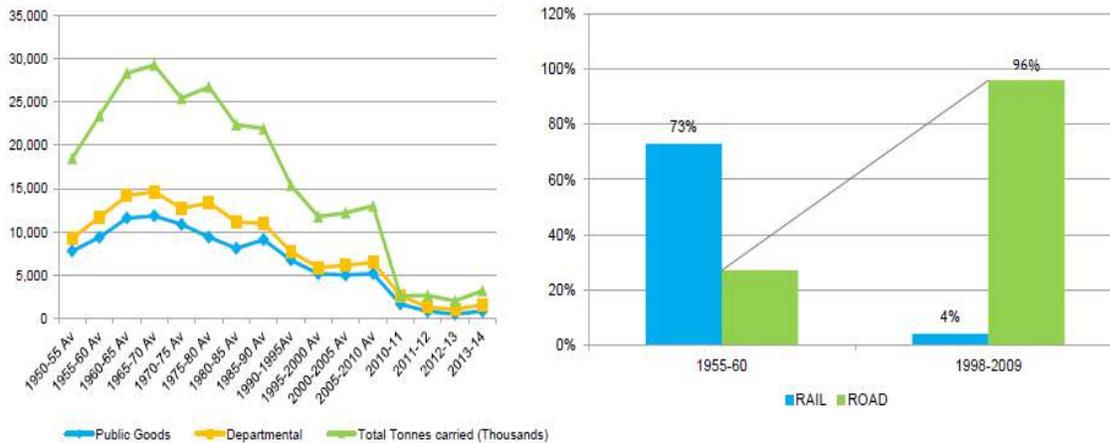
Baluchistan and Gwadar are strategically located in the region with 600 kilo meters long coastal belt and 624 nautical kilo meters away from Strait of Hormuz respectively. Around 100,000 ships are annually passing through this strait with 70 percent of world's oil trade. There is latent potential to invest up to 46 billion US dollars in Gwadar as Pakistan is going to be the trading and economic hub of the region. Gwadar Port will be giving direct gateway to China to explore those economies which holds 48 percent of the world oil and 38 percent of natural resources. The 15,000 kilo meters long Trans-Afghan Gas Pipeline, Turkmenistan Afghanistan Pakistan India (TAPI) which is passing through Gwadar and that will allow Turkmen natural gas to access global supply chain networks. Pakistan's total trade volume was 40 million tons in 2000 and grown up to 78 million tons in 2015. Gwadar development authority(GDA) also stated that foreign direct investors from China, Europe and Middle East has planned to setup more than 300 industries in next couple of decades. More than 1.7 million economic human resources will be relocating to Gwadar in next three decades. A special economic zone (SEZ) of 9.23 square meters is being established at Gwadar amounting with 2 billion US dollars which accelerate the exports and imports. Gwadar is expected to generate more than 2 million jobs in next decade (*Centre for Strategic & Contemporary Research, CSCR*).

#### *China Pakistan Economic Corridor (CPEC) and Connectivity Infra*

More than 12 billion US dollars are being allocated to road, rail, mass transit and optical fiber projects and it has always been difficult to make financial closing(FC) of all mega infrastructure projects. However, construction of 3,000 KM roads (*National Highway Authority, NHA*) and upgradation of Main Line One (ML-1) track of railway are under process. The expansion and up-gradation of the Main Line One (ML-1) railway track is around 8.172 billion US dollars in itself (*CPEC, 2017*).

There has been a continual decline in the rail services in favor of road transportation in Pakistan over the last two decades. As shown in the figure 4 and 5, a substantial importance has been given to road over rail despite the latter being the cheaper option. During the 2005-2010 budgetary expenditure for rail was more than three times lower than road. Since then Pak Railway (PR) found itself unable to compete and mainly due to a greater priority given to the passenger aspect rather than the more profitable freight services. In addition, there was a lack of investment in locomotives, wagons, and improving track capacity and quality which reduced Pakistan Railways ability and capacity (*Road Freight Transport and Emerging Competitive Dynamics, 2016*).

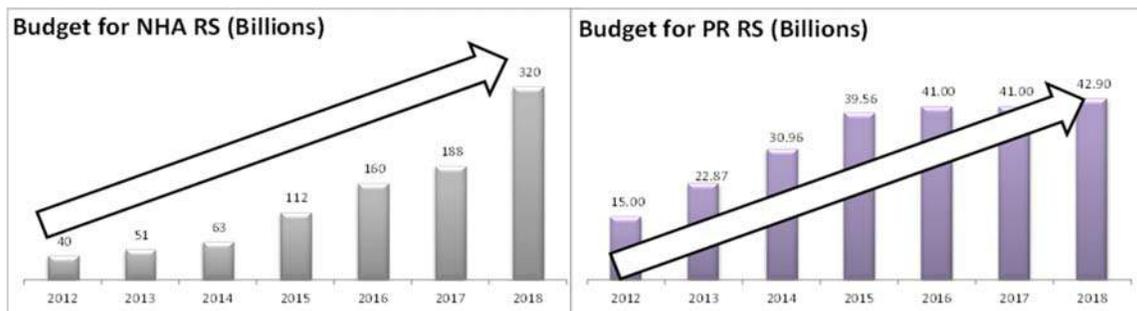
**FIGURE 4: EVOLUTION OF PAK RAILWAY TOTAL FREIGHT CARRIED, COMPARISON OF ROAD & RAIL**



Ministry of Railways and World Bank, 2011

Source:

**FIGURE 5: PUBLIC SERVICE DEVELOPMENT PROJECT BUDGETS ALLOCATION TRENDS IN PAKISTAN**



Source: Ministry of Finance, Pakistan Economic Survey

Despite the commitment to road over rail, there are numerous inefficiencies has been witnessed in the trucking sector in Pakistan. Inefficiencies are estimated around 2.62 billion US dollars per year, consisting mainly of (i) USD 1.04–USD 1.57 billion per year in extra fuel costs and diesel subsidies, (ii) USD 0.52–

USD 0.61 billion per year in additional road-user costs, and (iii) a USD 0.44 billion per year contribution to the infrastructure deficit (*Ernesto Sanchez et. al, 2013*).

That is not to say that there aren't inefficiencies in the rail sector. Due to obsolete infrastructure, technology and equipment the railway transport experiences severe delays and safety hazards. As you can see from table 2, total freight carried has decreased from 7.7 to 4.6 million tons (*Ernesto Sanchez et. al, 2013*). These inefficiencies have cost the economy about PKR 150 billion per annum. The low quality of service has reduced the country's regional competitiveness. About 30 percent to 40 percent of agricultural production is wasted due to inefficient farm-to-market channels. Much of this waste is due to of an inefficient, outdated and poorly equipped transport sector.

**TABLE 2: PAKISTAN RAILWAY TRAFFIC (MILLIONS)**

Year	Freight (tons)	Ton-kilometers
1980–85	11.2	7,380
1985–90	11.0	7,940
1990–95	7.7	5,890
1995–2000	5.9	4,370
2000–05	6.1	4,744
2005–10	6.2	5,285

Source: Aly et al. 2009, 47.

Note: Data for 2005–10 estimated from the Pakistan Economic Survey 2010–11.

Currently in Pakistan, cargo trains are running with 60 kilo meters per hour which is the slowest in the world. But with the help of CPEC, state of the art information technology(IT) based up-gradation of Main Line One(ML-1) will boost its speed up to 130 kilo meter per hour and eventually it will be reducing the overall lead time to one half between destinations. Pakistan has never imagine this mega investment in railway ever before.

#### *China Pakistan Economic Corridor (CPEC) and Industrial Cooperation*

Finally, Industry is a key for sustainable development of any economy, so this portion has also been included in long term plan. However nine special economic zones (SEZ's) have been declared so far and National Development Reforms Commission of China (NDRC) visited two zones (Rashkai and Sheikhpura) in July, 2017.

According to the economic history of Chinese growth, in 1978, Chinese government had announced 5 Special Economic Zones (SEZ's) along with 100's of industrial and economic zones under "Reform and Open Up Policy". Geographically, most of them were in eastern coastal areas of China. But the latest one, 6<sup>th</sup> Special Economic Zone (SEZ) had been declared in landlocked western China in 2010. This is geographically located in its autonomous region named with Kashgar, Xinjiang. The success of these industrial zones is based on light engineering (L.E) sectors. Chinese Special Economic Zones (SEZ's) at national level accounted for about 22 percent of national Gross Domestic Product (GDP), 46 percent of FDI, and 60 percent of exports and generated in excess of 30 million jobs (*Zeng 2010*). Details of these zones are shown in table 3.

**TABLE 3: SIX SPECIAL ECONOMIC ZONES (SEZ'S) OF CHINA**

Closed Economy 1948-78	Open Economy: Chinese Central Govt announced	SEZs	Location	Inauguration	GDP USD
		Shenzhen	Guangdong(Coastal)	1978	>152 B
		Zhuhai	Guangdong(Coastal)	1978	>19.2 B
		Shantou	Guangdong(Coastal)	1978	>19.25 B
		Xiamen	Fujian(Coastal)	1978	>32 B
		Hainan	Hainan(Coastal)	1978	>32.8 B

	"Reform and Open Up Policy" in 1978	Kashgar	Xinjiang(Land Locked)	2010	123 B(Xinjiang)
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But now, these industrial zones are at the level of highest saturation in Light Engineering (L.E) sectors and these industries are willing to relocate in other areas of the world where they can enjoy comparative advantages in terms of low operational cost (OPEX). 85 million jobs worth of work has been saturated in all industrial zones of Light Engineering(L.E) sectors in China and these industries are willing to relocate at their earliest (*Prof. Justin Yifulin at Planning Commission of Pakistan, April, 2017*). According to analysis, China has been exporting more than 17 percent of its export to Middle East, Europe and Africa, and CPEC is the most feasible and shortest route for this trade in future (*WTO*).

In order to boost and capture this saturating Light Engineering (L.E) industry, 9 Special Economic Zones (SEZ's) have been included in CPEC. Details can be watched in below mentioned table 4.

**TABLE 4: NINE SPECIAL ECONOMIC ZONES (SEZ'S) OF CPEC**

#	Name of Special Economic Zones(SEZ's)	Location	Category
1	Rashakai Economic Zone on M-1	KP	Provincial
2	Special Economic Zone Dhabeji	Sindh	Provincial
3	Bostan Industrial Zone	Balochistan	Provincial
4	Punjab - China Economic Zone, M-2 District Sheikhpura	Punjab	Provincial
5	ICT Model Industrial Zone, Islamabad	Islamabad	Federal
6	Development of Industrial Park on Pakistan Steel Mills Land at Port Qasim near Karachi	Port Qasim, Karachi	Federal
7	Mir Pur Industrial Zone	AJK	Provincial
8	Mohmand Marble City	FATA	Provincial
9	Moqpondass SEZ Gilgit-Baltistan	GB	Provincial

Pakistan's economy can get strategic benefits from these relocating sectors to reduce its import bill up to 5 billion US dollars annually which is currently importing from China. Similarly Pakistan can boost its export up to 400 billion US dollars annually in long run after the proper relocation of Light Engineering Industry (L.E.I) from China.

#### V. KEY CHALLENGES & SOLUTIONS IN BUILDING CPEC

Whenever mega projects come into the developing and under developed economies from very developed economies, usually, there are some challenges for the optimal utilizations of these projects. Basically, these challenges come due to the inconsistency in the development polices in their planning phases. Such problems as associated with mismatch of infrastructure, exclusive economic growth, cultural mismatches and lack of institutional capacity at macro level but also there are multiple issues at micro level as well e.g. lack of awareness, governance issues, improper implementation of free trade agreements, irrelevant conversion exercise of currency and sustainable development of SEZ's. Similarly these calibration issues are with CPEC

as well. In this initiative, world's 2<sup>nd</sup> largest economy with Gross Domestic Product (GDP) of 11,218 billion US dollars is going to join its hands with a developing economy of Gross Domestic Product (GDP) of 284 billion US dollars (*Global Competitiveness Index 2017-2018 edition*).

#### *Mismatches of Infrastructure*

In global comparison, China is at 46<sup>th</sup> position but Pakistan is at 110<sup>th</sup> position in their respective infrastructure pillar for global competitive index (*Global Competitiveness Index-GCI 2017-2018 edition*). Although, Pakistan has improved its rank from 105<sup>th</sup> to 82<sup>rd</sup> in last 5-6 years but there is still huge room to improve to get optimal gains from China-Pakistan Economic Corridor (CPEC). These infrastructural gaps and respective ranks can be evaluated in further nine parameters in below mentioned table 5.

**TABLE 5: INFRASTRUCTURAL MISMATCH BETWEEN CHINA AND PAKISTAN UNDER 9 PARAMETERS**

#	Parameters	China	Pakistan	Difference
1	Quality of over al infra	47	82	(35)
2	Quality of Road infra	42	76	(34)
3	Quality of railroad	17	52	(35)
4	Quality of port infra	49	73	(24)
5	Quality of air transport infra	45	91	(46)
6	Available airline seats KM/week, millions	2	46	(44)
7	Quality of electricity supply	65	115	(50)
8	Fixed telephones lines/100 pop	70	114	(44)
9	Mobile telephones subscriptions/ 100 pop	102	125	(23)

*Source: Global Competitiveness Index (GCI) 2017-2018 edition*

Under these above mentioned parameters, there is enormous Infrastructural mismatch between China and Pakistan. It can be overcome gradually with focused policies and investment in infra projects. According to figure 2, the complete portfolio of CPEC is for infrastructural improvement of Pakistan including energy, road, rail, sea ports, dry ports, air ports and internet which are directly addressing the all pillars of table 5. But the effect of this investment can be gaged in next couple of years. And now, Pakistan has to run on its

own to upgrade its infra up to the level of Chinese infra. But if China wants to move its all trade through this corridor in recent years then there can be a serious problem to handle trillion dollars trade through this capacity.

#### *Exclusive economic growth*

Similarly, there is vast gap in annual per capita income of China and Pakistan which is 8,113.3 US dollars and 1,468 US dollars respectively. If we see internally, per capita income of west China is 5,490 US dollars (*Xinjiang Statistical Yearbook*) annually but per capita income of eastern China is more than 9,000 US dollars annually. China started to develop its eastern coastal China in 1978 under the “Open up Policy” with five SEZ’s then they moved towards central China in 1990’s under the “Go west” policy and now they are moving towards western landlocked China under the “OBOR / Belt & Road Initiative”(Translating trends in China's economy, Chiecon, 2015). The journey from exclusive growth to inclusive growth is gradual but consistent. Similarly, In Pakistan there is immense difference in annual per capita income between Punjab (US 1,603 dollars) and Baluchistan (US 839 dollars) (*Pakistan Bureau of Statistics, 2016*). Pakistan has to adopt the same model for inclusive growth as China has adopted in last four decades. Nine SEZ’s are going to address this issue but these are still under plan. Countrywide well spread of these nine SEZ’s is a green signal and initiative for inclusive growth of the country under industrialization. But the sustainable habilitation of these SEZ’s itself an issue.

#### *Sustainable Development of SEZ’s*

According to Prof. Justin, 85 million jobs of worth work has been saturated in eastern and central Chinese industrial zones in light engineering sectors and these industries are will to relocate to other developing countries where they can enjoy cheap labor. Pakistan’s labor cost is three times less than China.

China has three strengths; 1) Deep pockets 2) Advance technology 3) Experienced management and Pakistan has one unique strength which is the cheapest labor in the region. This point of calibration between Chinese industries and Pakistani manpower can help these SEZ’s for their sustainable habilitation without wastage of time and capital. Currently 90% labor are working in already established venture between China and Pakistan .E.g. Zong-China Mobile, Hire etc.

#### *Lack of institutional capacity*

According to Institutional pillar of Global competitive Index (GCI), China is at 41<sup>th</sup> position and Pakistan is at 90<sup>th</sup> and detailed gaps under its 21 parameters can be evaluated in table 6.

**TABLE 6: INSTITUTIONAL CAPACITY MISMATCHES UNDER 21 PARAMETERS**

#	Parameters	China	Pakistan	Difference
1	Property rights	53	115	(62)
2	Intellectual property protection	49	96	(47)
3	Diversion of public funds	43	66	(23)
4	Public trust in politicians	27	62	(35)
5	Irregular payments and bribes	49	102	(53)
6	Judicial independence	49	80	(31)

7	Favoritism in decisions of government officials	20	62	(42)
8	Wastefulness of government spending	19	58	(39)
9	Burden of government regulation	18	64	(46)
10	Efficiency of legal framework in settling disputes	45	83	(38)
11	Efficiency of legal framework in challenging regs	30	69	(39)
12	Transparency of government policymaking	45	97	(52)
13	Business costs of terrorism	80	130	(50)
14	Business costs of crime and violence	64	121	(57)
15	Organized crime	79	127	(48)
16	Reliability of police services	60	116	(56)
17	Ethical behavior of firms	49	79	(30)
18	Strength of auditing and reporting standards	71	110	(39)
19	Efficacy of corporate boards	126	121	(5)
20	Protection of minority shareholders' interests	38	109	(71)
21	Strength of investor protection 0-10 (best)	102	26	76

Source: Global Competitiveness Index (GCI) 2017-2018 edition

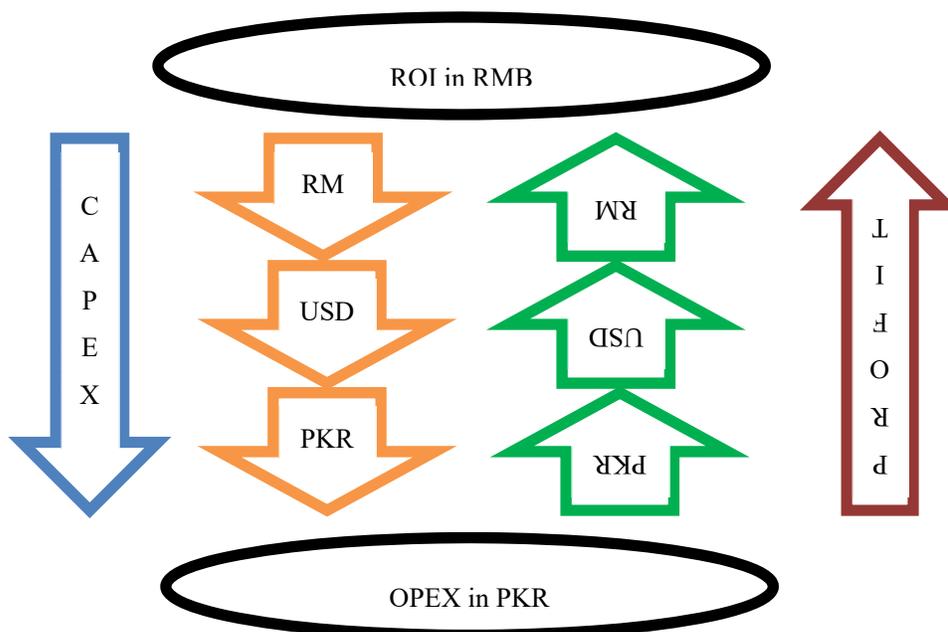
In this table, Pakistan is at negative position in all parameters and there is vast room to improve its institutional capacity for bilateral benefits of China and Pakistan.

*Both currencies conversion into US dollars*

CPEC agreement was signed in US dollars from both sides bilaterally but both have their own currencies RMBs and rupees respectively. But both are dealing in US dollars and further strengthening the third currency. Why?

Under little bit deep analysis, it is also very difficult exercise to convert three currencies into each other again and again. E.g. One CPEC's power plant is being installed by Chinese investor then he has to do the currency conversion exercise frequently as shown in figure 6.

**FIGURE 6: CURRENCY CONVERSION FLOW UNDER CPEC**



Similarly, central banks of both economies will be in complexity to manage the third currency without relevancy. As currently State Bank of Pakistan (SBP) is facing these issues to manage foreign exchange reserve and balance of payments (BOP).

If two independent states and doing this agreement between each other then why they are managing third currency?. Both has to reconsider their agreements and develop a model to handle these currency conversions without touching third currency. It can be done under currency SWAP or any other developed model of currency exchange.

#### *Implementation of China-Pakistan Free Trade Agreement (CPFTA)*

In 2013, before the inception of CPEC and CPFTA, Pakistan's trade deficit was 23 billion US dollars but now in 2017, it has been increased up to 33 billion US dollars and continuously increasing. Pakistan's FOREX has been decreased from 23 billion US dollars (2015-16) to 20 US dollars (2016-17). Pakistan's imports have been reached up to 53 billion UD dollars in current year, which is the highest in 70 years history of Pakistan (SBP, 2017). Most of the imports are being done from China under CPFTA and CPEC. These gaps may be peanut for China but these are very big for Pakistan where the total reserve is just 20 billion US dollars. Similarly, internal business community of Pakistan has some reservations about CPFTA, so both countries must renegotiate it for sustainable survival of both economies.

These all challenges can be severe if not handled timely with rightly addressing policies and steps. As China-Pakistan Economic Corridor (CPEC) is a game changer for Pakistan but both economies has to addresses these macro and micro challenges rightly for the sustainable inclusive growth of the region.

#### VI. CPEC's IMPACTS ON PAKISTAN'S ECONOMY

Pakistan has secured stable improvement in economic growth by 5.3 percent in FY2017 (*Economic Survey of Pakistan, 2017*). The improved law and order situation, successful 11th IMF review(*Express Tribune*), continuously declining inflation trends to 3.7% in FY2016(*Express Tribune*), prospect energy surplus with addition of 16,070 MW of energy under CPEC by 2018(*CoE-CPEC*), political stability, exponential gains in equity market to cross 49500 points by KSE-100 Index during 2013-16, infrastructural development projects under CPEC, decreasing cost of doing business with government's pro-business policies including 30-40 years tax holidays in Gwadar Industrial Zone for MNC's are decreasing Industrial operating expenditure(OPEX) exponentially and strengthening the confidence of foreign investor. These factors have placed Pakistan a future investment destination. Pakistan has been improved its international ranking for ease of doing business (EODB) up to 138(*WB*).

After the public announcement of CPEC, multiple multinational companies and foreign governments have showed the keen interest to establish new business ventures in Pakistan such as the 430 million US dollars merger of Engro Foods with a Dutch Company, American company General Electric's agreement with Sindh Engro Coal Mining Company(SECMC) for coal power plant machinery purchase, Malaysia's interest to cut further duties in free trade agreement(FTA), financial support from the French Government to Water

and Power Development Authority(WAPDA) for hydro power projects, Korean Automobile Company's interest to set up production facility in Pakistan, 2 billion US dollars Russian investment for 1100 kilo meters North South Gas Pipeline from Karachi to Lahore, Pak Arab Refinery-PARCO's plan to install new refinery in Baluchistan, stiff competition between German and US firms to win converter station contract for (Central Asia South Asia)CASA project worth \$10 billion, free trade agreement(FTA) signed with Turkey and Thailand, Australian High Commission also endorsed the boosting effect on regional trade under CPEC, Chinese consortium's won the bid win for 40% stake of Pakistan Stock Exchange(PSX), December 22, 2016 and KSE100 index crossing 495xx points with beating Chinese and Indian stocks market by a wide margin(*Express Tribune*).

#### *Opportunities and Potential gains for MNC's and local companies*

There are many other avenues in which many multi-national companies (MNC's) can make long-term business investments such as the growing 3 trillion US dollars Halal Food sector to meet the rising global demand. Pakistan has comparative advantage in labor and raw material. Many local companies have already initiated investing in this sector such as Hyper Star, Chase Up, Imtiaz, Metro, Makro and Naheed etc. It can be turn to be an excellent opportunity for any foreign Investor to start a new modern trade and retail chain here in Pakistan.

On 6th January, 2017, Doug McMillon, CEO Walmart, wrote about the importance of E-commerce in today's world. In his article on World Economic Forum (WEF), he discussed how E-commerce growth is going to double in next couple of decades. It is a highly unexploited market in Pakistan with a huge potential as there are only 2 or 3 major local companies working in E-Commerce including Rocket Internet, TCS etc. With a rapidly growing middle-class with internet connectivity, E-commerce is just waiting to be tapped.

## VII. CONNECTIVITY INFRASTRUCTURE IN CPEC

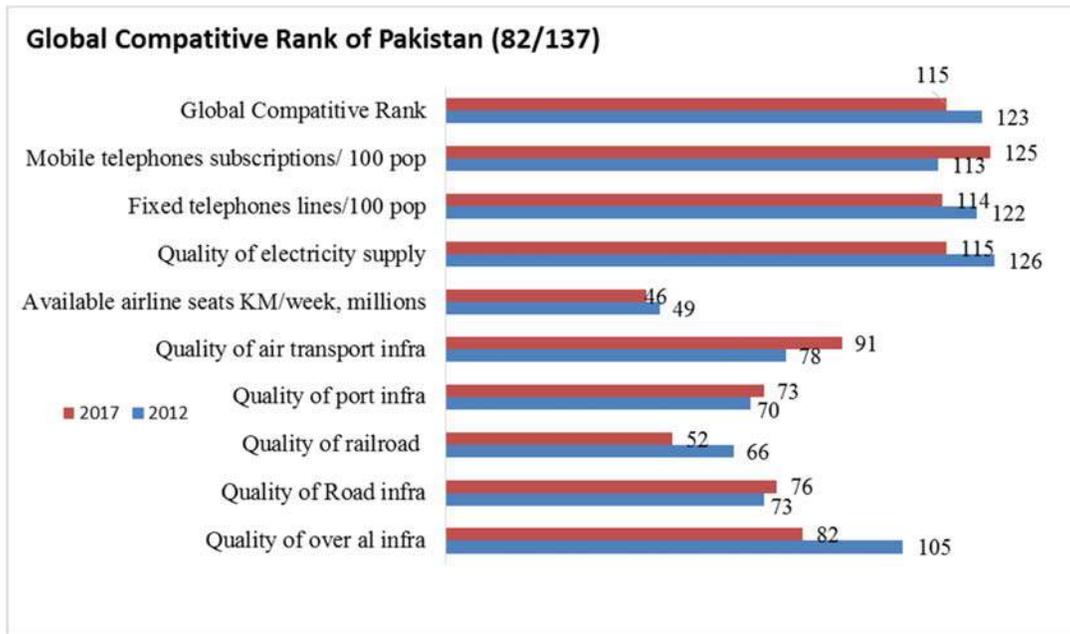
The introduction of CPEC and the BRI has addressed major concern of inefficient connectivity network and received investment for up-gradation and construction of new linkages. Industrial growth occurs in regions with good market access and low transportation costs. Development of connectivity infrastructure lowers the price of transport and the cost of production. Without the CPEC initiative there would have been a lack of investment in all areas of the connectivity infrastructure, which would have only increased the already existing impediments to economic growth. These include a lack of reliability into services, delays, accidents, loss of goods due to poor roads and delays, long lead times; all of these increase the cost and make businesses think twice before investing.

Rail freight takes 1 to 2 days on main line (Karachi-Lahore); and up to 16 days (Karachi-Quetta) to deliver upcountry which is three times slower than China and US (*Ovais, 2014*). When compared to countries such as China, United Kingdom and the United States they are well known for having a well-established and successful road and rail freight network Pakistan certainly falls behind. As such the leadership in Pakistan understood the need to invest in these critical areas and bring the infrastructure up to world standards.

Agglomeration of businesses occurs in areas with good market access, low transportation costs. Most of Pakistani businesses are hence located around Karachi and Lahore. The poor transport network and high cost not only denies businesses market access to other regions in Pakistan but also makes them unattractive to relocate too. Agglomeration of businesses is important to any economy as it leads to input-output linkages, knowledge and information spillovers and innovative ideas. These lead to industrial competitiveness and growth (*Sanchez-Triana et. al, 2013*).

According to Global Competitive Index(GCI) Report in figure 7, Pakistan has improved its infrastructure significantly in 2017 after illusion of CPEC with securing 82<sup>nd</sup> position out of 137 economies as compare to its position in 2012(*WEF*).

**FIGURE 7: GLOBAL COMPETITIVE INDEX OF PAKISTAN IN TERMS OF INFRA.**



*Source: Global Competitive Index (GCI), World Economic Forum*

The aim of these projects is to provide the infrastructure needed to support the CPEC initiative and provide a viable connectivity network to all regions. These projects will have direct and indirect impacts on regional development, connectivity and trade.

Road and rail infrastructure is the key to the entire transportation network. There can be no road shipment without roads, no air shipments without an airport and no rail shipment without railways. It is a key factor in capacity determination, method selection and route selection. However without a proper efficient airport infrastructure, the capacity for freight will not be optimal. The same applies to road, rail and sea.

It can be concluded that if business success depends on its costs and if supply chain costs account for a considerable amount of a business's costs then it is crucial to have a good infrastructure available in order to capitalize it and reduce the incurred cost. Having a good road linkage along the extraction–manufacture–distribution line will enable a quicker movement of goods thereby reducing lead time and costs. As mentioned when businesses thrive and infrastructure is well developed then there will be better market

access and reduced costs which will enable businesses to grow and move into less developed regions. This entire process will not only enable regional connectivity but also cultivate it.

## VIII. CONCLUSION

OBOR / BRI is a new economic world order sponsored from China to all developing and developed countries those want to grow economically. According to many prominent economic thinkers and researchers, “center of economic strength” is shifting from west to east. Manpower is the key source of economic growth. The population of three Asian neighboring countries namely China, India and Pakistan is 3 billion which is 65 percent of Asia and 39 percent of world’s population respectively. As China had been achieving double digit growth for long time but now it has been going to saturate. As China had announced its “Open Up Policy” in 1978 and then China had taken its practical part in World Trade Organization (WTO) in 2001 and has become one of the largest exporter and importer of the world within fifteen years. And now, China is going to remove its boundaries with huge connectivity infrastructure investments amounting up to 1 trillion US dollars (WEF) in other countries including 65 countries of BRI.

Having proper road and rail networks will help to determine the shortest and cheapest route thus creating a competitive edge. With better roads and rails, new regions and markets will be available to expand into and tap new resources. Connectivity Infrastructure not only supports business development directly but also helps to reduce costs which will only further help in business development and growth.

CPEC has rightly addressed the major bottlenecks of Pakistan’s economy through its diverse portfolio including connectivity infrastructure, energy, industrial cooperation and many more things. With the help of this infrastructure investment, Pakistan has improve it’s over all infrastructure rank to 12 points, 82(2018) from 105(2012), (*Global Competitive Index, World Economic Forum*).

The connectivity through CPEC will amplify opportunities as it could be extended to East, South, West and Central Asia and ultimate beneficiary would be the people of the region. Connectivity of ideas through exchange of information, mutual learning and joint research, among the Asia-Pacific member states is another dimension of connectivity to share experiences and lessons learned.

However, CPEC is going to complete with very good pace but there are some major challenges to make it optimal for both economies. Major problems are based in these multiple key directions; 1) Infrastructural Capacity Mismatches in terms of energy, rail, road, sea ports, air ports, dry ports and internet 2) Inclusive Growth between regions 3) Gaps in Institutional Capacity in terms of governance, transparency, policies, awareness, taxes etc. 4) Implementation of China-Pakistan Free Trade Agreement (CPFTA) 5) Both currency conversion into US dollars again and again 6) Sustainable development of SEZ’s. China has almost addressed the first major challenge of infra and now, Pakistan has to run on its own with proper infrastructural improvement plans. But for all other issues, China and Pakistan both have to design an effective and efficient mechanism to address these challenges timely and rightly.

CPEC is a real game changer for Pakistan in terms of expanding economic opportunities. It is not mere financing and road network but an extensive economic package. Its highly mentioned by Federal Minister of Planning, Development and Reforms that 33 billion US dollars investment under energy portfolio is being done in Independent Power Producer (IPP) Mode which is being regulated by the National Electric Power Regulatory Authority (NEPRA) and infrastructure sectors projects are being financed through concessional loans on a paltry low interest rate of the 2 percent payable over 20-25 years. The connectivity through developed infrastructure under CPEC portfolio will bring positive impacts on all segments of life.

Chinese dependence on foreign oil is around 60 percent from KSA, Iran, Russia, Oman, Iraq, Sudan, Kazakhstan and Kuwait. China’s merchandises exports account for 12.6 percent and imports for 10.4 percent of the world’s merchandised trade respectively (WTO). The perspective trade through CPEC will be

definitely adding billion of foreign exchange reserve (FOREX) in Pakistan's economy annually. It will lessen the debt of Pakistan and will improve the balance of payments (BOP's) situation.

In nutshell, Pakistan's economy is gradually rising after the inception of CPEC, which has been rightly addressing the major bottle necks of economy. Pakistan Gross Domestic Product (GDP) growth was 4 percent in 2015 but with the inception of CPEC, Pakistan has grown by 5.2 percent in 2017 and similarly World Bank has reported the estimated growth of Pakistan is 6 percent by 2018. Pakistan will be 20<sup>th</sup> largest economy with Purchasing Power Parity (PPP) of 1.868 trillion US dollars by 2030. (*Business Insider, Feb, 2017*)

Undoubtedly, CPEC can turn to be a fate changer and trend setter. It can prove to be a catalytic step in exponentially increasing the economic growth of Pakistan. The economy of Pakistan may emerge as dynamic and vibrant economy in next decade. In nutshell, CPEC is an open opportunity for both domestic and foreign investors. But in order to turn these opportunities in realities, we have to work very hard.

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