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Abstract: The current paper makes use multipronged approach highlighting the significance of China-Pakistan Economic Corridor through descriptive analysis and making use of SMART simulation model in illustrating the pre and post Free Trade Agreement (FTA) analysis and impact on trade, revenue and welfare gain of the market. Both the approaches are aimed at understanding the economic cooperation between both the countries in the areas of investment in physical infrastructure (road, railways, transit trade etc.) and via important trade facilitation indicator of tariff reduction for facilitating increase in trade. It is concluded from simulation that trade and welfare effect for Pakistan under zero concession from China is higher for Cotton, Cereals and salt, sulfur etc., with increased welfare impact for potential products of special woven etc., and impregnated textile fabric not included in FTA. Similarly, highest trade and welfare gain for China is in organic chemical products under zero tariff concession from Pakistan

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We understand that the Corresponding Author is the sole contact for the Editorial process. He/she is responsible for communicating with the other authors about progress, submissions of revisions and final approval of proofs.

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Dated: 27-09-2014

Trade Facilitation and Connectivity: Perspective from China-Pakistan Economic Corridor and Free Trade Agreement (FTA)

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Abstract

The current paper makes use multipronged approach highlighting the significance of China-Pakistan Economic Corridor through descriptive analysis and making use of SMART simulation model in illustrating the pre and post Free Trade Agreement (FTA) analysis and impact on trade, revenue and welfare gain of the market. Both the approaches are aimed at understanding the economic cooperation between both the countries in the areas of investment in physical infrastructure (road, railways, transit trade etc.) and via important trade facilitation indicator of tariff reduction for facilitating increase in trade. It is concluded from simulation that trade and welfare effect for Pakistan under zero concession from China is higher for Cotton, Cereals and salt, sulfur etc., with increased welfare impact for potential products of special woven etc., and impregnated textile fabric not included in FTA. Similarly, highest trade and welfare gain for China is in organic chemical products under zero tariff concession from Pakistan.

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[2] Disclaimer: The views expressed in this article are those of the authors and do not necessarily represent the views of, and should not be attributed to, the organizations for which the author works.

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Introduction

It is acceptable model today to talk about increased connectivity through bilateral and regional integration involving investment in transport connectivity through investment in physical infrastructure and trade facilitation via nurturing free trade agreement. In this aspect, bilateral and regional integration can be beneficial for economies engaged in economic cooperation. In this essence, it can be gauzed from international experience following strategic areas may be identified including: Trade facilitation, better connectivity and reduction in cost via transport and communication, also promoting investment opportunity through creation of Special Economic Zones.

Fan *et al.,* (1997) illustrates a strong link of improved road infrastructure, poverty reduction and increased productivity. Fan *et al.,* (1997) case study from China found that a one percent increase in road density increased agricultural GDP per worker, non-agricultural employment and wages of non-agricultural workers by 0.08 percentage points, 0.10 percentage points and 0.15 percentage points, respectively. Increase productivity leads to increased growth and ultimately reduces the poverty. Kwon (2000) calculated growth elasticity of poverty incidence as –0.33 and –0.09 for Indonesia provinces with good road infrastructure and bad road infrastructure. This implies that poverty decline by 0.33 and 0.09 percentage points respectively, for every one percentage point growth in provincial GDP. Glewwe et al., (2000) shows that the presences of paved roads increase the probability of escaping poverty by 67 percent for a poor households of Vietnam living in rural communities compare to those living in communities without paved roads.

These studies highlights the importance of transport infrastructure in employment, poverty reduction, increased productivity etc. There are some literature available that provides estimates for the infrastructure need of South Asia. For instance, Zhai, (2010) projected the estimated demand for financing infrastructure investment in 29 Asian countries based on their development prospects. According to Zhai (2010), if that demand is meet, the aggregate stock of infrastructure in these countries will increase by 93.3 percent by 2020, with highest increase in power sector infrastructure followed by transport and communication infrastructure. Similarly, the accumulated reduction in trade costs by 2020 due to the investment in infrastructure during 2010-2020 period is 14 percent and 12.9 percent of total trade value for China and Pakistan, respectively.

The China-Pakistan Economic Corridor (CPEC) project is one step toward greater connectivity for both China and Pakistan with greater focus on connectivity via road, railways, energy pipelines and social linkages for more trade and investment. The propose China- Pakistan Economic Corridor is to transpire the economies of both the countries towards further gains and development.

The current study is designed with objectives to explore the possible potentials from CPEC. It highlights the significance of CPEC through descriptive analysis of current physical infrastructure and trade facilitation situation and then applying SMART simulation model for illustrating the pre and post FTA analysis and impact on trade, revenue, and welfare gain of the

market to understand the economic cooperation between the countries in the area of physical infrastructure (roads, railways, transit trade etc).

The rest of the paper is organized as follow. Section 2 consist of situation analysis of Pakistan and China on infrastructure and trade. Additionally, it compare various infrastructure and logistic related statistics with its regional competitors and economic blocks. Section 3 presents brief overview of China-Pakistan Economic Corridor background with brief description. Details about the project is included in the Appendix-I. Section 4 presents the application of SMART model and the pre and post FTA impacts on trade, revenue and welfare gain for the markets in China and Pakistan. Finally, Section 6 conclude the paper.

2.   Situation Analysis: Infrastructure and Trade

In order to have a competitive and quality soft and hard infrastructure to support the need for establishing China-Pakistan Economic Corridor a situational analysis of infrastructure and trade is undertaken from various published sources. The Global Competiveness Report (2013) provides details about the quality of overall infrastructure, quality of railroad, roads, air transport infrastructure for about 140 countries. Pakistan lags behind other regional partners (such as China, India, Singapore, Philippines etc.) in quality of railroads and port with the exception of roads and transport where Pakistan fares well with other partners (Figure 1). On the other hand, China perform well due to its developed infrastructure of roads, railways and aviation compared to other regional partners.

Moreover, if we compare stock of Pakistan infrastructure quality with regional economies, Pakistan has comparatively better roads compare to an average Economic Cooperation Organization (ECO) or South Asian Association for Regional Cooperation (SAARC) member country but not as well as that of an average Association of Southeast Asian Nations (ASEAN), North American Free Trade Agreement (NAFTA) or European Union (EU) member state.[3] Similarly, Pakistan has good port quality or access to sea compare to average ECO or SAARC member but not as good as compare with NAFTA, EU or ASEAN. Therefore investment both in terms of quality from technological advancement and sharing and financial resources are needed

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[3] It is not a straightforward to compare the infrastructure of individual countries. Some reports such as Global Competitiveness (or Doing Business Report) do such comparison for individual countries based on field surveys data they collect annually. However, it does not compare various economic regions among themselves or with individual countries. In order to compare infrastructure of various economic regions such as ASEAN, NAFTA, EU etc, we used the data provided by Global Competitiveness Report 2012-13. This report ranks each country infrastructure (overall infrastructure and road, railways, etc., separately) on a 1 to 7 scale where 1 is for the worst and 7 is for the best score. Accordingly, from that report data was obtained for each individual country and an average was obtained for each individual economic region. Then comparison was made for Pakistan with each economic block. The descriptive work related to it can be presented on request however avoided to present in this paper due to the length of the paper.

to be tapped for bringing needed change in infrastructure development to support the economy with the potential of Pakistan GDP on average at 7-8 percent growth.
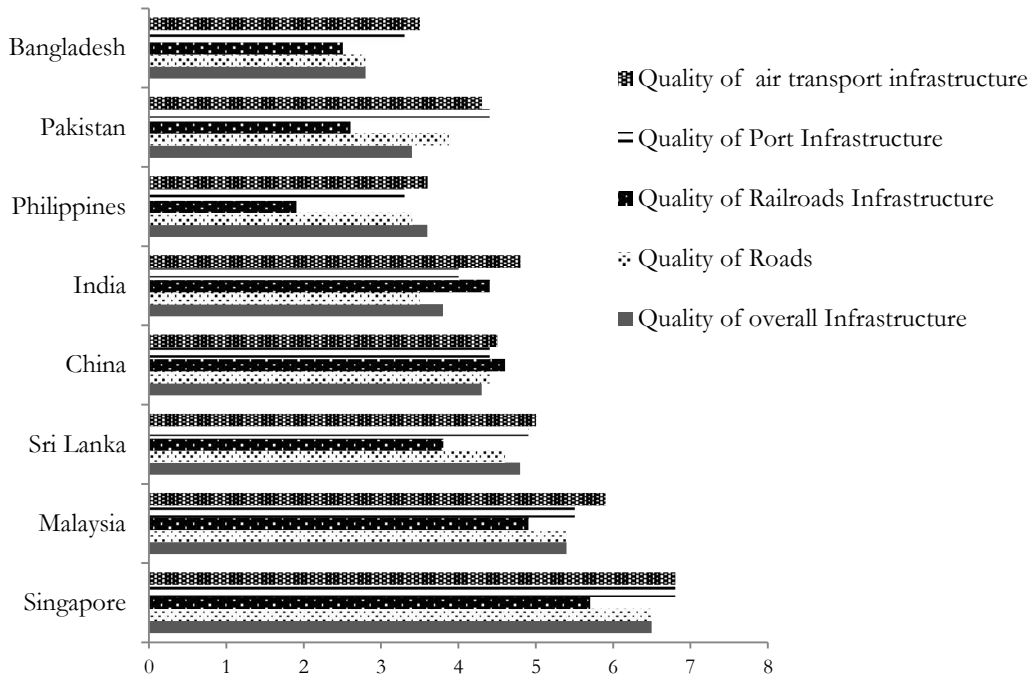

Figure 1: Quality of Infrastructure: A Regional Comparison
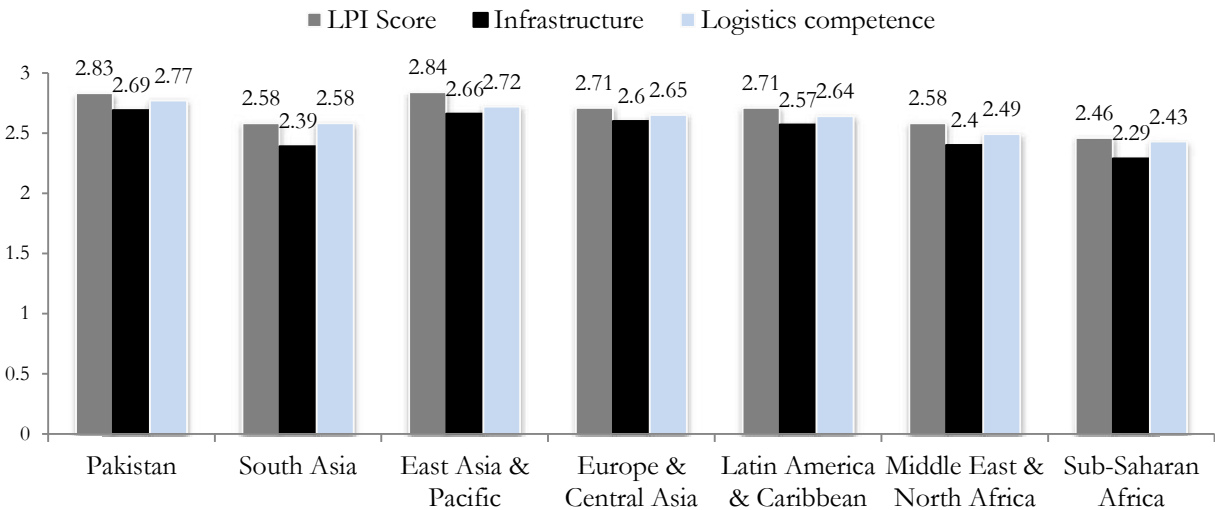*Source: Global competitiveness report 2012-13*

Figure 2: Logistics Performance Regional Comparison 2013
Source: World Logistics Index, 2013

Figure 3 presents the regional comparison of logistics performance. It can be inferred that Pakistan performance is not bad as compared to average of other regional groups in the same vicinity. While comparing LPI score, infrastructure development and logistic competence it can be noted that LPI score of Pakistan is 2.83 compared to average of each region is which bodes well for the performance of the country in terms of logistics index.

Pakistan performance is better at global comparison on logistics competence but it does not bodes well in terms of logistics competence compare to its regional competitors. Pakistan is ranked 71 as compared to China (26), India (46) and Turkey (27) suggesting need for improved performance in logistic sector which helps in connectivity and region to be better integrated. Therefore, added value addition and investment would be required to boost the economic growth through these channels for increasing bilateral and regional connectivity of trade and transport and Pakistan can benefit from Chinese experience with support in terms of investment, financial resource provision, trade facilitation and technology sharing.

3.   China-Pakistan Economic Corridor: The way to move forward

3.1 Background

During the visit of Premier Li Keqiang, the People's Republic of China to Islamic Republic of Pakistan on 22nd- 23rd May, 2013 and subsequent visit of Prime Minister of Pakistan to China on 5th July, 2013, an MoU was signed between the National Development and Reform Commission (NDRC) of the People's Republic of China and the Ministry of Planning, Development and Reform for establishing joint working group for formulating a Long-Term Plan for China Pakistan Economic Corridor covering for promoting Infrastructure, trade, Investment and development of Economic Zones along the Corridor. The articles within MoU includes: Significance of cooperation, organizational structure, Priority areas of co-operation, road map formulation other details for promoting and harnessing better relationship with Pakistan. More detailed about the China-Pakistan Economic Corridor are included in Appendix I. The proposed alignment are given in Figure 1. [4]

3.2 The Future Plans

The long term plan is based on areas of cooperation with construction of research framework and action plan followed by long term action plan. The area given higher priority are communication network including transport connectivity and development of physical infrastructure. The precedence for areas includes: Setting up of research framework, exploring and promoting rail, road and communication network for increased connectivity, launching of optic

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[4] This is the proposed alignment for China-Pakistan Economic Corridor presented by National Highway Authorities, government of Pakistan, to the first meeting of Joint Coordinating Committee of CPEC, at Islamabad during 2013.

fiber and development of commerce and industrial park along the economic corridor. The road map for the Economic Corridor is based on Joint Working Group with expertise in various fields on both sides and its future recommendations, Joint cooperation Committee for steering the whole process and working groups in relevant fields.

Figure 3: The proposed China-Pakistan Economic Corridor

4. The Bilateral Trade between Pakistan and China

China and Pakistan signed FTA in 2006. Rapid economic development in China and consequent inter-regional activity has caused increased demand for raw materials, exchange of parts, components, intermediate products and development of cross country production works and processes. Consistent growth in economic relations amplifies the strength of their relationship. China and Pakistan also have witnessed steady growth in mutual investments in recent years. The Chinese have invested in Pakistan in telecommunications, energy, infrastructure, heavy engineering, IT, mining and defense related industries. Recently, the two countries has special focus for increasing trade has been towards land connectivity with through investment via China-Pakistan Economic Corridor as enunciated in previous section.

Historically, the bilateral trade and commercial links between the two countries were established in January 1963 when the first bilateral long term trade agreement was signed with Pakistan according MFN status to China. China-Pakistan Free Trade Agreement (CPFTA) was signed on 24th November, 2006 and implemented from 1st July 2007. Evaluating the post trade performance since signing of FTA, the total trade with China increased by 172 percent with significant trade recorded in electric and electronic equipment, machinery, chemicals, fertilizers and industrial raw materials (iron and steel, staple fibres, plastics). Considering this, Pakistan's GDP is 0.2 percent of China's GDP which stands at currently at 8.2 trillion dollars with gain for Pakistan dependent on cheap raw material and machinery for local production. It can be noticed, that trade provides encouraging signs for both the countries but more in favor of China as indicated in trade inflows in Figure 4 which indicate increase of 265 percent for China and 223 percent for Pakistan since 2006-2012. This indicates post FTA trade in favor of China but also difference in economies of both the countries. Moreover, China provides for top most supplier of import products for Pakistan with largest exports recorded in 0-5 percent tariff concession category with increase of 186 percent provided by China to Pakistan products in this category covering period from 2008 to 2012. Additionally, it is important to highlight that the growth of exports products which are part of FTA grew by 427 percent as compared to growth of exports not part of the FTA growing by 498 percent indicating that increase in exports has not been entirely concentrated in the fact that tariffs concession has been provided but due to difference in complementary structure of the products of demand as well.
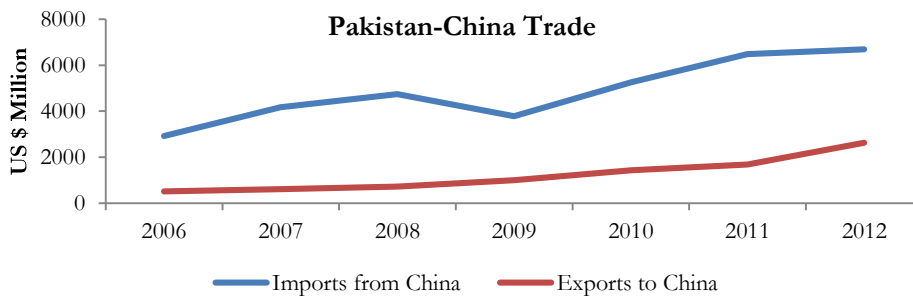

Figure 4: Bilateral trade flow since signing of FTA
Source: State Bank of Pakistan, Islamabad

The Figure 5 provides for top products in export and import category in 2013 to China indicating Cotton and Cereals as top products of exports to Pakistan, while electrical, electronic material, machinery etc., and organic chemicals provides for top imports from China. Currently, tariff concession of zero has been provided by China to Pakistan products along 385 items with demand by Pakistan for providing market access for Pakistan products of competitive nature with 205 items showing high potential for trade in future.
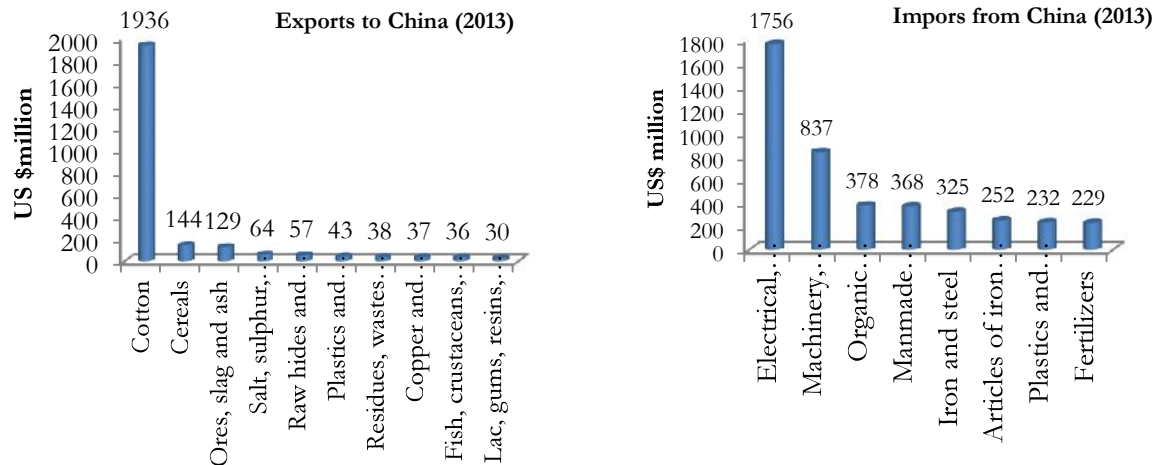
Figure 5: Top export and Import product of Pakistan to and from China
Source: International Trade Centre (2013)

These issues are regularly brought and updated in the establishment of bilateral FTA, Free Trade Commission (FTC) with an aim to discuss the issues that are hampering bilateral trade has been recorded. The negotiations for the 2nd Phase of China-Pakistan Free Trade Agreement (CPFTA) were commenced in March 2011 with two sides agreed to develop a roadmap for moving ahead in the second phase and to finalize the tariff reduction modality aiming at further deepening of tariff concessions. In a meeting held at Beijing on November 14-15, 2013 both sides exchanged views to further deepen the bilateral trade and economic cooperation through the platform of FTA. Both sides agreed to put in place Electronic Data Interchange. China agreed to consider signing of Mutual Recognition Agreement (MRA) for Sanitary and Phyto-sanitary measures (SPS) with Pakistan.

Product diversification, competitiveness and adaptation effects is provided in Table 1. It can be noticed that in terms of product diversification in all sectors China has been stand out performer with high value in each sector as compared to Pakistan. Similarly, in terms competitiveness effect of the products, China high value stands in sectors of wood, textiles, chemicals, IT and consumer products, non-electronic and electronic products, transport and miscellaneous. Therefore, the higher value is for chemicals, wood, transport and miscellaneous items. Similarly, for Pakistan it has high value for processed foods, leather products, and clothing. In terms of adaptation effect China possesses better sectoral performance in many while Pakistan also shows better product adaptation.

Table 1: Competitiveness Index: Pakistan and China in Different Sectors

Products	Product diversification		Competitiveness effect, p.a. (%)		Adaptation effect, p.a. (%)	
	Pakistan	China	Pakistan	China	Pakistan	China
Fresh food	5	33	-0.78	1.85	-1.13	1.07
Processed food	8	44	9.98	1.24	1.14	0.76
Wood products	5	27	0.19	6.03	6.06	3.06
Textiles	21	73	0.02	2.72	-2.73	1.34
Chemicals	12	100	-0.81	5.20	0.93	-0.98
Leather products	7	10	5.58	0.74	-4.22	0.74
Basic manufactures	4	104	-2.25	-0.54	-0.07	2.90
Non-electronic machinery	14	74	-8.30	3.46	5.50	1.81
IT & Consumer electronics	4	8	-7.18	2.67	-5.05	0.52
Electronic components	7	15	-0.14	3.65	0.88	0.68
Transport equipment	8	11	-6.26	5.21	-1.06	1.18
Clothing	18	51	2.85	0.15	-1.77	1.30
Miscellaneous manufacturing	3	32	6.04	4.27	8.70	2.49
Minerals	4	3	-9.45	-3.81	0.19	-0.60

Source: International Trade Center (2013)

5. The SMART model Analysis: Trade through Free Trade Agreement

5.1 The SMART model

SMART or Software for Market Analysis and Restrictions on Trade are the partial equilibrium model. This model is employed for assessing the trade impact, tariff revenue and welfare effects of an FTA under different tariff scenario for top five export of Pakistan and China with latest year available in World Integrated Trade Solution (WITS). This SMART model, and the database use for various simulations are jointly provided by World Bank and United Nations Conference on Trade and Development (UNCTAD).

These models are based on certain assumptions for which one can consult a detailed literature such as Laird and Yeats (1986), Cheong (2010), Othieno and Shinyekwa (2011). The use of these models become popular over period of time. For instance, Mehmood and Gul (2014), Choudhry (2013), Cheong (2010), Othieno and Shinyekwa (2011) etc. According to Othieno and Shinyekwa (2011) the SMART model have several strengths such as its ability to analyses the tariff effects of a single market and on a disaggregated product lines in addition to analysing the effects of trade policy reforms in presences of imperfect substitutes. Additionally, the avoiding of corner solution and the simplicity of applying it (due to availability of online tools from (WITS) make it a better option for such kind of analysis.

5.2 SMART Model for China-Pakistan Economic Corridor

The SMART model is used to capture the economic effects of preferential tariff liberalization in China import market. The model is applied with assumption of reducing the tariff to zero for top Pakistan export products to China and keeping the existing rates for all other countries. The simulation is done keeping assumption in SMART model with imports differentiated by national origin and FTA requiring not all shift from one country to other non-member countries. The inbuilt data is accounted for COMTRADE, TRAINS, and WTO data on trade and tariff, para-tariff and nontariff trade barriers which also include the parameter values for Import-demand elasticity and substitution elasticity estimated by World Bank, but can also be changed depending on nature of trade flows.[5]

In this analysis we keep the same assumption with only change in tariff scenarios with output dependent on change in import value and tariff value for a single good with changes reflecting measures of trade creation and diversion for specific product and origin of flows.

5. Simulations and Results

The various scenario are generated based on specific context details of which are elaborated in each scenario separately and additional details in Appendix II. The results of all scenarios are presented in Appendix III. In brief, there are three scenarios. Scenario I assume that Pakistan top five products get full access to the Chinese market under zero tariff. Scenario II, assumes China top export entering Pakistan market under zero tariff regime. Finally, Scenario III, those products which are identified as potential items for exports under FTA for both countries. Under all these three scenarios the impacts on revenue, trade and welfare are discussed.

Scenario I: The simulation of first scenario considers Pakistan top five products exports to China with full access to these products under zero tariff concession provided and comparison with ASEAN economies in terms of its impact on revenue, trade and welfare. The results which are provided in Appendix III indicate that there is higher export revenue change for Pakistan in 1000 USD for Cotton, Cereals and Salt, sulphur, earth, stone, plaster, lime and cement. We also notice that negative export revenue for ASEAN economies keeping provision of providing zero tariff concession to Pakistan shows that Thailand has the highest negative impact in terms of product cotton and both Malaysia and Thailand in product of salt, sulphur, earth, stone, plaster, lime. Rest of the countries have small and minimal impact on revenue indicating that providing zero tariff to Pakistan by China would not impact their products change in revenue in future. Moreover, within the same scenario the result also indicates that revenue effect for China providing zero tariff on Pakistan products drops highest for cotton followed by Salt, sulphur, earth, stone, plaster, lime and cement and Cereals.

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[5] Similar methodology is applied by authors in Mehmood and Gul (2014)

The total trade effect measured in 1000 USD is highest for cotton (2292) followed by sulphur, earth, stone, plaster, lime and cement (532) and cereals (265) indicating highest trade impact for cotton. Only three of the products have the highest trade impact while the rest of the products show small or no impact. The welfare impact of Pakistan products in Chinese market with provision of zero tariff concession on these products is noticed higher for cotton, Cereals and sulphur, earth, stone, plaster, lime and cement with values of 313.103, 44.596 and 7.524 measured in 1000 USD. Rest of the products have small welfare impact with highest welfare impact factor indicator that providing zero tariff on these products have less revenue loss to Chinese Government but increased welfare impact in the market impacting socio-economic conditions. The trade creation under this scenario is noticed highest for cotton followed by salt, sulphur, earth, stone, plaster, lime and cereals respectively. The positive trade diversion is noticed for cotton and salt, sulphur, earth, stone, plaster, lime with negative trade diversion in ASEAN economies noticed for Thailand in cotton (28.8) and salt, sulphur, earth, stone, plaster, lime (7.7) measured in 1000 USD. The trade diversion for Malaysia is in salt, sulphur, earth, stone, plaster, lime (25) with small impact on cotton as indicated in terms of revenue previously. Thus, indicating that trade creation and diversion is highest for cotton (Pakistan) and cotton (Thailand). The analysis in this scenario concludes that Thailand is the most effected country in terms of revenue and trade impact.

Scenario II: second scenario analyses the impacts of top Chinese products and its impact on trade and welfare in Pakistan market with zero tariff or fully liberalized policy by Pakistan on these products. The result from this simulation indicate that the highest trade effect measured in 1000 USD is noticed for product category of Organic chemicals (1607.665), Manmade filaments (2.347) and Iron and steel (0.587). This shows that highest trade impact under this policy assumption is on organic chemicals which also seem to have higher trade creation and diversion effects as well with value of 1607.666 and 2523.167 respectively, while the rest of the products show small change with respect to trade effect and also for trade creation and diversion impact. The welfare impact result shows that organic chemicals has the highest welfare impact under this policy assumption in Pakistan market impacting the socio-economic conditions through trade with value of 96.987 measured in 1000 USD, while the rest of the products showing small change with other products not included showing no change or zero value.

Scenario III: we simulate the potential products identified by previous studies (e.g., Hamid and Hayat (2012) on evaluation of China-Pakistan FTA which are not recognized under the FTA umbrella and have the potential to impact the trade and welfare. Therefore, we try to simulate these products which include: Live animals (01), Meat and edible meat offal (02), edible vegetables and certain roots and tubers (07), edible fruit, nuts, peel of citrus fruit, melons (08), Special woven or tufted fabric, lace, tapestry etc., (58) and impregnated, coated or laminated textile fabric (59) considering the same scenario as established in first case for Pakistani products, but this time for potential products in future. The results from the simulation specify that highest trade effect is noticed for impregnated, coated or laminated textile fabric (5996) and Special woven or tufted

fabric, lace, tapestry etc., (3863) with highest trade creation and diversion also noticed for these categories followed by edible vegetables and certain roots and tubers. In terms of welfare impact, it can be noticed that highest welfare impact is noticed for edible fruit, nuts, peel of citrus fruit, melons, Special woven or tufted fabric, lace, tapestry etc., and impregnated, coated or laminated textile fabric indicating that under this scenario these products have the potential to be part of FTA in future with zero tariff concession or full liberalization towards these products in the Chinese market to be provided.

6.   Conclusion

This study has shed light on the aspect of current established China-Pakistan Economic Corridor conspiring the global experience and trend towards regionalism through better connectivity and state of FTA and its underlying implication for welfare, trade and welfare under different simulation scenario's for both the countries. From the results of FTA in facilitation of trade through tariff reduction and full liberalization of the economy and presentation of updated status of China-Pakistan Economic Corridor in the realm of China-Pakistan Economic Relationship, it is concluded that in the area of economic corridor importance has been towards investment in hard infrastructure and towards land connectivity through various means which as shown by different global experience can result in increase in employment, production, technological sharing, global production emulation for bringing innovation and creativity, economic growth , development and towards improving the socio economic conditions of the country through increased bilateral and regional connectivity via various mechanism impacting the overall welfare of the country.

The assessment of the simulation results from FTA analysis provides towards the direction that before embarking on market access and tariff reduction with each other it is important to gauze the quality, competiveness and adaptation impact that the product can impact on the economy. This is proven fact as the theory suggests that local economy is more interested with trade channel impacting the welfare of the people through various means and channels. Therefore, this is also guide towards the policy makers who tend to make decisions without considering the ramification in terms of competitiveness of the product in the local market and concession as provided to other regional partners.

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China-Pakistan Economic Corridor Project:

1. Background

- The project started after the visit of Premier Li Keqiang, the People's Republic of China to Islamic Republic of Pakistan on 22nd- 23rd May, 2013 and subsequent visit of Prime Minister of Pakistan to China on 5th July, 2013
- An Memorandum of Understanding was signed between the National Development and Reform Commission (NDRC) of the People's Republic of China and the Ministry of Planning & Development (MPD) for establishing joint working group for formulating a Long-Term Plan for China Pakistan Economic Corridor covering for promoting Infrastructure, trade, Investment and development of Economic Zones along the Corridor.
- It was decided that the long term plan will be based on areas of cooperation with construction of research framework and action plan followed by long term plan. The area given higher priority will be communication network including transport connectivity and development of physical infrastructure.
- The areas of cooperation includes: Setting up of research framework, exploring and promoting rail, road and communication network for increased connectivity, launching of optic fiber and development of commerce and industrial park along the economic corridor. The road map for the Economic Corridor will be based on Joint Working Group with expertise in various fields on both sides and its future recommendations, Joint cooperation Committee for steering the whole process and working groups in relevant fields.

2. Significance of the Project

- Transport and economic corridor linking China western Xinjiang region to port of Gwadar for bringing development in Xinjiang through strategic connectivity
- Opens China and Pakistan new route in transport, energy and other economic indicators for increasing regional trade passing through Pakistan providing feasible transport link between China and Pakistan helping to boost employment opportunities, growth and alleviate poverty and bring welfare in the country
- Based on five point proposal emphasizing strategic and long-term planning, connectivity and development with also focus on development of Gwadar located close to the strategic Strait of Hormuz via transport connectivity (road, port, rail link, pipelines) from the Persian Gulf through Pakistan to Western China.
- Modernisation of infrastructure network through national highway, railways, ports and shipping, energy and other related sub-sectors projects of fiber optics, special economic, export processing and industrial zones along the corridor with total of 37 projects costing $39.553 billion
- The importance for China lies in the fact that 60 percent of oil is being imported from gulf countries reaching China after covering distance of 16,000 kilometres, whereas after completion of economic corridor and Gawadar Port project reducing the distance to 2500 kilometres
- Increasing trade with development of Urumqi Economic and Technological Development Zone attracting foreign investment with Xinjiang region close to Central Asian countries with which China has become the largest trading partner.
- Xinjiang region's bureau effort toward attracting trade for increasing industrial production and similarly developing Kashgar bordering Gilgit-Baltistan towards regional logistics centre providing for cheap land, fiscal incentives include tax exemptions, subsidised electricity and transport and low interest loans.

3. Areas of Cooperation

3.1. Physical Connectivity

- Road and Rail networks.
- Laying of fiber optic cable for IT connectivity in Northern Pakistan
- Identification of locations suitable for developing special economic corridors
- Identification of regions appropriate for development of power plants, including hydro and those based on renewable energy sources such as solar and wind power.
- Another key area can be in the exploration and extraction of mines that are abundant in the Northern Areas of the country. Mineral resources such as copper and other additional minerals can be extracted and then exported to the Chinese to fulfill the ever increasing need of the development taking place in China.

3.2. Institutional Connectivity

- The proposed areas for enhancing institutional connectivity are as follows:
- Trade and transport related legislation
- Streamlining bilateral trade agreements, including Free Trade agreements that benefit both parties.
- Enacting carriage of goods by road and rail bills.
- Easing of visa regulations to ease movement of relevant economic agents between Pakistan and China.
- Fully taking advantage of FTA between Pakistan and China

3.3. People-to-People Connectivity

In this regard, the following areas of study are identified to be pivotal in enhancing people-to-people connectivity.

- Tourism
- Cultural and language Exchange and Promotion
- Educational exchange
- Exchange programs at school and university level can enhance effective communication but more importantly foster friendly relations between the two peoples. Such relations will contribute greatly towards establishing trust, thereby facilitating trade and economic inter-dependence.
- In addition, collaborations on research and development between 'partner' research institutions in both countries will facilitate trade of 'ideas' and can also lay the platform for establishing special 'knowledge' economy zones.

4. Current status

Following is the implementation mechanism:

- Setting up Joint Cooperation Committee (JCC) and constitution of Joint Working Group (JWG) at Director General level
- Formulation of Expert group to support JCC
- For daily coordination and contacts, Ministry of Planning and Development has set up a Secretariat under the name of "China-Pak Economic Corridor Secretariat".
- Formulation, Development and updation of Research Framework to formulate a Long-Term Plan for the Corridor with aim of providing an overall direction, ideas and goals of cooperation
- Formulation of working group on Energy, Transport Infrastructure, Long term Planning Group, Gwadar Port Development and Special Economic zone
- Long term plan for China- Pakistan Economic Corridor will be completed by 2030

5. Early Harvest Projects (EHP): Transport & Connectivity

- In the various meetings of Pakistan and Chinese under the guidance of Joint Cooperation Committee (JCC), Early Harvest Projects (EHP) are recognized with duration of five years or less. The list of the projects is mentioned below:
- *Karachi-Lahore-Motorway (KLM):* KLM planned as 6-Lane access controlled Motorway having same standards as of Lahore – Islamabad Motorway (M-2). Total Length of the Project is envisaged as 1,100 Km, covering Multan – Sukkur section of 387 KM. Estimated Cost of project is Rs. 246 Billion plus Land Acquisition cost of Rs.55.0 billion with all major towns/ economic hubs shall be connected with lateral links to the Motorway. The project will result in reduced traffic capacity, fuel savings of 9549500 tons, connectivity and energy saving, socio economic benefit along the alignment, improve the comprehensive transportation system, increase in exports with time benefits for reaching port and bring under developed areas in developed scheme through better internal connectivity.
- *Karakoram Highway (Phase-II):* The estimated cost is Rs. 379 Billion including Rs. 6.0 Billion for Land Acquisition covering 487km distance from Raikot to Islamabad.
- *Upgradation /rehabilitation of Main line-1:* Covering from Karachi to Peshawar via Hyderabad, Nawabshah, Rohri, RahimyarKhan, Bahawalpur, Khanewal, Sahiwal, Lahore, Gujrawala, Rwalpindi, Peshwar.
Rehabilitation/improvement of existing track that will follow the existing alignment except at locations where sharp curves are to be eased out or eliminated to allow higher speed upto 140 Km/h. The proposed rehabilitation will be carried to achieve the design speed for which feasibility study will be carried out initially by the nominated consultant who focusesa on different works mentioned in Terms of reference.
- *Rehabilitation & Up-gradation of Karachi-Lahore-Peshawar (ML-1) Railway Track (1736 kms):* The total distance is 1736kms with TOR's to be agreed with Chinese side with estimated cost of US$ 3,650 million
Construction of Havelian Dry port (including cargo handling facilities): The estimated cost is US$ 40 million. The Terms of Reference (TORs) for feasibility agreed with Chinese counterparts with approval from Government joint feasibility study will be completed in 4 months with implementation and financial modality of EPC and Chinese Government Concessional Loan (GCL).

Context of Applied Scenarios

Before evaluating the FTA for future impact on growth in revenue, trade creation and diversion and understanding the welfare impact of products of zero concession category tariff line on each economy, it is important to illustrate the fact that two studies in Pakistan have already been conducted on understanding the pre and post evaluation of trade and economic relationship between Pakistan and China.

It is imperative at this point to understand that along with top export product concession to Pakistan by China, provision of zero tariff and exemptions on similar lines provided to Pakistan has also been provided to ASEAN. Secondly, the previous studies have not highlighted the difference of economies and potential impact of FTA for top categories in question and their impact on the welfare of the economy through angle of trade. The tariff concessions given to Pakistan for all products of top export category in which Pakistan has comparative advantage, China has provided higher or equal reduction in tariffs to ASEAN countries. The tariffs under 100 percent concession categories which constitutes more than 35 percent of the total products part of the FTA reduced to 0 percent for Pakistan has also been zero for ASEAN countries along these lines. Similarly, concessions to China under FTA appear more beneficial as provided by China to Pakistan in terms of coverage and diversification with market access to China mainly on machinery, organic, and inorganic chemicals, fruits and vegetables, medicaments and other raw materials for various industries including engineering sector, intermediary goods for engineering sectors, etc.

Therefore, the importance of trade facilitation measuring indicator of tariff reduction through mode of FTA implies one of the way of increasing bilateral and regional trade. In line with establishment of China-Pakistan Economic Corridor, it is important to work out land connectivity and investment in local industry for boosting trade with China with interest in those products which provide high RCA (as indicated in top exports of Pakistan), market access, tariff concession, trade and revenue impact and more importantly the welfare impact on the economy providing tariff concession. The trade concessions to be boosted in a way which provides for welfare impact on the local economy and thus increase in demand for that product. Therefore, our objective would be in the area of revenue, trade and welfare using SMART model developed by World Bank:

- Understanding and simulating the revenue, trade and welfare impact of Pakistan top five products on Chinese economy with provision of zero tariffs (Scenario in which China would fully open its economy to top five products from Pakistani at zero tariff with tariff for other countries remaining the same)
- Trade creation and diversion for ASEAN economies in relationship to China in the area of exports keeping in mind the provision of zero tariff concession to Pakistan on high RCA/top products of Pakistan
- Similarly, understanding and simulating the trade and welfare impact of China top five products on Pakistan economy with provision of zero tariffs on these products provided by Pakistan
- Lastly, understanding the potential products identified in survey studies conducted in relation to Pak-China relationship and expected impact on trade and welfare with zero concession provided by China to these potential Pakistan Products.

The list of Pakistan top five products from Pakistan in 2013 include: Cotton (52), Cereals (10), Ores, slag and ash (26), Salt, sulphur, earth, stone, plaster, lime and cement (25) and raw hides and skins (other than furskins) and leather (41), whereas list of China top exports to Pakistan in 2013 include: Electrical, electronic equipment (85), Machinery, nuclear reactors, boilers, etc (84), Organic chemicals (29), Manmade filaments (54) and Iron and steel (72). Moreover, we also add up international research and experience to implement this methodology.

The relationship between trade facilitation, trade cost and improvement in infrastructure has been researched and it is found that quality of infrastructure thus largely determines the time required to get product to market and the reliability of delivery. Similarly, elasticity of trade cost is highly correlated with quality of infrastructure and trade facilitation in the form of tariff reduction. The result indicate 1 percent improvement in transport infrastructure decreased the trade cost equivalents for the value traded by 0.03–0.58 percent in most developing Asian countries assessed during 1988–2003 (Francois *et al*. (2009). Therefore, we will simulate the tariff reduction scenario of full market access to Pakistan by China, China to Pakistan in top five products of interest in 2013 value and potential product simulation from Pakistan side and considering all scenarios impact on revenue, trade creation and diversion and welfare impact.

A3.1: Change in Revenue, Trade and Welfare under Zero Tariff from China:
Pakistan and ASEAN

Reporter Name	Partner Name	Product Code	Export Change in Revenue in 1000 USD	Trade Creation Effects in 1000 USD	Trade Diversion Effect in 1000 USD
Pakistan	China	10	271.936	265.8	6.2
Pakistan	China	25	717.937	532.1	185.9
Pakistan	China	26	5.327	5.3	0.1
Pakistan	China	41	3.665	1.6	2.1
Pakistan	China	52	2561.304	2292.5	268.8
Pakistan	Indonesia	52	-1.1	0.0	-1.1
Pakistan	Malaysia	25	-3.53	0.0	-3.5
Pakistan	Malaysia	52	-0.016	0.0	0
Pakistan	Philippines	25	-0.484	0.0	-0.5
Pakistan	Singapore	25	-1.553	0.0	-1.6
Pakistan	Singapore	41	-0.003	0.0	0
Pakistan	Singapore	52	-0.029	0.0	0
Pakistan	Thailand	10	-0.107	0.0	-0.1
Pakistan	Thailand	25	-7.7	0.0	-7.7
Pakistan	Thailand	52	-28.771	0.0	-28.8
Pakistan	Vietnam	25	-0.116	0.0	-0.1

Reporter Name	Product Code	Revenue Effects in 1000 USD	Trade Total Effect in 1000 USD	Welfare in 1000 USD
Pakistan	10	-330.399	265.8	7.524
Pakistan	25	-257.667	532.1	44.596
Pakistan	26	-7.341	5.3	0.334
Pakistan	41	-2.085	1.6	0.089
Pakistan	52	-980.483	2292.5	313.103

Source: Authors own calculation online using SMART analysis, WITS, World Bank, 2014

A3.2 Trade and Welfare Impact under Zero Tariff policy from Pakistan:
Chinese products

Reporter Name	Partner Name	Product Code	Trade Total Effect in 1000 USD	Trade Creation Effect in 1000 USD	Trade Diversion Effect in 1000 USD	Welfare in 1000 USD
China	Pakistan	29	1607.665	1607.665	2523.2	96.987
China	Pakistan	84	2.347	2.347	0.8	0.341
China	Pakistan	85	0.587	0.587	1.3	0.131

Source: Authors own calculation online using SMART analysis, WITS, World Bank, 2014

A3.3: Simulated Impact under Zero Tariff Policy: Potential Pakistani Products

Reporter Name	Product Code	Trade Total Effect in 1000 USD	Trade Creation Effect in 1000 USD	Trade Diversion Effect in 1000 USD	Welfare in 1000 USD
Pakistan	1	0.19	0.058	0.132	0.003
Pakistan	7	137.124	110.952	26.172	8.274
Pakistan	8	984.968	450.969	534	113.364
Pakistan	58	3863.892	2808.69	1055.201	456.147
Pakistan	59	5996.891	4425.802	1571.09	589.23

Source: Authors own calculation online using SMART analysis, WITS, World Bank, 2014