

# Engagement with Punjab under CPEC: A Proposed Framework for Industry



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## About the project

**Funded by:** IGC

**Key Counterpart:** Department of Industries, Punjab

### Impact

Findings from the project have been presented to senior policymakers including the Chief Minister of Punjab. Additionally, this project led to additional requests for similar work to be carried out for other departments. Another subsequent presentation was made at a conference at the Institute of Business Administration (IBA) in Karachi in partnership with universities from across Pakistan. Participants made a number of comments and agreed with the overall direction proposed, while emphasizing the need for other provinces to take a similar approach.

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## In brief

- Industrial cooperation under the CPEC has the potential to contribute to Punjab's growth objectives: private sector-led, export-oriented development that creates productive jobs. But Pakistan needs to clearly identify its own priorities for industrial cooperation under CPEC.
- There is an urgent need to develop a full-scale industrial policy and strategy for Punjab, which could inform various actions of the government regarding CPEC and beyond.
- Any sector-level policies should be informed by rigorous diagnostics to seek a deeper understanding of bottlenecks faced by various industrial sectors. Such diagnostics should focus on existing strengths, particularly those for which global demand is growing.

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**IGC**  
International  
Growth Centre

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## LIST OF ABBREVIATIONS

CPEC	China-Pakistan Economic Corridor
IGC	International Growth Centre
LTP	Long-Term Plan
PER	Punjab Economic Report
OBOR	One Belt One Road
JCC	Joint Coordination Committee
CDB	China Development Bank
TEVTA	Technical Education and Vocational Training Authority
WTO	World Trade Organization
KP	Khyber Pakhtunkhwa
FTA	Free Trade Agreement
SRO	Statutory Regulatory Order
SEZ	Special Economic Zones
JV	Joint Venture
GVC	Global Value Chain
FDI	Foreign Direct Investment
R&D	Research and Development
SME	Small and Medium-sized Enterprises
ATC	Agreement on Textiles and Clothing
MFA	Multi-Fiber Arrangement
UAE	United Arab Emirates
EU	European Union
PCJCCI	Pakistan-China Joint Chamber of Commerce and Industry
MW	Megawatts
NEPRA	National Electric Power Regulatory Authority
GENCOs	Generating Companies

BPC	Bulk Power Consumers
PPMU	Punjab Power Management Unit
LNG	Liquefied Natural Gas
QAAP	Quaid-e-Azam Apparel Park
PIEDMC	Punjab Industrial Estate Development and Management Company
CNTEX	China National Textile Company
NEQS	National Environment Quality Standards
PVTC	Punjab Vocational Training Council
PSDF	Punjab Skills Development Fund
PHMA	Pakistan Hosiery Manufacturers Association
PRGMEA	Pakistan Ready-made Garments Manufacturers and Exporters Association
TIKA	Turkish Corporation and Coordination Agency
DTRE	Duty and Tax Remission Scheme
ROW	Rest of World
IOCO	Input/ Output Co-efficient Organisation
FBR	Federal Board of Revenue
MMF	Man-Made Fibre
ANF	Anti-Narcotic Force
HS Code	Harmonized System Code
OEM	Original Equipment Manufacturer
LCV	Light Commercial Vehicle
ASEAN	Association of South East Asian Nations
FAW Vehicles	Forschungsinstitut für Anwendungsorientierte Wissensverarbeitung Vehicles
KETs	Key Enabling Technologies
UN	United Nations
ICT	Information and Communication Technology

UNIDO	United Nations Industrial Development Organization
MOT	Ministry of Transport (i.e., an annual test for vehicle safety)
NPK fertilizer	Three-component fertilizers providing nitrogen, phosphorus and potassium.
OECD	Organisation for Economic Co-operation and Development
PBC	Pakistan Business Council
RMG Industry	Ready-made Garments Industry
IPO	Intellectual Property Organisation
LDA	Lahore Development Authority
TMA	Town Municipal Authority
NOC	No Objection Certificate
EPA	Environment Protection Agency
PBIT	Punjab Board of Investment and Trade
SSC	Structure Safety Certificate

## Executive Summary

***One Belt One Road (OBOR) presents the Chinese development strategy and framework, initiated in 2013, with a focus on connectivity and cooperation from China to the rest of Eurasia, through two primary routes – land-based ‘Silk Road Economic Belt’ (SREB) and sea-based ‘Maritime Silk Road’ (MSR) and six connecting economic corridors.***

***The China–Pakistan Economic Corridor (CPEC), linking the Northwestern autonomous Chinese region of Xinjiang to Gwadar port in Pakistan, represents a USD 46 billion portfolio of projects including highways, port development, power generation and an optic fiber project. China has developed a Long-Term Plan (LTP) for CPEC, which provides the details of the initiative.***

***An active and meaningful involvement by Pakistani provinces in CPEC will be central to its effectiveness, despite the fact that energy, railways, national highways, ports and trade lie within the ambit of the federal government. With improved connectivity between the vast regions of Western China and Central Asia to the Arabian Sea, immense economic opportunities lie for various industrial clusters close to the CPEC routes. Provinces’ role is not only confined to infrastructure development in ‘core’ and ‘radiation’ areas around CPEC routes but they can very well use this opportunity to stimulate private investments in a number of sectors with an effective strategy and appropriate investment climate.***

***Punjab is keen to take benefit of the opportunities that CPEC has to offer by creating a conducive environment for foreign and domestic investment. Industries, Commerce & Investment Department, Government of Punjab, is expected to play a central role in addressing the challenges and opportunities pertaining specifically to industrial development.***

***International Growth Centre (IGC) Pakistan was requested to help the government inform its decision-making regarding industrial cooperation in the context of CPEC. Consequently, IGC deployed technical support, to help Government of Punjab in devising a strategy to maximize the positive impact of the CPEC on the industrial sector in Punjab. The support was provided in close coordination with the department, so that the needs of the department are accurately identified and met.***

### Industrial cooperation under CPEC

***China is willing to encourage reputable Chinese companies to invest in Pakistan but it also expects Pakistan to develop plug-and-play industrial zones, provide raw material to feed its textile cluster in Kashghar and provide preferential policies.*** Industrial cooperation therefore forms an important thread under CPEC and is one of the five key areas around which dedicated working groups have been established. According to the Chinese LTP, the foundation of future industrial cooperation should

be laid out on the relative strengths of the two countries, with China bringing ‘experience, technology, financing and industrial capacity’ to the table, while Pakistan can contribute through favorable resources, labor forces and market opportunities.

***Pakistan needs to clearly identify its own priorities for industrial cooperation*** under CPEC. Industrial cooperation under the CPEC has the potential to contribute to Punjab’s growth objectives: private sector-led, export-oriented development that creates productive jobs. While Punjab has the raw material and low cost labour that China needs, it is important to also attract investment that contributes to higher value addition, and ensures technology acquisition, exports and industrial diversification.

### **Need for an industrial policy**

***The Punjab Growth Strategy clearly identifies that the role of the government is to encourage private sector-led industrial development.*** This could be done through a trade policy that promotes exports and a more favourable exchange rate, leading to international competitiveness.

***There is an urgent need to develop a full-scale industrial policy and strategy for Punjab, which could inform various actions of the government regarding CPEC and beyond.*** This in turn needs to be based on a comprehensive data collection exercise to get a better handle on the scale and structure of Punjab’s industrial sector. Such a policy should contain Punjab’s vision, diagnostics including bottlenecks to industrial development and both sector-specific and non-sector specific interventions required to achieve the vision.

***There are a few fundamental principles that should dictate the industrial policy.*** These should include focusing government interventions around addressing market failures, driving innovation, promoting spillovers, limiting incentives for a pre-announced period to help the industries become competitive and sustainable, having clear objectives and results-based performance indicators for both the government and targeted beneficiaries and focusing in cost recovery to the extent possible.

***Government of Punjab should also focus on overall business environment reforms that provide a stable, enabling environment to all businesses.*** Businesses in Pakistan have often quoted weaknesses in the investment climate as key barrier to growth. In addition, investment climate is one the fundamental drivers of foreign investment location. Although business environment reform would require a concerted effort from both the federal and provincial governments, with the enhanced mandate of provinces through 18<sup>th</sup> constitutional amendment, the provincial response on this count has become all the more important. Presently, the responsibility for four out of ten indicators of the Doing Business survey lies with the provincial government.



***It is important not to lose sight of existing industries, which are economically vital for Punjab,*** to ensure that they continue to grow and provide sustained economic benefit. Looking at employment, exports and investment statistics, it is easy to identify the major industries of Punjab, including textile related industries such as spinning, weaving, composite textiles, cotton ginning, ready-made garments and towel, hosiery and knitted garments and other important industries such as agriculture products, fertilizers, leather goods, surgical instruments, sports goods, auto parts and pharmaceuticals.

***Any sector-level policies should be informed by rigorous diagnostics to seek a deeper understanding of bottlenecks faced by various industrial sectors.*** Such diagnostics should focus on existing strengths, particularly those for which global demand is growing. These include IT, agro-processing, ready-made garments and automotive. As an illustrative guide to sector diagnostics, this report zooms in on two key economic sectors because of the available analysis on them – ready-made garments and automotive – to demonstrate how the framework could be used to critically analyze various industrial sectors, and thereby inform any sector-specific policy decisions.

***Within the textiles chain, ready-made garments sector has been identified as a focus sector in the Punjab Growth Strategy,*** as it is most labor intensive, least energy intensive and highest value addition segment in the textiles chain. Garments sector is already making significant contributions to exports and employment generation in Pakistan. In 2015, Pakistan's garment exports totaled USD 4.5 billion, which accounted for 5 percent of its total exports. In addition to being a major contributor to exports, the garments industry is a key employer in the manufacturing sector as it requires relatively low capital investment and most of its activities, such as cutting and sewing, remain labor intensive.

***Going forward, Pakistan can deepen and widen these contributions of ready-made garments vis-à-vis CPEC.*** As China, which is a leading exporter of garments, is expected to withdraw (because of rising labor costs), this will present Pakistan with the opportunity to fill in this gap under CPEC. Two of the countries with the fastest growing ready-made garments imports, UAE and China, will be more readily accessed via CPEC.

***Besides focusing on existing industries, Punjab needs to diversify its industrial offering, by adding industries that are likely to provide higher value addition jobs in the medium and long term.*** This can be achieved through focusing on areas, where the competitive advantage can be developed due to complementary capabilities, aiming at creating better forward and backward linkages and exploiting those complementarities, and by nurturing new industries leading towards industrial and export sophistication.

***The auto sector, while not currently amongst the largest sectors for Pakistan in terms of production and exports, presents a useful potential opportunity vis-à-vis***

**CPEC.** The key strengths of this sector for Pakistan are firstly, that this sector is growing, both in Pakistan and globally. Secondly, the auto sector has strong spillover effects on the economy for innovation and building engineering capacity, and for employment in the value chain. Thirdly, being non-textiles, it is an important sector to develop in order to diversify Pakistan's industrial base.

***In terms of opportunity, improved connectivity to China can be an important step towards Global Value Chain participation for Pakistan within the auto sector,*** as China is currently the largest automaker in the world. However, this will require greater Chinese investment in Pakistan's vehicle manufacturing, and subsequent JVs in the value chain. It will also require better access to Chinese markets under the Free Trade Agreement (FTA) with China, as Pakistan's top auto part exports currently do not have preferential access to Chinese markets. China imports a negligible part of Pakistani exports, despite the fact that China imports those categories of auto parts that Pakistan exports.

#### **What needs to be done?**

***Going forward, there are a number of steps that Punjab needs to take to prepare itself for industrial cooperation under CPEC,*** besides developing an industrial policy. These steps should form part of an integrated plan, driven by Industries, Commerce and Investment Department, Government of Punjab.

***Government of Punjab would need to provide targeted incentives to support desired policy outcomes.*** For provinces such incentives may include tax incentives for provincial taxes, subsidized credit; industrial parks and export promotion zones or other forms of land lease; venture funds, development funds, guarantees or special purpose vehicles to subsidize high-risk finance; subsidized skills development interventions; and business facilitation. It is important that any such incentives should be decided after a comparison with the incentives offered by alternative destinations available to potential investors and follow international guidelines on investment policy principles such as transparency, property protection and non-discrimination.

***There is a need to develop sector-specific investor fora to ensure that continuous public-private dialogue feeds into industrial policy formulation and implementation process.*** Such dialogue should be central to CPEC planning to inform the government of the market pulse and to timely request for any corrective action on part of the government. There is a need to look for all possible positive and negative implications of industrial cooperation initiatives under CPEC. The ultimate objective of CPEC for Pakistan is to promote economic growth and there is a need to take utmost care to support specifically those industries and areas, which are likely to contribute towards future growth and not undermine the existing economic base of the country or province.

***There is a need for sound evidence and data to assess industrial trends, competitiveness of various sectors, value chain dynamics and identify bottlenecks and failures, etc.*** Such intelligence should regularly feed into government's policy making and help calibrate any government interventions. It is proposed to create dedicated capacity within Industries Department, in the form of an Industrial observatory, to take on this role.

***Coordination with the federal government to renegotiate the FTA with China to take full benefit of industrial cooperation under CPEC is also needed.*** Despite Pakistan's FTA with China, Pakistan has not been able to increase its share of Chinese markets significantly. Pakistan's bilateral trade deficit with China accounts for over 40% of Pakistan's trade deficit with the world. A detailed investigation is required to explore the factors that have prevented Pakistani producers from accessing Chinese markets. Furthermore, it is important that tariff structure for Pakistan should be at par with that offered to China's other trading partners and non-tariff barriers should be rationalized and minimized through effective negotiation.

***The regulatory and safeguards regime should be tightened and the capacity to implement environmental regulations should be strengthened.*** It is expected that CPEC will also lead to industry relocation from China to Pakistan. While this is good news, as it would lead to more investment and greater employment opportunities, there is a need to look for any environmental concerns due to relocation of 'dirty industry' and accordingly the government should think through any necessary safeguards regime.

***Capacity of local industry should be built so that they can take maximum benefit of these upcoming investments.*** It is also critical that any new industry, especially in sectors supported by government, should focus on technology transfer and strengthening of local business. Efforts should also be made for upstream and/or downstream integration of local partners.

***Public investments should be aligned with CPEC and readiness of local industrial clusters to take benefit of upcoming developments should be ensured.*** Government of Punjab is already making substantial investments through its annual development portfolio in a number of areas that are relevant to CPEC, such as skills development, industrial parks development, rural and urban roads development, etc. These need to be calibrated in light of CPEC plans. A similar readiness would also be required for the local workforce, so that they are suitably skilled to take advantage of opportunities offered by new and expanding industries. Pakistan has poor secondary and tertiary school enrolment compared to competitors, and it is imperative to provide basic competencies and higher and technical education to a wider section of the population. This will ensure that labour is resilient to structural change and has absorptive capacity for new technologies.

***In order to promote foreign investments and become a preferred destination for such investors, there is a need to improve investment climate and to increase the***

***ease of doing business.*** Government of Punjab therefore should undertake necessary business environment reforms that could make the environment friendly for future investments. These reforms could come as a comprehensive regulatory package in the wake of CPEC.

***Last but not the least, as CPEC is rolled out, there would be need for a responsive public sector,*** especially on industrial cooperation side to respond to demands and requests by foreign investors. Moreover, there is a need for meticulous planning and implementation. All of this calls for the need to enhance existing institutional capacity at Industries Department and improve coordination with other departments that influence business environment such as labour, environment and taxation.

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## 1 Introduction

Industries, Commerce & Investment Department, Government of Punjab requested IGC Pakistan to help the Department inform its decision-making regarding industrial cooperation in the context of CPEC. Consequently, IGC deployed technical support, to help Government of Punjab in devising a strategy to maximize the positive impact of the CPEC on the industrial sector in Punjab. The support was provided in close coordination with the department, so that the needs of the department were accurately identified and met.

This report presents the final output of the project, presenting a proposed framework for industrial cooperation in CPEC context, reviewing the industrial cooperation framework under the LTP developed by China and providing the basis for an initial response to the draft LTP. It is expected that the findings of this report will also inform the annual Punjab Economic Report (PER) and will ultimately form the basis of a full-scale industrial policy for Punjab in future.

Besides shedding light on broad contours of an industrial policy, this report also zooms in on two key economic sectors – ready-made garments and automotive – to illustrate how the framework could be used to critically analyze various industrial sectors, and thereby inform any sector-specific policy decisions.

*It is important to note that presently, the Government of Punjab does not have any industrial policy, which should be developed as early as possible, not merely in the context of CPEC but also looking at global canvass and opportunities that it has to offer. This report also takes a broader view of CPEC and takes into view markets beyond China, which will be better connected to Pakistan, as a result of the infrastructure that will be laid under CPEC.*

### 1.1 What is CPEC?

CPEC represents a portfolio of projects that are either under progress or will be undertaken as a result of China-Pakistan cooperation under the landmark Chinese OBOR initiative, deepening China's connectivity with the world. Presently, the total size of the projects envisaged under CPEC stands at USD 54 billion<sup>1</sup>, upgraded from USD 46 billion, during the last meeting of CPEC Joint Coordination Committee (JCC) in Beijing. The portfolio primarily includes major road and other infrastructure projects, establishment of special economic zones and an improved supply of electricity, besides an ambitious optical fiber cable project. It is expected that road network developed under CPEC will link China with Gwadar and other ports and will lead to development along the route and beyond. From within the China, the Northwestern autonomous region of Xinjiang specifically is expected to immediately benefit from this improved connectivity.

<sup>1</sup> It was estimated at USD 46 billion but recent JCC included a few more projects with estimated cost of USD 8 billion.



***CPEC has a spatial layout of ‘one belt, three passages, two axes and five functional zones’.***

Some of the highlights of CPEC include the following:

- Road infrastructure projects of approximately USD 11 billion
- A portfolio of USD 33 billion energy projects by private investors
- Karachi–Peshawar main ML-1 railway line upgradation for quicker rail travel, eventually connecting to China's Southern Xinjiang Railway in Kashgar
- A network of pipelines to transport liquefied natural gas and oil, including a USD 2.5 billion pipeline between Gwadar and Nawabshah to eventually transport gas from Iran

While all these projects have varying timelines, some of the projects are categorized as ‘early harvest’ projects under CPEC that are being fast tracked. Five joint working groups have been formed under JCC to drive their respective areas including: long-term planning, energy, transportation infrastructure, industrial cooperation and Gwadar port. On Chinese side, National Development and Reform Commission of China houses the JCC secretariat, whereas in Pakistan Ministry of Planning, Development and Reforms of Pakistan has taken over this role.

#### ***CPEC's LTP***

*China has developed an LTP for CPEC, which provides the details of the initiative. From Chinese side, China Development Bank (CDB) was commissioned to develop LTP, which has been shared with Pakistan to develop consensus.*

### **1.2 Industries and Commerce Department, Punjab**

The Industries, Commerce & Investment Department is one of the major government institutions striving to promote industrial development, trade and investment in the province. The main focus of activity is promotion of trade and investment in the province. Punjab is keen to take benefit of the opportunities that CPEC has to offer and to create a conducive environment for its domestic industries.

#### VISION

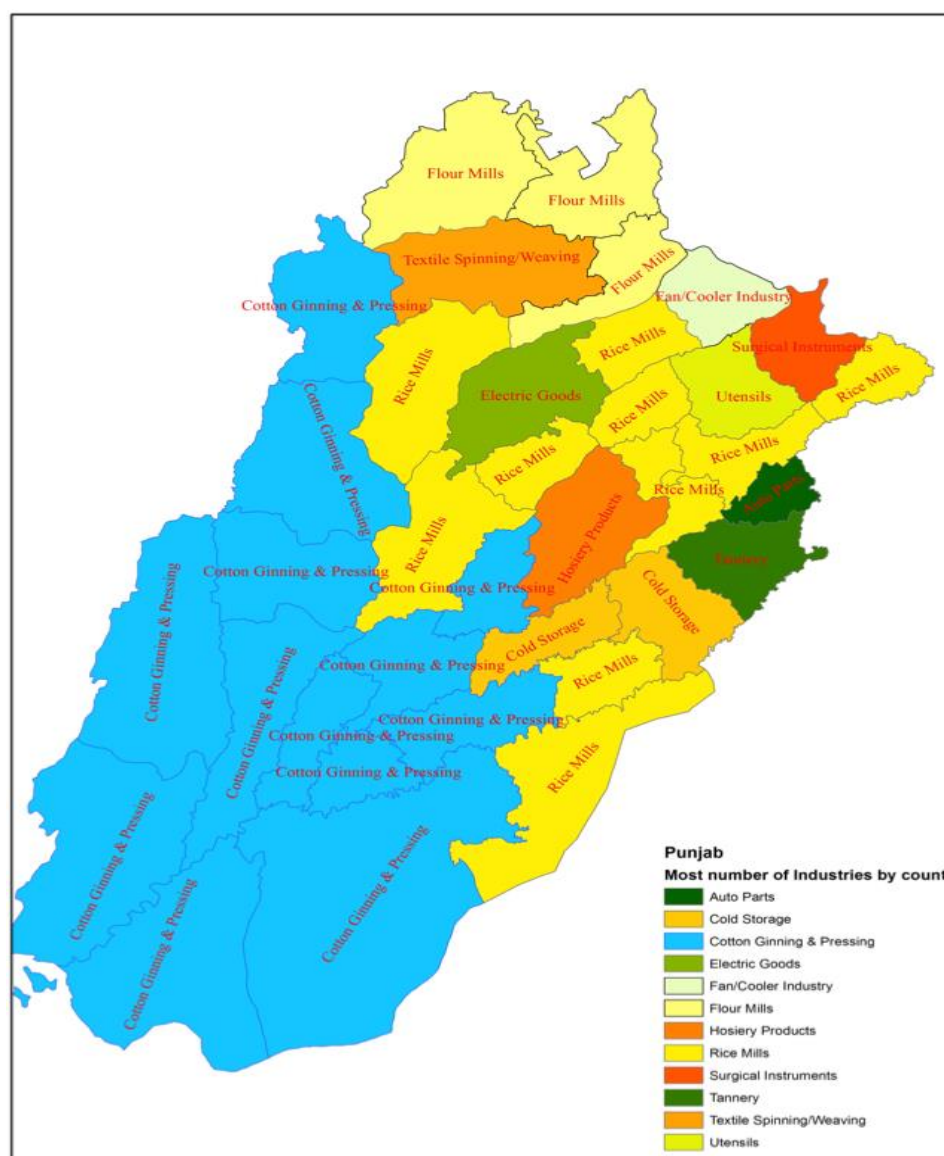
The vision of Industries and Commerce Department is ***to promote sustainable growth of industry and commerce, led by private sector investment, targeting quality employment and enhanced exports by fostering a business friendly environment.***

Presently, the Industries and Commerce Department consists of three attached departments – Directorate of Industries; Punjab Consumer Protection Council; and Punjab Printing and Stationary Press. Additionally, it has one autonomous body – Punjab Small Industries Corporation; three independent companies – Punjab Board of Investment and Trade, Punjab Industrial Estate Development Management Company and Faisalabad Industrial Estate Development Management Company; two special institutions – Technical Education and Vocational Training Authority (TEVTA) and Punjab Prices Supply Board; Commerce and Investment Wing and WTO Cell.

### 1.3 Punjab's Industrial Landscape

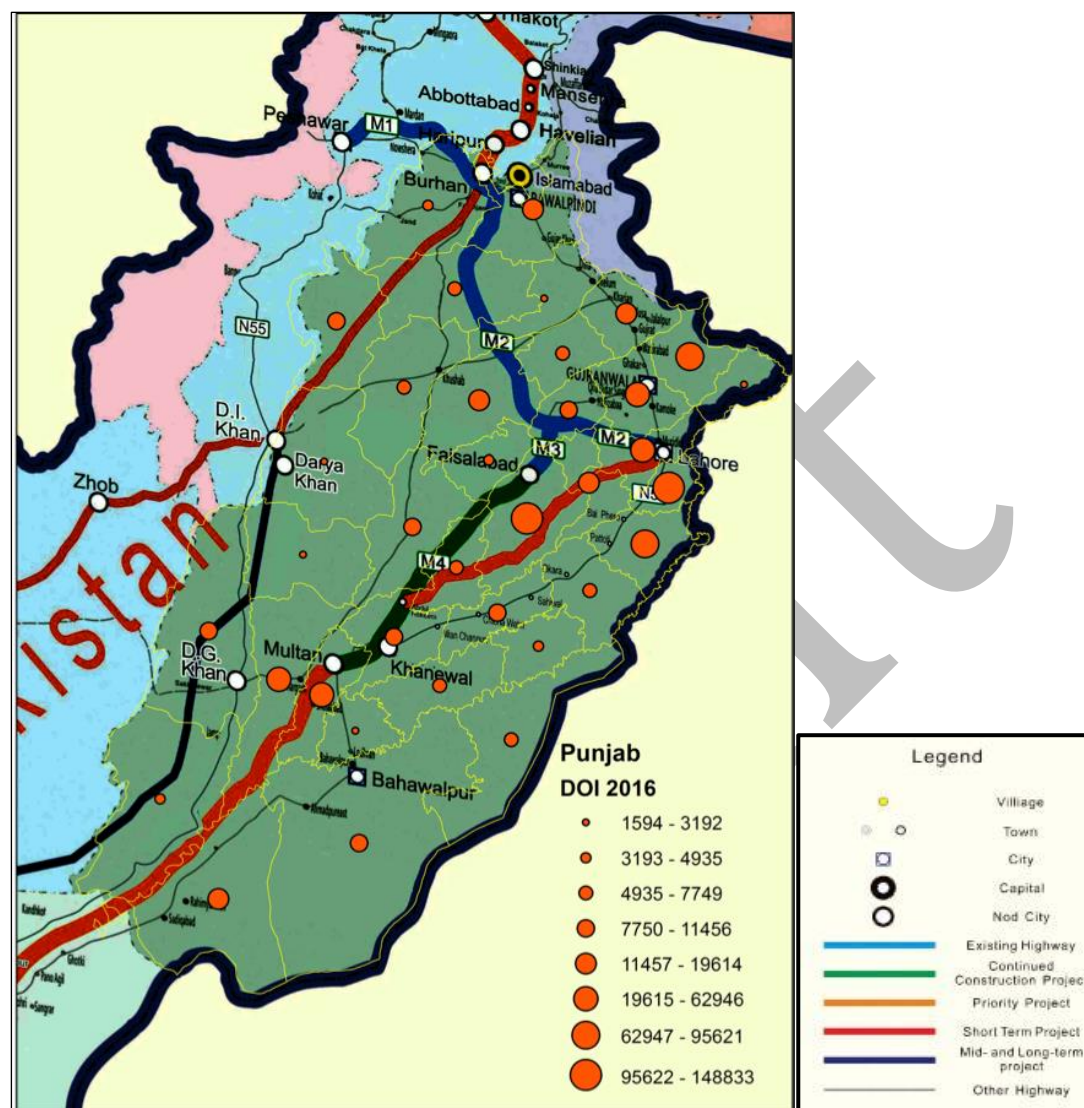
Punjab is a home to many industries such as textiles and garments, leather and related products, agri-processing, etc. and a number of industrial clusters around Lahore, Kasur, Gujranwala, Faisalabad and others. Figure 1-1 below shows the main industry in each district.

Figure 1-1 Main industry by district, Punjab 2016



Source: Directorate of Industries, Government of Punjab

Figure 1-2 District wise employment of large-scale industries

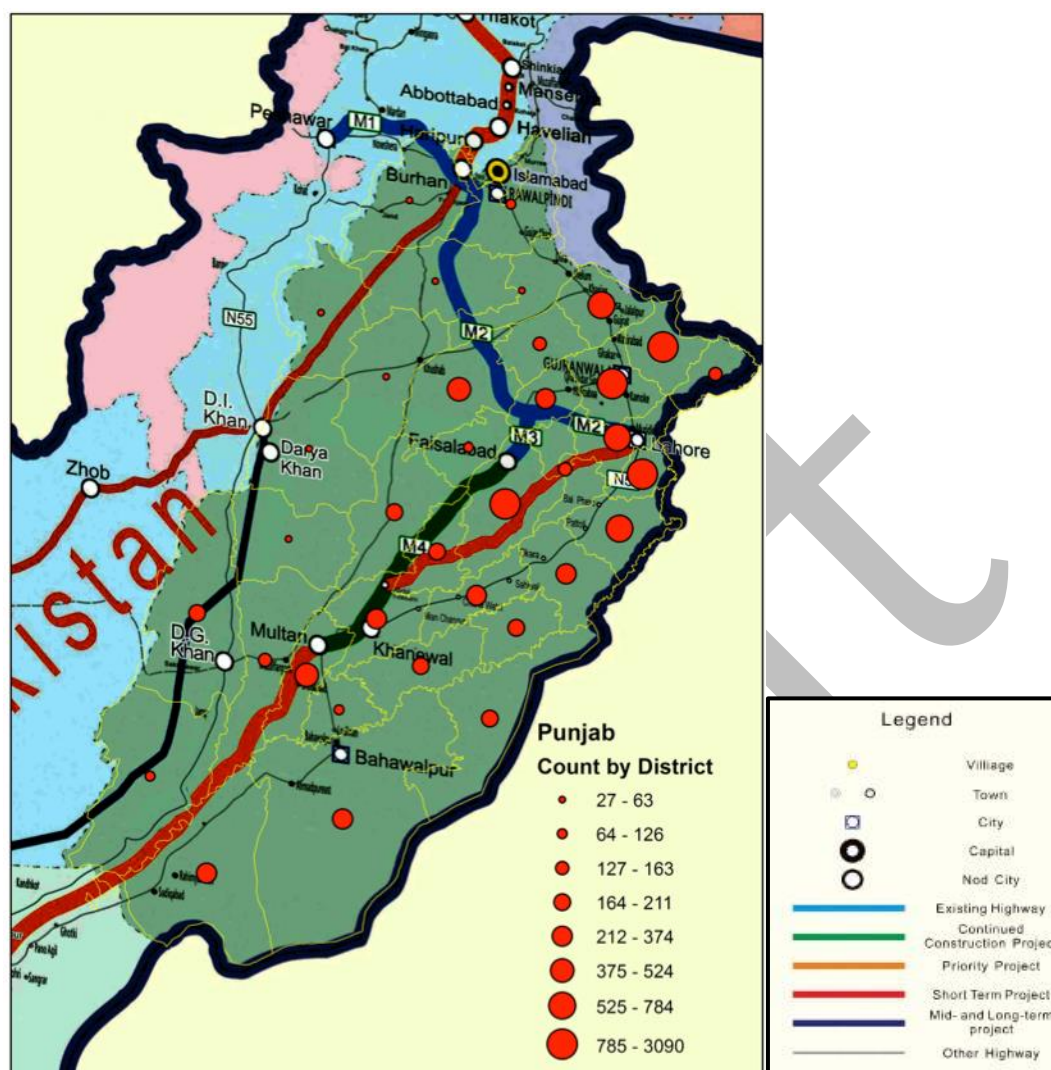


Source: Directorate of Industries, Government of Punjab

CPEC emphasizes the spatial strategy with both the 'core areas development' around the main arteries of the proposed corridor as well as the 'radiation areas development' surrounding the core areas. In case of Punjab, the core and radiation areas together should encompass some of the major industrial clusters such as Faisalabad, Kasur, Sialkot and Gujranwala, besides Lahore and Multan.

Figure 1-2 shows the districts with the largest industrial employment and Figure 1-3 shows districts with the highest numbers of large-scale industries superimposed on the proposed CPEC infrastructure. While some of the districts with a large number of large-scale industrial units already have the CPEC infrastructure passing through it, others will have to be connected to the route, for example Sialkot and Gujranwala.

Figure 1-3 District wise count of large-scale industries



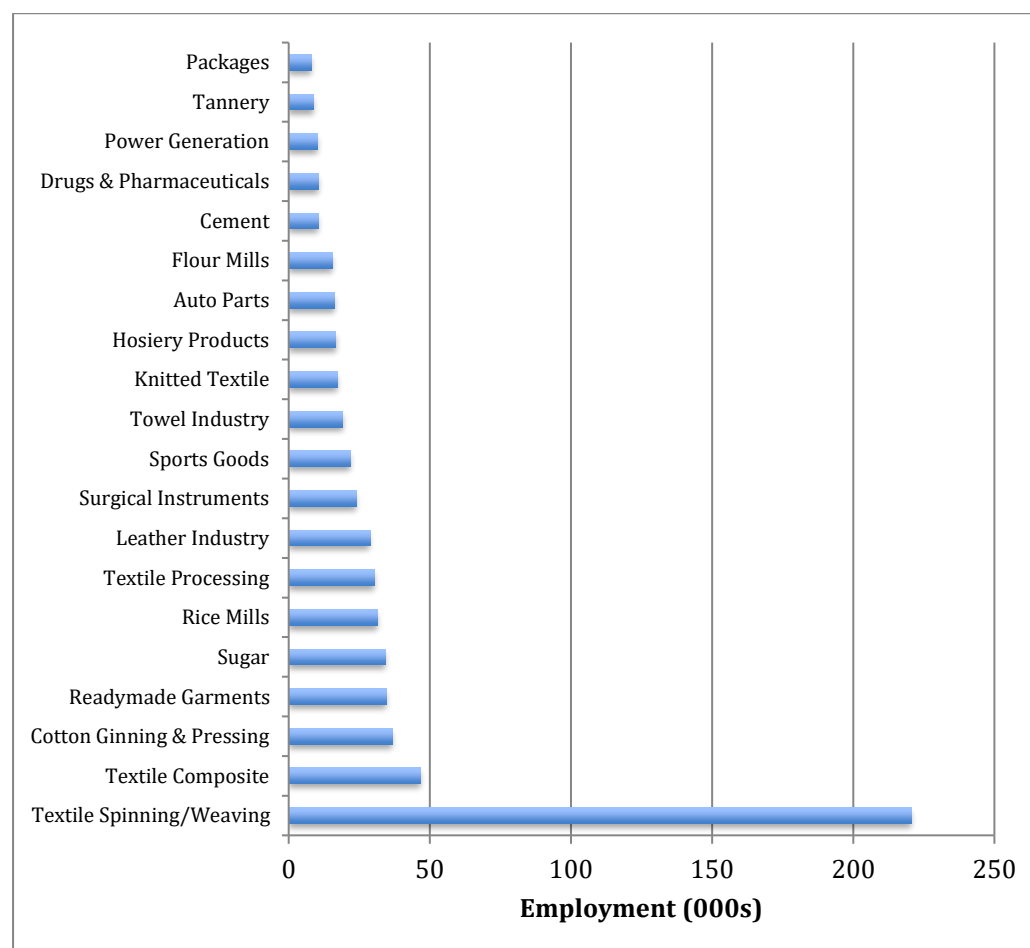
Source: Directorate of Industries, Government of Punjab

Reviewing the employment, exports and investment statistics, it is easy to identify some of the existing major industries of Punjab. These sectors primarily include textile related industries such as spinning, weaving, composite textiles, cotton ginning, ready-made garments and towel, hosiery and knitted garments. Other than the textile group, other important industries include agriculture products, fertilizers, leather goods, surgical instruments, sports goods, auto parts and pharmaceuticals.

About 25% of industrial employment in Punjab is generated from textile spinning and weaving, as shown in Figure 1-4 below.



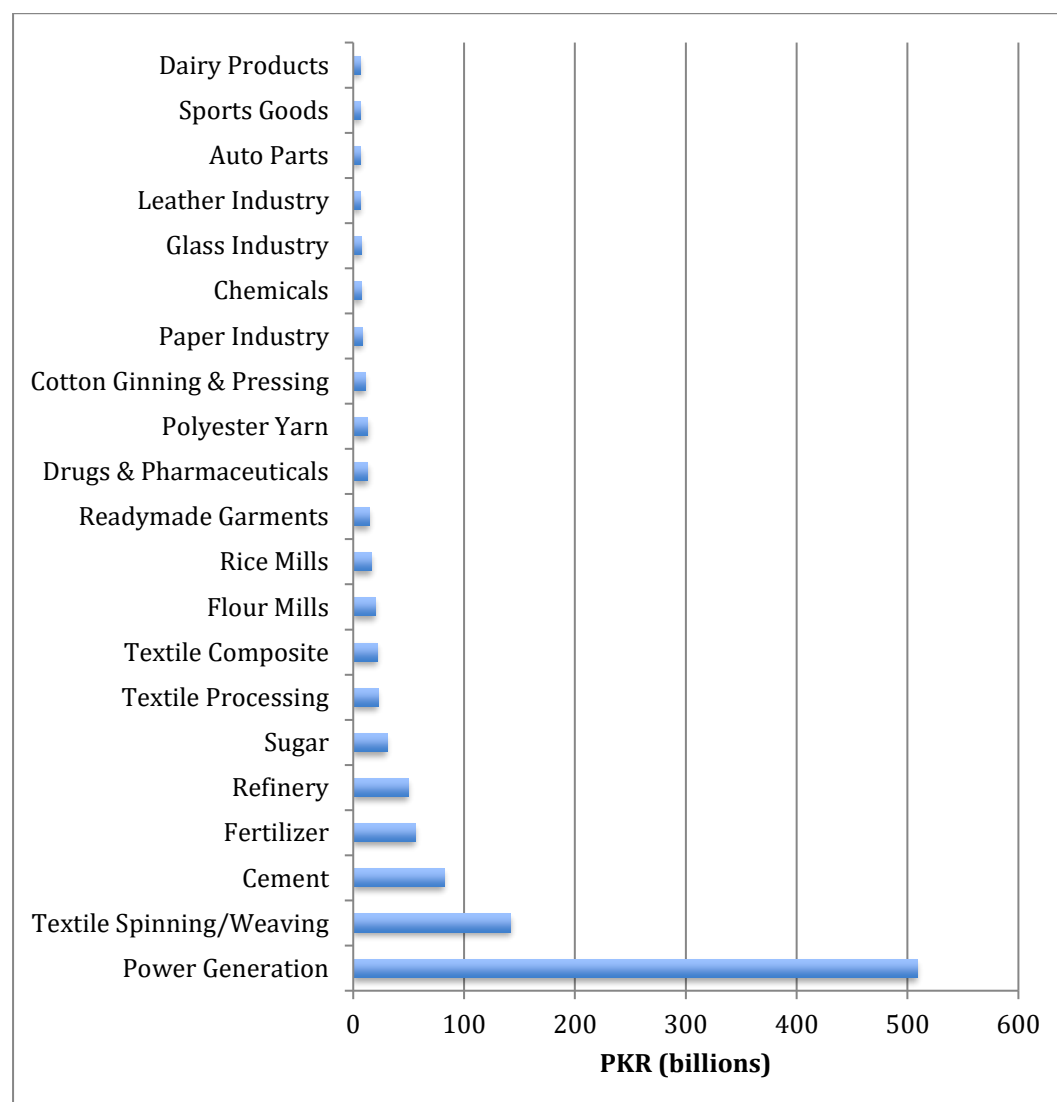
**Figure 1-4 Top 20 industries by employment, Punjab 2016**



Source: Directorate of Industries, Government of Punjab

Power generation represents 43% of all investment in Punjab and textile spinning and weaving 12% (Figure 1-5).

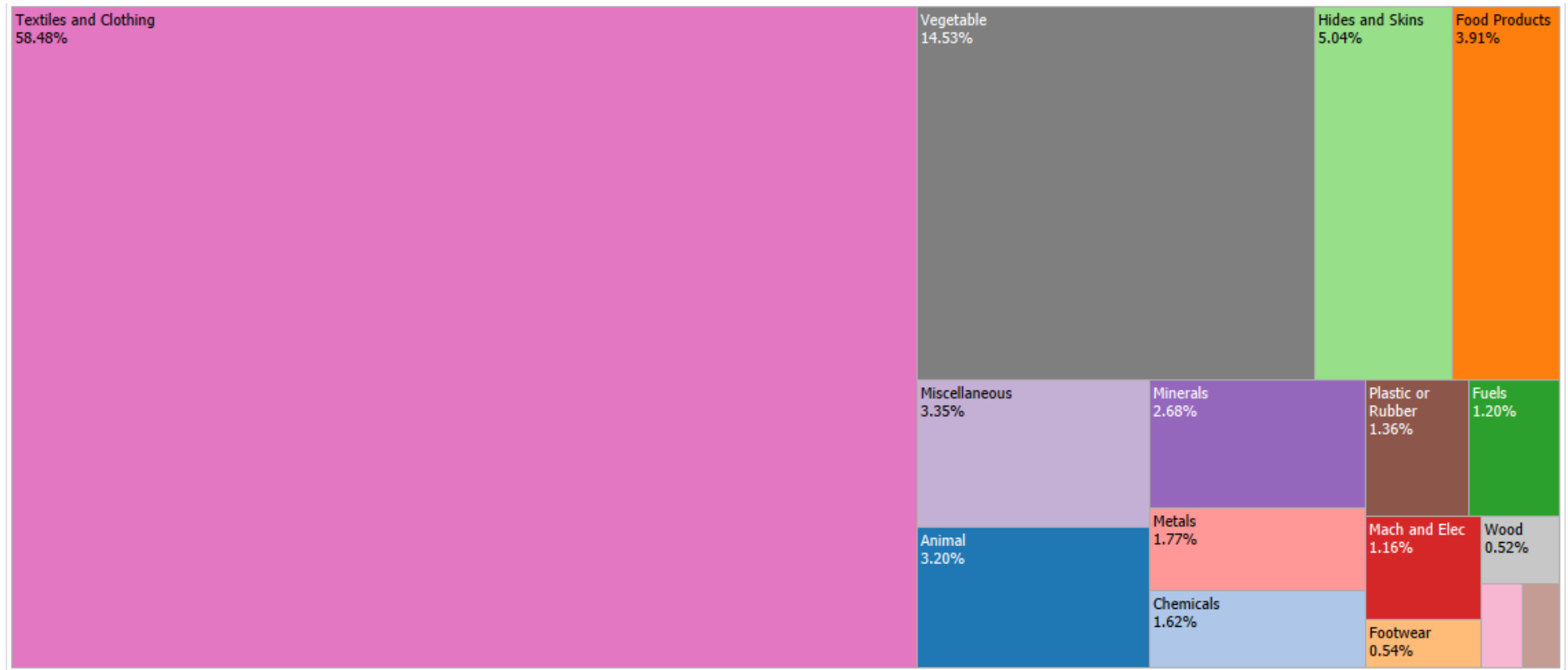
Figure 1-5 Top 20 industries in Pakistan, by investment



Source: Directorate of Industries, Government of Punjab

Figure 1-6 shows the top exports of Pakistan – textiles and clothing represent nearly 60% of total exports. Table 1-1 breaks this down at the 2 digit HS code level, showing all exports that have more than 1% share in Pakistan’s exports. Articles of apparel and clothing and other made-up textile articles jointly account for 37.3% of Pakistan’s exports. While there are limited shares of non-textiles manufacturing sectors, leather goods, surgical equipment and sports goods are all important contributors to exports.

Figure 1-6 Pakistan's top exports, 2015



Source: WITS World Bank <http://wits.worldbank.org>

**Table 1-1 Pakistan's top exports, 2015**

HS Code	Commodity	Exports (USD millions)	% of exports
52	Cotton	4,040.27	18.29
63	Other made up textile articles; sets; worn clothing and worn textile articles; rags	3,759.72	17.02
61	Articles of apparel and clothing accessories, knitted or crocheted	2,359.61	10.68
62	Articles of apparel and clothing accessories not knitted or crocheted	2,127.46	9.63
10	Cereals	1,942.27	8.79
42	Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut)	687.62	3.11
25	Salt; sulphur; earths and stone; plastering materials, lime and cement	507.57	2.30
41	Raw hides and skins (other than furskins) and leather	425.09	1.92
8	Edible fruit and nuts; peel of citrus fruit or melons	415.33	1.88
90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof	369.20	1.67
17	Sugars and sugar confectionery	358.00	1.62
11	Products of the milling industry; malt; starches; inulin; wheat gluten	336.02	1.52
3	Fish and crustaceans, molluscs and other aquatic invertebrates	328.73	1.49
22	Beverages, spirits and vinegar	310.03	1.40
55	Man-made staple fibres	302.34	1.37
39	Plastics and articles thereof	284.13	1.29
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes	265.13	1.20
2	Meat and edible meat offal	263.74	1.19
7	Edible vegetables and certain roots and tubers	234.13	1.06
95	Toys, games and sports requisites; parts and accessories thereof	232.80	1.05

Source: UN Comtrade, downloaded February 2017

## 1.4 Role of Provinces vis-à-vis CPEC

Right from the start, smaller provinces raised a number of concerns over CPEC routes, but many of these differences have been addressed amicably. The inclusion of Karachi Circular Railways, Keti Bandar, special economic zones in Sindh and KP, a 1,700 MW hydel plant and circular railway track between Peshawar-Charsadda-Nowshera-Mardan and Swabi were especially included within CPEC to convince Sindh and KP.

Going forward, despite the fact that energy, railways, national highways, ports and trade lie within the ambit of the federal government, an active and meaningful involvement by provinces in CPEC will be central to its effectiveness, through developing 'core' and 'radiation' areas around CPEC routes. It is expected that

through robust industrial cooperation, a lot of new investment can come to provinces, providing means for employment and economic growth.

Although the provinces have formed their own CPEC coordination offices, residing in various departments, lack of clarity is still prevailing on how the provinces can best leverage the benefits of CPEC. With improved connectivity between the vast regions of Western China and Central Asia to the Arabian Sea, immense economic opportunities lie for various industrial clusters close to the CPEC routes. With an effective strategy and appropriate investment climate, provinces can very well use these opportunities to stimulate private investments in a number of sectors.

This however is easier said than done. The provinces would need to understand the dynamics of their own industrial landscape vis-à-vis CPEC and develop an informed investment policy to attract investments with promising potential. There are large public investments made every year as part of respective provincial development portfolios, which need to be aligned with CPEC to get maximum value out of them. The provinces would also need to ensure that their respective workforces are fully qualified and trained to take benefit of these forthcoming opportunities. In addition, the provinces would need to strengthen their institutions, especially those that interface with the private sector and improve regulatory regimes.

### 1.5 Key Objectives and Proposed Approach

Based on request made by Industries Department and a quick scan of the issues, it was agreed that the project should meet the following objectives:

- Inform Government of Punjab's thinking on industrial cooperation in the context of CPEC
- Lay a foundation for evidence-backed policy making on industrial cooperation and investment incentives
- Support the government to develop a response towards industrial cooperation framework in LTP

First and foremost, there is a need to develop an industrial policy for Punjab. This should then lead to developing strategies to attract investment and identifying sectors and investment types that are aligned best with Punjab's vision and growth strategy. This report presents the broad contours for Punjab's industrial policy and some fundamental principles for providing any investment incentives.

After defining the above-mentioned framework, the report then closely looks at two selected sectors, not only to demonstrate how this framework can be used but also to identify early harvest opportunities for Punjab's Industries Department within the CPEC context. The two case studies primarily rely on secondary research and provide a detailed account of these sectors and their potential vis-à-vis CPEC.



The existing draft LTP is structured around priorities identified by China. Subsequent meetings with Chinese business community have provided further insights. Punjab should also develop a thorough understanding of CPEC and what it entails with respect to industrial cooperation. Then, based on Punjab's own interest, Industries Department needs to develop an informed view about CPEC and any industrial cooperation activities that would be undertaken under it. A dedicated section of the report provides detailed views on industrial cooperation framework defined in LTP and gives a direction for Punjab's response towards the draft LTP.

Lastly, the report provides a plan of action for Industries Department on how to move ahead with this framework.

Draft

## 2 Broad Contours of Industrial Policy

***There is an urgent need to develop a full-scale industrial policy and strategy for Punjab, which could inform various actions of the government regarding CPEC and beyond. This in turn needs to be based on a comprehensive data collection exercise to get a better handle on the scale and structure of Punjab's industrial sector. This work, on one hand, provides intellectual foundation for the future industrial policy and on the other provides a framework for early decision-making regarding specific investment proposals.***

The Punjab Growth Strategy clearly identifies that the role of the government is to encourage private sector-led industrial development. The strategy lays out the role for the Department of Industries, Commerce and Investment in achieving growth as following:

- Formation of an industrial policy that gives strategic direction and coordinates the efforts of various arms of Government
- Data and information on constraints faced by businesses, liaison between industry and government agencies in order to address these constraints and assess industry requirements, as well as the provision of a licensing role
- Provision of infrastructure, land and key services via industrial estates and special economic zones
- Assessing skills requirements, and enabling and providing skills training to labor
- Enforcing quality standards
- Investment Promotion

### 2.1 Objectives of the Proposed Policy Framework

This chapter sets the broad contours for the proposed framework for industrial cooperation vis-à-vis CPEC and will provide a basis for providing any incentives to industries. It is important to note that the proposed framework takes a hybrid approach, primarily presenting a horizontal model to improve overall business environment but also has some vertical elements to address sector-specific issues mentioned in LTP. Going forward, any industrial policy framework should focus on all the following three dimensions in the given order of priority and create a balanced approach:

- Focusing on existing industries, which are economically vital for Punjab, and ensuring that they continue to grow, and provide sustained economic benefit
- Concentrating on allied industries, where the competitive advantage can be developed due to complementary capabilities, aiming at creating better forward and backward linkages and exploiting those complementarities
- Aiming at industrial diversification, nurturing new industries leading towards industrial and export sophistication.

Furthermore, there is a need to clearly lay out the desired policy outcomes before designing any industrial policy intervention or investment incentive, which may range from providing employment to local workforce to technology transfer or strengthening the industrial base of the country to promoting local enterprises or even a combination of many such objectives.

While it is expected that the sector diagnostics will lead to specific policy outputs that the government would want to achieve, there are a few fundamental principles that should dictate the industrial policy such as driving innovation, promoting spillovers, limited time period for any incentives to help the industries become competitive and sustainable, etc.

The Punjab Planning Manual (2015) lays out the principles that provide the broad contours of the future industrial policy.<sup>2</sup> These principles are reproduced below:

- **Market Failures** – The need for government interventions for industrial support should only be justified, if they are addressing a market failure, which cannot be addressed by the private sector itself.<sup>3</sup> These failures may include coordination failures, information spillovers, etc.

*Coordination failures occur when markets are incomplete so that the return to one investment depends on whether some other investment is also made. For instance, hypothetically a number of furniture manufacturers in Chiniot may not be investing in high quality designs or highly skilled workforce, due to the absence of a wood seasoning facility in the area. Nobody may be willing to invest in such a seasoning facility, in the absence of high quality manufacturers in the area. The government may either provide guarantees or invest and establish such a facility to ensure availability of high quality wood for more expensive designs.*

*Information spillovers mean that an entrepreneur shies away from investing in something where he would incur costs (personalized costs), but if he/she is successful the gains would be shared by others as well (social costs). For instance, surgical instrument manufacturers may not invest in training their workforce, as these workers, once trained, may be hired by other players in the market. However, government may address this failure by establishing a technical and vocational training institute in the area for surgical manufacturing workforce.*

- **Clear Objectives & Results-Based Performance Indicators** – All industrial support interventions should have well defined objectives with commitment

<sup>2</sup> Extracted from Punjab Planning Manual.

<sup>3</sup> Hausmann and Rodrik, 2006. Doomed to Choose; Industrial Policy as Predicament

at the outset of the intervention, so that all stakeholders know what the new industrial support initiatives are trying to achieve. A well-designed industrial support intervention must have both output and outcome level goals.

*For instance, a technical and vocational training facility may have the outcome-level objective/ goal of enhancing the skill of the workforce in particular industries, however, the output-level goals must include the number of trainees or number of courses delivered over a period of time. Moreover, the outcome-level goals should be quantifiable, which may then be verified through impact assessment exercises, a third party or any other institution.*

- **Performance Benchmarks for Beneficiaries** – All private sector support interventions should have clear performance benchmarks for beneficiaries and if these are not met, there should be a clear process for filtering out such beneficiaries. For example, in special industrial or export processing zones, the beneficiaries can be asked to meet certain export targets.
- **Whole or Partial Cost Recovery** – The notion of cost recovery is important not only for creating ownership and responsibility but also so that government's limited resources could be channeled in the most effective manner. The government may decide to support interventions, which do not contribute anything towards cost recovery, nevertheless, the principle should be there to prioritize, rank and assess any such interventions.
- **Targeting** – Government has the mandate of directing limited resources to the initiatives that meet its strategic priorities. Some of the interventions, while having clear objectives, only aim at increasing the profitability of the private enterprises. However, all such interventions should target either productivity or innovation as clear criteria for targeting. For instance, any tax rebates may be given to all industries in a sector, thereby increasing their profitability. As per this principle, however, these rebates should be focused on 'certain' types of exporters, including those exporting to new markets (where they could not previously export and now due to productivity enhancement have become more competitive) or in new product categories (which indicates innovation).
- **Sunset Clause** – Sunset clauses define the time duration of an intervention and as such are termed as the most effective policy design feature. Governments operate at a distance from private enterprises and at most of the times, it is difficult for the government to pick winners from among the interventions, and lack having an explicit timeframe for an intervention after which a third party may carry out a cost benefit analysis to decide on continuing or otherwise for that particular initiative. Therefore, all the industrial support interventions should exist for a limited period and must

have sunset clauses. For instance, provision of milk cooling tanks, mechanization support for farms, etc. under various industry support initiatives should have a sunset clause with an inherent assumption that by the time they would end they would have achieved the desired objectives. Even the Section 42 companies, as well as public-sector training institutions, exhibition centers, etc. must also have a sunset clause, as government should not keep on supporting this essentially private sector activity for an unlimited period. If private sector continues to see value in these initiatives, they should be taken up by the private sector itself. For example, Section 42 companies for sector development in a particular industry, can be taken up by respective industry association after a certain time. Similarly, the public sector-led training can be taken over by private sector players, if there is sufficient element of cost recovery. These sunset clauses, however should be corresponded with an appropriate exit strategy.

## 2.2 Tools for Industrial Policy and Investment Framework

Based on the above-mentioned principles and through detailed sector diagnostics, the government can design a number of interventions and incentives to support desired policy outcomes. The following provides an illustrative menu for the provincial government on how it can facilitate and incentivize investments:

- Coordination with federal government to create provisions in FTA
- Tax incentives for provincial taxes such as UIPT, Sales Tax on Services, Stamp Duty, Professional Tax, etc.
- Subsidized credit
- Regulatory reforms
- Industrial parks and export promotion zones or other forms of land lease
- Strategic fund to address market failures
- Venture funds, development funds, guarantees or special purpose vehicles to subsidize high risk finance
- Subsidizing skills development interventions
- Business facilitation

However, it is important that any such incentives should be based on the following principles:

- **Comparison with alternative destinations** – Any proposed policy guidelines should be based on a comparison with the incentives offered in alternative destinations available to potential investors. For instance, many Chinese companies have decided to move their manufacturing facilities to other locations such as Vietnam, Bangladesh and Philippines, besides Pakistan but there is no comparison available. Such an analysis can shed some useful light on how can Pakistan position itself better vis-à-vis these alternative destinations. This should include an examination of best practice amongst

other regional competitors too, such as India, as this policy framework should be in place for all foreign and domestic investment, not just Chinese.

- **Benchmarking to international standards** – It is important to follow international guidelines on investment policy principles. Transparency, property protection and non-discrimination, for example, are core internationally accepted principles for investment policies.<sup>4</sup> These international guidelines indicate that the incentives should not discriminate between national and international investors i.e., the incentives should not be limited to foreign JVs only. Similarly, incentives that reduce the cost of investment such as investment tax credits and accelerated depreciation have demonstrated effectiveness. Moreover, it must be kept in mind that profit-based tax incentives, such as the tax holidays have been found to be largely ineffective.<sup>56</sup>
- **Limited scope for discretion** – Any incentives provided should apply based on an objective criterion, with no or limited discretion. While it is important to ensure that the incentive package responds to investor requirements, this should be in the form of stakeholder engagement and a review of best practice prior to the announcement of investment packages. Once the package has been announced, it is important that the process be transparent and stable, and not prone to changes following lobbying.
- **Policy stability** – Another important element of any proposed incentives is a guarantee of policy stability, particularly in the tariff structure. One of the major deterrents of large-scale investment in Pakistan is frequent change to the tariff structure. Even small changes in tariffs can impact the feasibility of a large investment if it is based on imported inputs or exporting outputs. Scope for discretion via SROs adds another layer of complication and encourages rent seeking and lobbying, distorting the market unfairly towards larger investors and creating scope for anti-competitive behavior. It would be important to guarantee stability of trade regulations and tariffs for a specified time period at least in the SEZs. Any changes should be pre-announced with sufficient time to allow firms to adjust and plan accordingly.

<sup>4</sup> For details see OECD guidelines

<https://www.oecd.org/investment/toolkit/policyareas/investmentpolicy.htm>

<sup>5</sup> <https://www.imf.org/external/np/g20/pdf/101515.pdf>

<sup>6</sup> <http://www.theigc.org/wp-content/uploads/2014/09/Tuomi-2012-Working-Paper.pdf>

## 2.3 Business Environment Reform

Businesses in Pakistan have often quoted weaknesses in the investment climate as key barrier to growth. Although an enabling investment climate would require a coherent response from both the federal and provincial governments, with the enhanced mandate of provinces through 18<sup>th</sup> constitutional amendment, the provincial response on this count has become all the more important. Presently, the responsibility for four out of ten indicators of the Doing Business survey lies with the provincial government. Therefore, any industrial policy framework by Government of Punjab should have overall business environment reforms as its part and parcel.

A recently conducted study – Diagnostic and Research study on policy reforms for Punjab’s priority business sectors by Business Environment Reform Facility<sup>7</sup> – sheds some useful light on the areas in need of immediate business reform. It is proposed that the Government of Punjab should introduce a regulatory package for cross-cutting business environment reform. The proposed regulatory package should cover the following aspects, as identified in the above-mentioned study:

### Business licensing and registration procedures

Business licensing and registration are the gateway procedures of sorts for any new enterprise and are therefore critical to materialize initial interests of potential investors. Registering a company in Punjab requires several steps, which are often laborious and in many cases manual. This is also the case for tax registration, where multiple agencies are involved. Despite the recent wave of automation in the provincial government, the line departments and other government agencies seldom share data with each other, resulting in redundancy and duplication. Not only does the sales tax registration with the Federal Board of Revenue (FBR) involve a complicated process at the federal level, but the firms also have to pay multiple provincial duties and taxes, each requiring a separate procedure. It is hard for new firms to provide the requisite information on suppliers and customers to prove their authenticity. The need for hiring external lawyers and consultants for these registrations or the informal payments and bribes increase the cost of doing business for the investors. Other clearances and permits such as the ones required from Town Municipal Authority (TMA) and Lahore Development Authority (LDA) (for buildings), the Intellectual Property Organization (IPO) and the Environment Protection Agency (EPA) offer similar challenges.

Some of the ways in which these constraints can be eased include:

<sup>7</sup> Nazish Afraz, Dan Aylward, Usman Khan, Jayyad Malik and Hina Shaikh (2016) “Diagnostic and Research study on policy reforms for Punjab’s priority business sectors” Business Environment Reform Facility (World Bank and Department for International Development). Available at <http://www.businessenvironmentreform.co.uk/wp-content/uploads/2016/06/Punjab-BERF-Research-and-Diagnostic-Report.pdf>



- Establishment of a helpline to facilitate registration, followed by creation of a one-window facility to support registration, tax, monitoring and compliance
- Simplification of registration processes using a centralized database of information available for multiple agencies<sup>[17]</sup><sub>SEP</sub>

### **Tax policies and administration**

Once the businesses are registered for tax purposes, filing the returns, assessment of taxes and their payment offer another challenge. Unpredictability of tax policy creates uncertainties for businesses, which have to keep safety margins for unforeseen costs. The enterprises in Punjab sometimes have to face duplicity of tax regimes, with FBR and Punjab Revenue Authority (PRA), particularly in case of the value added tax. Discretion of tax authorities leads to room for bribery and rent seeking. In case of over taxation, claiming refunds take a long time and ties up working capital for firms. These challenges can be addressed through:

- Use of single tax ID by a single tax collection agency to ensure no duplication
- Enhanced transparency in PRA procedures and communicating all applicable taxes and their rates on a website
- Alignment of tax policy between FBR and Government of Punjab, besides expedited refund claims resolution of over taxation cases

### **Access to finance**

Access to finance presents a cross-cutting challenge which is more severe for smaller firms. Large firms can secure better financial rates as they typically pay KIBOR + 1 – 1.25%. In comparison, SMEs often have to pay KIBOR + 3 – 6%. Currently, SMEs have no specific financial products available for them. Providing collateral is difficult for them as stocks, letters of credit for export orders, confirmed orders and factory premises are often not accepted. Consequently, SMEs often have to rely on personal property or unleveraged personal savings to secure credit. In order to ease access to finance, it is recommended that:

- Preferential rates for SMEs, linked to their performances and use of alternative collateral through support by Bank of Punjab (BOP)
- Use of credit guarantee schemes in the medium term
- Strengthening of credit bureaus to provide better information to lenders.

### **Labour laws and administration**<sup>[18]</sup><sub>SEP</sub>

The labour laws in Pakistan and Punjab are outdated and ambiguously worded. Complete compliance to these laws is considered an unachievable task which often leads to firms making unofficial payments to avoid inspections. Enforcement is perceived as ineffective and firms themselves demand actual compliance due to consideration for their workers or due to customers' demand. SMEs face more difficulty in such cases as they lack the resources and influence to challenge wrongful penalties. In order to overcome these challenges, the following is recommended:

- Publishing a short labour code compliance booklet and checklist of laws by Labour Department
- Simplification of labour laws regimes
- Use of intermediaries for interaction between labour officials and businesses with inspections regime based on risk profile of different industries
- Exemptions for low risk industries and third party validation for medium risk industries
- Online availability of inspection reports to enhance transparency

### **Overall quality of regulatory governance**

Overall poor quality of regulatory governance and wide discretion of government officials pose another challenge for businesses. For instance, informal payments and bribes are routinely used to get a No Objection Certificate (NOC) from the EPA or to seek a Structure Safety Certificate (SSC). Recently introduced Dengue inspections have also created another avenue for rent seeking. In order to address these issues, the following is recommended:

- Publically available list of approved Dengue spray companies, by Health Department, to issue certificates of compliance, without on-ground inspections
- Use of software, such as AutoCAD, for online verification of the compliance of building plans with building codes
- Combining all inspections into a single regime, in the long run, as practiced globally with time bound government service delivery to businesses, with consequences for non-compliance
- Relevant legislation for labour, environment, provincial taxes, land, construction permits and utility connections

### **Land titles, registration and administration**

The computerization of land titles in Punjab has made transfer of land quicker and cheaper. However, where changes are disputed, delays are caused due to lack of sharing between courts, property registry office and tax office. Furthermore, the EPA needs to provide clearance for new manufacturing units, which can be challenging, as there is no proper land zoning. Therefore, the following is recommended:

- Online availability of information about land allotted according to type of industry and the criteria used
- Online availability of land maps, with information on roads and water pipelines
- Land Record and Management Information System (LRMIS) website to showcase a model sale deed for property registration
- Use of e-stamps
- Dedicated conflict resolution mechanism for land disputes bypassing the formal judicial system

- Digitization of property registration, relevant payments and downloadable verification

### **Access to commercial courts and alternative dispute resolution mechanisms**

Since, Pakistan has no commercial courts, business disputes have to be resolved through normal judicial system, which is quite cumbersome and takes a very long time. The businesses therefore try to seek out-of-court settlements, in the absence of an alternative dispute resolution mechanism. In order to overcome this, the following is recommended:

- Alternative dispute resolution mechanisms specific to industrial estates and sector associations
- Developing a provincial policy in the longer run, to cover out of court mediation and the introduction of a separate division under the High Court to settle business cases
- Expediting mediations through a system of electronic filing, summons and payment

### **Public-private dialogue processes**

There is a lack of formal, systematic dialogue process during policy formulation. Business member organizations have no say in any relevant discussions and any consultation is seen as redundant. Therefore, businesses use personal networks to make any inroads. Work is being done with the Planning and Development Department and the Investment Climate Reform Unit to develop an online feedback mechanism. This will give the private sector an improved channel of communication with the public sector and hence, should be piloted in priority sectors.

### **Access to market information**

Market information is unreliable as the Trade Development Authority of Pakistan (TDAP) supports only those exhibitions that businesses already know about. Other entities, such as the Small and Medium Enterprise Development Authority (SMEDA) and Punjab Small Industries Corporation (PSIC) are also not seen as useful. Even business associations are seen as helpful to only large firms. To overcome this issue, the following is suggested:

- Online availability of combined data on production, trade and export markets by different government agencies coordinated by Punjab Board of Investment and Trade (PBIT)
- PBIT to commission market studies for priority sectors in non-traditional markets

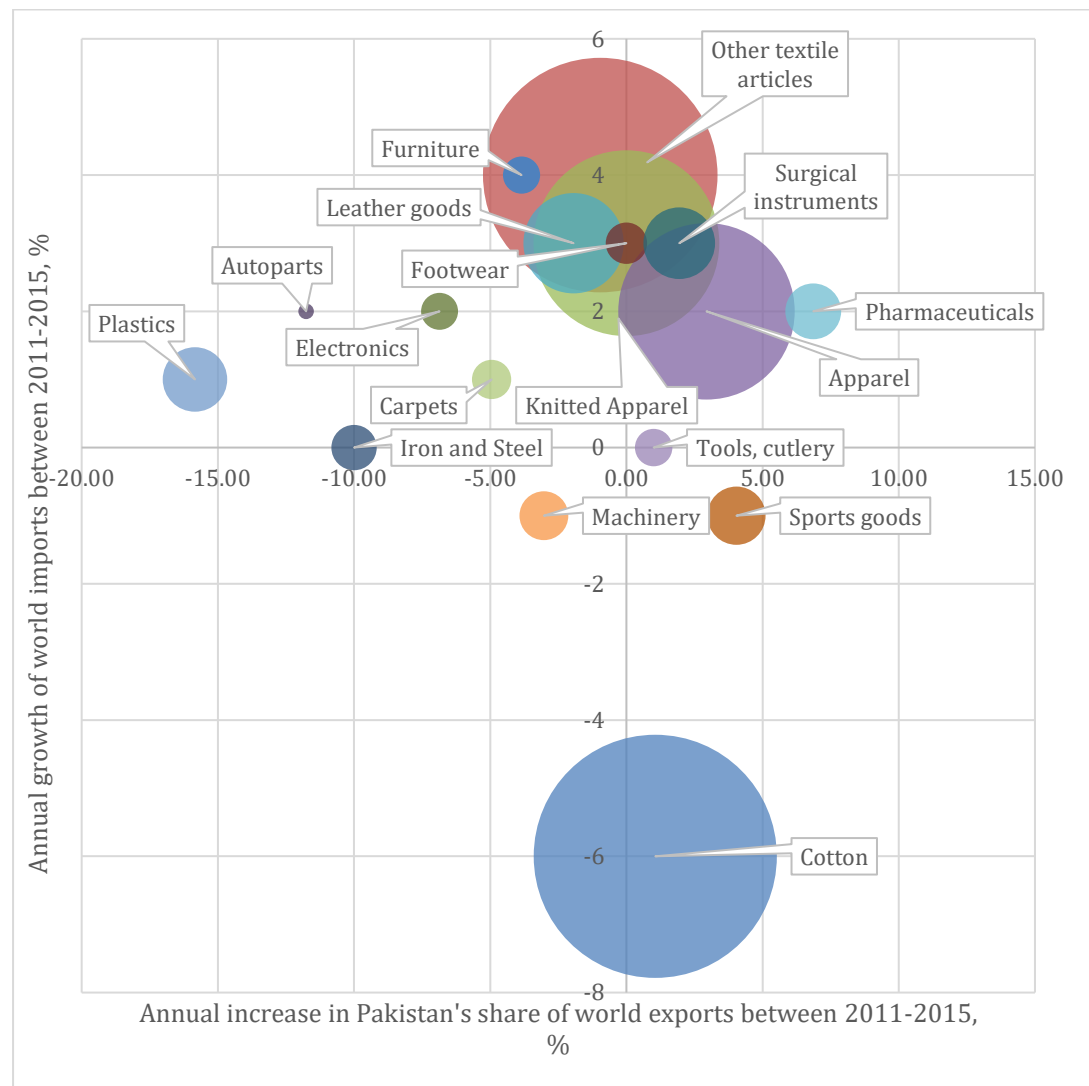
## 2.4 Assessing Sector Priorities for Punjab

As explained earlier, ideally, the response to CPEC and any other new development should be in light of a proper provincial industrial policy that is aligned to a similar federal industrial policy. Such policies would contain Pakistan and Punjab's vision, diagnostics (including bottle-necks to industrial development) and both sector-specific and non-sector specific policies required to achieve the vision. However, in the absence of this, this chapter sets out some broad parameters that can inform Punjab's perspective on industrial cooperation.

At the outset it is important to understand the Punjab's existing industrial base. Section 1.3 describes this in detail: Punjab's industrial base is heavily dominated by textiles and garments, though there is also a small presence of light engineering products. This provides a static picture of Punjab's industrial strengths.

It is also important to see how Pakistan's industrial sectors perform both over time in Pakistan, and relative to global sector growth. Figure 2-1 illustrates this. It is evident that Pakistan's major exports relate to cotton and textile related products and they have not shown any significant growth in recent years. Exports of cotton (and related products such as cotton yarn) have actually been declining globally. Over time there is a need to focus on those sectors that have been growing in the world market and where Pakistan has shown some potential. In particular, there are several sectors in the top left quadrant – these are sectors where Pakistan is losing its existing foothold in growing global markets. These sectors require urgent attention to curb the decline.

Figure 2-1 Pakistan's supply and international demand for manufacturing sectors



Data source: ITC Trade Maps, 2016

### 2.4.1 Need for Industry/ Sector Diagnostics

There is a need to undertake comprehensive cluster mapping within the core and radiation areas of CPEC to provide a snapshot of sectors that will be connected with a much efficient road network, through CPEC and can potentially reap its dividends. The diagnostic exercise, supported through consultation with industry in selected clusters, will shed light on how different industries in these clusters can benefit from CPEC and how the private sector views CPEC and its impact on existing industrial landscape.

Given the time constraints, Government of Punjab is expected to furnish views on LTP fairly urgently (as covered in Chapter 7). These diagnostics, however, should be carried out nevertheless with the following objectives:

- Validate and calibrate Punjab's position on China's priority sectors and how to address future challenges and capitalize on potential opportunities
- Validate the list of economically significant sectors for Punjab and refine approach to integrate them further within industrial cooperation under CPEC
- Deepen understanding about environmental concerns and tighten safeguards regime, leading to tailored approaches towards greener (and dirty) industries and technologies
- Deepening sector knowledge – to identify bottlenecks, market failures, opportunities, etc. to inform trade negotiations as well as to design future industrial interventions to unlock their potential

It is expected that sector diagnostics will help in the formulation of sector level policies, by identifying those areas where Punjab has dynamic comparative advantage, or competitive advantage, rather than static comparative advantage. Industries where either a large domestic demand exists or the global market share can be captured – for instance those where production has become costly for developed countries or where the knowledge gap is relatively low, and where there are gaps in global value chains – may also provide great opportunity to invest. Furthermore, it is important for Pakistan to broaden its support beyond those industries where it has a resource advantage. Sectors where comparative advantage can be developed based on capabilities and opportunities also need to be added to the mix.<sup>8</sup>

### 2.4.2 Parameters for Sector Diagnostics

The proposed sector diagnostics should be undertaken on the basis of the Government's vision and priorities. In this section, we propose a comprehensive set of priorities, organized into three broad categories that are aligned to the Punjab Growth Strategy: economic impact (including innovation and sustainability), impact on social inclusiveness and environmental sustainability. These priorities can help

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<sup>8</sup> These priorities (competitive advantage, scope for global market share, large domestic demand and scope for outward FDI) have been set in Pakistan's Industrial Strategy (2010)

critically analyze the impact of specific sectors and investment types, and can help in developing sector specific investment incentives and policy interventions. For example, if a sector has strong economic and innovation benefits, that are likely to be accessible to a wide section of the labour, without major environmental problems, then the Government may well offer specific R&D incentives and training programs to support the sector, and invest in alleviating the binding constraints for the sector as a priority over other sectors.

In the next two sections, we provide detailed case studies that analyse these parameters for the automotive and ready-made garments sections. A template containing these questions is provided in the Appendix so that it can be applied to additional sectors.

**Economic Factors** – Economic factors should be the most important consideration to assess the attractiveness of various sectors and design any incentives for preferable investments. The Punjab Growth Strategy 2018 specifies the growth objectives and drivers for the Government of Punjab. Three drivers of economic growth are specifically emphasized: Growth that is private sector led, that is employment generating and that is export oriented. The economic factors included in this report are based on these drivers. The following questions should help determine the economic impact of an industry or investment type:

1. Domestic market profile
2. Will growth in this sector have a significant impact on balance of trade?
  - a. What is the scope for export promotion?
    - i. Trends in export, including main trading partners
    - ii. What is the global demand, prices, and growth rates for the product?
    - iii. What is the demand, prices, and growth rates for the output in the specific set of countries for which the most substantial reduction of logistics costs is expected following completion of CPEC?
    - iv. What is the demand, prices, and growth rates for any imported inputs in the specific set of countries for which the most substantial reduction of logistics costs is expected following completion of CPEC?
    - v. What are current market access conditions like in these countries (FTAs)? What is the likelihood of negotiating access to regional and global markets for the products? What are the current impediments to export to these countries and can they realistically be relieved?
  - b. What is the scope for import substitution?
    - i. Is the product being imported currently?
    - ii. Trends in import, including main trading partners



3. Will growth in this sector have a significant impact on competitiveness of other sectors?
  - a. Does it produce an input for another good?
  - b. Will it reduce market concentration and/ or prices and increase choice?
  - c. Is it an enabling sector or an enabling technology?
  - d. What integration opportunities are there for local businesses?
4. Are there good investor prospects in this sector?
5. Does Pakistan have the underlying assets and natural resources to be competitive in this sector?
6. Can Pakistan develop the infrastructure to compete in this sector? Are the barriers to growth in this sector easy to remove?

**Innovation** – Innovation and technology readiness are linked intrinsically to both economic benefit and social inclusiveness. Innovation contributes to higher valued jobs and to sustained economic growth, both of which are crucial determinants of economic benefit and quality of employment.

The following questions should help determine the impact of an industry or investment type on promoting innovation:

1. How much R&D is undertaken in the industry globally?
2. What proportion of skilled personnel and R&D workers are hired globally?
3. How many patents does the industry file globally?
4. What are the prospects for Pakistan for acquiring technology?

**Social Inclusiveness** – The Punjab Growth Strategy targets employment intensive growth to accommodate the demographic bulge. It recognizes explicitly that meaningful employment will come via skills and human capital development. Social factors should cover the expected benefits to be reaped by local SMEs and workforce, skill readiness to enable local workforce especially women and other marginalized groups to derive maximum benefit and opportunities to upgrade and develop skills and any other poverty reduction effects. These should also cater for any geographical disparities. The following questions should help determine the impact of an industry or investment type on social inclusiveness:

1. What is the expected impact on the quantity of jobs?
  - a. Scale of investment
  - b. Employment multipliers
  - c. Labour intensity of production
2. What is the expected impact on the quality of jobs?
  - a. Typical composition of higher value addition, permanent jobs
  - b. Proportions of different grades of labour expected to be used – management, high skill, low skill

3. Are there prospects for improving gender inclusiveness?
4. Are there prospects for improving geographical disparities within Pakistan?
5. Provision for SMEs
6. Skills and resource match with current population profile

**Sustainability** – There are three types of sustainability: economic sustainability, social sustainability and environmental sustainability. Since social and economic sustainability is covered above, this section focusses on environmental factors. The following questions should help determine the environmental impact of an industry or investment type:

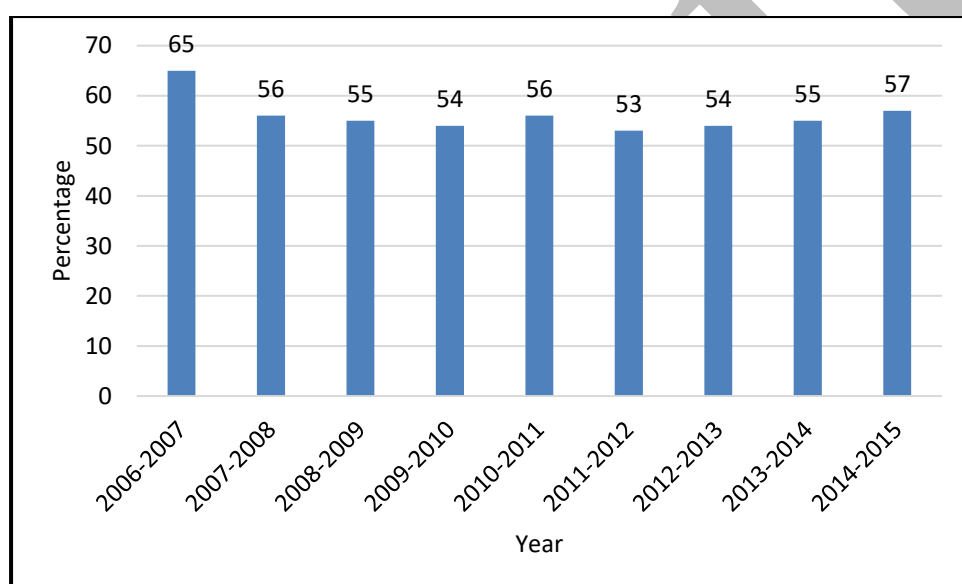
1. Economic sustainability: how does it contribute to growth that is high, non-volatile and long-lasting enough to be meaningful
2. Social sustainability: covered under Social inclusiveness
3. Environmental sustainability in production process and product use
  - a. Energy and material efficiency
  - b. Resource depletion
  - c. Effluent damage
  - d. What are the safeguards available in current environmental policy to contain this?
  - e. Does government have the capacity to make the required rules and/or implement existing rules practically?
  - f. Is the investment likely to improve energy efficiency in the future?

### 3 Illustrative Sector Findings – Ready-Made Garments

#### 3.1 Introduction

Owing to its natural endowments, including soil, climate and irrigation, Pakistan is among the top five producers of cotton in the world and accounts for 9 percent of total world output of cotton. Pakistan has put this to its advantage and put in place an industrialisation strategy that is led by textiles. The textiles chain consists of the following segments: ginning, spinning, weaving, finished fabrics, garments (woven and knitwear), home textiles (particularly bed linen and towels) and synthetic fiber (Nabi & Hamid, 2013, p. 5). The textiles industry contributes nearly one-fourth of industrial value-added and provides employment to about 40 percent of industrial labour force (Ministry of Finance, 2015, p. 51). Figure 3-1 shows the share of textiles in Pakistan's total exports.

Figure 3-1 Pakistan's Textile Exports as % of Total Exports



Source: Ministry of Finance (Government of Pakistan), various editions of the Pakistan Economic Surveys

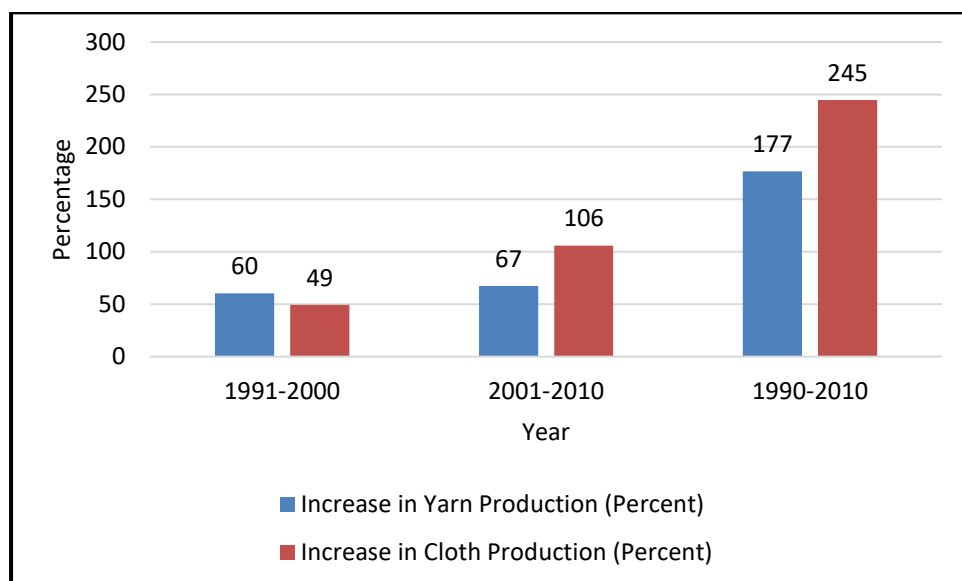
Garments have now become a significant and growing component in the textiles chain in Pakistan. As shown by Table 3-1, relative to other components in the textiles chain, garments (woven and knitwear) have done much better in terms of the number of units and exports (Nabi et al., 2013, p. 5).

**Table 3-1 The Importance of Garments in the Textile Value Chain**

	Number of units	Size	Production	Exports (US\$ Billion)
<b>Ginning</b>	1,260		20 million bales	0.36
<b>Spinning</b>	442	10 million spindles	2.9 billion kg yarn	2.23
<b>Weaving</b>	124 large 425 small	170 integrated 28,500 shuttle less 400,000 power looms	1 billion sq meters cloth	2.64
<b>Finishing</b>	10 large 625 small		4.8 billion sq meter cloth	
<b>Garments (woven)</b>	50 large 2,500 small		670 million pieces	1.77
<b>Knitwear</b>	2,500		350 million pieces	2.31
<b>Towels</b>	400		53 million pieces	0.76
<b>Synthetic fabric</b>			148 million sq meters	0.67

Source: Pakistan Readymade Garments Manufacturers & Exporters Association

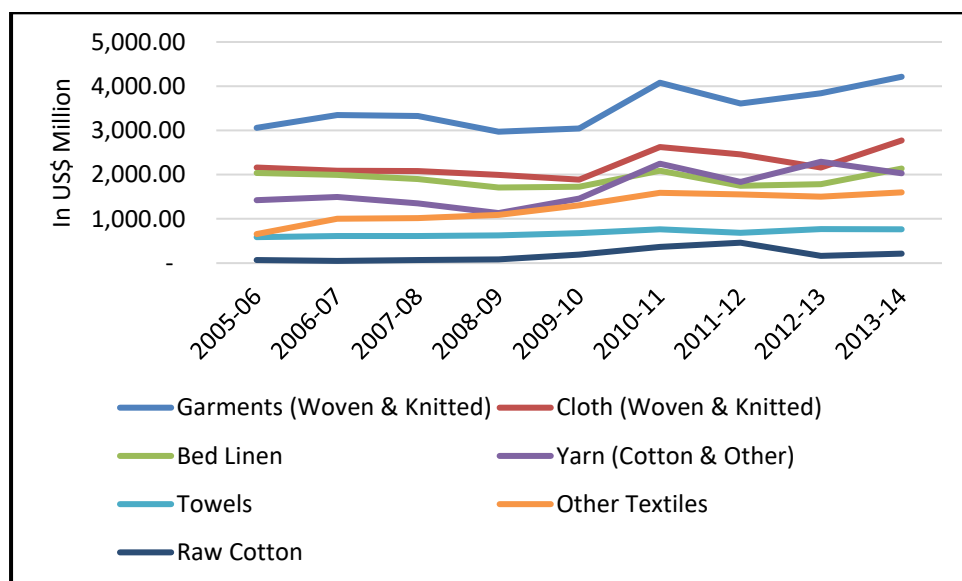
The movement of private textiles manufacturers in Pakistan towards higher value addition can be traced back to a combination of tariff, tax and financing incentives under its textiles policy. As part of the broader import substitution industrialization strategy, textiles industry in Pakistan was the first industry to take steps towards value addition in the 1960's when it imported machines that could convert cotton yarn into low count yarn. It was following this that investments were made in weaving and more recently in finishing. As Figure 3-2 shows, Pakistan has gradually moved towards higher value addition over the years (Nabi et al., 2013, p. 6).

**Figure 3-2 Moving towards Higher Value Addition in the Textiles Chain**

Source: Ministry of Finance (Government of Pakistan), various editions of the Pakistan Economic Surveys

It was under the 20-year Multi-Fiber Arrangement (MFA) of 1974 that revived garments manufacturing in Pakistan as a result of the rationalisation in the global garments trade. Advanced economies including the United States negotiated bilateral quotas with major suppliers in the textiles chain under the MFA. Later in 1995, right after the Uruguay Round, MFA was superseded by the Agreement on Textiles and Clothing (ATC). Once the agreement was wound up, not all its beneficiaries in Pakistan were able to survive it. Especially those that had not taken advantage of the protected market access to become internationally competitive had to go out of business. However, many players still managed to survive and flourish even after the expiry of the ATC in 2005. As shown by Figure 3-3 garments (woven and knitted) have done much better on exports as compared to other segments of the textiles chain (Nabi et al., 2013, p. 8).

Figure 3-3 Pakistan's Textile Exports by Major Categories



Source: Pakistan Readymade Garments Manufacturers & Exporters Association

## 3.2 Economic Benefit

### 3.2.1 Impact on balance of trade

#### Pakistan's exports of knitted and woven garments

Pakistan's garment exports at Harmonized System Code (HS Code) 61 (i.e., knitted) and 62 (i.e., woven) totaled US\$ 4.5 billion in 2015. This is 5 percent of Pakistan's total exports in 2015. This comprises largely of the following six categories (at HS-4), as also shown Figure 3-4 and Figure 3-5.

#### Knitted:

1. **HS Code 6105:** Men's or boys' shirts, knitted or crocheted.
2. **HS Code 6103:** Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear), knitted or crocheted.
3. **HS Code 6115:** Panty hose, tights, stockings, socks and other hosiery, including graduated compression hosiery (for example, stockings for varicose veins) and footwear without applied soles, knitted or crocheted.
4. **HS Code 6109:** T-shirts, singlets and other vests, knitted or crocheted.

#### Woven:

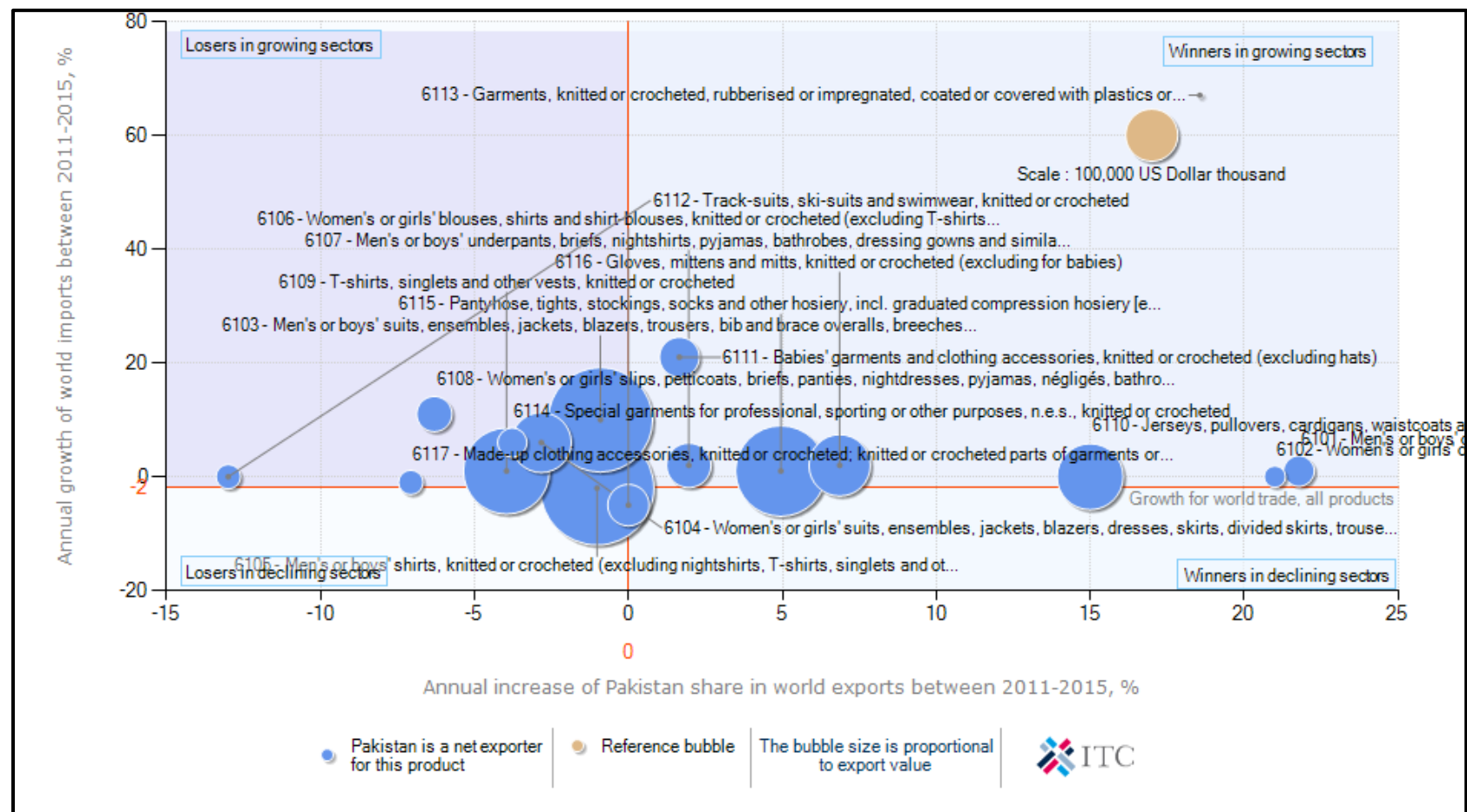
1. **HS Code 6203:** Garments, made up of knitted or crocheted fabrics of heading 59.03, 59.06 or 59.07.

2. **HS Code 6204:** Women's or girls' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind- jackets and similar articles, knitted or crocheted, other than those of heading 61.04.

Draft



Figure 3-4 Growth of Pakistan's Supply and International Demand for Knitted Garments (HS61), 2015

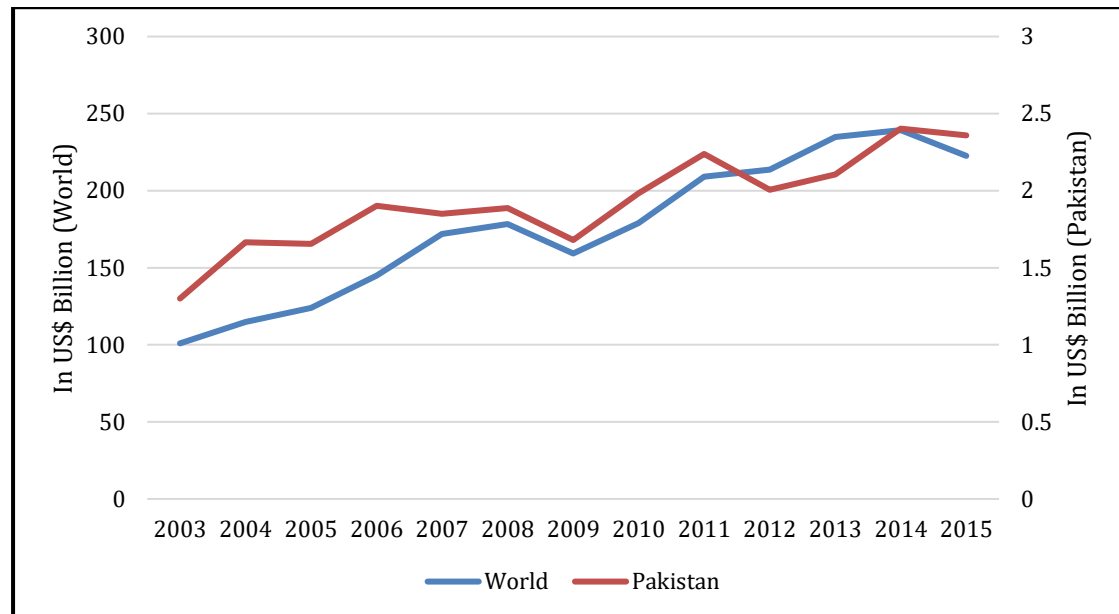


Source: ITC trade maps



Figure 3-6 shows Pakistan's and World's exports for knitted garments. It shows that Pakistan's export growth for knitted garments has been slower than world's export growth (as Pakistan's curve is flatter) for this category, which is an indication that Pakistan is losing share globally.

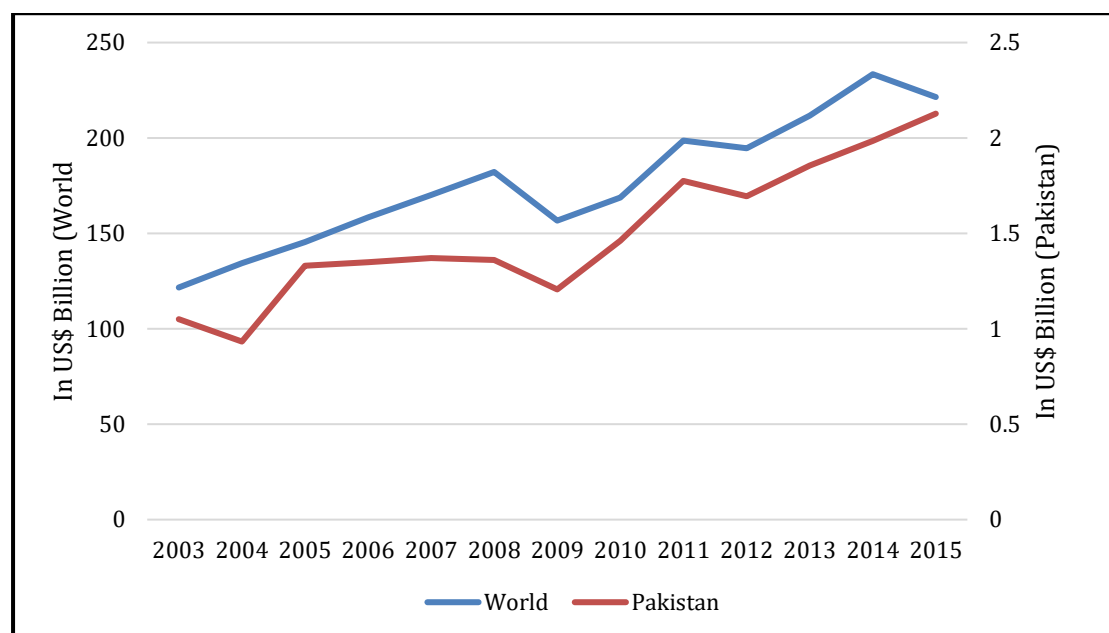
**Figure 3-6 Pakistan and World Knitted Garment (HS 61) Exports**



Source: Trade Map – Trade statistics for international business development

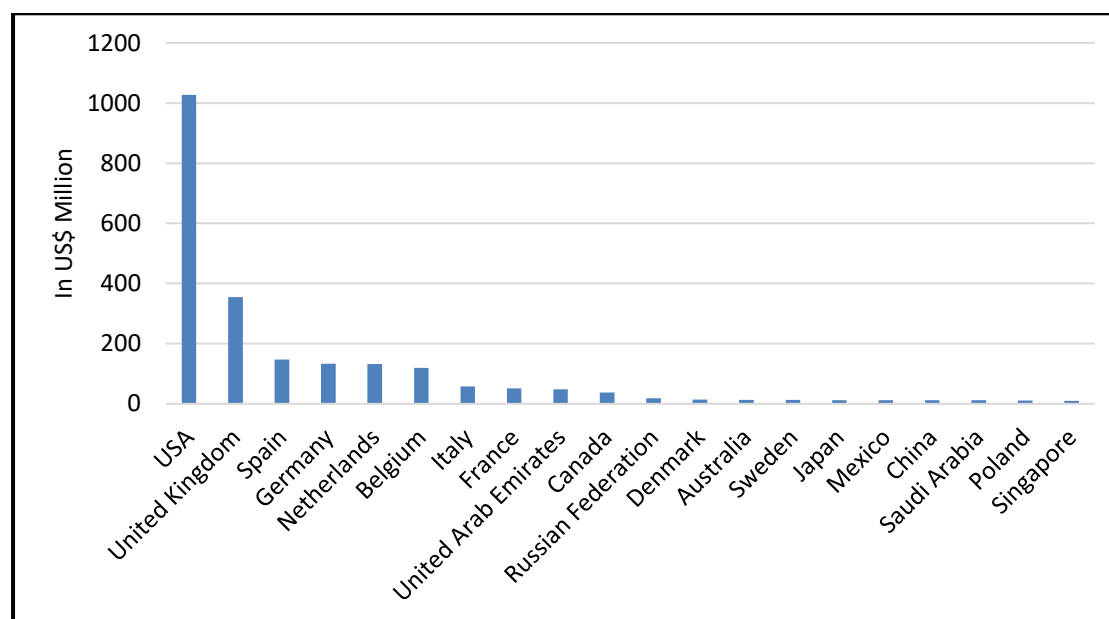
Similarly, Figure 3-7 shows Pakistan's and World's exports for woven garments. It shows that Pakistan's export growth for woven garments has been nearly same as world's export growth (as Pakistan's curve has similar slope as world's) for this category, which is an indication that Pakistan has kept pace globally.

**Figure 3-7 Pakistan and World Woven Garment (HS 62) Exports**



Source: Trade Map – Trade statistics for international business development

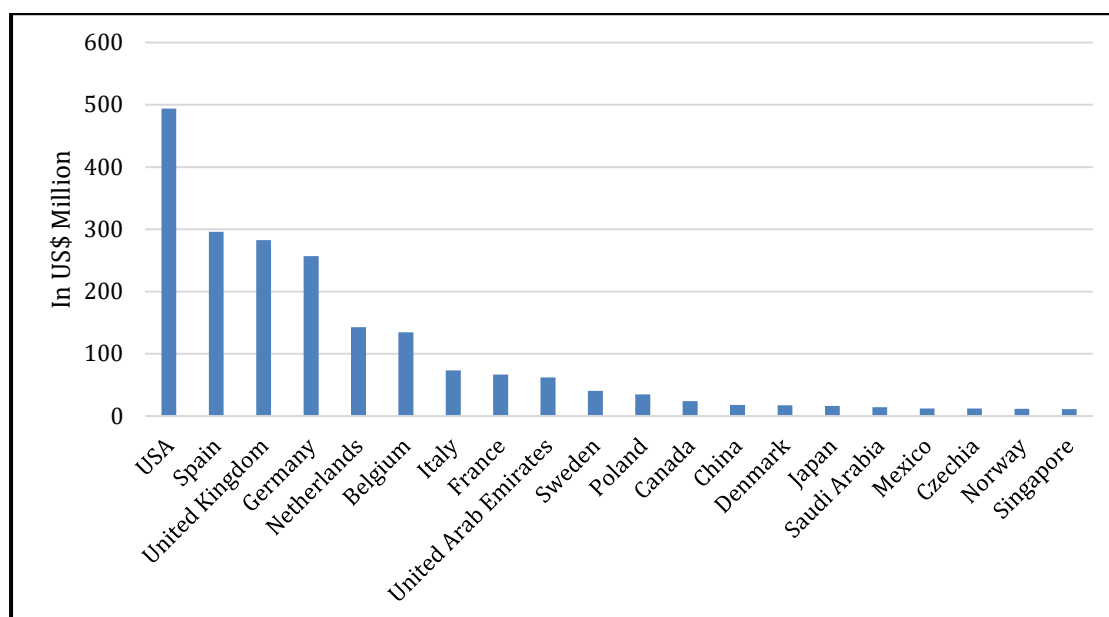
As shown by Figure 3-8, Pakistan’s top export destination for knitted garments in 2015 was the United States, followed by the United Kingdom, some European countries and the United Arab Emirates. It is worth noting that Pakistan’s knitted garment exports to China were very small at about US\$ 12 million. This may be because China’s world exports for knitted garments itself totaled at about US\$ 82 billion, thus making China world’s leading exporter of knitted garments.

**Figure 3-8 Pakistan's Top 20 Export Destinations for Knitted Garments (HS 61), 2015**

Source: UN Comtrade

Similarly, as shown by Figure 3-9, Pakistan's largest export destination for woven garments in 2015 was the United States, followed by Spain, the United Kingdom, some European countries and the United Arab Emirates. Again, Pakistan's woven garments exports to China stood at about only US\$ 18 million, although this was higher than its knitted garment exports to China of about US\$ 12 million. China's woven garments exports to the rest of the world totaled at about US\$ 79 billion, thus making China world's leading exporter of woven garments as well.

Figure 3-9 Pakistan's top 20 Export Destinations for Woven Garments (HS 62), 2015



Source: UN Comtrade

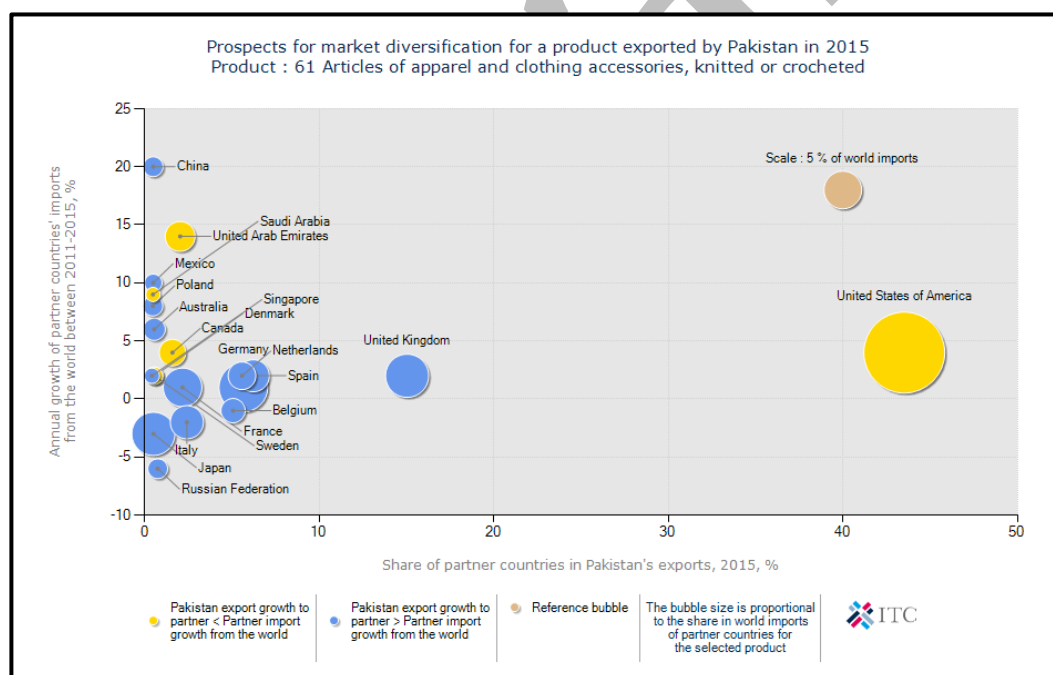
Just between 2010 and 2015 world garment exports increased by 27 percent to reach US\$ 444 billion or 1.3 percent of world merchandise trade. China was the leading exporter of garments, followed by Bangladesh, Turkey, Vietnam and Italy at 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> place respectively.

It is worth noting that China's share in world garment exports nearly doubled from 18.3 percent to 37 percent between 2005 and 2010, while it only slightly increased from 35 percent to 37 percent between 2010 and 2015. This is indicative that going forward it will be difficult for China to sustain its share in world garments trade. The reason for this is the rising labour cost in China, which is a key determinant of international competitiveness in the garments industry. It has been estimated that the average labour cost of an operational hour in the coastal and inland regions of China is US\$ 1.88 and US\$ 1.44 respectively, which is thrice the cost in Vietnam and Pakistan, twice that of India and six times that of Bangladesh. Since China's exit from world garments trade, like Japan and Asian Tiger's earlier, is inevitable, this will leave a US\$ 161 billion (plus more as China becomes a net importer of garments) world market wide open (Nabi et al., 2013, p. 10). This is a window of opportunity that Pakistan can potentially avail under the China-Pakistan Economic Corridor (CPEC).

In addition, Figure 3-10 shows another opportunity for Pakistan. It shows that China is the fastest importer of knitted garments in the world (as China is furthest up on the vertical axis that measures annual growth of a country's imports for knitted garments between 2011-2015), while at the same time Pakistan's knitted garment exports to China are very small (as China falls very early on the horizontal axis that measures share of Pakistan's knitted garment exports in China's import of knitted

garments). Therefore, CPEC could be an opportunity for Pakistan to increase its knitted garment exports to China.

Figure 3-10 Prospects for Market Diversification for Knitted Garments (HS 61), 2015

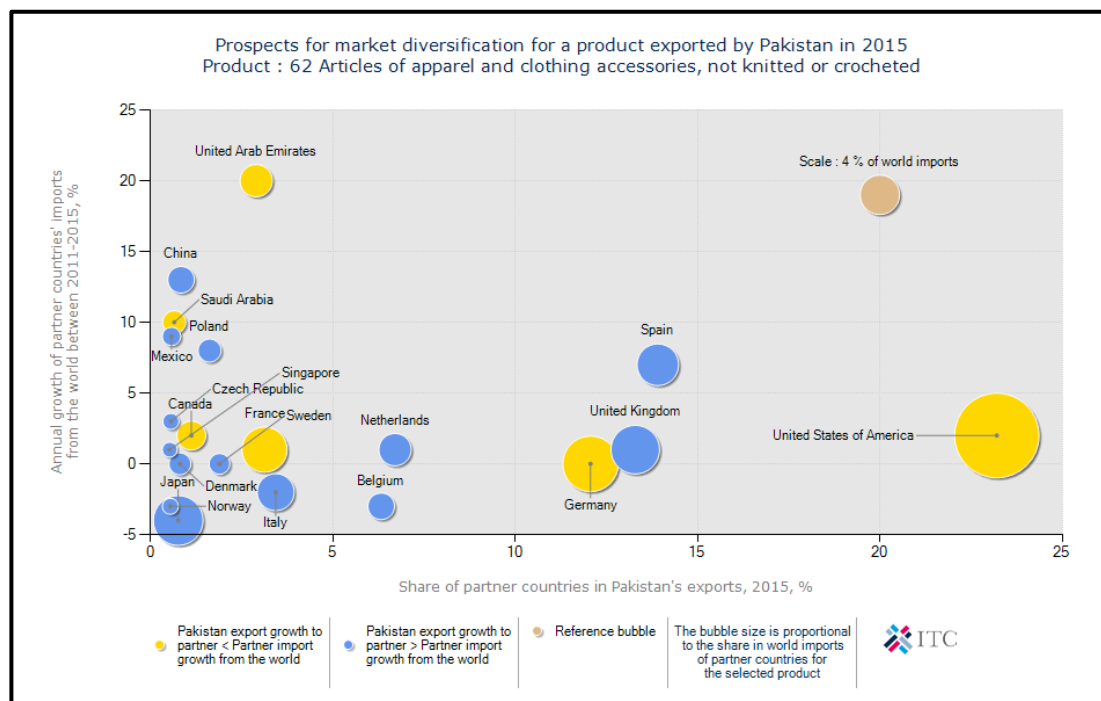


At the same time, CPEC could also be a good opportunity for Pakistan to increase its woven garment exports to countries other than China. As Figure 3-11 shows, Pakistan is already exporting woven garments to the United Arab Emirates (UAE), where UAE is one of the fastest growing importers of woven garments among Pakistan's partner countries. With Pakistan's improved maritime connectivity with



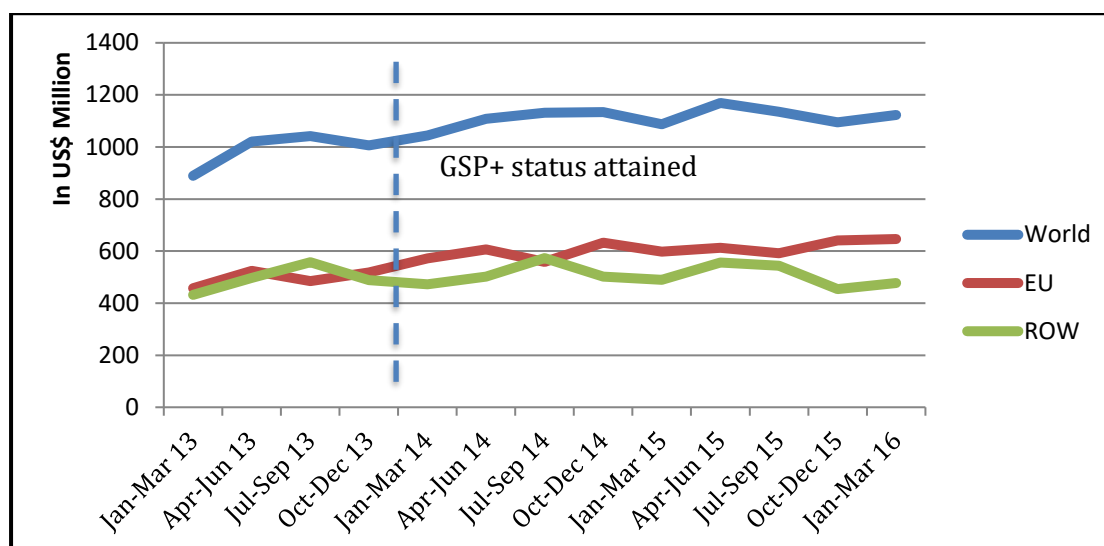
the UAE under CPEC, Pakistan can increase its woven garment exports to the UAE and beyond.

**Figure 3-11 Prospects for Market Diversification for Woven Garments (HS 62), 2015**



Lastly, lessons from Pakistan's earlier experience with GSP+ [that eased access to the European Union (EU) market] can also be used for alignment with CPEC. While the attainment of GSP+ in 2014 did have a significant impact on Pakistan's exports (see Figure 3-12), both to the EU and rest of the world (ROW), the adverse internal conditions faced by the industry, particularly the substantial appreciation in the real exchange rate and continuing energy shortages, did limit its true impact (Nabi et al., 2017, p. 14). Going forward, if Pakistan is able to solve some of its internal constraints, such as improving its macroeconomic environment or increasing energy supply, it can not only unlock the true potential of GSP+ but also get the most out of CPEC.

Figure 3-12 Impact of GSP plus on Garments Exports



Source: UN Comtrade

### Pakistan's imports of knitted and woven garments

Similarly, Pakistan's garment imports at Harmonized System Code (HS Code) 61 (i.e., knitted) and 62 (i.e., woven) totaled US\$ 86 million in 2015. This is 10 percent of Pakistan's total imports in 2015. This comprises largely of the following eight categories (at HS-4), as also shown in Figure 3-13 and Figure 3-14.

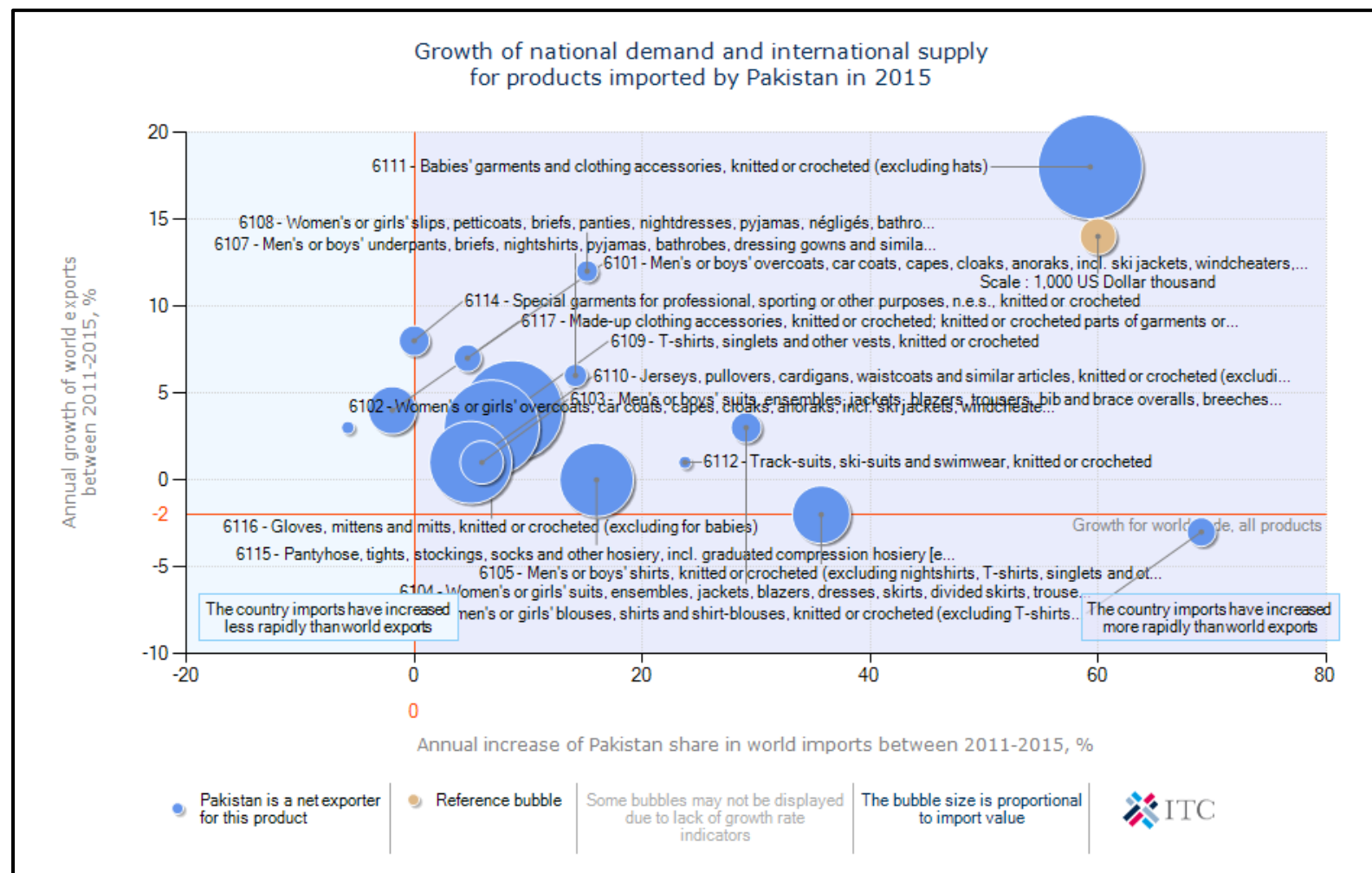
#### Knitted:

1. **HS Code 6111:** Babies' garments and clothing accessories, knitted or crocheted.
2. **HS Code 6109:** T-shirts, singlets and other vests, knitted or crocheted.
3. **HS Code 6116:** Gloves, mittens and mitts, knitted or crocheted.
4. **HS Code 6110:** Jerseys, pullovers, cardigans, waistcoats and similar articles, knitted or crocheted.
5. **HS Code 6115:** Panty hose, tights, stockings, socks and other hosiery, including graduated compression hosiery (for example, stockings for varicose veins) and footwear without applied soles, knitted or crocheted.

#### Woven:

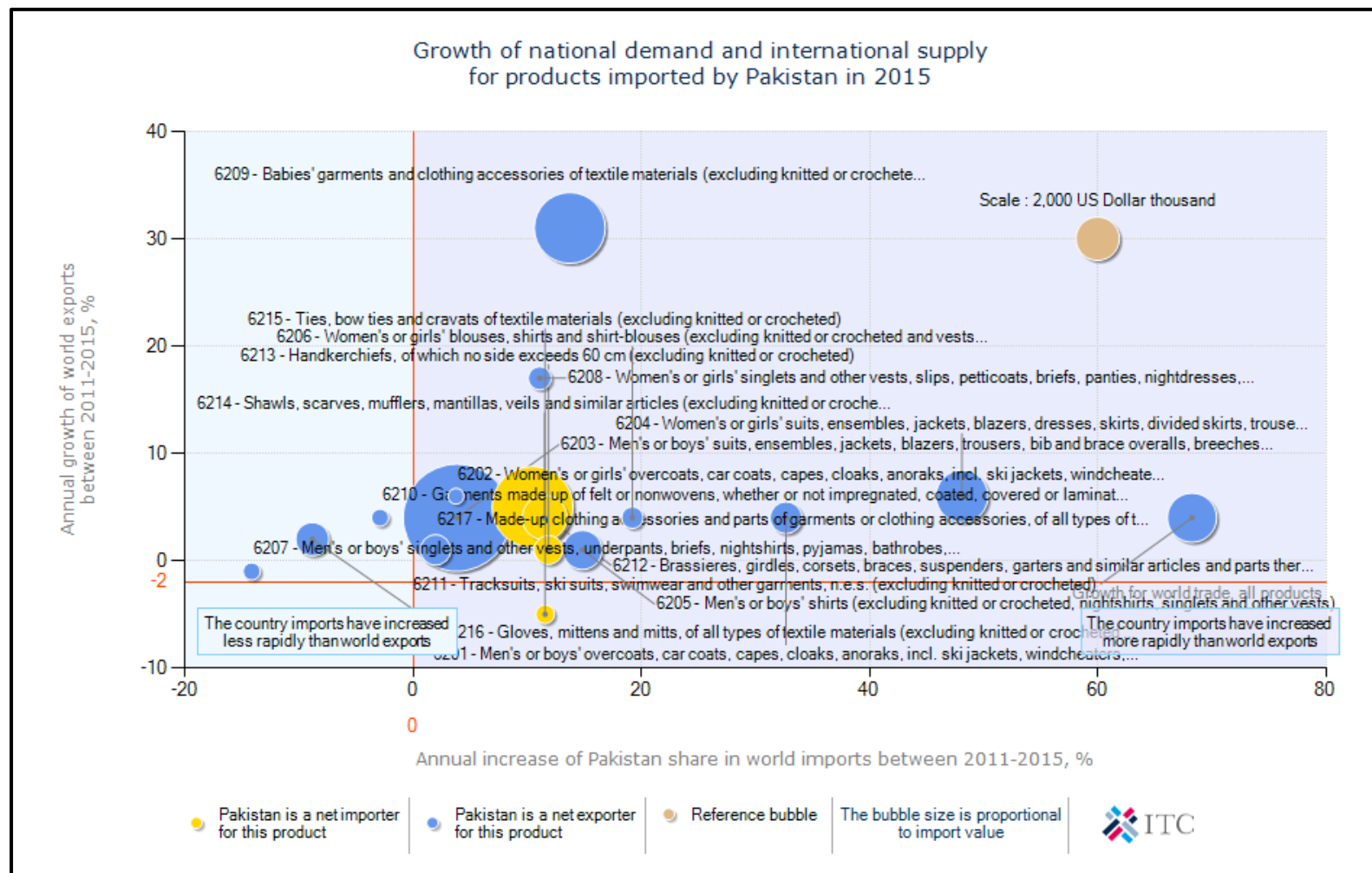
6. **HS Code 6203:** Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear).
7. **HS Code 6212:** Brassieres, girdles, corsets, braces, suspenders, garters and similar articles and parts thereof, whether or not knitted or crocheted.
8. **HS Code 6209:** Babies' garments and clothing accessories.

Figure 3-13 Growth of Pakistan's Demand and International Supply for Knitted Garments (HS61), 2015



Source: ITC trade maps

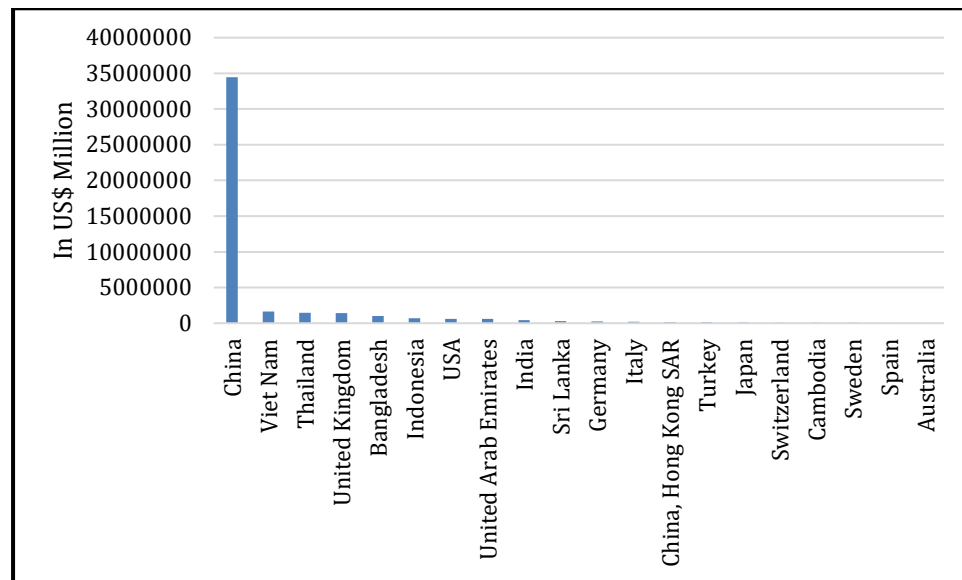
Figure 3-14 Growth of Pakistan's Demand and International Supply for Woven Garments (HS 62), 2015



Source: ITC trade maps

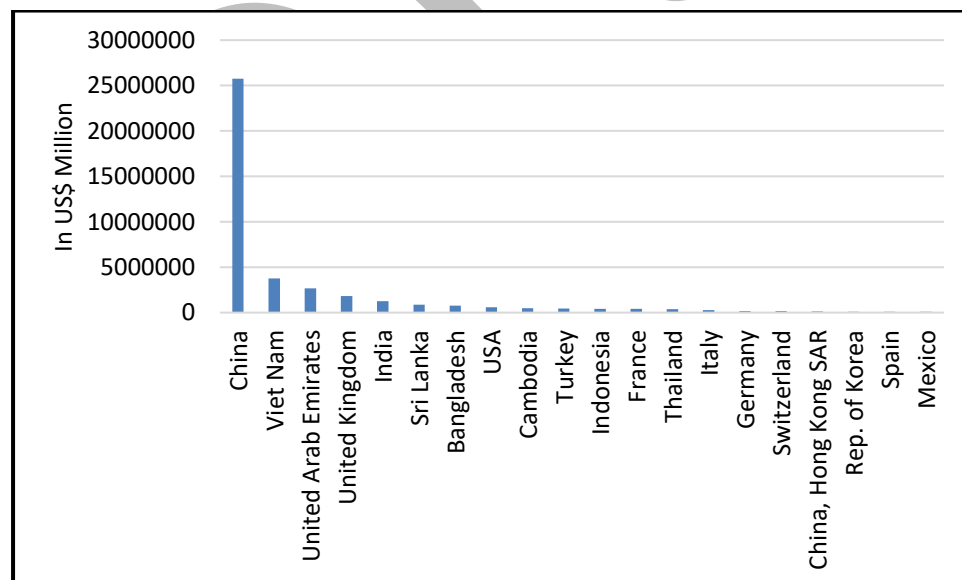
As shown by Figure 3-15, Pakistan's top import destination for knitted garments in 2015 was China. The value of this import totaled US\$ 34 million. In light of the improved connectivity between China and Pakistan that the CPEC promises, Pakistan may be able to reduce its import costs and, in turn, reap large savings. Similar is the situation of Pakistan's woven garment exports, as shown in Figure 3-16.

**Figure 3-15 Pakistan's top 20 Import Destinations for Knitted Garments (HS 61), 2015**



Source: UN Comtrade

**Figure 3-16 Pakistan's top 20 Import Destinations for Woven Garments (HS 62), 2015**



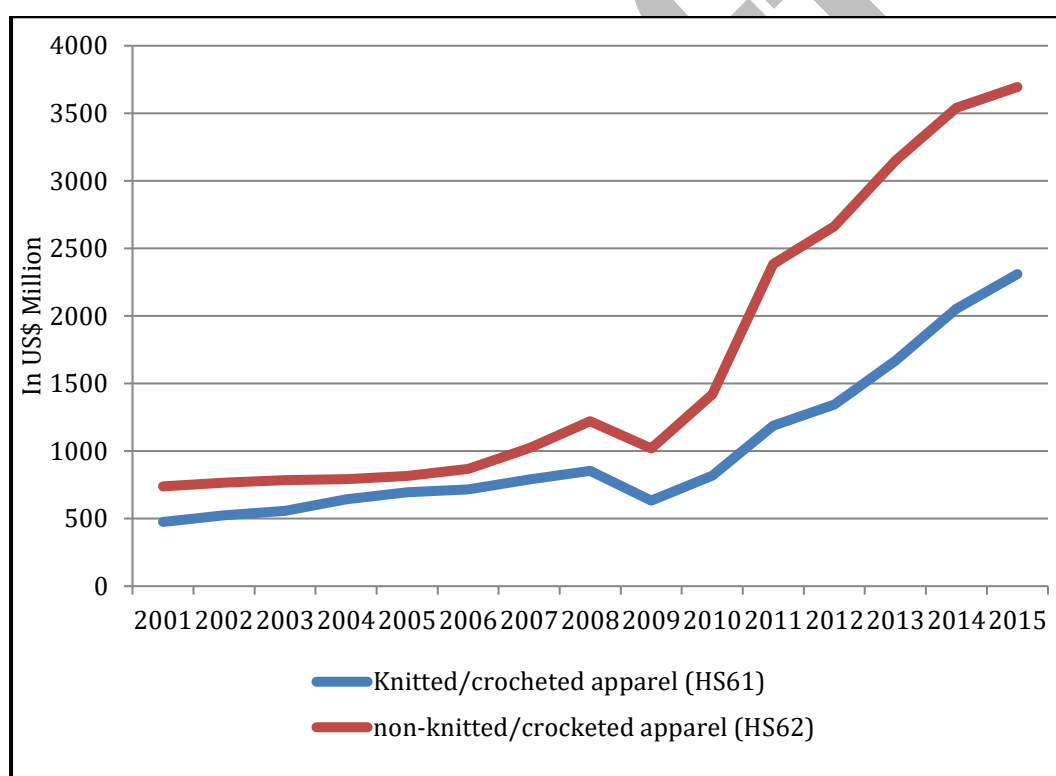
Source: UN Comtrade

It is noteworthy that China's top import destination for knitted garments in 2015 was Vietnam with a total import value of US\$ 348 million, while Pakistan stood at number fifteen with only US\$21 million. Similarly, China's top import destination for woven garments in 2015 was South Korea with a total import value of US\$600

million, while Pakistan stood at number twenty with only US\$ 34 million. In contrast, however, China is Pakistan's top import destination for both knitted and woven garments. This is indicative that Pakistan's garment exports need preferential treatment by China.

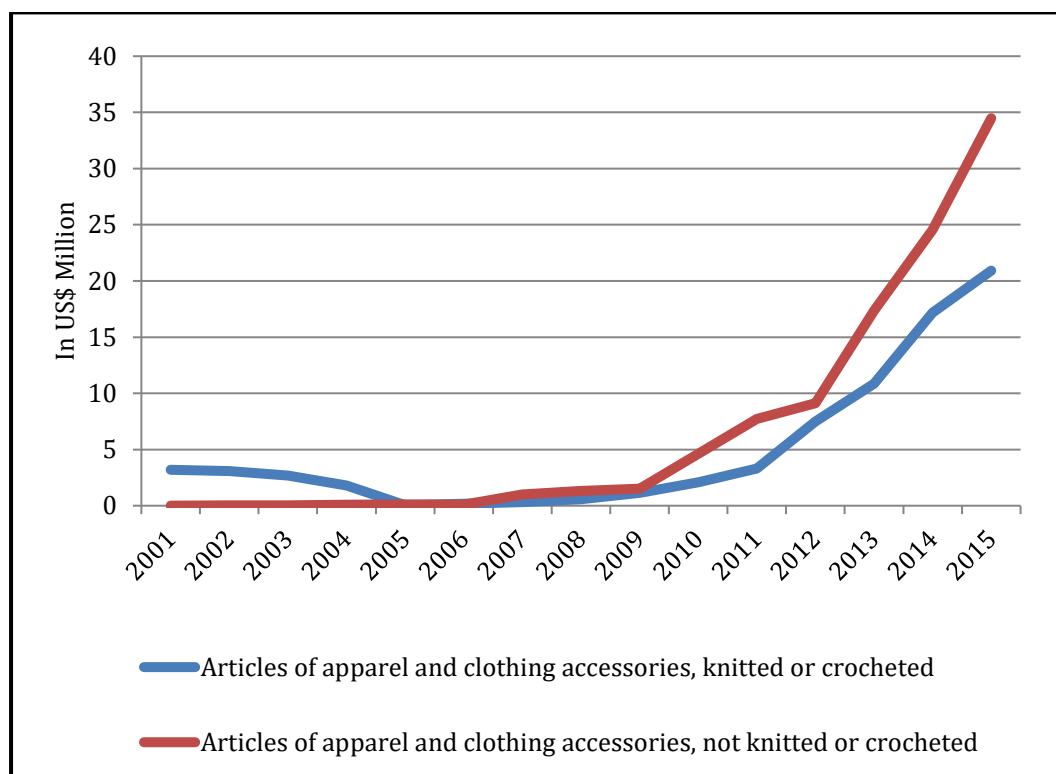
As shown by Figure 3-17 and Figure 3-18, China's knitted and woven garment imports from the world and from Pakistan have significantly increased recently. And as shown by Figure 3-19, the growth of these imports has been faster for Pakistan than the world (as Pakistan's curve is steeper than the world's). Therefore, this shows that Pakistan is already on its way to increasing its exports of knitted and woven garments, and so CPEC could just be the opportunity to increase these exports even more.

**Figure 3-17 China's Imports of Knitted Garments (HS 61) and Woven Garments (HS 62) from the World, 2001-2015**



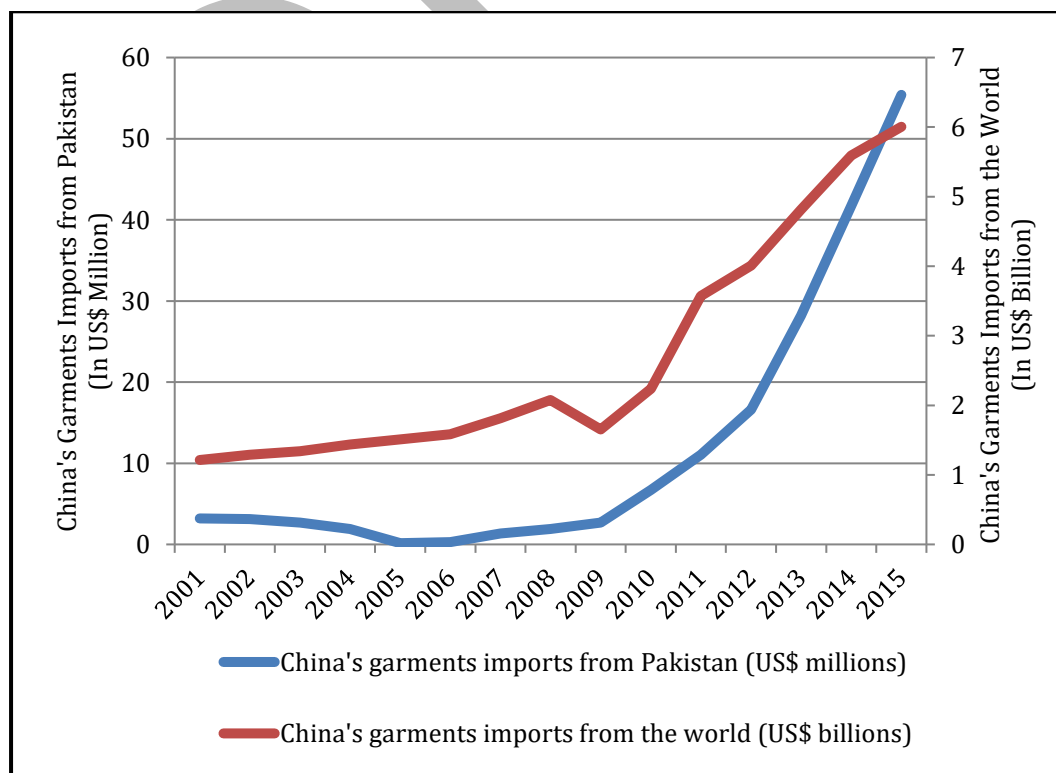
Source: UN Comtrade

**Figure 3-18 China's Imports of Knitted Garments (HS 61) and Woven Garments (HS 62) from Pakistan, 2001-2015**



Source: UN Comtrade

**Figure 3-19 China's garment (HS61 and 62) imports from Pakistan vs. the World**



Source: UN Comtrade

However, it is also noteworthy that while the current FTA that Pakistan has with China does allow for various degrees of concessions, for garments, only one product from Pakistan's top 20 garment exports has been given Category 1 concession, which entails complete elimination of tariffs. Furthermore, none of the top exports come under category 2, which imposes tariffs of 0-5% in five years. In fact, some of the top exports have no concessions at all. This is shown in Table 3-2. This demonstrates that there is scope for increasing access to Chinese markets by renegotiating the current FTA. This is particularly important in light of the bilateral deficit and opportunities for a matching increase in exports from Pakistan to China.

**Table 3-2 FTA Access to China for Pakistan's Top Garments [Knitted (HS 61) and Woven (HS 62)] Exports, 2015**

Pakistan's Top 20 Exports				
FTA Category	Codes	Description	Export Value (US\$ '000)	% of Pakistan's Total HS 61 & 62 Exports
Category 3	'620342	Men's or boys' trousers, bib and brace overalls, breeches and shorts, of cotton	762156	18%
Category 3	'620462	Women's or girls' trousers, bib and brace overalls, breeches and shorts of cotton	528521	12%
Category 3	'610590	Men's or boys' shirts of textile materials, knitted or crocheted (excluding of cotton or man-made	262020	6%
No concession	'610510	Men's or boys' shirts of cotton, knitted or crocheted (excluding nightshirts, T-shirts, singlets	240342	6%
No concession	'610910	T-shirts, singlets and other vests of cotton, knitted or crocheted	203756	5%
Cat 4	'620322	Men's or boys' ensembles of cotton (excluding knitted or crocheted, ski ensembles and swimwear)	199452	5%
Category 3	'611595	Full-length or knee-length stockings, socks and other hosiery, incl. footwear	166211	4%
Category 3	'610349	Men's or boys' trousers, bib and brace overalls, breeches and shorts of textile materials	135664	3%
Category 1	'611090	Jerseys, pullovers, cardigans, waistcoats and similar articles, of textile materials, knitted	129804	3%
Category 3	'610339	Men's or boys' jackets and blazers of textile materials (excluding of wool, fine animal hair	112442	3%
Category 3	'620469	Women's or girls' trousers, bib and brace overalls, breeches and shorts of textile materials	93098	2%



<b>No concession</b>	'610990	T-shirts, singlets and other vests of textile materials, knitted or crocheted (excluding cotton)	92002	2%
<b>Category 3</b>	'620349	Men's or boys' trousers, bib and brace overalls, breeches and shorts of textile materials	79455	2%
<b>Category 3</b>	'620463	Women's or girls' trousers, bib and brace overalls, breeches and shorts of synthetic fibres	74992	2%
<b>Category 3</b>	'610342	Men's or boys' trousers, bib and brace overalls, breeches and shorts of cotton, knitted	70437	2%
<b>No concession</b>	'611610	Gloves, mittens and mitts, impregnated, coated or covered with plastics or rubber, knitted	63349	1%
<b>Category 4</b>	'611599	Full-length or knee-length stockings, socks and other hosiery, incl. footwear	58980	1%
<b>Category 3</b>	'610332	Men's or boys' jackets and blazers of cotton, knitted or crocheted (excluding wind-jackets)	53889	1%
<b>No concession</b>	'611692	Gloves, mittens and mitts, of cotton, knitted or crocheted (excluding impregnated, coated)	49023	1%
<b>Category 3</b>	'620339	Men's or boys' jackets and blazers of textile materials (excluding of wool, fine animal hair)	44291	1%

Source: International Trade Centre. FTA details from Ministry of Commerce  
[http://www.commerce.gov.pk/?page\\_id=205](http://www.commerce.gov.pk/?page_id=205)

Moreover, when a matching exercise of Pakistan's top garment exports with China's top garment imports is undertaken (see Table 3-3 for China's top garment imports), one finds a good match in traded items. For instance, product with HS Code 620432 is Pakistan's top garment export and constitutes for 18 percent of its total garment exports and is also China's 2<sup>nd</sup> highest garment import and constitutes for 6 percent of its total garment imports. However, due to reasons that need to be studied in-depth, Pakistan has been unable to enter the Chinese markets for such products.

**Table 3-3 China's Top Garments [Knitted (HS 61) and Woven (HS 62)] Imports, 2015**

China's Top 20 Imports			
Commodity Code	Commodity	Trade Value (US\$)	% of China's garments imports
<b>610910</b>	T-shirts, singlets and other vests, knitted or crocheted. // -Of cotton	419408847	7%
<b>620342</b>	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear). // - Trousers, bib and brace overalls, breeches and shorts : // -- Of cotton	354073905	6%
<b>620193</b>	Men's or boys' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-	310770450	5%

	jackets and similar articles, other than those of heading 62.03. // - Other : // -- Of man-made fibres		
<b>620293</b>	Women's or girls' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, other than those of heading 62.04. // - Other : // -- Of man-made fibres	199347852	3%
<b>610990</b>	T-shirts, singlets and other vests, knitted or crocheted. // -Of other textile materials	185695396	3%
<b>620211</b>	Women's or girls' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, other than those of heading 62.04. // - Overcoats, raincoats, car-coats, capes, cloaks and similar articles : // -- Of wool or fine animal hair	119857946	2%
<b>620343</b>	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear). // - Trousers, bib and brace overalls, breeches and shorts : // -- Of synthetic fibres	119570307	2%
<b>620333</b>	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear). // - Jackets and blazers : // -- Of synthetic fibres	114535013	2%
<b>620213</b>	Women's or girls' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, other than those of heading 62.04. // - Overcoats, raincoats, car-coats, capes, cloaks and similar articles : // -- Of man-made fibres	105101104	2%
<b>610510</b>	Men's or boys' shirts, knitted or crocheted. // -Of cotton	95207728	2%
<b>620331</b>	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear). // - Jackets and blazers : // -- Of wool or fine animal hair	73910096	1%
<b>610342</b>	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear), knitted or crocheted. // - Trousers, bib and brace overalls, breeches and shorts : // -- Of cotton	58986023	1%
<b>620212</b>	Women's or girls' overcoats, car-coats, capes, cloaks, anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles, other than those of heading 62.04. // - Overcoats, raincoats, car-coats, capes, cloaks and similar articles : // -- Of cotton	57426803	1%
<b>610462</b>	Women's or girls' suits, ensembles, jackets, blazers, dresses, skirts, divided skirts, trousers, bib and brace overalls, breeches and shorts (other than swimwear), knitted or crocheted. // - Trousers, bib and brace overalls, breeches and shorts : // -- Of cotton	57361815	1%
<b>620332</b>	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear). // - Jackets and blazers : // -- Of cotton	54646345	1%
<b>620311</b>	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear). // - Suits : // -- Of wool or fine animal hair	53468226	1%

<b>610463</b>	Women's or girls' suits, ensembles, jackets, blazers, dresses, skirts, divided skirts, trousers, bib and brace overalls, breeches and shorts (other than swimwear), knitted or crocheted. // - Trousers, bib and brace overalls, breeches and shorts : // -- Of synthetic fibres	44573593	1%
<b>620439</b>	Women's or girls' suits, ensembles, jackets, blazers, dresses, skirts, divided skirts, trousers, bib and brace overalls, breeches and shorts (other than swimwear). // - Jackets and blazers : // -- Of other textile materials	39915244	1%
<b>620640</b>	Women's or girls' blouses, shirts and shirt-blouses. // -Of man-made fibres	38229616	1%
<b>620341</b>	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (other than swimwear). // - Trousers, bib and brace overalls, breeches and shorts : // -- Of wool or fine animal hair	36109363	1%

Source: UN Comtrade

### 3.2.2 Impact on market concentration, prices and choice

The textiles chain consists of several segments including “ginning, spinning, weaving, finished fabrics, garments – woven and knitwear, home textiles, particularly bed linen and towels, and synthetic fabric (Nabi et al., 2013, p. 5).” Among all these segments, ready-made garments have the highest number of manufacturing units. Within ready-made garments, woven has 50 large and 2,500 small firms, and knitwear has 2,500 firms (Nabi et al., 2013, p. 6). Comparing these figures with other segments in the textiles chain (see Table 1), it appears that the market is already fairly competitive in terms of market structure. With increased investment in the sector as a result of CPEC, it is possible to further increase competition and subsequently reduce prices, increase choices as well as consumer surplus.

### 3.2.3 Is it an enabling sector or an enabling technology?

An economic sector is called an enabling sector if the main purpose of the innovation activities of the firms running in that particular sector is to create unique and more efficient products for use as goods in other sectors or ultimately in the same sector (Pol, Carroll & Robertson, 2001, p. 11). Such enabling sectors that are closely linked with multiple other sectors include energy, electronics and construction.

On the other hand, enabling technology or more specifically key enabling technologies (KETs) as defined by the European Commission “are a group of six technologies: micro and nanoelectronics, nanotechnology, industrial biotechnology, advanced materials, photonics, and advanced manufacturing technologies”.<sup>9</sup>

Based on the two definitions above, ready-made garments sector is neither considered an enabling sector nor an enabling technology.

<sup>9</sup> [https://ec.europa.eu/growth/industry/key-enabling-technologies\\_en](https://ec.europa.eu/growth/industry/key-enabling-technologies_en)

### 3.2.4 What are the expected linkage effects?

For the purpose of simplicity, there are two types of linkage effects. Backward linkage is when investments in an industry profit from inputs and forward linkage is when investments in an industry profit from outputs.

While data on linkages is not available for Pakistan, it is justifiable to use data for Bangladesh to demonstrate Pakistan's linkage effects as the situation of textiles and garments sector in the two countries is very similar. For Bangladesh as well as for China and India, clothing sector has the highest backward linkage multiplier domestically. This means, investments in the clothing sector in these three countries profits the most from inputs. For example, Bangladesh has a total backward linkage indicator of 2.42, that is, if there is one unit change in the final demand, there will be 2.42 times change in clothing production in the country. There is an increase in production because the change in demand activates other sectors to provide greater input (Masum and Inaba, 2015).

### 3.2.5 What integration opportunities are there for local businesses?

With CPEC, opportunities of joint ventures between local and international businesses will be more likely and will potentially stimulate further growth in the sector. There are some existing joint ventures, which include:

1. Shahzad Apparel Ltd. in Karachi, Pakistan is a joint venture with the US based Kellwood Company.
2. PRGMEA and Association of Italian Textile Machinery Manufacturers (ACIMIT) have signed an MoU in 2016 to promote and expand cooperation between Pakistan and Italian textile and apparel companies.
3. Challenge Apparel, a firm based in Faisalabad, is a joint venture with Shengai Challenge Group in China.

Events such as the annual Textile Asia Exhibition are also important platforms for facilitating trade and attracting international investment in the sector. Following CPEC, there is potential for greater attendance at these events and also higher likelihood for more of such exhibitions to take place.

### 3.2.6 Are there good investor prospects in this sector?

The garments industry in Pakistan has attracted some big brands that are using Pakistani firms for manufacturing their products. These brands are either US or UK based and include names such as Levis, Zara, H&M and GAP. However, according to garment manufacturers very few new brands have come to Pakistan recently. The growth that has taken place in the industry has occurred by increasing business with

existing clients. Pakistan is competing heavily with Bangladesh and investors prefer using Bangladeshi firms, especially for higher quality products. Investors that do come to Pakistan come for their low end products, which allows very little room for profits for Pakistani firms. Thus, Pakistan will have to offer products that are of a higher quality and are in line with the latest global trends to improve future investment.

Conversely, efforts to attract investment are being made by the government, by initiating projects such as QAAP. The special economic status of the park gives incentives and provides facilities for potential investors. Recently, the government gave a road-show of QAAP to representatives of about 76 Chinese companies, suggesting that there may be possible interest by Chinese firms to invest in Punjab (The Nation, February 2017). Furthermore, the president of the Pakistan-China Joint Chamber of Commerce and Industry (PCJCCI) has suggested that firms in Shandong province are in talks with their Pakistani counterparts for possible joint ventures in the textile industry (Dawn, October 2016).

### **3.2.7 Does Punjab have the underlying assets and natural endowments to be competitive in this sector?**

The major industrial clusters of Pakistan's garments industry are located in the South (Karachi) and North (Lahore, Sialkot and Faisalabad). In the case of Karachi, it has the advantage of being a port city, a large workforce at easy commute, better availability of gas (so firms are allowed to use generators that run on gas) and several complementarities with various manufacturing activities; while Lahore, Sialkot and Faisalabad have the advantage of clean water and better law and order, are relatively safer for women to work, have low political divide and have lack of extortion groups demanding a share of profits (Nabi et. al, 2013, p. 11). Thus, it is safe to say that Punjab has both the underlying assets as well as the natural endowments to be successful in the garments sector.

### **3.2.8 Can Pakistan develop the infrastructure to compete in this sector? Are there barriers to growth in this sector easy to remove?**

#### **Energy shortages**

The major missing infrastructure required to support the garments sector is energy. Nabi et al. (2013) documents this as follows. "Pakistan has faced growing energy shortages since 2007; in 2012, most of the industry suffered power outages of 8 to 12 hours a day while the supply of natural gas was suspended for several months in the winter. Most large firms have installed generators at a substantial cost to meet their basic power needs, but small firms may not be able to afford this. This is particularly important in the case of the trimmings and accessories industry, which is dominated by small firms: delays in supplies of trimmings and accessories can affect

both large and small firms. Suspended gas supplies are especially disruptive to the knitwear industry as natural gas is used to fire boilers for dyeing—a crucial component of the production cycle for knitted apparel—and the capital cost of switching to an alternative fuel source such as coal is substantial while the cost of LPG in place of natural gas can be prohibitive.

The energy crisis has had a twofold impact on the garments industry. First, it has raised the cost of production for garment manufacturers in Pakistan and thus made them less competitive. Second, it has increased uncertainty with regard to production planning by creating the possibility of delays at different stages of the production cycle over which the firm has little control. Timely delivery of an order is extremely important in the garments industry given its seasonal nature, and in the case of a delay, the manufacturer may have to ship the order by air. Thus, energy shortages not only impose a substantial cost on the manufacturer, but also erode the firm's credibility with its buyers as a dependable source. The latter has long-term implications, not only for the growth of export volume, but also for the product price range as the importance of timeliness increases as firms move up the price range. At the high end, even a few days' delay is usually not acceptable (Nabi et al., 2013, p. 295)."

Since energy policy falls under the purview of the federal government, the provincial governments in Pakistan have very little say in it, especially in the regulation of the sector. However, owing to the pressure of the Punjab Government, the textiles industry has been given priority in power allocation in the recent past, and as a result the amount of load shedding faced by the garments industry has declined. In addition, the government has made significant investments to improve the supply of power. Some projects are already online, while others are underway. In particular, the bulk of the investments under CPEC are in energy projects, which will further improve the energy supply situation (Nabi et al., 2017, p. 38).

On energy, therefore, it appears that the required infrastructure to compete in this sector is already being developed.

### Cluster formation

The entire garments value chain – that includes fabric manufacturing to dyeing, printing and accessories manufacturing – is fragmented in different locations. "Firms look to the government for the provision of basic infrastructure which promotes cluster formation and the agglomeration economies that flow from it. This will require setting up state of the art industrial estates that provide clear land rights, reliable energy, world standard quality of water and waste treatment and facilitates access to skilled workers (Nabi et. al, 2017, p. 5)."

To this end, the Punjab Government has commenced work on the Quaid-e-Azam Apparel Park (QAAP). "The boundary wall and the temporary office sites are being constructed. The M-2 interchange design has been completed and the land for QAAP

has been acquired. China National Textile Company (CNTEX) was hired to design the park, which now has been completed and submitted. Following this, hiring of a contractor for construction of the park is currently in process. The estimated cost of QAAP is PKR 42 billion, with PKR18 billion just for infrastructure. Part of the cost will be financed through a returnable loan given by the government to Punjab Industrial Estates Development and Management Company (PIEDMC) (PKR 9 billion). The remaining balance will be arranged by PIEDMC through the Bank of Punjab. Once the land is sold to firms and profits are generated, it will be used to return the loan. However, the government has taken up some of the financing directly, such as the cost of roads and labour colonies (Nabi et al., 2017, p. 23)."

In addition to energy, cluster formation and skills (section 3.3.5), market access and trade policies and customs procedures are the other two key challenges faced by the garments industry.

#### Market access

While the attainment of GSP+ in 2014 did have a significant impact on Pakistan's exports (see Figure 4-12), both to the EU and rest of the world (ROW), the adverse internal conditions faced by the industry, particularly the substantial appreciation in the real exchange rate and continuing energy shortages, did limit its true impact. CEO Naveena Group, Mr. Masood Riaz says:

***"Any benefit that we would have received from GSP+ has been offset by the change in exchange rate."***

In addition, the security concerns of buyers, especially new clients in the EU who want to visit Pakistan has also hampered the growth of garment exports in Pakistan. Reports of terrorist activities and frequent strikes, protests and sit-ins have discouraged new investments. Garment firms believe that the media has had a considerable role in promoting a more negative role for Pakistan than there is in reality. According to the Director Operations of K.M. Ashraf, Mr. Muhammad Farooq Khawaja:

***"It's important that we present our country in a positive way. We don't have marketing offices abroad, but a natural marketing office would be our foreign offices, which have a zero role in all of this."***

Moreover, based on ratings by the international agency, Maplecroft, Pakistan is categorised as an extremely high-risk country for investment. The agency ranks a country's investment risk profile in view of economic risk, political risk, social compliance (e.g., labour and safety laws, human rights, etc.) and infrastructure (e.g., power, roads, climate change, disaster management, etc.). Table 3-4 compares



Pakistan's ratings with those for Bangladesh. As shown, Pakistan is doing worse than then Bangladesh in most categories.

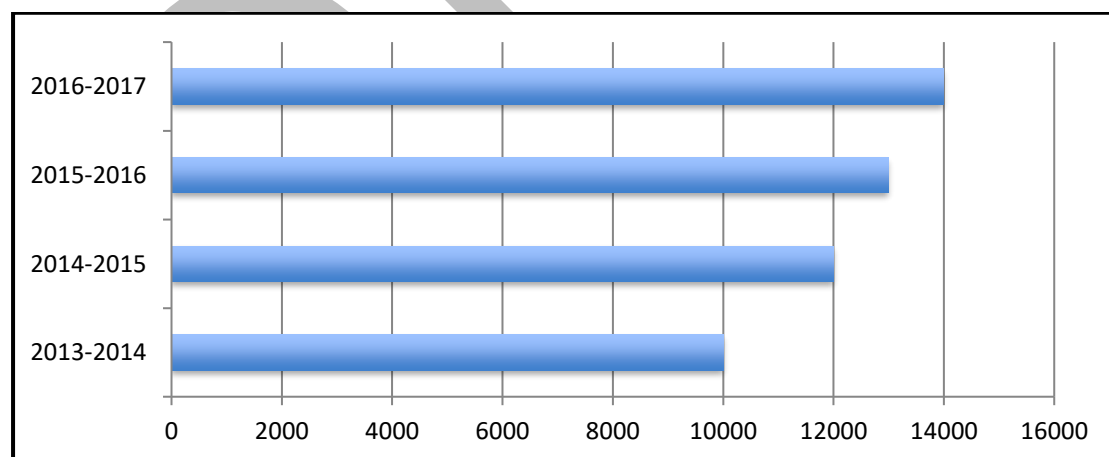
**Table 3-4 Country wise rating for Investment**

	Pakistan	Bangladesh
Political Risk	8.34	7.21
Social/Compliance Risk	8.82	8.46
Economic Risk	6.42	6.22
Infrastructure Risk	9.47	9.62
Adjusted Country Risk Score	8.26	7.88
Overall Risk Rating	extreme	extreme

Source: Nabi et al., 2013, p. 17

Another reason highlighted by garment firms is how the minimum wage has increased in Pakistan since 2011. As shown by Figure 3-20 the minimum was PKR 8,000 in FY 2013 and has increased to PKR 13,000 in FY 2015. In the past 4 years, the minimum wage in Pakistan has increased by 60 percent and since getting GSP+ it has increased by 30 percent. This has resulted in an increase in the unit labour cost in the garments sector, which had made Pakistani garment exports less competitive in the international market. This has particularly affected the exporting firms as they have to comply with international standards, whereas non-exporting firms do not usually pay the minimum wage and they are not inspected for compliance (Nabi et al., 2017, p. 14).

**Figure 3-20 Minimum Wage Rate**



Source: various newspaper articles

“Attaining GSP+ status has helped with the export of garments. The woven sector has benefitted more than knitwear. However, to realize the full export potential, other supporting measures (exchange rate management, energy needs, skilled workers, trade policy reform, etc.) to strengthen the capacity of garments firms will also need to be implemented (Nabi et al., 2017, p. 19).”



### Trade policies and customs procedures

Due to tariff and non-tariff barriers on Man-Made Fibre (MMF) yarn, fabrics and accessories, Pakistani garment manufacturers are limited to only manufacturing products that are based on local raw materials. As a result of this, there is a reduction in the diversity, value added and price range of garments exported from Pakistan. In addition, customs procedures also cause delays and are therefore costly (Nabi et al., 2017, p. 4).

### *Import duties and tax policies*

A key constraint to growth of garment exports is the lack of easy access to exporters of imported raw materials at world prices. The import of fabric and yarn under the Duty and Tax Remission Scheme (DTRE) requires approval from the Input/ Output Co-efficient Organisation (IOCO) of the input-output ratios and permitted wastage allowance to determine how much raw material can be imported. This results in an increase in the lead-time on export orders for firms generally by 35-45 days. “An additional issue, as pointed out by firms interviewed in Phase II (of the IGC garment studies), is that garments produced with these imports have to be exported within 1 year or FBR can encash the post-dated checks (equivalent to the value of import duties exempted) deposited at the time of import of the raw materials. Due to the energy crisis and other barriers, firms often have difficulty in exporting the entire quantity within a year and extending the permissible period through FBR takes time (Nabi et al., 2017, p. 42)”

Because of their traditional market links with the sports good sector, garment firms in Sialkot have specialised in export of sportswear. One of the main raw materials used in sportswear is Lycra, which is not readily available in Pakistan and so has to be imported from China. Additionally, firms in Sialkot have pointed out that importing raw material from China is time consuming and hence more expensive as opposed to importing it from India. But since materials like polyester is on the negative list for trade with India, this is not possible.

Pakistan’s garment exports have a cotton concentrated 80:20 mix, while the global trends demand that Pakistani firms move to a 50:50 mix. The reason why Pakistani firms have not been able to do this is because of the cumbersome procedures and high duties on the import of artificial fibers and PTA (a raw material for the manufacture of polyester). This also stops firms from diversifying their products and reaching out to high-end clients.

Pakistani firms have to import certain small items that are used in the manufacturing of garments. These include tags, zips and other trimmings. These items have to be imported in order to meet specifications of clients. Firms first import these items and once the garments have been exported they then apply for a refund on these items to the government. Firms have reported that they have to go through a lot of hassle

in this refund process, and are therefore demanding the government to remove this tax altogether as it is a low tax yield for the government anyway.

In addition, the government has recently imposed a duty on imported cotton yarn ranging from 5-15 percent. This was in response to the demands of the spinning industry. According to Matrix Sourcing, since the cost of yarn on average is one-third of the total cost of the garment, this will make Pakistani exports less competitive.

Lastly, exporters can apply for a refund for the taxes they pay on local raw material. But again, there are significant delays and costs involved in this refund process, which are at the minimum 10 percent of the value of the claim. This further raises costs and, in turn, lowers the competitiveness of Pakistani garment exports (Nabi et al., 2017, p. 43).

“To address the issue of delays in sales tax refunds, in his budget speech in June 2016, the Finance Minister, Mr. Ishaq Dar, announced that a zero-rated tax regime would be applied to five major export-oriented sectors, including textiles, leather, carpet, sports goods, and surgical instruments from the next fiscal year. Under this scheme, the government will zero-rate the local supplies as well as imported supplies that are re-exported. Garments exporting firms believe that while this may be a step in the right direction, it will not solve the problem of billions of rupees of refund still stuck with FBR.

In face of continuous decline in Pakistan’s exports over the last three years, in January, 2017, the Prime Minister announced a new incentive package for exporters. The package includes the removal of customs duty and sales tax on the import of cotton, of customs duty on man-made fibers other than polyester and of sales tax on the import of textile machine. In addition, under this package, textile exports will be eligible for duty drawback at the following rates: garments 7 percent, textile made-ups 6 percent, processed fabric 5 percent and yarn and grey fabric 4 percent – other manufactured exports such as sports goods, leather and footwear will also be eligible for a duty drawback of 7 percent. However, to receive these incentives, the government has placed the condition on exporters to increase exports by 5 percent from January to June 2017 and then a further 10 percent growth in exports during fiscal year 2017-2018. According to the garments industry players, the package was badly needed but it will be difficult to show an immediate increase in exports because there is usually a lead time of three to five months between getting new orders and actual shipment of goods. Also, as there will be an increase in the domestic price of yarns and fabrics, because of the duty drawbacks on those items, and since these constitute about 50 percent of the cost of a garment, the full benefit of the 7 percent rebate will be diluted somewhat. Despite, these reservations, most exporters agree that this is a timely intervention, and it provides some breathing space to garment exporters to invest into fundamental improvements (Nabi et al., 2017, p. 43).”

*Customs clearance*

Garment manufacturing firms have faced the problem of not having a 24/7 custom clearance facility. Although the facility is there, but the offices are either under staffed or the staff are mostly absent from work or come only 5 days a week. For instance, while on paper the Sialkot dry port should only take a day to clear consignments, in reality it takes approximately 3 days, as there is no scanner at the facility. In addition, the Anti Narcotic Force (ANF) takes another 2 days to clear consignments. All this forces the firms to send their consignments by air, to avoid delays (Nabi et al., 2017, p. 44).

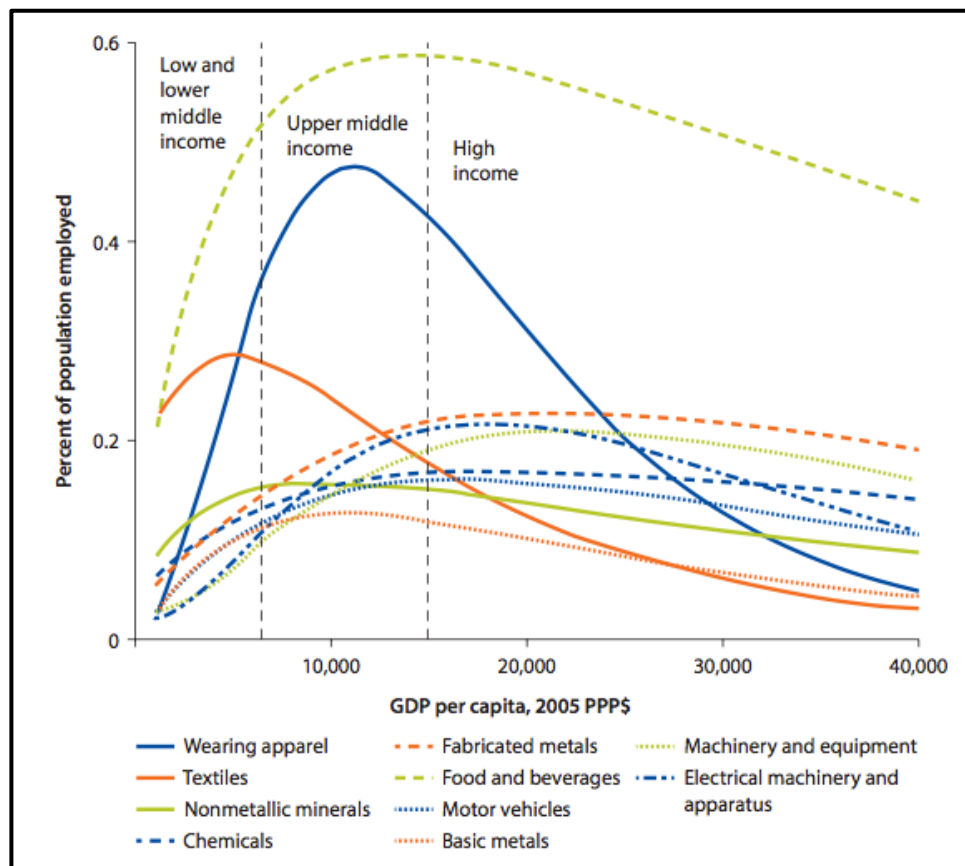
To conclude, the government has managed to solve some of the problems faced by firms under trade policies and customs clearance, e.g., it has opened an IOCO office in Lahore and has provided a 24/7 customs clearance facility. But the remaining problems still exist. The Punjab government has facilitated a number of meetings between the private sector and FBR, particularly with regards to exempting low tax yield HS codes (i.e., tags and trimmings), but FBR refused to give any relaxation in the import regime for exporters. Recently, however, in light of falling exports, the government has given certain incentives to exporters in order to improve their competitiveness. Nonetheless, the provision of free access to raw material and a business friendly customs environment still needs to be provided to garment firms (Nabi et al., 2017, p. 45).

### 3.3 Social inclusiveness

#### 3.3.1 Employment creation: impact on quality

In addition to being a major contributor to exports, the garments industry is a key employer in the manufacturing sector. It requires relatively low capital investment and most of its activities, such as cutting and sewing, remain labour intensive (Nabi et al., 2013). Empirical evidence demonstrates that the garments industry has been one of the largest employers for low and middle-income countries (Pakistan considered as a lower-middle income country). Between 1963 and 2007, it has employed up to 0.5 percent of the population (see Figure 3-21). Other, more sophisticated industries such as chemicals, automobiles and fabricated metals are less important as a source of employment for these countries and only overtake the garments industry, when a country reaches a higher income status (Lopez-Acevedo et al., 2016, p. 20).

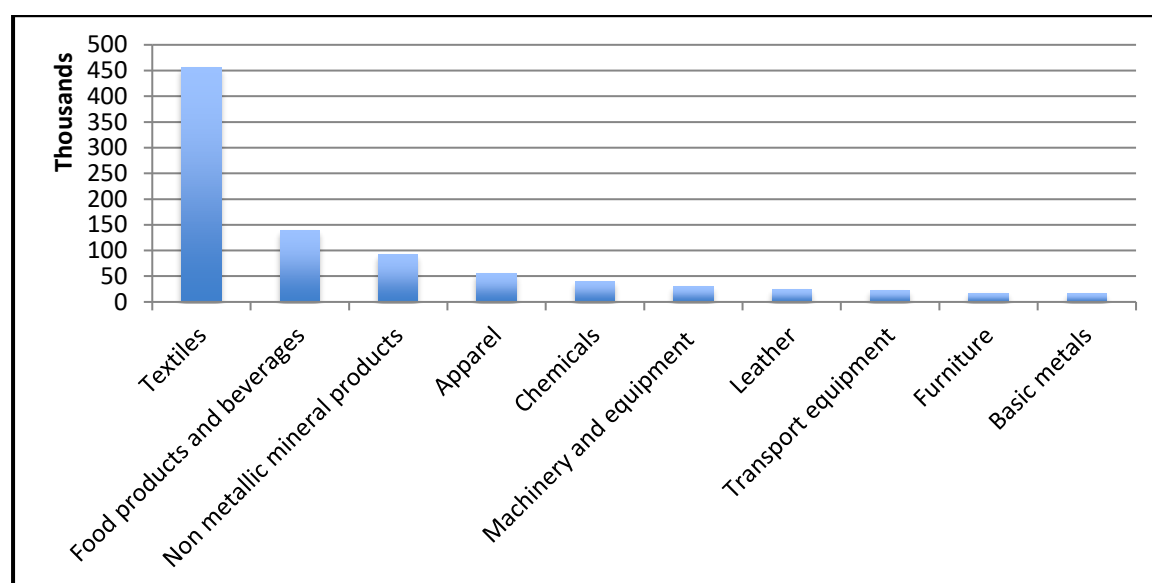
**Figure 3-21 Apparel Sector as an Important Employer for Developing Countries (1963-2007)**



Source: Lopez-Acevedo et al., 2016, p. 20

Specifically, in Punjab, the garments industry is an important employer, with an estimated 54,787 employees in 2014 (see Figure 3-22). This amounts to 5.52 percent of Punjab's industrial employment.

Figure 3-22 Employment in Major Industries, Punjab 2014



Source: Punjab Development Statistics, 2015

These employment numbers can rise if there is expansion in the garments sector. A 1 percent increase in garments output is associated with a 0.3–0.4 percent increase in employment (for both men and women) in Pakistan. This suggests the industry’s positive response to an increase in output (Lopez-Acevedo et al., 2016, p. 102). It also demonstrates that garments can play an important role in increasing female labour participation. The industry provides employment to more female workers than any other industry in Pakistan.

Moreover, a window of opportunity may be opening up in the garments sector, as China, because of rising labor costs, is likely to slowly withdraw from the sector. If Pakistan positions itself correctly, it can potentially capture some of the market and see a correlated response in employment. A 10 percent increase in Chinese garments prices would increase employment in Pakistan’s garments industry (as there is an anticipated increase in exports and therefore, higher labour demand) for males by 8.93 percent and 8.50 percent for females. In case of the EU market, a 10 percent increase in Chinese garments prices, would reduce employment by 0.21 percent for males and 0.20 for females. This is due to the fact that Pakistani garment products sold in the EU are not close substitutes to Chinese products. Therefore, competing countries like India and Sri Lanka, who have products that can substitute Chinese garments, are more likely to capture the market (Lopez-Acevedo et al., 2016, p. 183).

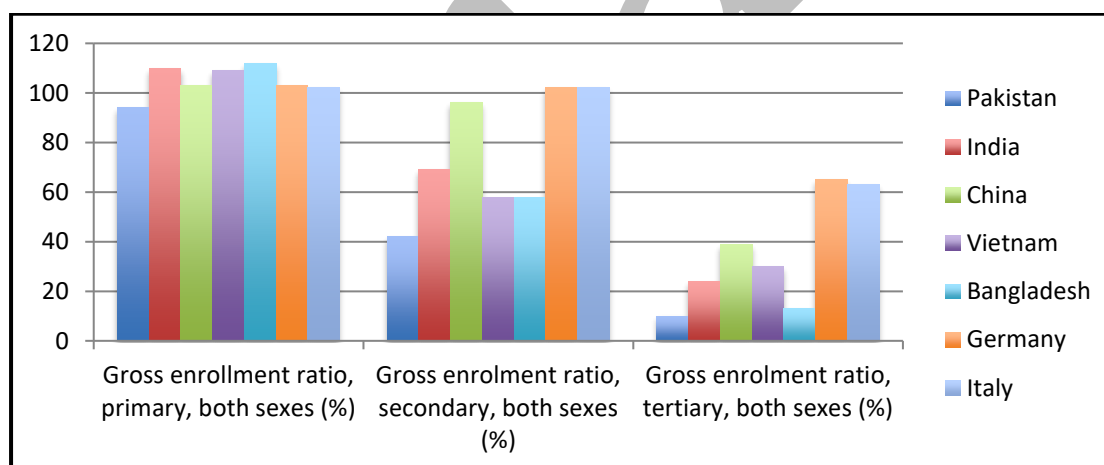
Another way that could possibly impact employment is that as firms demand more labor the wages in the garments sector are also likely to increase. “A 1 percent increase in expected wages would raise the probability of women entering the labor force by 16.3 percent” (Lopez-Acevedo et al., 2016, p. 183). This is because female labor, especially low-skilled labor, is more likely to enter the market as wages rise

(Lopez-Acevedo et al., 2016, p. 180). As it stands, low female participation in the labour force limits the labour pool.

The garments industry mostly employs skilled labour, where the ratio of unskilled to skilled workers (mostly stitchers) is 20:80 (Nabi et. al, 2013). According to a study conducted by the Punjab Skills Development Fund (PSDF) on skills for garments sector,<sup>10</sup> the industry views current workers as possessing “average skills”. The study points out that only “32 percent of the firms have a formal system in place to train their workforce, from which they are able to tap into only 4.36 percent of the existing workforce” (Nabi et al., 2017, p. 28). Only 33 percent of the firms allocate budget specifically for training purposes, while 52 percent firms do not see any need for specialised internal training system. The remaining firms cite lack of resources as the major reason for not undertaking training activity.

The current education profile shows that Pakistan lags behind its competitors in both secondary and tertiary education (see Figure 3-23). While the gross enrollment ratios for primary education are similar among competing countries, the divergence occurs in secondary and further in tertiary education. Furthermore, only 19 percent and 6.5 percent of Pakistan’s labour force has secondary and tertiary education respectively (Labour Force Survey 2014-15).

**Figure 3-23 Education Enrolment Rates for Pakistan Relative to Competitors, 2014**



Source: World Development Indicators

Note: Data for Bangladesh is for 2011, as 2014 was unavailable

A major player in the skills training industry is PSDF, established in 2010. Before its inception, the only public sector organisations responsible for skills training were Technical Education and Vocational Training Authority (TEVTA) and Punjab

<sup>10</sup> PSDF hired the services of an independent firm to administer a comprehensive survey covering 250 garment manufacturers, divided across woven and knitwear firms, 25 Training Service Providers (TSPs) and 50 business experts.

Vocational Training Council (PVTC). However, the garments industry preferred training workers themselves to using labour force trained by the public sector. PSDF, recognising the importance of the garments sector, launched the 'Skills for Garments' scheme in 2013. Under this scheme, PSDF trained over 10,000 individuals using a private-provision government-finance model. The skills training providers in this program were some of the country's largest garment manufacturers (such as Crescent, Nishat and Style textiles), the Pakistan Readymade Garment Technical Training Institute, and public sector training institutions (TEVTA and PVTC). With the initiation of this scheme, PSDF offered an extensive variety of garments related courses (around 35 different courses). These courses went beyond the basic industrial stitching machine operator course. They provided cutting edge skills such as computer pattern design, fashion designing, pattern drafting and cutting, production planning and control, quality control in garments and apparel merchandising (Nabi et al., 2017, p. 29).

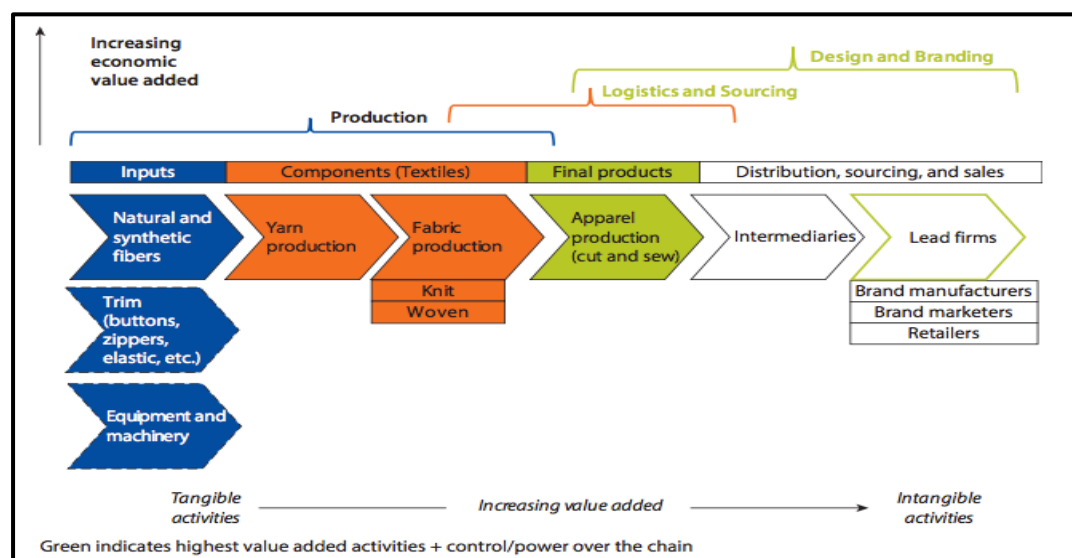
TEVTA also provides training for stitchers. In Fiscal Year (FY) 2015-2016, 841 students have been enrolled as industrial machine stitching operators and 204 for machine embroidery. However, these are the only garments relevant courses being offered. Due to a protocol signed between Turkish Cooperation and Coordination Agency (TIKA) and Industries, Commerce & Investment Department, Government of Punjab for collaboration in the skills sector, the proposed capacity of trainees for industrial machine stitching operators is expected to increase by a 1,000. Training on wet and dry processes has also been initiated to help denim manufacturers become more competitive in the global market (Nabi et al., 2017, p. 32).

The garments industry also lacks trained middle and higher management, as the only way to train management level employees is through on-job training. While, training providers offer courses related to computer skills that may help middle management, they do not provide courses that enhance soft skills (Nabi et al., 2017, p. 34).

Producing garments is the highest value added activity in the textile chain. Figure 3-24 shows where garments stand in the textiles value chain and how economic value increases when countries move from tangible activities such as producing yarn to intangible activities such as creating a brand for clothing. That is why manufacturing in this industry has historically been considered as a first step toward industrialisation for developing countries. The experience from this sector aids in the production of more sophisticated products such as machinery (Lopez-Acevedo et al., 2016, p. 26).



Figure 3-24 Structure of the Global Value Chain for Garments



Source: Lopez-Acevedo et al., 2016, p. 26

By quantifying the value addition at each stage, it can be seen how much can be gained by manufacturing garments instead of just spinning or weaving. To 1 kg of cotton with a value of US\$ 2, the spinning stage adds about US\$ 1 in value; by weaving the yarn, it adds another US\$ 3.5–5, while finishing of the fabric can add as much as US\$ 6. Conversely, converting 1 kg of fabric into garments can add as much as US\$ 20–25 (allowing for 5 percent in wasted fabric and an additional 10 percent of the garment's value for the cost of trimmings and accessories) (Nabi et al., 2013, p. 287).

However, to gain the maximum profits, which occur once a firm is in the middle to upper price range of a product, a firm needs to have their own design capacity for product development. Many woven firms in Pakistan are involved in R&D and ensure they keep up with the latest trends by keeping design departments in London or Istanbul.

Another method firms have employed to move up the value chain is to target niche markets. In Pakistan, many small and middle-sized firms are producing heavy protective garments using denim and Kevlar for bikers. They are also targeting baseball and American football teams in the US for manufacturing their uniforms, schools in the UK for sports uniforms and universities in the US for fleece jackets (hoodies).

Other firms are adding value by manufacturing complex garments. This is particularly seen in the denim category where firms have invested in advanced washing systems. Conversely, knitwear firms are investing in specialised equipment, e.g., computer-



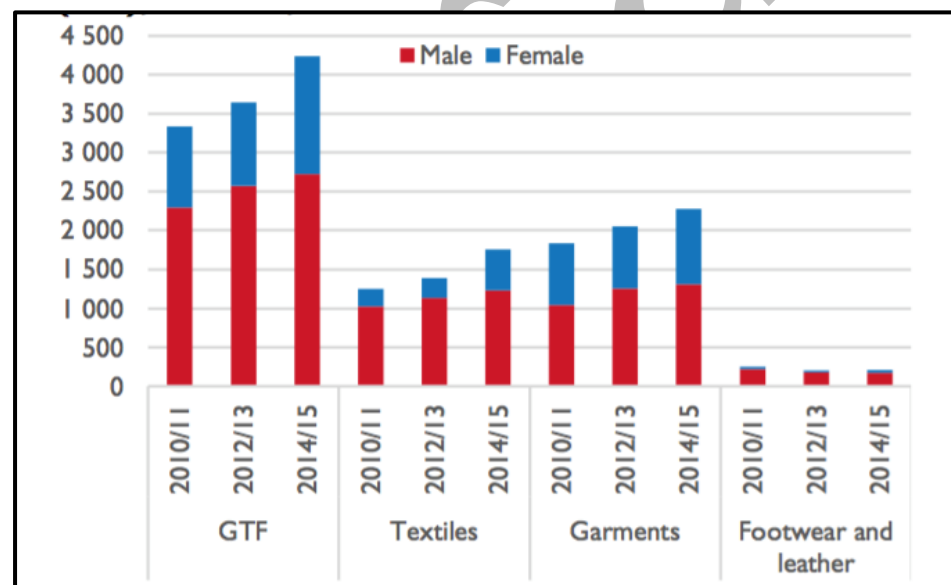
controlled Jacquard knitting machines in order to produce patterned knitwear. Some firms have become part of a certified, organic supply chain and have acquired Global Organic Textile Standard manufacturing certification (Nabi et al., 2013, p. 299).

### 3.3.2 Are there prospects for improving inclusiveness on gender?

The garments sector is a labour-intensive sector and thus appears to be gateway to create jobs. For instance, every job in the textiles sector creates 2.81 additional jobs (Bivens, 2003). The garments sector has job prospects for women in particular. Giving job opportunities to more women would not only increase household income, but also contribute to improved health and education outcomes, poverty reduction and strengthen the role of women in society (Lopez-Acevedo et al., 2016, p. 102).

Yet, this industry in Pakistan largely employs male workers. Nonetheless, the sector is increasingly employing more female workers (see Figure 3-25 below). Although there has been progress for women in securing jobs in the garments sector over the years, the wide gender disparity largely reflects Pakistan's low female labour participation driven by cultural barriers and stereotypes, lack of safe transportation services as well as factors such as lack of affordable child care facilities (Huynh, 2017).

Figure 3-25 Employment in Garments, Textiles, Footwear and Leather by Sex



Source: Huynh, 2017

Table 3-5 below illustrates gender wise employment situation in small, medium and large-scale industries of Pakistan. The male to female employment ratio shows that the textile industry of Pakistan employs more male workers than female workers. The garments manufacturing firms, however, have a larger share of female workers in the labour force. More specifically, small-scale firms employ more females in comparison to medium and large-scale firms. For instance, in small-scale garments

firms, there are almost 5 male workers for every one female worker. Given the share of female workers in the garments industry has increased over time, the ratios given below are likely to fall in the coming years, acknowledging more inclusiveness on gender.

**Table 3-5 Male/ female Employment Ratio**

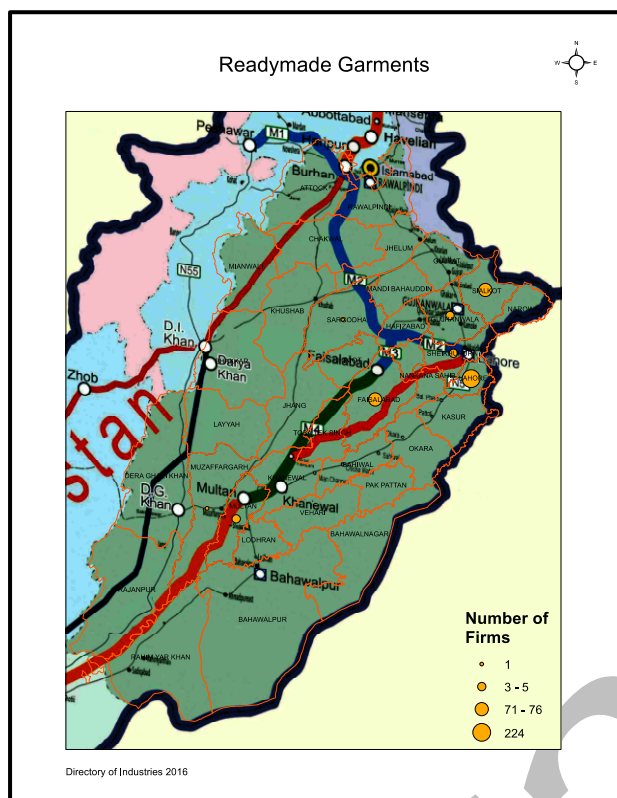
Pakistan	Industry/size	Small	Medium	Large
	Textile	6.0	7.5	29.7
	Garment	4.9	3.8	27.0
	Others	4.2	6.5	27.2

Source: Lopez-Acevedo et al., 2016, p. 125

### 3.3.3 Is the proposal likely to improve geographic disparities?

**Error! Reference source not found.** below illustrates the road network of CPEC in Punjab. The blue line shows the existing route of the road network of CPEC and the red lines show the early harvest road-related projects to be implemented under CPEC. The map also marks, in yellow, the cities clustered with ready-made garment firms. The figure also shows that Lahore is concentrated with the highest number of firms, followed by Faisalabad and Sialkot – these three cities form the hubs of garments industry in Pakistan, as also pointed out in a study by Nabi et al., 2013. It can be seen from the same figure that the early harvest road-related projects to be implemented under CPEC (i.e., red lines) will not only improve the connectivity of the already established hubs of the garments industry (i.e., yellow dots), but will also provide connectivity and transport facilities to areas where there was poor or no road infrastructure previously (i.e., Southern Punjab). Therefore, with CPEC it is likely that the existing geographical disparities will reduce.

Figure 3-26 Number of Garment Firms in Punjab



Source: Author's personal calculations

### 3.3.4 Provision for SMEs

The construction of an industrial estate, QAAP, is currently underway in Punjab to facilitate large garment manufacturers as well as SMEs. QAAP is expected to provide space for 134 SMEs. The cost of relocating to QAAP is estimated to be greater than the return for SMEs and unavailability of cheap skilled labour is also a concern. However, the plan to have a vocational institute is likely to address their concern of unavailability of affordable skilled labour. Furthermore, PIEDMC has suggested that the benefits gained from tax holidays and cheaper land at QAAP will help the SMEs lower their overall costs.

### 3.3.5 Skills and resource match

The problem with skills in the garments industry is twofold: poorly educated work force, which means poor trainability, and shortage of formal vocational institutes, which means that firms have to fill in this gap themselves. A number of initiatives have been undertaken to attend to this (Nabi et al., 2017, p. 26):

- The establishment of PSDF in 2010 is an attempt to improve the skills training industry by responding to the demands of the industry. Although large public sector organisations such as TEVTA and PVTC did exist even before PSDF, but

the garments industry was not very satisfied with their trainings. PSDF is a unique model as it does not provide trainings itself, but responds to industry's demands for skills and instead funds its provision by other institutes in the public, private and non-profit sector.

- PSDF's model is demand-driven. This means that it responds to the needs of the public, private and non-profit sector based on evidence of need. In order to identify these, PSDF conducted a "Skill Needs Assessment" for the garments sector in September 2013. It was hosted by PSDF in collaboration with PRGMEA and Pakistan Hosiery Manufacturers Association (PHMA). The workshop was represented by all segments of the garments industry, including small, medium and large enterprises. Based on feedback from this workshop, an action plan for skills training was developed and used in the design of a garments related skills scheme.
- PSDF also commissioned a Garments Sector Skills study in order to identify both current and potential skills deficiency that would allow Punjab (in particular) and Pakistan (in general) to tap into the global garments market.
- Following the "Skill Needs Assessment", PSDF successfully launched the "Skills for Garments Scheme" in 2013. Under this scheme, PSDF launched its programme to train over 9,000 individuals using a private-provision government-finance model. The 14 skills training providers in this programme included some the country's largest garment manufacturers, the Pakistan Garment Technical Training Institute and public sector training institutes such as TEVTA and PVTC. This scheme resulted in an increase in the number of students graduating from all garments related courses from 118 in FY 2012-2013 to 4,885 in FY 2015-2016.
- A protocol was signed in December 2013 between TIKa and Industries Department, Punjab for collaboration in the garments sector. More specifically, a state of the art garments institute was set up in one of TEVTA's institutes, with experts from TIKa providing technical and financial assistance for developing the scope of the curriculum, training of trainers, international accreditation, machinery and equipment and refurbishment/ upgradation of existing buildings and labs.

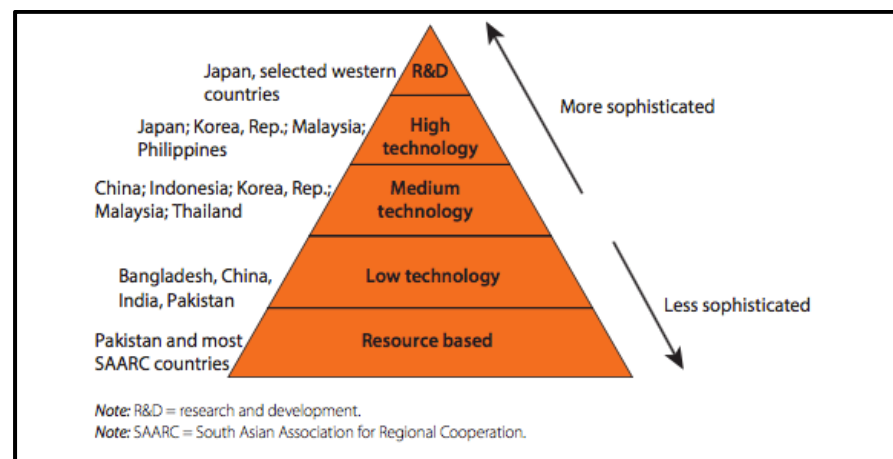
### 3.4 Innovation

With CPEC and any potential joint ventures, Pakistani firms have the opportunity for technology transfer, access to buyers, spillovers and, hence, learning and upgrading opportunities. Currently, Vietnam has been taking advantage of China's spillovers as Chinese firms move up the value chain and move its branches to Vietnam for cheaper inputs particularly for garments industry (Lopez-Acevedo et al., 2016, p. 50). With the resulting connectivity of China and Pakistan through CPEC, Pakistan can take advantage and position itself in GVCs the way Vietnam has. However, this potential can only be realized if Pakistani firms can introduce new processes, innovative products and can respond to the fast-changing garments industry

demands. In today's world, it is no longer just about reducing costs.

As the technology pyramid in Figure 3-27 shows, Pakistan is at the bottom, as a resource based, low technology country. Only by upgrading its skill level (increasing the number of scientists and technicians) and upgrading its technology can it move up to where Japan and Western countries are positioned (undertaking research and development and introducing new products in the world). This is where the maximum benefits are reaped.

**Figure 3-27 Pakistan in the Technology Pyramid**



Source: Sánchez-Triana et al., 2014, p. 68

However, some of the existing efforts by garments firms to stay innovative and internationally competitive are evident. According to a survey conducted of textile and garment manufacturers<sup>11</sup>, in the past few years, firms in Punjab have been involved in either technological (product and process) or non-technological (managerial and marketing) innovation. Garment firms have a higher innovation rate than other firms in the value chain. Within Punjab, Sialkot is the most innovative district and has recently produced six products that are first in the world. Firms in Punjab have also manufactured products that are new to the market. They have further been innovative in their processes by introducing new methods of manufacturing, or by introducing supporting activities or innovation in logistics, delivery or distribution. The survey also shows that there is complementarity between different types of innovations. Product innovation has a positive association with both types of non- technological innovation but the correlation with marketing innovation is stronger. Similarly, process innovation is positively correlated with both types of non-technological innovation. Furthermore, marketing and managerial innovations also show very strong positive association with each other (Wadho & Chaudhary,

<sup>11</sup> In this study, a sample of 614 manufacturers of textiles and garments in Sindh and Punjab was surveyed. Survey response rate was 70 percent and a total of 431 firms voluntarily participated in the survey.

2016). Thus, if Pakistani garments firms continue to focus on either kind of innovation, they can move up the global value chain.

### 3.5 Sustainability

Sustainable growth can be broken into three parts: economic, social and environmental. Social sustainability has been discussed under section 3.3 that talks about social inclusiveness. This section entails a discussion on the ability of the ready-made garments sector to contribute to sustained (economic) growth and environmental sustainability.

#### 4.5.1 Sustained growth

Energy crisis in Pakistan has been one of the biggest obstacles to the garments industry and little has changed in the past few years. However, in the last year or so, due to the pressure of the Government of the Punjab, the garments sector has been given more priority in power allocations. As a result of this, hours of load shedding of electricity and natural gas in the garments industry of Punjab has declined.

Especially, multiple projects have started in Punjab under CPEC and the province's energy department has played an active role in the launch of these projects. Due to insufficient generation of electricity at the national level and limited natural gas reserves, alternate energy sources have been exploited under the new initiatives. However, the idea of meeting the exceeding demand for energy through installing coal power plants is not sustainable for one major reason – coal will soon run out like natural gas reserves, as it is a non-renewable resource. Therefore, in order for the garments industry to contribute to sustained growth, it should first be provided with reliable supply of energy that is produced through sustainable means.

However, besides coal power plants, a solar power plant called the Quaid-e-Azam Solar Park has also been set up under CPEC, which is a step in the right direction. Generating energy using solar power plants is a sustainable source of producing energy.

#### 3.5.2 Growth that is environmentally friendly

In industrial areas and areas in the proximity, people and the local environment both are influenced by the chemical and organic pollutants because of dyeing processes undertaken by the ready-made garment firms. Results supporting this damage caused were found in a study conducted in Bangladesh (Alom, 2016). It was seen that large quantities of highly toxic effluent are discharged as a result of dyeing which are significantly more than the standard value set by the department of environment. The wastewater is discharged into the nearby water bodies through the drainage system, contaminating the water. In addition, water bodies polluted with hazardous chemicals produce toxic fumes, leading to air pollution. This contaminated air then causes health issues, particularly among children.

Research studies conducted in Pakistan and Bangladesh have shown that these chemicals are not only dangerous to humans, but also to marine life and water ecosystem in general (Shaikh, 2009; Khan and Malik, 2014; Dey and Islam, 2015). It is, thus, crucial that all factories have their own wastewater treatment plant or Effluent Treatment Plant (ETP) in order to avoid adverse consequences on the environment (Alom, 2016).

In addition, installation of coal power plants under CPEC can pose high environmental costs due to emission of hazardous gases, such as carbon dioxide. It is, thus, ideal to support cleaner ways of generating electricity, such as through solar power.

### 3.6 Summary

Owing to its natural endowments, including soil, climate and irrigation, Pakistan is among the top five producers of cotton in the world and accounts for 9 percent of total world output of cotton. Pakistan has put this to its advantage and put in place an industrialisation strategy that is led by textiles. The textiles chain consists of the following segments: ginning, spinning, weaving, finished fabrics, garments (woven and knitwear), home textiles (particularly bed linen and towels) and synthetic fiber (Nabi & Hamid, 2013, p. 5). The sector contributes nearly one-fourth of industrial value-added and provides employment to about 40 percent of industrial labour force (Ministry of Finance, 2015, p. 51). Within the textiles chain, Pakistan has a comparative advantage in ready-made garments as it is most labour intensive, least energy intensive and highest value addition segment in the textiles chain (Nabi & Hamid, 2017, p. 3).

#### 3.6.1 Economic benefit

Pakistan's garment exports make up a significant portion of its total exports – just in 2015, its garment exports accounted for 5 percent of its total exports. And while the growth of its knitted garment exports has been slower than world's export growth for knitted garments (between 2003-2015), its growth of woven garment exports has been at par with the world's (for the same time period). This means that for knitted garments Pakistan is losing share globally, while for woven garments it is keeping pace globally. And as China, who is a leading exporter of garments, is expected to withdraw (because of rising labour costs) and leave the world market wide open, this presents Pakistan with the opportunity to fill in this gap under CPEC.

Pakistan can also use CPEC to increase its otherwise small exports of knitted garments to China (between 2011-2015), where China has been the fastest importer of knitted garments (for the same time period). Similarly, Pakistan can also use CPEC to increase its woven garment exports to UAE because of improved road and maritime connectivity under CPEC, where UAE is the fastest importer of woven garments among Pakistan's partner countries. So while garment exports already have significant



economic benefits for Pakistan, CPEC can be an opportunity for Pakistan to deepen and widen these benefits.

### 3.6.2 Social inclusiveness

In addition to being a major contributor to exports, the garments industry is a key employer in the manufacturing sector as it requires relatively low capital investment and most of its activities, such as cutting and sewing, remain labour intensive (Nabi et al., 2013). Specifically, in Punjab, the garments industry is an important employer, where it accounts for 5.52 percent of industrial employment. Moreover, a window of opportunity may be opening up in the garments sector, as China, because of rising labor costs, is likely to slowly withdraw from the sector. If Pakistan positions itself correctly, it can potentially capture some of the market and see a correlated response in employment – A 10 percent increase in Chinese garments prices would increase employment in Pakistan's garments industry (as there is an anticipated increase in exports and therefore, higher labour demand) for males by 8.93 percent and 8.50 percent for females (Lopez-Acevedo et al., 2016, p. 183).

### 3.6.3 Innovation

With CPEC and any potential joint ventures, Pakistani firms have the opportunity for technology transfer, access to buyers, spillovers and, hence, learning and upgrading opportunities. Currently, Vietnam has been taking advantage of China's spillovers as Chinese firms move up the value chain and move its branches to Vietnam for cheaper inputs particularly for garments industry (Lopez-Acevedo et al., 2016, p. 50). With the resulting connectivity of China and Pakistan through CPEC, Pakistan can take advantage and position itself in GVCs the way Vietnam has. However, this potential can only be realized if Pakistani firms can introduce new processes, innovative products and can respond to the fast-changing garments industry demands. In today's world, it is no longer just about reducing costs.

### 3.6.4 Sustainability

In all industries, there are some processes that cause environmental damage in one way or the other. The damage may be due to inefficient use of resources, a polluting way of generating energy (for example, through coal) or negligent disposal of waste. The severe energy crisis in Pakistan has greatly harmed the garments industry. As substitutes of electricity and natural gas as sources of energy, coal and solar power plants have been installed in Punjab under CPEC. Generating energy through coal is not sustainable: coal, being a non-renewable resource, will not last forever; more importantly, it is an impure way to producing energy that damages the environment. Cleaner ways of producing energy must be encouraged, such as through solar power. The printing and dyeing process in manufacturing of garments uses toxic chemicals, which enter nearby water bodies through drainage system, contaminate the water and adversely impacts the air, water ecosystem and human life. Therefore, activities



undertaken in the garments industry under CPEC should promote environmental sustainability.

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## 4 Illustrative Sector Findings – Automotive

### 4.1 Introduction and reason for selection

The automotive industry was selected on the basis of the four considerations identified in Pakistan's industrial policy (2010)<sup>12</sup> for formulating sector level policies:

1. Dynamic comparative advantage, or competitive advantage, rather than static comparative advantage.
2. Industries where global market share can be obtained, i.e., those where production has become costly for developed countries or where the knowledge gap is relatively low, and where there are gaps in Global Value Chains.
3. Industries where large domestic demand exists.
4. Scope for outward foreign direct investment, which allows firms to gain R&D, branding knowledge and other elements that are missing in domestic markets, by buying assets abroad.

On the basis of static comparative advantage, Pakistan is not currently a market leader in the automotive sector globally. However, the sector has the potential for dynamic comparative advantage and presents an opportunity to diversify the product mix of Pakistan's manufacturing sector.<sup>13</sup> The textile sector currently dominates Punjab's industrial employment and Pakistan's exports, as shown in Section 2.3. It is important for Pakistan to broaden its support beyond those industries where it has a resource advantage. Sectors where comparative advantage can be developed based on capabilities and opportunities also need to be added to the mix.

In this particular case, the nexus of four factors make the auto sector a promising opportunity:

Firstly, production in the automotive sector is now organised in Global Value Chains rather than in a single country or factory. Regardless of where the vehicle is finally assembled, lighter and more expensive parts are sourced from globally competitive locations, and heavier and bulky parts are sourced closer to the destination market. Here, smooth logistics and proximity to a large market are now key determinants of

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<sup>12</sup> Burki, Abid, Kamal Munir, Mushtaq Khan, Syed Turab Hussain and Usman Khan (2011) "Industrial Policy, its Spatial Aspects and Cluster Development in Pakistan" available at [https://www.researchgate.net/publication/266211382\\_INDUSTRIAL\\_POLICY\\_ITS\\_SPATIAL\\_ASPECTS\\_AND\\_CLUSTER\\_DEVELOPMENT\\_IN\\_PAKISTAN](https://www.researchgate.net/publication/266211382_INDUSTRIAL_POLICY_ITS_SPATIAL_ASPECTS_AND_CLUSTER_DEVELOPMENT_IN_PAKISTAN)

<sup>13</sup> Several studies have found an inverted U shaped relationship between diversification and growth: at lower levels of income, diversification is associated with higher growth, possibly by increasing their resilience to external shocks. Countries with higher levels of income seem to benefit more from specialisation. (Imbs and Wacziarg (2003), UNIDO (2012), UNIDO (2016))

the ability to cater to GVCs, along with competitiveness. It is no longer critical to have a large domestic vehicle market to become a large auto parts manufacturer.

Secondly, Pakistan has immediate proximity and a shared border with China, by far the world's largest automotive manufacturer. The automotive sector is also the focus of China's own industrial strategy, with increasing amounts of sophisticated product development and R&D now locating in China. Further improvements in both technology and scale are expected, and with rising incomes in China, domestic Chinese demand is also expected to increase.

Thirdly, the upcoming CPEC infrastructure enables Pakistan to be connected seamlessly to this large and growing market, in terms of both transport and trade infrastructure. Cordial bilateral relationships also mean that, unlike with India, the physical proximity has greater potential to translate into increased trade flows.

Fourthly, Pakistan already has inroads into the global auto parts industry, and exports parts to a variety of developed country markets. The Pakistani auto parts industry is currently catering to replacement markets abroad and local OEMs and is not yet part of foreign OEM value chains. However improved competitiveness could facilitate GVC participation in China and other foreign markets. This can be achieved from a reduction in the transport costs and time of reaching destination markets, and alleviation of the energy crisis that currently impedes Pakistani industry, all of which are likely to result from the CPEC investments. This is particularly timely as rising labour costs are necessitating the outsourcing of labour-intensive parts to feed China's vehicle industry. Labour intensive parts are also the main strength of Pakistan auto parts industry at the moment.

Apart from the opportunity that the combination of these four factors provides, the automotive industry has two major positive spillovers in areas that Pakistan requires urgently: employment and technology. The automotive sector is considered a mother industry, as it creates employment throughout its supply chain and has one of the highest employment multiplier effects on the rest of the economy, compared to services and other manufacturing. The automotive industry is also one of the most innovative industries of the world, and there is scope to move up the value chain for the suppliers by licensing, joint ventures and mergers with global Tier 1 companies.

Finally, while in some cases it is not useful, and may in fact be counterproductive, to select winning and losing industries, in the case of the auto industry, there is a clear argument for improved coordination, for which government intervention would be helpful. The education and skills requirements for R&D, access to markets via free trade agreements, institutes that support quality improvements such as protection of intellectual property and testing and enforcing standards are all currently underdeveloped, and are unlikely to arise naturally. In this case, specific interventions that create a facilitating environment and remove the binding constraints might have large long-term payoffs for the economy.

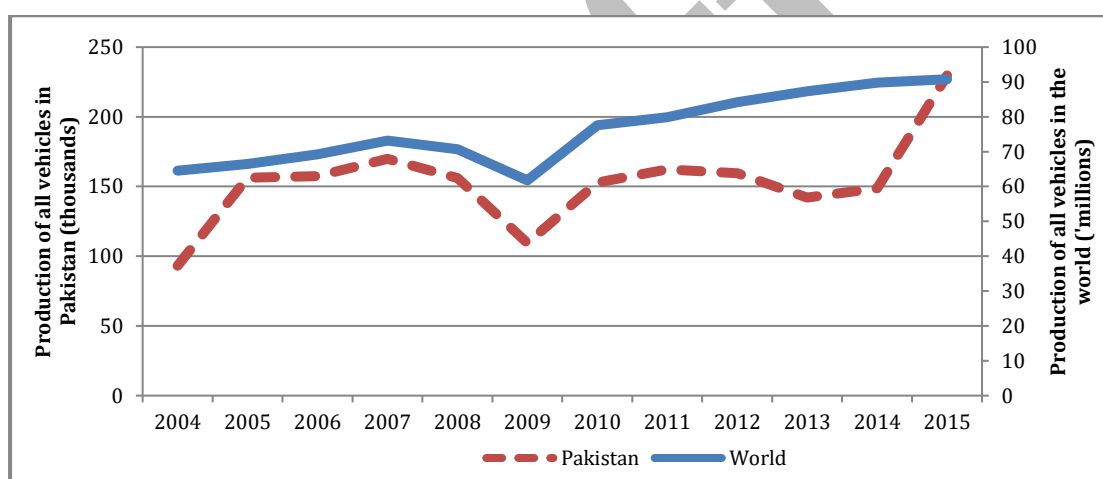
## 4.2 Economic benefit

### 4.2.1 Domestic market profile

Production volumes in the auto sector in Pakistan have increased sharply in recent years, outstripping global growth rates, as shown in Figure 7-1. This trend is expected to continue, with the announcement that Renault, Kia and Hyundai will start assembly of cars from 2018, and with the continued boost to the production of commercial vehicles due to CPEC related demand.

Pakistan exported US\$ 45 million in the automotive sector (HS87) in 2015, which represents 0.2% of Pakistan's exports.

Figure 4-1 Vehicle production in Pakistan relative to global time trend

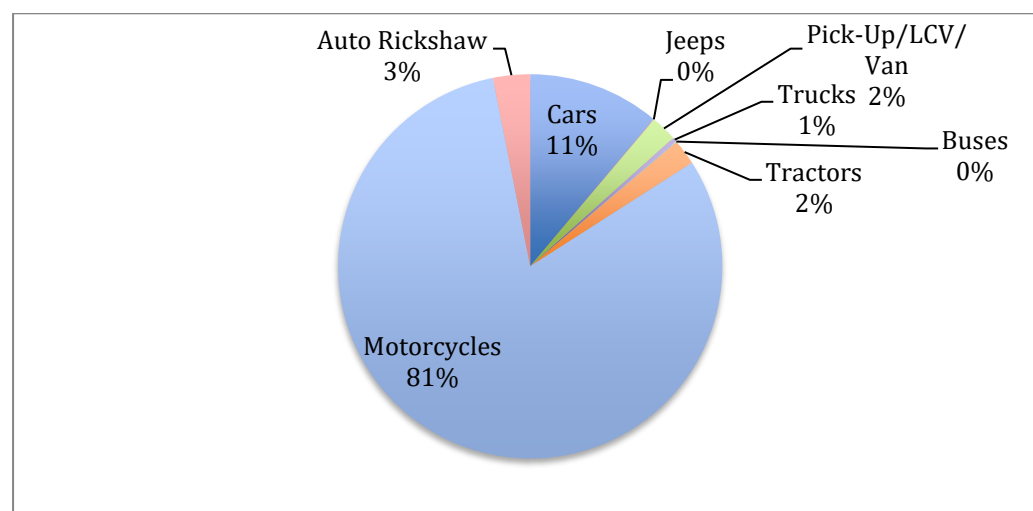


Source: OICA. <http://www.oica.net/category/production-statistics/>

As shown in Figure 4-2, the largest automotive sub-sector sector has been motorcycles, reaching an annual production volume of 1.3 million motorcycles in 2016. Pakistan's motorcycle market is unusual in that the 70cc motorcycle holds dominant market share, catering to 80% of the market. The 70cc motorcycle is virtually obsolete elsewhere in the world, dominated by larger engine sizes. While the market accommodates approximately 100 assemblers and manufacturers<sup>14</sup>, the market is highly segmented between Honda and the "Chinese Honda clone". Honda holds 40% market share and is priced at a comfortable premium of 30-40% over competitors'. With rising incomes, larger engine sizes are now showing an increased demand, with a consequent increase in investment. Yamaha, for instance re-entered the Pakistani market in 2015 to assemble 125CC and 150CC motorcycles.

<sup>14</sup> While there are approximately 100 motorcycle manufacturers and assemblers, stable market share is held by around 70. There are low barriers to entry and exit for the Honda clone: Non-exclusive suppliers provide parts to assemblers using a system of "market credit" where payments to the supply chain are made after the motorcycle has been sold.

**Figure 4-2 Breakdown of vehicle manufacturing in Pakistan, 2016**



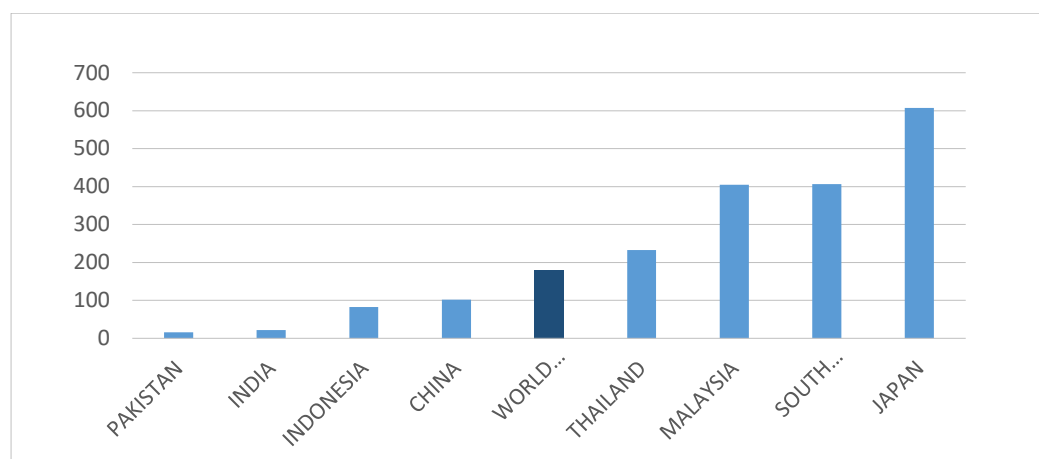
Source: Pakistan Automotive Manufacturers Association <http://www.pama.org.pk/statistical-information/historical-information/annual-sales-production>

In 2015, Pakistan exported US\$5.4 million in motorcycles to 22 countries including USA, several European countries and some Central Asian countries. Most of these exports, however, were sent to Afghanistan (83%), followed by Bangladesh (14%). There were no exports to China.

Pakistan has tried to implement the Euro 2 standard for motorcycles, though this is believed to be largely ineffective. In the absence of domestic facilities to check implementation, the requirement is to produce a certificate of compliance from the engine manufacturer, but the will or capacity to verify these does not exist.

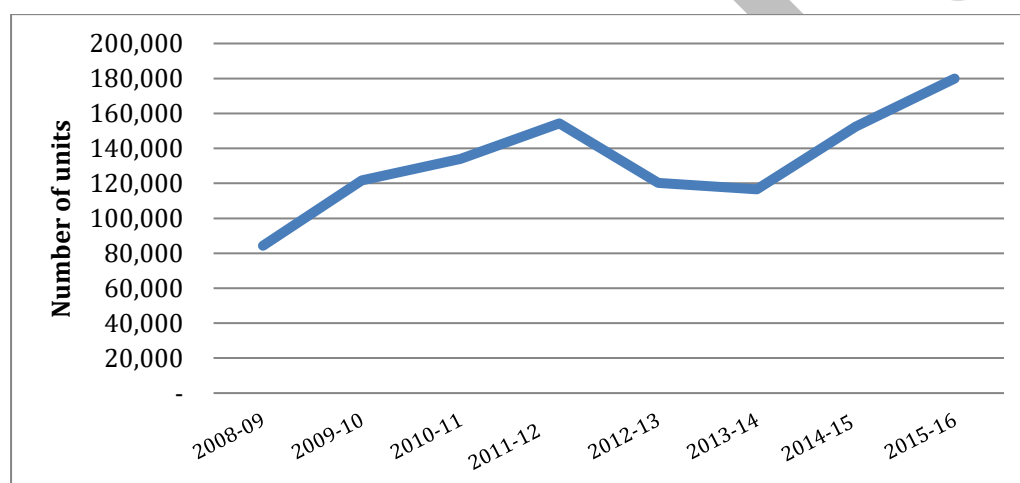
The domestic passenger car market produced approximately 180,000 cars in 2016, well below the 500,000 units that industry believes are required for economies of scale. Pakistan has a low motorization index, as shown in Figure 7-3. Demand for cars and domestic production have been increasing steadily (Figure 7-4) and with rising incomes, demand is expected to rise.

**Figure 4-3 Motorisation rate (vehicles in use per 1000 inhabitants), 2014**



Source: OICA 2017, <http://www.oica.net/category/vehicles-in-use/>

**Figure 4-4 Pakistan's production of cars, 2008-2016**



Source: Pakistan Automotive Manufacturers Association <http://www.pama.org.pk/statistical-information/historical-information/annual-sales-production>

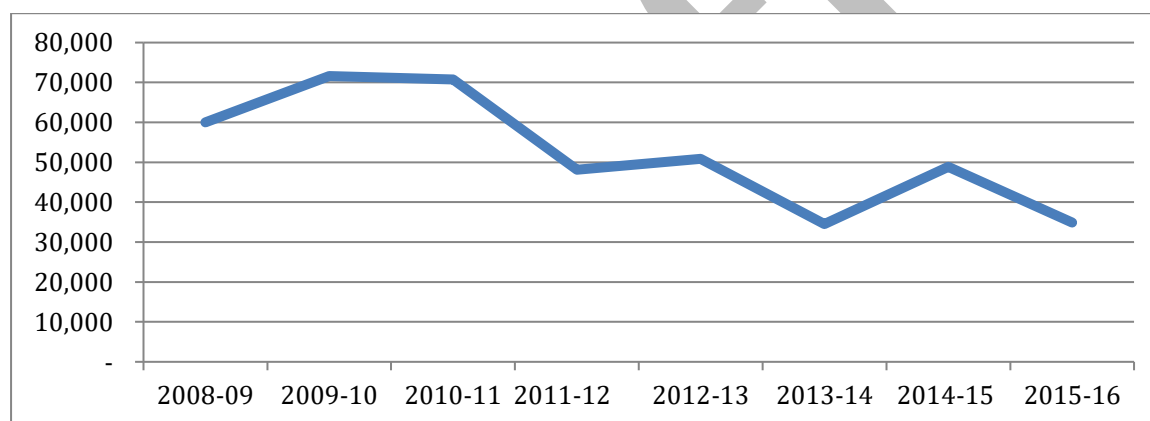
The passenger car sector is not globally competitive, and is propped up by decades of continued tariff protection. Within Pakistan too, the domestic car market is highly concentrated with market share divided between three players, all with Japanese principals. Furthermore, Pak-Suzuki has a monopoly in the small car segment (1000cc and below). High import tariffs and regulatory duties on imported new cars deter imports. However, 10-15% of passenger cars sales are still imported, most of them used. UN Comtrade also reports exports worth US\$ 1.5 million to UAE (40%), Bangladesh (22%), UK (12%) and a variety of other countries including Afghanistan, Tanzania and Japan. There are no exports to China.

Pakistan does not have national standards for the passenger car sector, and the carmakers adhere to and self-implement their own global standards.

The domestic tractor market produced approximately 35,000 tractors in 2016, shared largely between two manufacturers: Millat (under license from Massey Ferguson) and Al-Ghazi (under license from Fiat). The tractor industry has a highly localised supply chain, sourcing approximately 90% of the inputs domestically. Tractors worth approximately US\$ 17 million are currently exported to 42 countries, with the largest share of exports being sent to Afghanistan (26.5%), followed by Kenya (17%), Tanzania (7.7%) Botswana (7.4%) and UAE (6.4%). US\$18,176 of tractor exports were sent to China, Pakistan's 35<sup>th</sup> largest export partner for tractors in 2015.

Despite being Pakistan's largest export earner in the automotive category, domestic demand has fallen steadily as shown in Figure 7-5.

**Figure 4-5 Tractor production in Pakistan, 2008-2016**

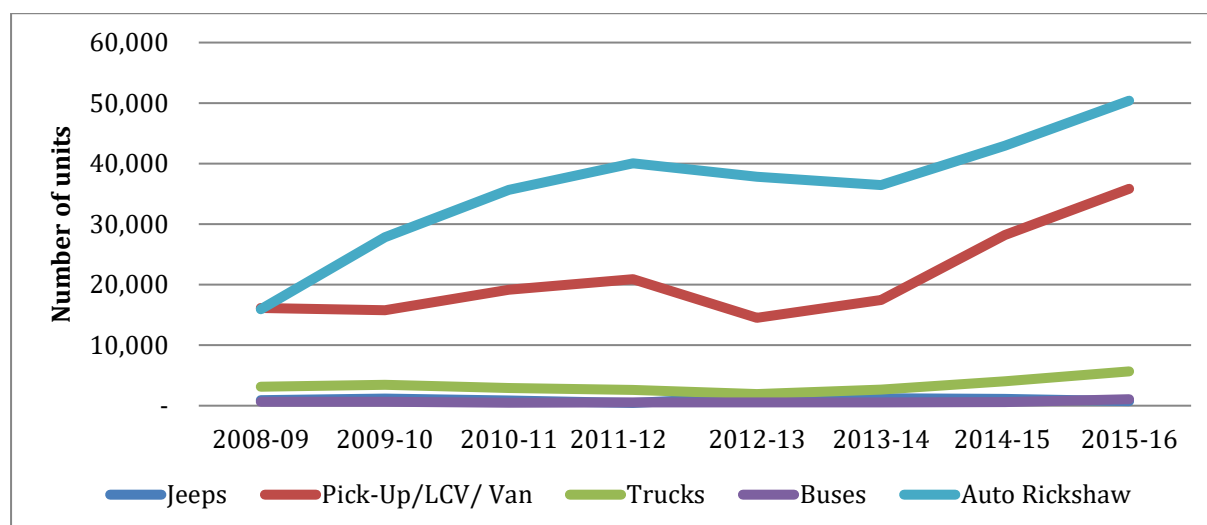


Source: Pakistan Automotive Manufacturers Association <http://www.pama.org.pk/statistical-information/historical-information/annual-sales-production>

As with passenger cars, there are no nationally mandated or implemented standards for the tractor industry.

While the markets for LCVs and Auto Rickshaws is currently small, it has shown a sharp increase in recent years (Figure 4-6).

Figure 4-6 Production of jeeps, LCVs, trucks, busses, auto rickshaws in Pakistan, 2008-16



Source: Pakistan Automotive Manufacturers Association <http://www.pama.org.pk/statistical-information/historical-information/annual-sales-production>

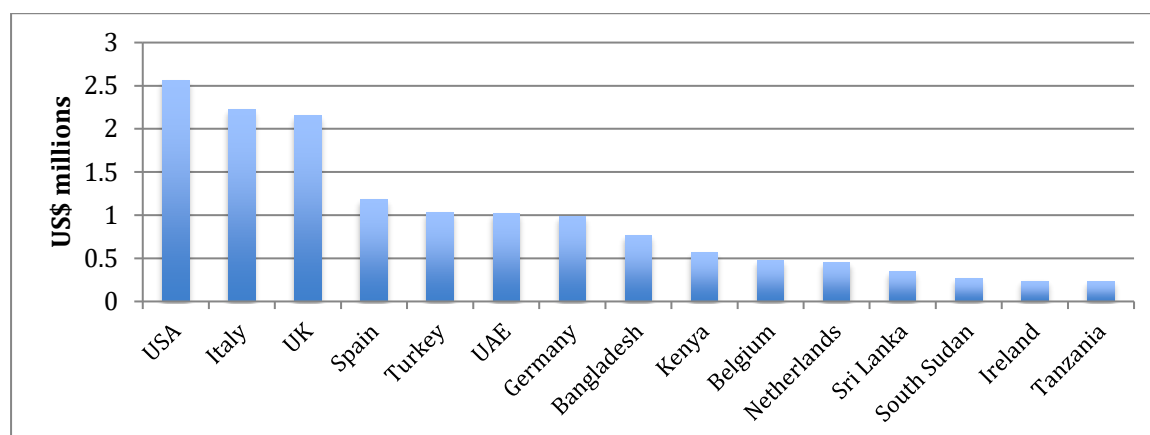
The downstream industries of vehicle manufacturing in Pakistan comprise approximately 2000 auto part manufacturers. They produce a variety of parts: interior trims, plastic parts, forgings, casting, machined parts, rubber parts and electrical parts. There are two segments in the auto parts sector: sales to Original Equipment Manufacturers (OEMs) for assembly into new cars in Pakistan, and the replacement market, catering to both Pakistan and export markets. Auto parts manufacturers in Pakistan are not part of the Global Value Chains of OEMs, and are largely engaged in basic manufacturing to blue prints that are provided by OEMs, i.e., higher value services such as product development, research and development, branding and marketing are not undertaken in Pakistan. However, while the products are low value-addition, they are not low quality as they are produced to OEM standards, and are tested to ensure that they meet their global standards.

Pakistan exported US\$ 16.5 million in auto parts for cars to 68 countries.<sup>15</sup> The largest export destinations in 2015 were USA (15.5%), Italy (13.5%) and the UK (13.1%). Barely US\$ 900 of exports were sent to China, which makes it Pakistan's 62<sup>nd</sup> largest export partner for auto parts.

<sup>15</sup> This only includes auto parts exported under HS8708. Motorcycle exports (HS 8714) were an additional US\$ 860,050. For the purposes of this report HS8708 has been considered to constitute auto parts. This is by far the largest code for auto parts as it comprises parts for motor vehicles. This excludes HS8714 (auto parts of motorcycles), and a host of other codes that fall outside HS87 – for example HS 70071119 (window glass for use in vehicles), HS40082190 (weather strips for door of vehicles), HS4011 (rubber tyres), 840820 (diesel engines for use in motor vehicles), HS 841520 (car air conditioning) and HS940120 (seats for motor vehicles).



Figure 4-7 Pakistan's export partners in auto parts (HS8708), 2015



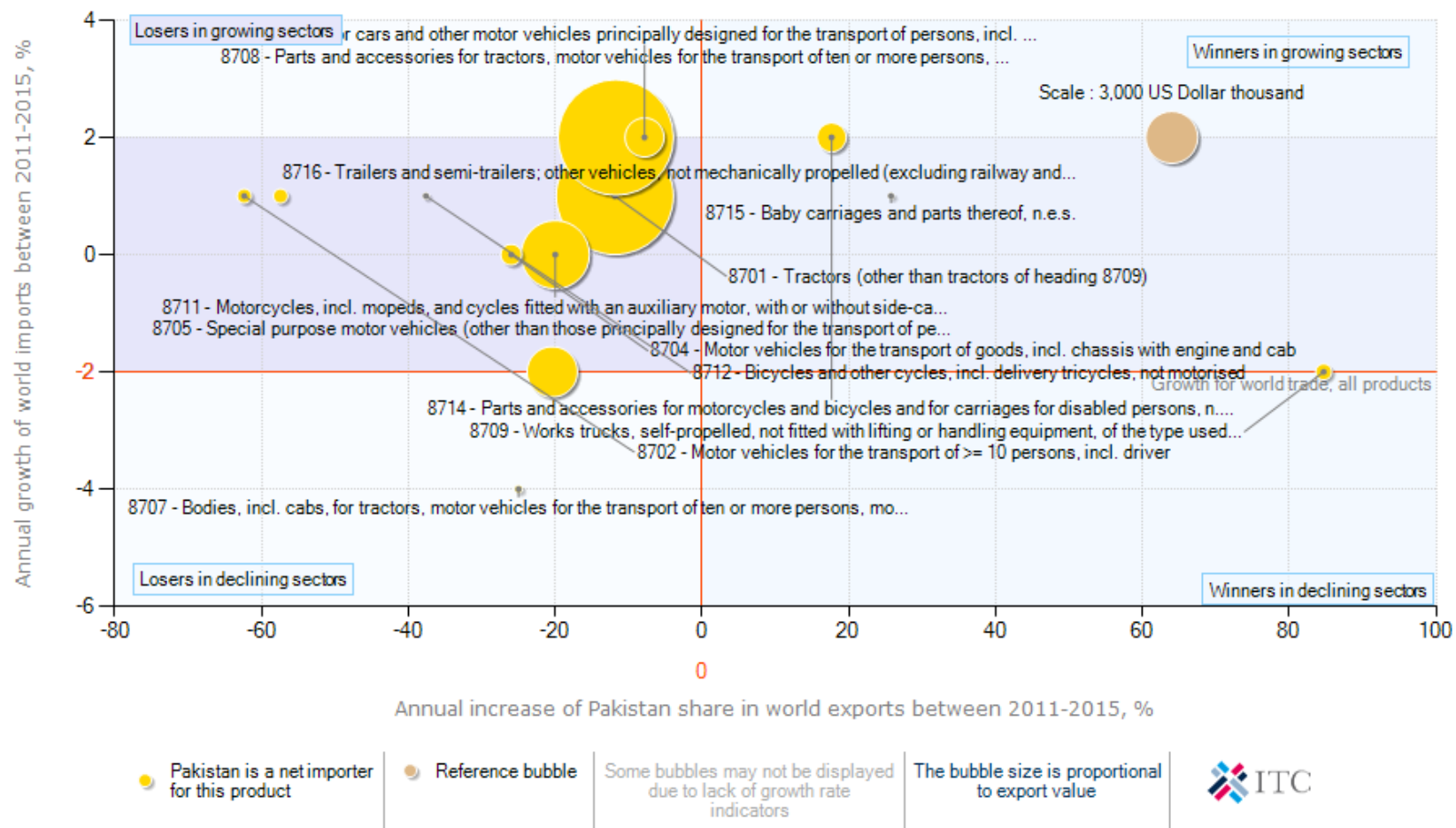
Data source: UN Comtrade, downloaded February 2017

While the auto parts sub-sector has made inroads into export markets, the parts exported are mainly for niche and replacement markets, and for low technology parts. Moreover, Pakistan has been losing global market share in the growing international auto parts sector, as shown in Figure 4-8.

Since the demand for auto parts is a derived demand for the demand for vehicles, the uptick in domestic demand illustrated in Figure 4-1 can be expected to boost demand for domestic auto parts. Economies of scale can be achieved through this expected increase, along with the potential of supplying to Chinese OEMs following the recent improvements in logistics due to the CPEC.

Figure 4-8 shows the performance of Pakistan's automotive sector in global markets. For motorcycle parts, Pakistan is increasing global market share in a market that is increasing globally. However, for the remaining automotive products, Pakistan is losing global market share. This is particularly worrisome as, apart from Special Purpose Vehicles, the sectors are all growing sectors globally and could therefore be an important and sustained source of export-led growth for Pakistan.

Figure 4-8 Growth of national supply and international demand for the automotive sector, 2015



Source: ITC Trade maps

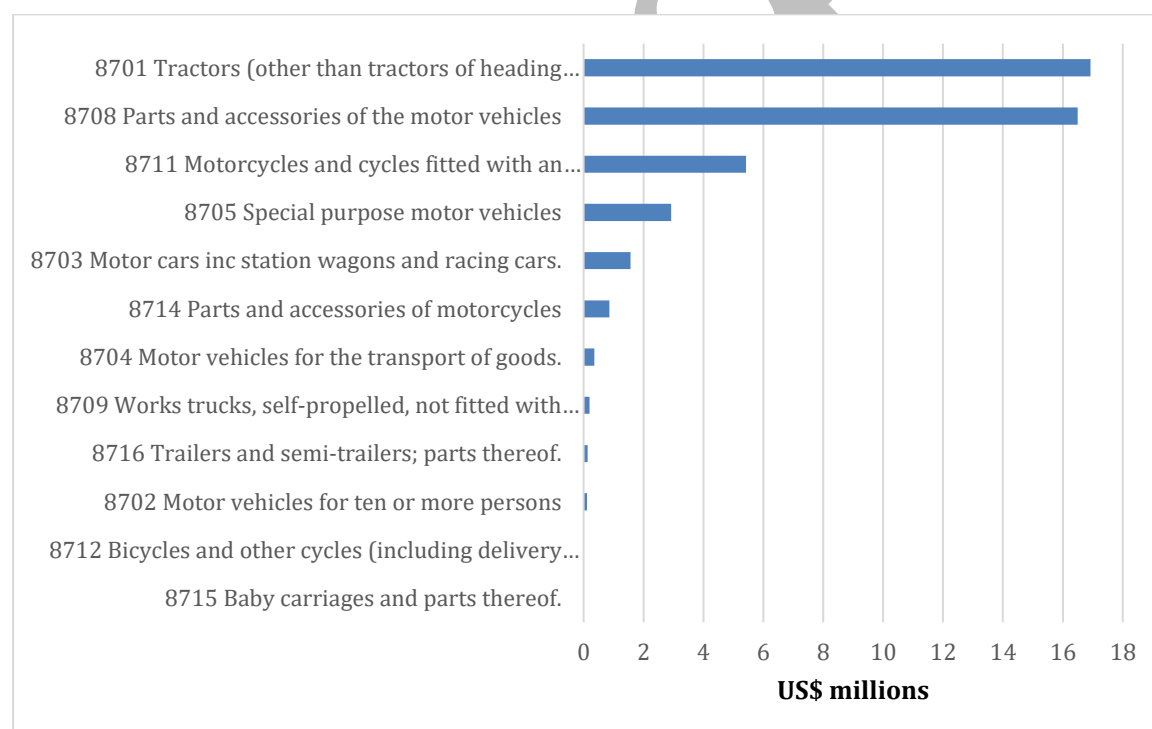
## 4.2.2 Impact on balance of trade

### 4.2.2.1 Scope for export promotion

#### 4.2.2.1.1 Pakistan's current export profile for HS 87

Pakistan's exports in the auto sector (HS87<sup>16</sup>) totaled US\$45 million in 2015, representing 0.2% of Pakistan's total exports. This comprises largely tractors, motorcycles and auto parts as shown in Figure 4-9.

Figure 4-9 Export value of Pakistan's auto exports, 2015

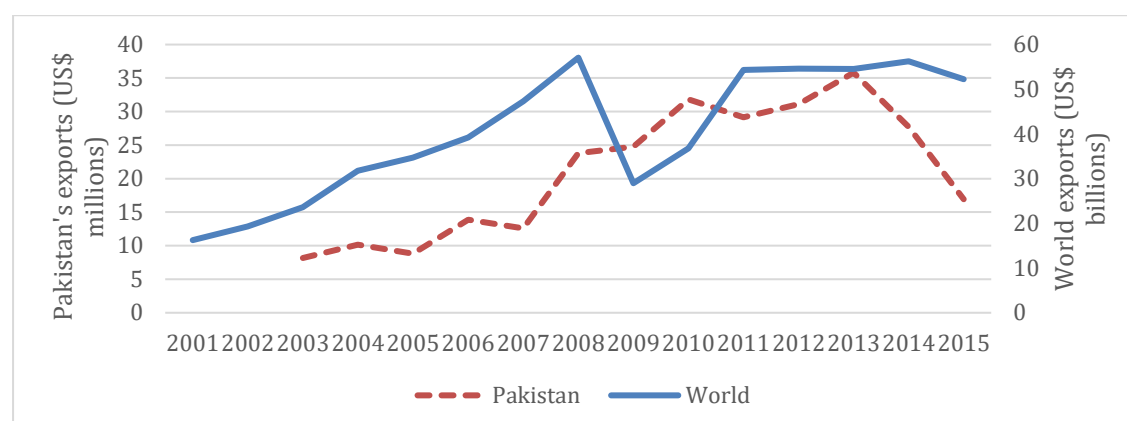


Data source: UN Comtrade, downloaded February 2017

The trends in export for the top three exports (Figure 4-10, Figure 4-11 and Figure 4-12) show that in recent years, the growth in Pakistan's exports for these products has been slower than world export growth, an indication that Pakistan is losing market share globally.

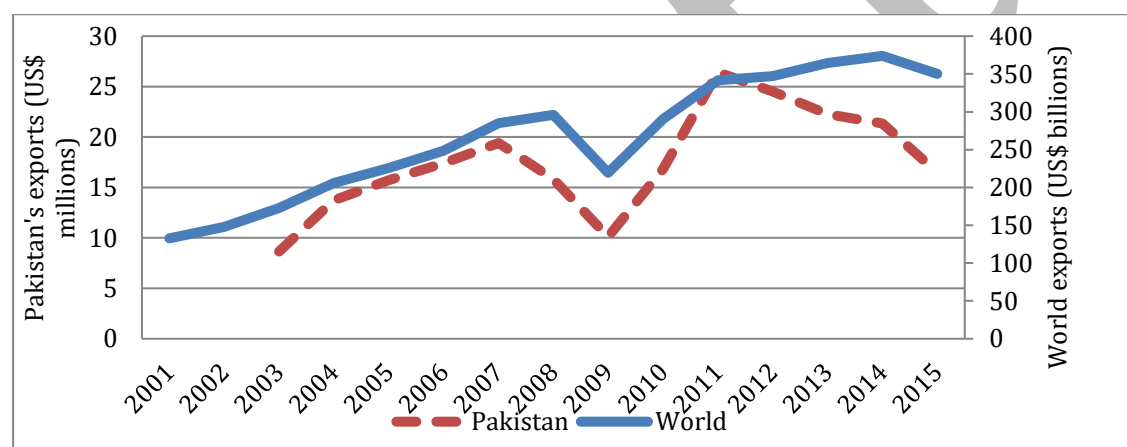
<sup>16</sup> HS87 category is "vehicles other than railway or tramway rolling-stock, and parts and accessories thereof"

**Figure 4-10 Export value of tractors (HS8701)**



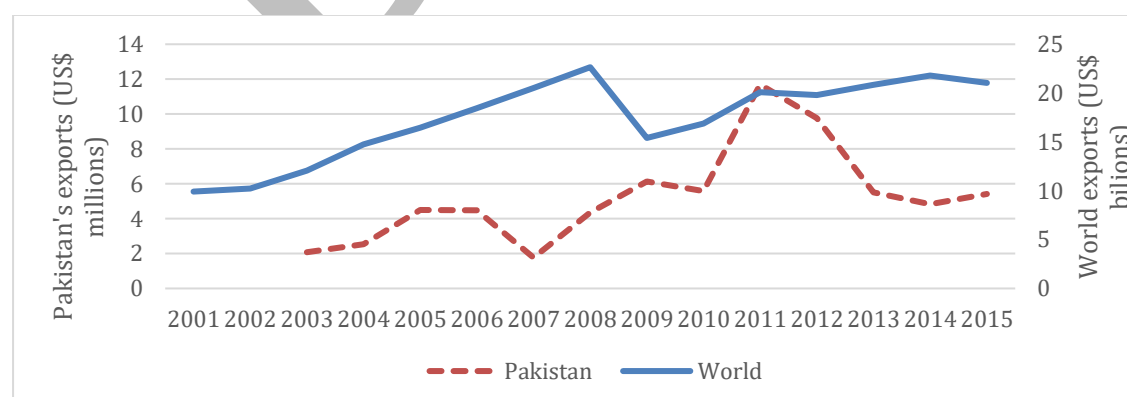
Data source: ITC Trade map 2017

**Figure 4-11 Export value of auto parts (HS8708)**



Data source: ITC Trade map 2017

**Figure 4-12 Export value of Motorcycles (HS 8711)**

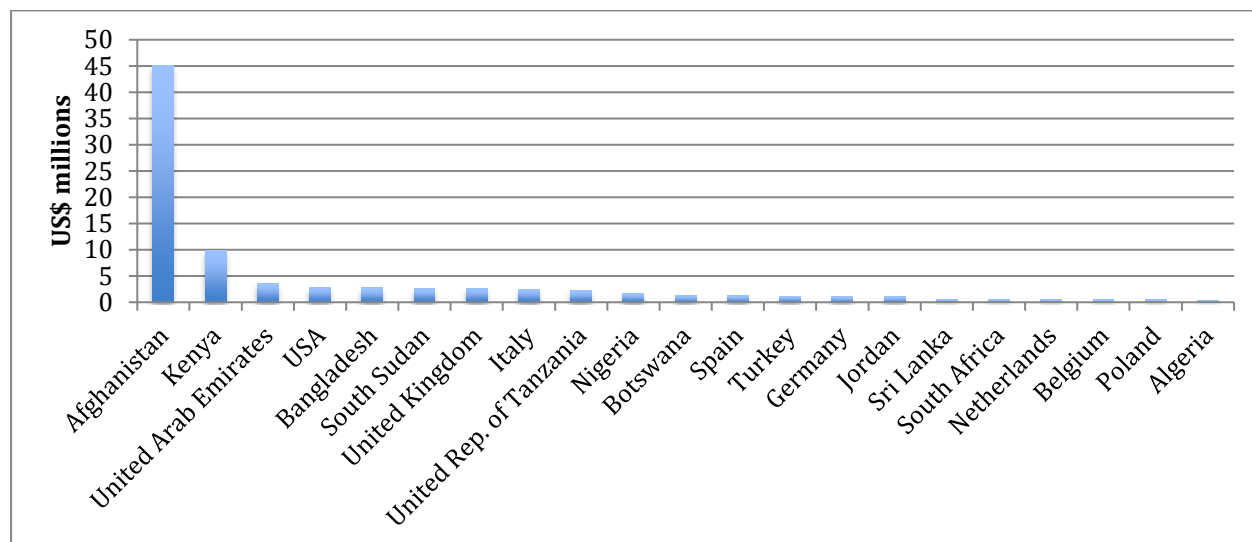


Data source: ITC Trade map 2017

Figure 4-13 shows that Afghanistan is by far Pakistan's most important export destination for the auto sector. China (not shown) imports just US\$ 276,048 from

Pakistan's auto sector, which makes it the 29th largest export destination for Pakistan in the auto sector.

Figure 4-13 Pakistan's top 20 export destinations for HS87, 2015

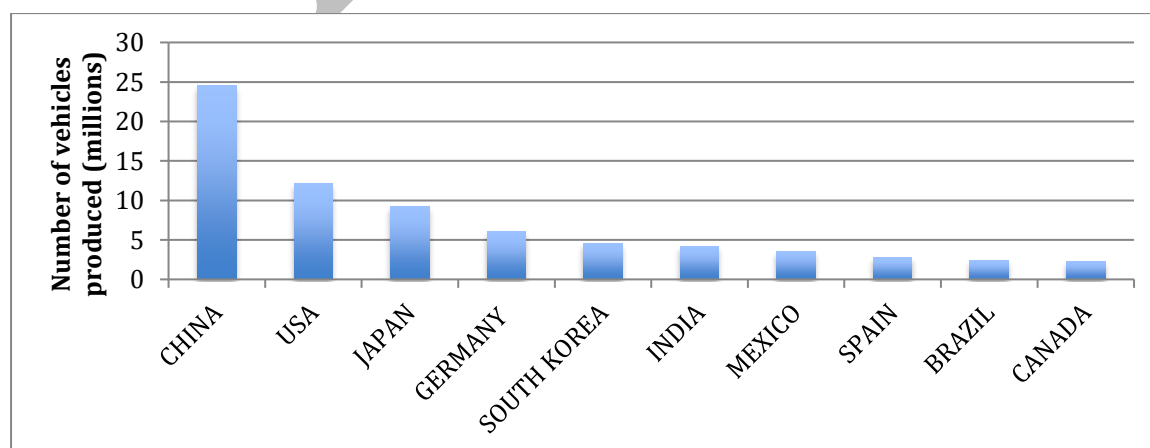


Data source: UN Comtrade, downloaded February 2017

#### 4.2.2.1.2 Potential to export to China

The CPEC infrastructure will improve logistics through the length of the country, making it easier, quicker and more economical to access both domestic and international markets. Some of the largest changes are expected in the north of Pakistan, making it easier to connect to China and to the Central Asian countries. China has the highest volume of vehicle production in the world, producing 24.5 million vehicles – 26% of the global production of vehicles, and more than twice the production of the next largest vehicle manufacturer, USA (Figure 4-14). This makes it an attractive, though currently almost completely unused, market for auto part manufacturers in Pakistan.

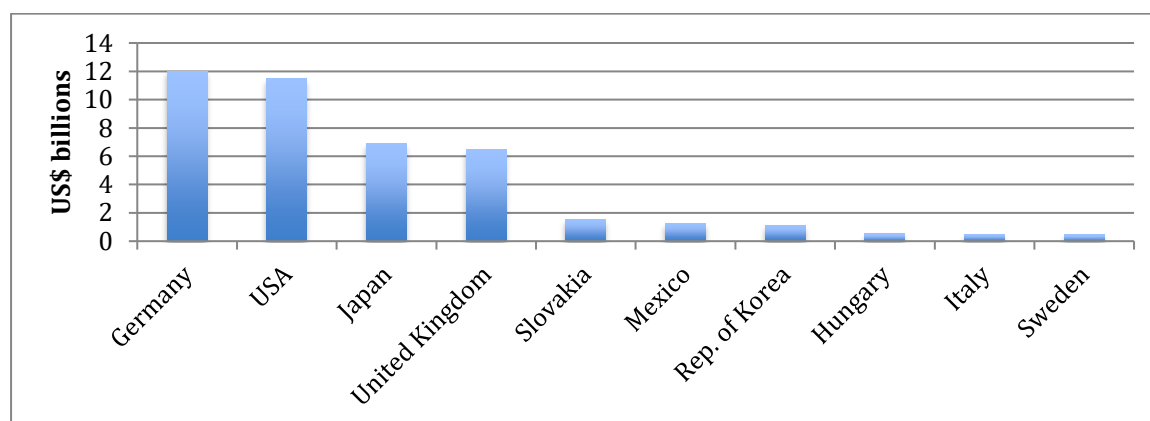
Figure 4-14 Top ten motor vehicle producing countries - all vehicles, 2015



Source: OICA 2017 Note: Germany's vehicle production data includes only cars and LCVs

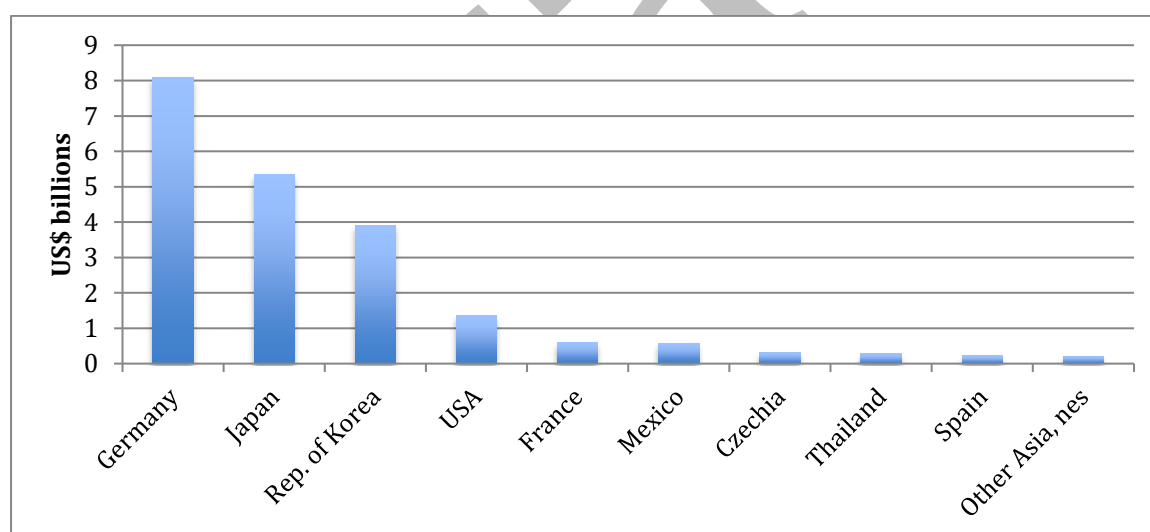
In 2015, China imported US\$ 69.6 billion in automotive products (HS 87). 97% of these imports are concentrated in two types of products: Motor cars (HS 8703) make up 63 per cent of the import value and auto parts (HS8708) makes up 34 per cent. Figure 4-15 and Figure 4-16 show the major import partners for the two key import categories in the automotive sector.

**Figure 4-15 Top ten Chinese import partners in motorcars (HS8703), 2015**



Data source: UN Comtrade, downloaded February 2017

**Figure 4-16 Top ten Chinese import partners in auto parts (HS 8708), 2015**

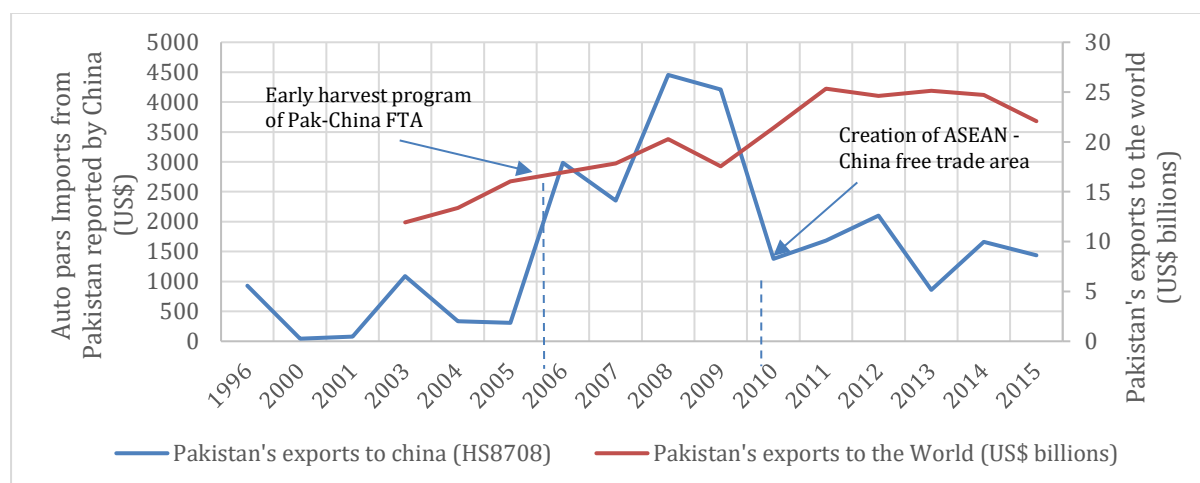


Data source: UN Comtrade, downloaded February 2017

Of China's total auto parts imports of US\$ 23 billion, Pakistan's share is a negligible US\$1440. In 2015, 87 countries exported more auto parts to China than Pakistan did. Despite the fact that Pakistan's auto parts sector has made inroads into foreign markets, clearly, the Chinese market is currently not one of them. Pakistan's auto parts (HS8708) exports to all countries combined represent 0.07% of Chinese imports of auto parts (HS8708). Even if Pakistan could cater to 0.01% of the Chinese auto parts imports in HS8708, that would represent a 40% increase in Pakistan's export earnings from HS 8708.

The Pak-China FTA was signed in November 2006, with the early harvest plan effective from January 2006. This is reflected in the improved flow of auto parts from Pakistan to China from 2006 to 2009 (Figure 4-17). However, this level has not been sustained in recent years. One of the contributing reasons could be the creation of the ASEAN-China free trade area that eliminated tariffs on 90% of imported goods traded between the ASEAN countries (Brunei, Indonesia, Malaysia, Philippines, Singapore and Thailand) and China, thereby eroding the relative advantage afforded to Pakistan by the Pakistan-China FTA.

Figure 4-17 Auto parts (HS 8708) imports reported from Pakistan by China, 1996-2015



Data Source: UN Comtrade, downloaded February 2017

Secondly, China's Category 1 offer list, which lists products for which tariffs are eliminated, does not contain any of Pakistan's current auto parts exports. Some of Pakistan's exports are, however, in the Category 2 list which proposes tariffs of 0-5% in five years, and some on the Category 3 list which offers a reduction of 50% on the margin of preference in five years or Category 4 which offers a reduction of 20% on the margin of preference in five years. The FTA status of all of Pakistan's export categories in auto parts (HS 8708) is shown in Table 4-1.

Pakistan's utilization of the FTA stands at just 5% of the tariff lines compared with China's 57% utilization of the tariff lines offered by Pakistan.<sup>17</sup>

Table 4-1 Pak-China FTA status of Pakistan's exports in Auto parts (HS8708), 2015

FTA status	Commodity HS Code	Export Value (US\$)	% of Pakistan's total HS 8708 exports	Description
Category 2	870899	9128731	55.36	Other parts and accessories : //Other
Category 2	870840	3262570	19.78	-Gear boxes and parts thereof

<sup>17</sup> Pakistan Business Council (2013) "Preliminary Study of Pakistan China trade partnership post FTA"

<b>Category 3 &amp; 4</b>	870829	2375056	14.40	Other parts and accessories of bodies (including cabs) : // -- Other
<b>Category 3</b>	870891	925387	5.61	Radiators and parts thereof
<b>Category 2</b>	870810	386605	2.34	Bumpers and parts thereof
<b>Category 2</b>	870894	133046	0.81	Steering wheels, steering columns and steering boxes; parts thereof
<b>Category 2</b>	870893	108463	0.66	Clutches and parts thereof
<b>Category 2</b>	870870	92158	0.56	Road wheels and parts and accessories thereof
<b>Category 3</b>	870880	29206	0.18	Suspension systems and parts thereof (including shock-absorbers)
<b>No concession (Category 5)</b>	870830	28130	0.17	Brakes and servo-brakes; parts thereof
<b>Category 2</b>	870850	16536	0.10	Drive-axles with differential, whether or not provided with other transmission components, and non-driving axles; parts thereof
<b>Category 3</b>	870821	4564	0.03	Safety seat belts

Source: UN Comtrade for trade data, FTA details from Ministry of Commerce  
[http://www.commerce.gov.pk/?page\\_id=205](http://www.commerce.gov.pk/?page_id=205)

A matching exercise can be undertaken of Pakistan's exports of auto parts with China's imports of auto parts at the 6-digit level. Table 4-2 shows China's top auto parts imports. Gear boxes comprise 42% of China's auto parts imports from the world. Gear boxes are also Pakistan's second most important export in auto parts to the world, representing 20% of auto parts exports. Similarly, steering wheels, brakes and brake parts, safety seat belts and parts and radiators and parts are all both exported by Pakistan and imported by China.

**Table 4-2 China's top auto parts imports (within HS8708), 2015**

HS Code	Commodity	Import value (US\$ billions)	% of China's auto parts imports (8708)
<b>870840</b>	Gear boxes and parts thereof	97.92	41.95
<b>870829</b>	Other parts and accessories of bodies (including cabs) : // -- Other	46.38	19.87
<b>870899</b>	Other parts and accessories : // -- Other	19.57	8.39
<b>870894</b>	Steering wheels, steering columns and steering boxes; parts thereof	18.73	8.03
<b>870830</b>	Brakes and servo-brakes; parts thereof	9.28	3.98
<b>870850</b>	Drive-axles with differential, whether or not provided with other transmission components, and non-driving axles; parts thereof	8.06	3.45
<b>870880</b>	-Suspension systems and parts thereof (including shock-absorbers)	7.95	3.41
<b>870893</b>	Clutches and parts thereof	6.20	2.65
<b>870895</b>	Safety airbags with inflator system; parts thereof	5.71	2.44
<b>870892</b>	Silencers (mufflers) and exhaust pipes; parts thereof	3.80	1.63
<b>870891</b>	Radiators and parts thereof	3.48	1.49



<b>870810</b>	Bumpers and parts thereof	3.16	1.35
<b>870870</b>	Road wheels and parts and accessories thereof	2.17	0.93
<b>870821</b>	Safety seat belts	1.01	0.43

Source: UN Comtrade, downloaded February 2017

Despite this seeming match in traded items, Pakistan has not been able to enter Chinese markets. It would require a detailed investigation to explore the factors that have prevented Pakistani producers from accessing Chinese markets. In particular, tariff structure for Pakistan should be at par with that offered to China's other trading partners, and non-tariff barriers should be rationalised and minimised through effective negotiation. Trade policy and industrial policy have to mutually complement each other to be effective. Pakistan's federal industrial policy in fact explicitly recognises trade policy as an instrument of industrial policy.<sup>18</sup>

### Accessing Automotive Global Value Chains

Given the large scale of the Chinese vehicle market, it is important to explore the possibility of fitting into Chinese vehicle value chains. The production of cars is now organised around global value chains (GVCs), with tasks and functions spread over several regionally dispersed companies. The larger parts, in terms of volume and/ or weight (e.g., engines, transmission, seats), and those that are specific to regional models, are typically produced closer to final assembly plants. Lighter and more generic parts such as tyres, batteries and wire harnesses, can be produced in countries where low labor costs and economies of scale offset the transport costs.

Value chains offer a far greater scope for technology transfer, as they are based on more detailed exchanges of information, technology and components than the traditional knowledge transfers of the past. Auto parts must be exactly compatible with the final product so the OEMs are directly involved in providing all the required technology and services that may not otherwise be available to the value chain supplier. This can include intellectual property, trademarks, managerial, business and marketing skills and organizational models.<sup>19</sup>

This allows nations with lower wages to industrialize much more rapidly than was previously possible. This is exemplified by China's experience itself, which combined its availability of cheap labour with the technology acquired from more technologically advanced countries to increase its share of world manufacturing from 3 per cent to 19 per cent in two decades.

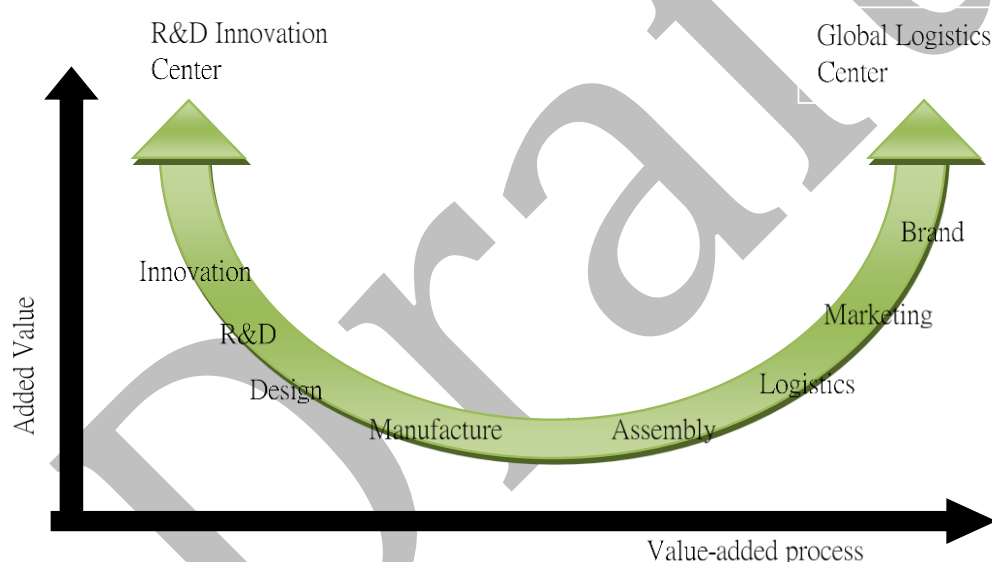
<sup>18</sup> "Pakistan's industrial Policy: It's Spatial Aspects and Cluster Development in Pakistan" (2010) available at [https://www.researchgate.net/publication/266211382\\_INDUSTRIAL\\_POLICY\\_ITS\\_SPATIAL\\_ASPECTS\\_AND\\_CLUSTER\\_DEVELOPMENT\\_IN\\_PAKISTAN](https://www.researchgate.net/publication/266211382_INDUSTRIAL_POLICY_ITS_SPATIAL_ASPECTS_AND_CLUSTER_DEVELOPMENT_IN_PAKISTAN)

<sup>19</sup> Taglioni et al., 2015

Afraz et al (2016)<sup>20</sup> provide a detailed evaluation of Pakistan's potential to contribute to value chains, which is reproduced below:

"Pakistan is currently at the lowest rung of auto-part manufacturing — the replacement market for older models, and in basic manufacturing. There are no local Tier 1 suppliers that supply to global value chains. While many local manufacturers supply directly to local OEMs, and have established technical collaborations with global Tier 1 suppliers, they have not been able to enter OEM GVCs so far. Basic manufacturing of the kind engaged in by local firms is in itself the lowest value process in the production chain. As Figure 4-18 below illustrates, the services on either side of basic manufacturing and assembly create higher value, and it is imperative to develop these skills and services to ensure better and higher value participation in GVC.

**Figure 4-18 Smiley model of value addition**



Source: World Economic Forum, 2012 which refers to Business Week International, 2005

Although not Tier 1 suppliers globally, Pakistani manufacturers have at least taken the first step on the technology ladder. Taiwan also started with a vending industry that was small, fragmented, highly protected and inefficient. It became competitive in exporting replacements parts for American and Japanese old car models and now produces parts for export in the global market. The example demonstrates that entry into GVCs is an incremental process and the Pakistani auto parts industry can be considered at the inception stage.

<sup>20</sup> Afraz, Nazish, Faisal Bari, Nadia Mukhtar and Umbreen Shaikh (2016) "Regional Competitiveness Report on the Auto Sector" IDEAS and World Bank. Available at <http://ideaspak.org/images/Publications/Fiscal%20Federalism/IDEASAutoSectorReport.pdf>

However, as discussed earlier, in order to progress beyond this inception stage into successful GVC integration there are two vital pre-requisites. Firstly, the business environment has to be attractive and has to be able to protect foreign investments and property. Secondly, for cross-border manufacturing units to work successfully, it is imperative to have smooth and reliable trade flows, which includes physical infrastructure.<sup>21</sup>

....

“The development of a non-exclusive supply chain of global standards has also meant that domestic firms in developing countries have the opportunity to leapfrog the auto development ladder to become OEMs themselves in a far shorter span of time, and at a fraction of the cost of first generation automakers. Chinese automaker Chery is a key example of such a development. Chinese and Indian firms have acquired well established, but distressed companies in developed markets to assist in the process. For example, Jaguar Land Rover, under the ownership of Tata India, is now looking to invest US\$606 million in factory expansion in England, having opened its first overseas plant in China in October 2014. Similarly, The London Taxi Company, now owned by China’s Geely, is looking to invest US\$379 million in a new plant in England.<sup>22</sup> These developments all signal a faster relocation of the global auto industry towards growing Asian markets, particularly China.

Sturgeon and Van Biesebroeck (2015) note, however, that the auto industries in developing countries have been restricted to those that offer large and growing end markets, e.g., India, China and Brazil. It is only in these countries that it is profitable to customize final products to local tastes and conditions. In order to do this, they have driven the co-location of design centers and global suppliers to these large markets too. This leads to the development of domestic Tier-2 and Tier-3 suppliers throughout the value chain. However, developing countries that are located close to large developed markets or trading blocs also have a potential upside in supplying parts to them. For example, Thailand in ASEAN and in East Asian markets, and Mexico in NAFTA, have both benefitted from being proximate enough to supply parts on a just-in-time basis. Mexico has a history of producing wire harnesses and automotive electronics near the Mexico/ USA border to benefit from the cheap labor. Similarly, while Pakistan does not offer the large market sizes of China and India, its proximity to these major new auto hubs, should generate substantial opportunities in the auto value chain.

China in particular, with its large auto industry and demonstrated commitments to investing in Pakistani infrastructure, provides important opportunities for Pakistan in entering GVCs through the China route. Proximity to China, an established light engineering base and a good trading relationship with China, could make Pakistan an

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<sup>21</sup> (Taglioni et al., 2015)

<sup>22</sup> (Financial Times, 2015)

attractive partner for Chinese firms looking to outsource, particularly in the face of China's rising labor costs."

The prerequisites mentioned in the extract (business environment, logistics, proximity to large markets) are all likely to hold true for Pakistan in the next few years. Logistics are the main target of the CPEC investments. CPEC investments also focus on energy supply, the main binding constraint for competitiveness of businesses in Pakistan. On the business environment, the Government of Punjab has made substantial investments. These changes are likely to naturally change market conditions that would improve the competitiveness of Pakistani auto parts manufacturers and consequently their ability to cater to Chinese markets. Encouraging Chinese investments in the automotive vehicle segment can accelerate this. For example, FAW's entry into the Pakistani market (as a joint venture with Al-Hajj) has led to important contracts with auto parts producers. These producers will now be better placed to supply to FAW vehicles in China. However, it will be important to negotiate access via the FTA, to ensure especially that Pakistan is at a level playing field with China's other import partners, particularly the ASEAN countries.

#### 4.2.2.1.3 Potential to export to Central Asian countries

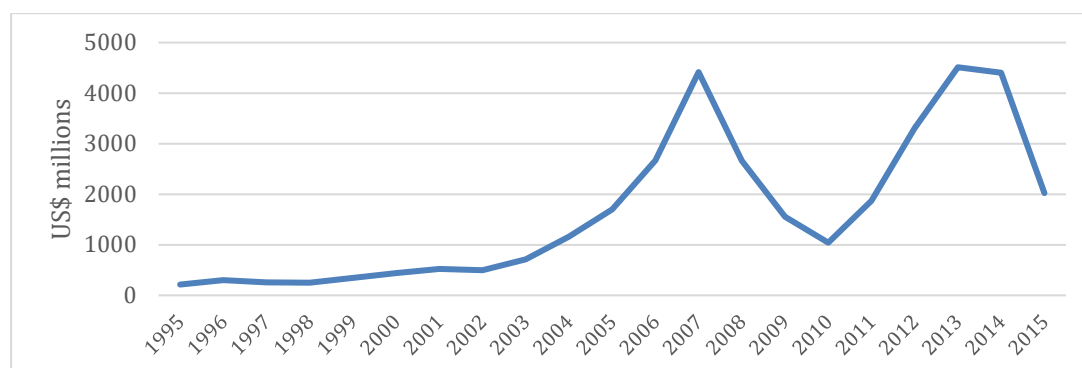
China, with the largest car production in the world and a shared border with three of the Central Asian countries, is a far more likely candidate than Pakistan for gaining access to the Central Asian automotive market. In light of this, this section presents an analysis of the auto sector prospects in Kazakhstan, in order to illustrate the parameters rather than to present a realistic opportunity for Pakistan. Kazakhstan is chosen due to its relatively large sized economy and better availability of trade data compared to the other Central Asian countries.

Kazakhstan has a small-scale car assembly capacity, producing 40,162 vehicles in 2014, which plunged to 14,477 vehicles in 2015.<sup>23</sup> Automotive imports have shown a sharp decrease in 2015, reflecting the dip in both imports and exports of all products due to a slowdown in the economy. This is shown in Figure 4-19. This can be expected to rise in the near future as duties on foreign cars are expected to drop from 25% to 12.5% following Kazakhstan's membership of the WTO.<sup>24</sup>

<sup>23</sup> OICA 2017 <http://www.oica.net/category/production-statistics/2015-statistics/>

<sup>24</sup> PWC Kazakhstan (5 April 2016) "Kazakhstan's automotive sector: A window of Opportunity" [http://pwc.blogs.com/growth\\_markets/2016/04/kazakhstans-automotive-sector-a-window-of-opportunity-.html](http://pwc.blogs.com/growth_markets/2016/04/kazakhstans-automotive-sector-a-window-of-opportunity-.html)

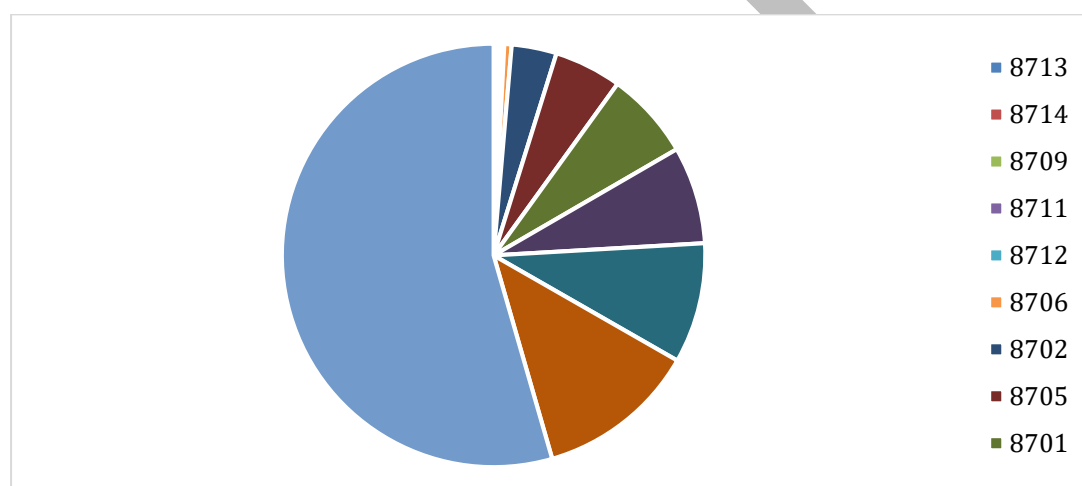
**Figure 4-19 Kazakhstan's automotive imports, value, 1995-2015**



Data source: UN Comtrade, downloaded February 2017

Figure 4-20 shows that automotive imports comprise largely assembled motor vehicles (passenger vehicles (HS 8703) which made up more than 50% of the value of imports in 2014. Vehicles for transport of goods (HS 8704)), auto parts (HS 8708) and car bodies (HS 8707) were also prominent imports.

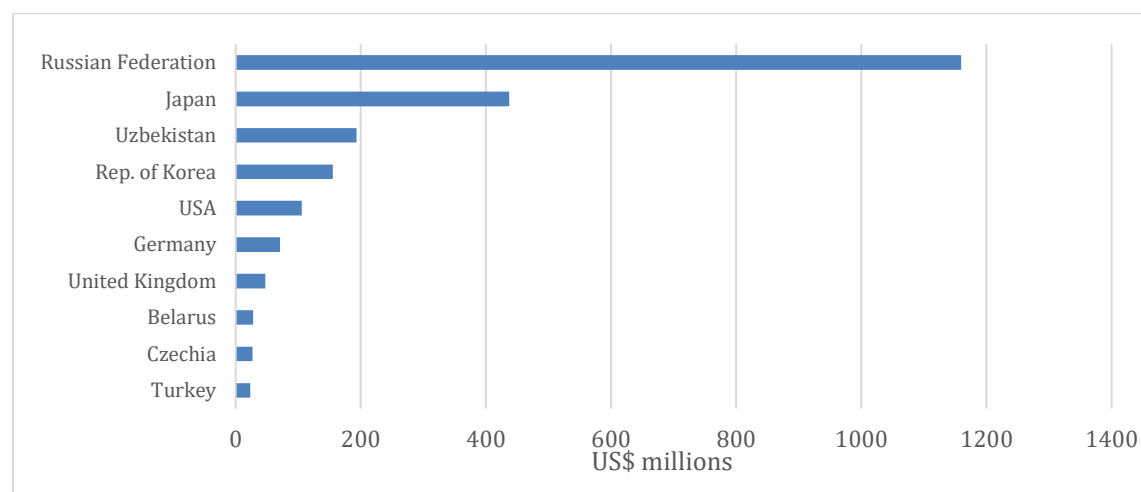
**Figure 4-20 Breakdown of Kazakhstan's automotive imports by HS code, 2014**



Data source: UN Comtrade, downloaded February 2017

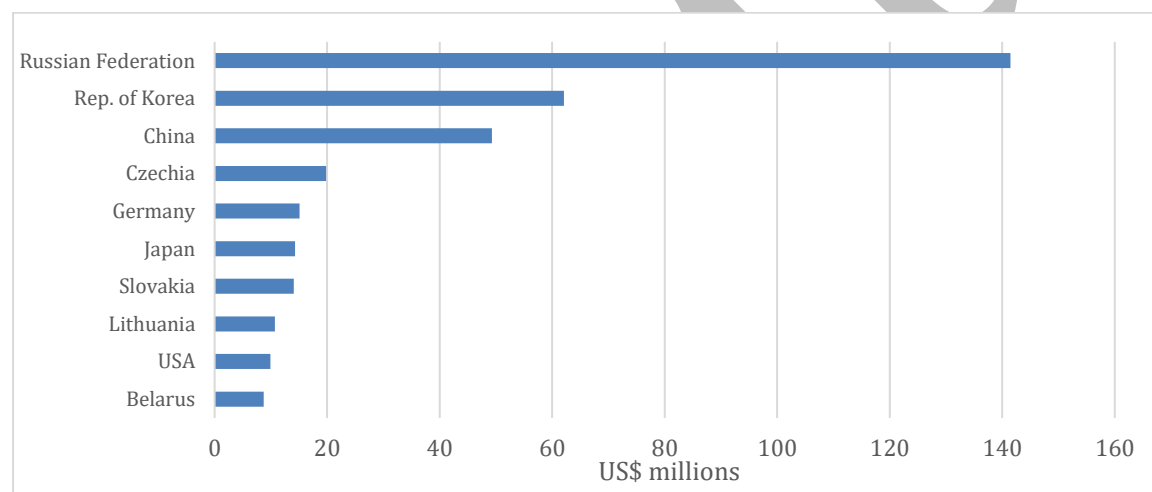
Most of these imports currently come from Russia (Figure 7-20, Figure 7-21 and Figure 7-22).

**Figure 4-21 Kazakhstan's top 10 import partners for passenger vehicles (HS 8703) in 2014**



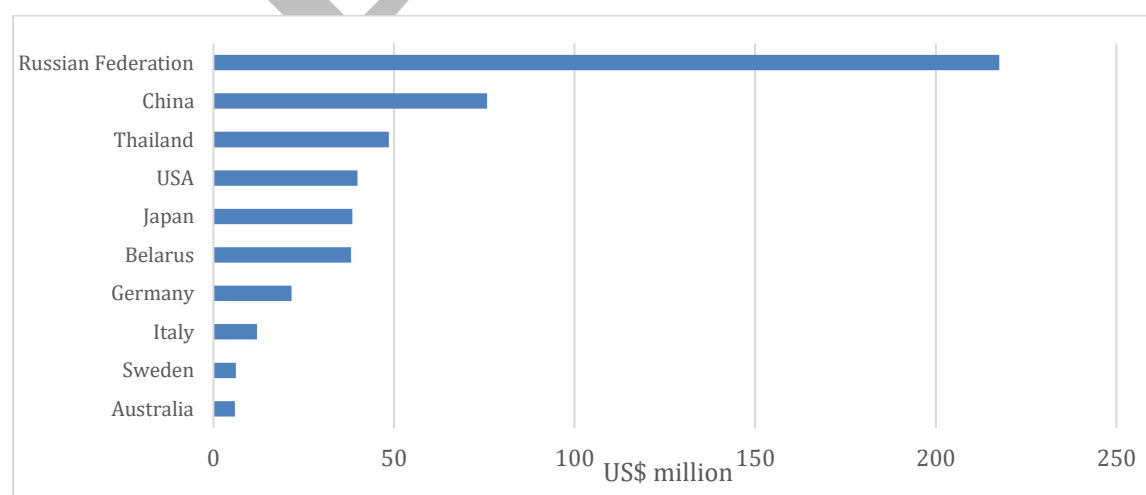
Data source: UN Comtrade, downloaded February 2017

**Figure 4-22 Kazakhstan's top 10 import partners for auto parts (HS8708) in 2014**



Data source: UN Comtrade, downloaded February 2017

**Figure 4-23 Kazakhstan's top 10 import partners for vehicles for the transport of goods (HS8704) in 2014**



Data source: UN Comtrade, downloaded February 2017

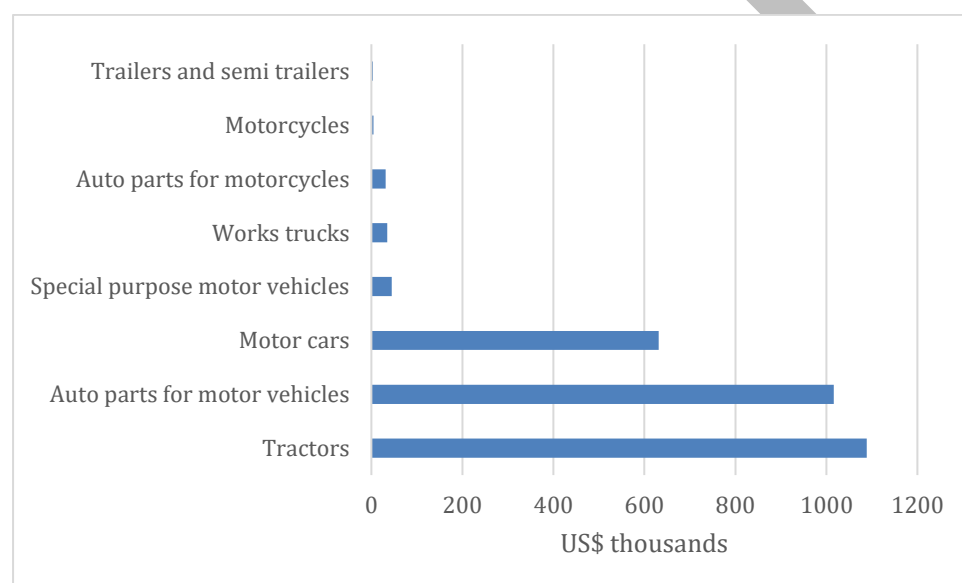
#### 4.2.2.1.4 Potential to export to UAE and Kenya

Kenya and the UAE are Pakistan's second and third most important export partners respectively, after Afghanistan (as shown in Figure 4-13). Exports of tractors represents 81% of the export value in the automotive sector to Kenya, and auto parts represent 16%. There are also small quantities of special purpose vehicles and vehicles for the transport of goods.

Top exports to the UAE are shown in Figure 4-24. Again, tractors and auto parts for motor vehicles make up the largest share, though there is also a prominent share of motorcars.

Given expected improvements in the logistics of reaching Gwadar and Karachi from Punjab, costs of reaching these markets are expected to lower. Having already established inroads in these countries, these sectors are a promising investment opportunity.

**Figure 4-24 Pakistan's automotive exports to the UAE, 2015**



Data source: UN Comtrade, downloaded February 2017

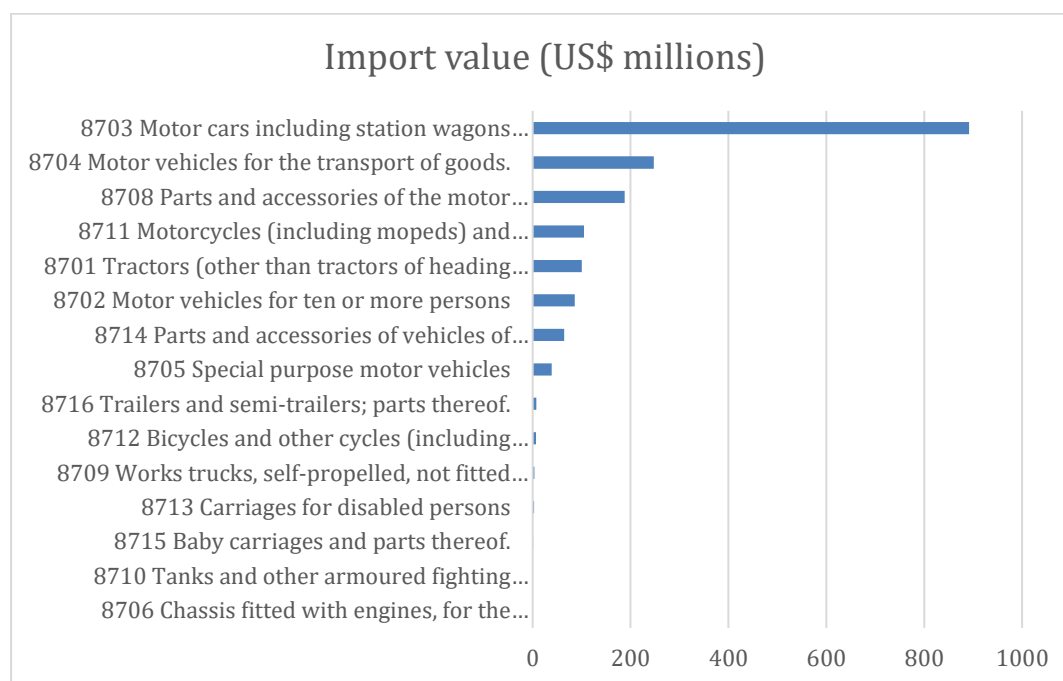
#### 4.2.2.2 Scope for import substitution

##### 4.2.2.2.1 Pakistan's import profile in HS 87

Pakistan imports in the auto sector (HS87) total US\$ 1.74 billion, representing 4 per cent of Pakistan's total imports. This comprises largely motorcars (51% of automotive imports), vehicles for the transport of goods (14%) and parts and accessories of cars (11%), as shown in Figure 4-25. Pakistan's imports in the automotive sector have increased sharply in 2015 in contrast with the global dip in automotive imports (Figure 4-26). Imports of assembled cars have also increased

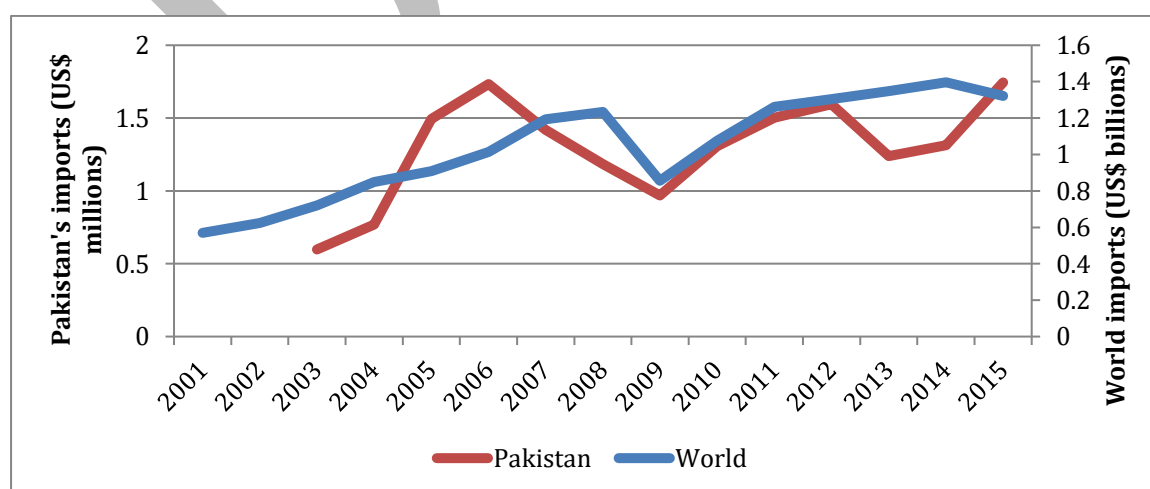
(Figure 4-27), possibly due to the limited choice available in the domestic market in the face of increased demand. Increased investment in vehicle assembly by new companies, which is explicitly encouraged by the policies articulated in the new Auto Development Policy 2016<sup>25</sup>, is likely to improve competition, increasing choice and putting downward pressure on prices. This has the possibility of reducing imports of assembled vehicles.

Figure 4-25 Pakistan's auto imports, 2015



Source: UN Comtrade, downloaded February 2017

Figure 4-26 Pakistan automotive imports compared to world imports, 2001-2015

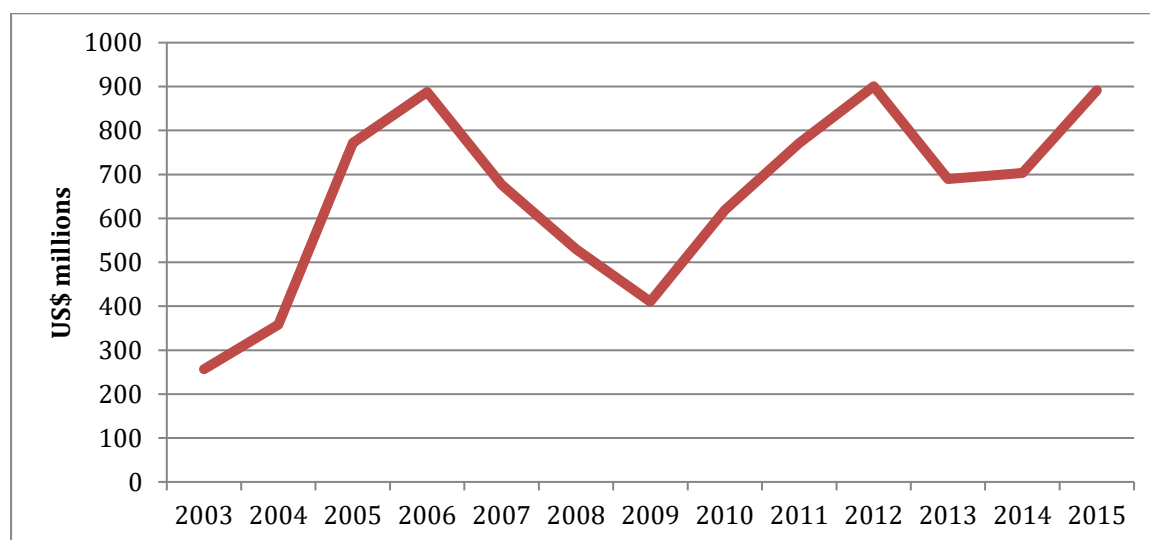


Data source: ITC trade map, downloaded February 2017

<sup>25</sup> The Auto Development Policy is available at Engineering Development Board's website <http://www.engineeringpakistan.com/ADP%202016latest.pdf>

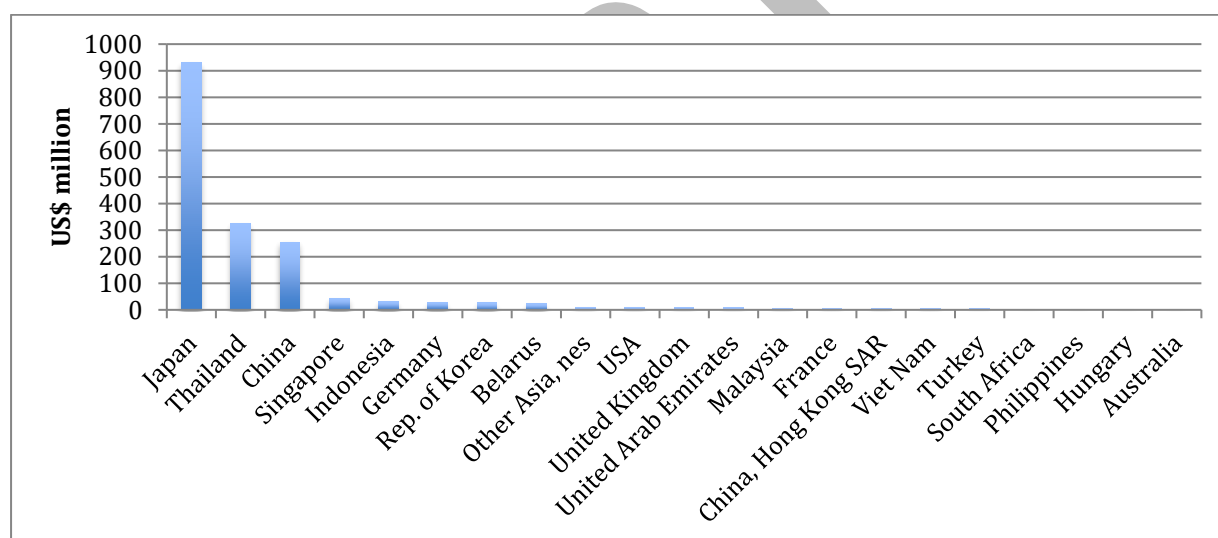


**Figure 4-27 Pakistan's imports of Motor Vehicles (HS 8703) 2003-2014**



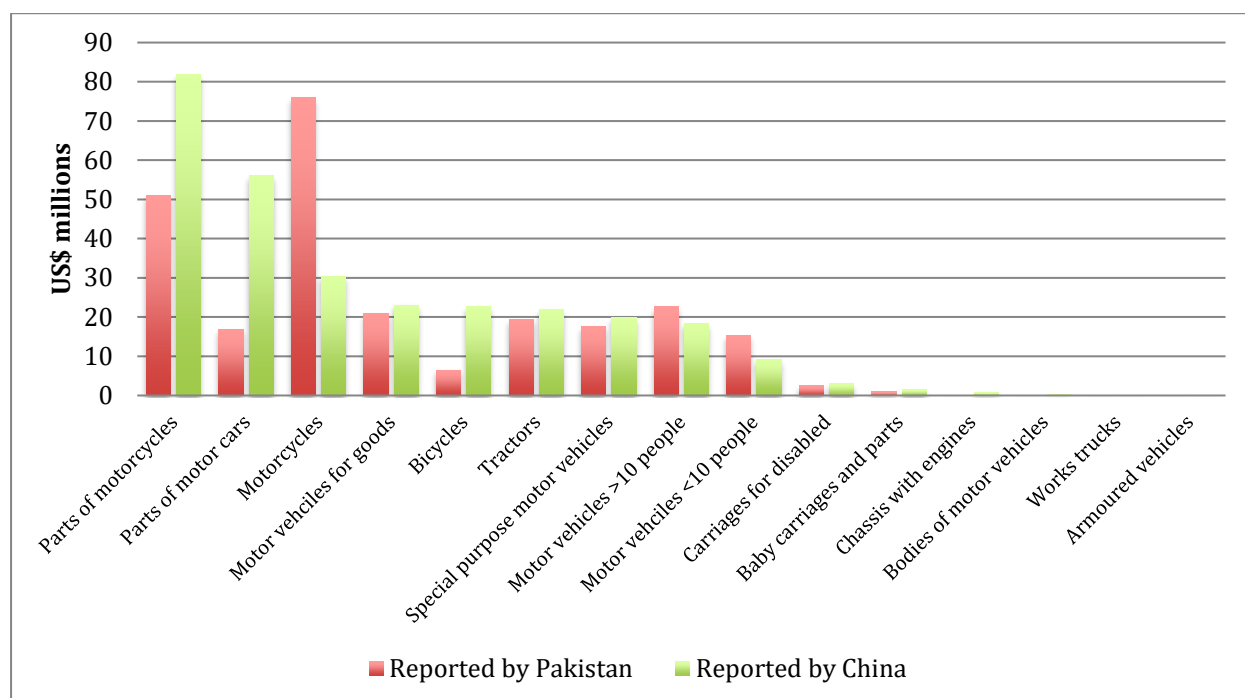
Source: UN Comtrade, downloaded February 2016

**Figure 4-28 Pakistan's top 20 import partners for HS 87, 2015**



Source: UN Comtrade, downloaded February 2016

Figure 4-29 Pakistan's automotive imports from China, 2015



Source: UN Comtrade, downloaded February 2016

China is Pakistan's third most important import partner (Figure 4-28) for the automotive sector as a whole. Figure 4-29 illustrates the main imports from China to Pakistan in 2015, both those reported as imports by Pakistan, and those reported as exported to Pakistan by China. Apart from demonstrating the top import categories, it also shows an interesting feature of Pak-China trade: a discrepancy in the reported values depending on the reporting country.

Typically, Pakistan reports lower values than China across all import categories. This is exemplified by parts of motorcars reported by China, which are almost 3.5 times higher than those reported by Pakistan. Discrepancies such as these have been ascribed to underreporting and undervaluing. In an unusual reversal of this anomaly, however, Pakistan reports 2.5 times more imported motorcycles from China than China reports having exported. Furthermore, this anomaly appears to have amplified over time (Figure 4-30). While it will require a detailed investigation to uncover the reasons from this, it is clear that there is a large element of under and over invoicing in Pak-China trade, and possibly non-Chinese goods being incorrectly imported as Chinese goods. If trade policy is to be effective as an instrument of industrial policy, it will be important to ensure implementation of announced policies and rules.

Figure 4-30 Trade reporting discrepancy in motorcycles, 2003-2015

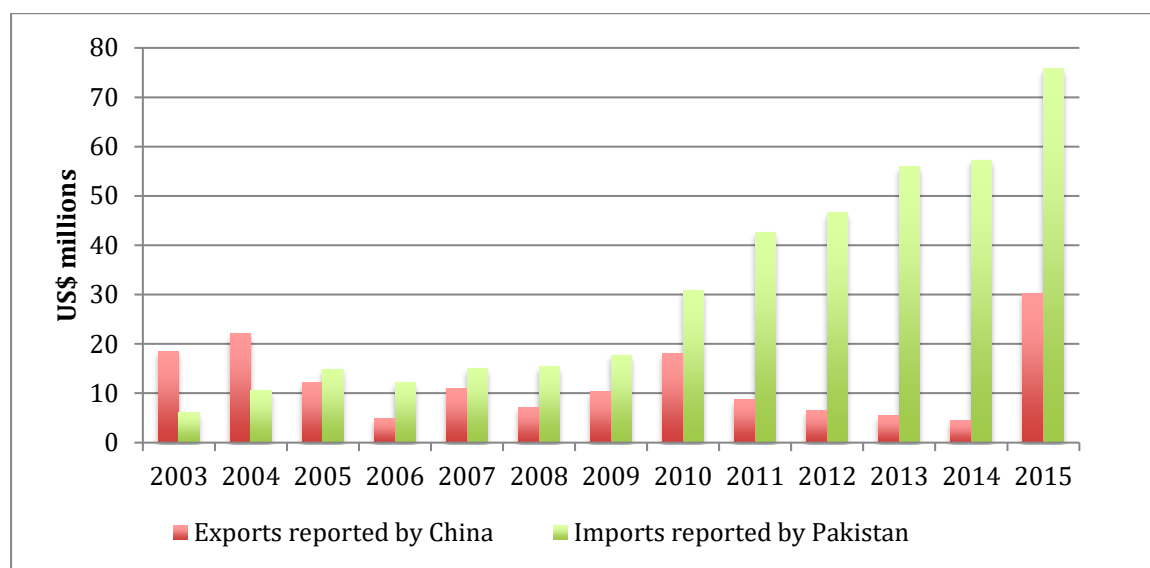
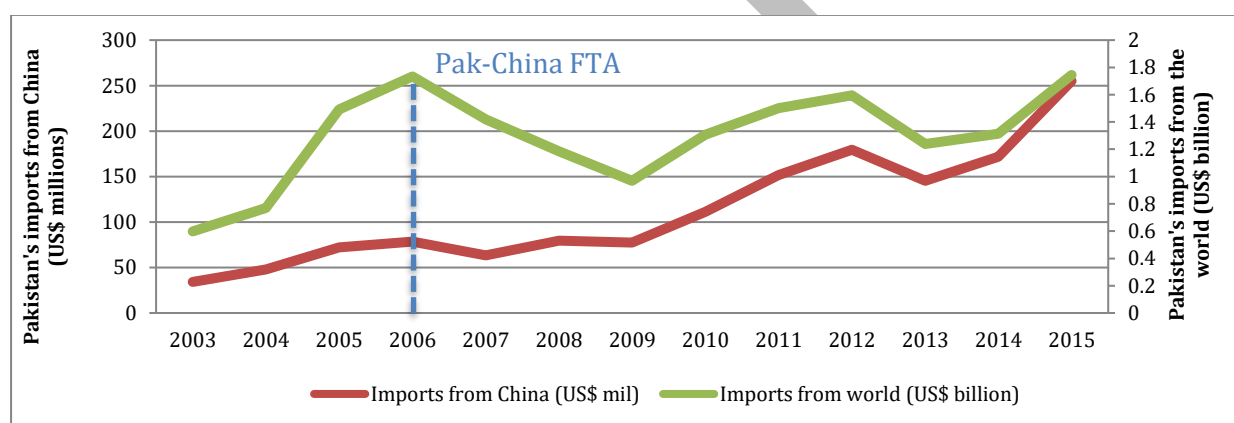
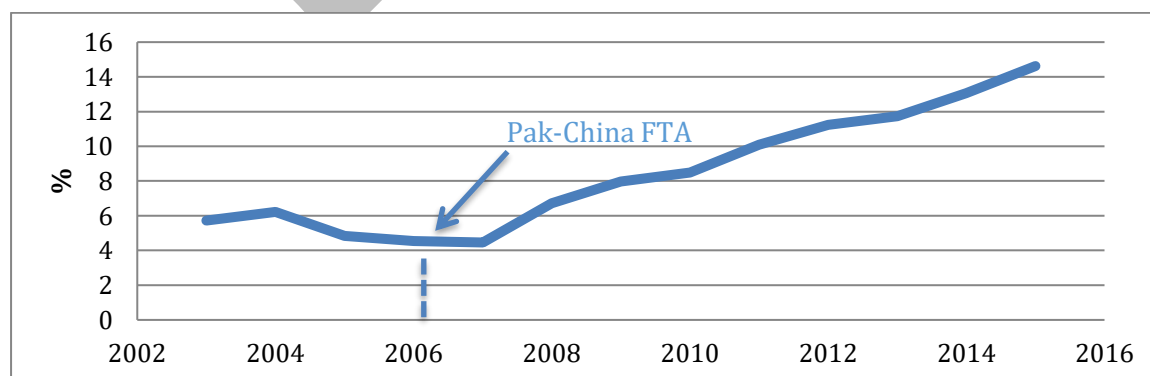


Figure 4-31 Pakistan's imports from China in the automotive sector (HS87), 2002-2015



Source: UN Comtrade, downloaded February 2017

Figure 4-32 China's share in Pakistan's automotive imports, 2002-2015



Auto parts, both those for motorcars and for motorcycles, are a major imported product group from China. With an improvement in logistics, these imports (as

indeed imports across all product categories) are likely to rise. Figure 4-31 shows that Pakistan's automotive imports from China have increased sharply following the FTA with China, and as shown in Figure 4-32, China's share in Pakistan's automotive imports has nearly tripled since the FTA in 2006. Improved logistics resulting from CPEC mean increased competition from Chinese manufactured goods, and there is a strong possibility that this trend in high imports from China will get a further impetus after the CPEC, at the cost of domestic producers of auto parts.

However, if Pakistan's auto parts sector experiences an increase in investment and competitive advantage, imports might decrease as the domestic auto sector develops the capacity to produce a greater variety of auto parts for the domestic industry and for export markets. This is dependent on being able to import raw material and machinery at a lower cost, successfully transferring technology and most importantly getting access to Chinese markets so that economies of scale can be achieved. Participation in GVCs therefore increases both exports and imports.

#### 4.2.3 Impact on competitiveness of other sectors

The auto parts sector produces inputs for the vehicle-manufacturing sector. In Pakistan, the two vehicle segments that are the most competitive, as indicated by export performance, are those for which the supply chain has been localised the most – tractors and motorcycles. As the auto parts sector develops, achieves economies of scale and becomes more competitive, there are likely to be spill-over impacts into the competitiveness of the vehicle segments too.

In the case of vehicle manufacturing, there is a high level of market concentration in all the segments, frequently giving rise to anti-competitive concerns. While there are 2000 auto parts manufacturers, there are typically no more than two or three manufacturers of each type of distinct auto part.

Investment in the automotive sector is therefore likely to increase competition, reducing prices and increasing choice and consumer surplus.

#### 4.2.4 Is it an enabling sector or an enabling technology?

Enabling sectors or technology are defined as those that are used in multiple industries for example energy, electronics and construction. Pakistan's industrial policy 2010 identifies steel, chemicals and fertilizers as the primary industrial sectors of Pakistan in that they support the competitiveness of linked industries. The European Commission uses a more sophisticated set of technologies that have applications in multiple industries. These are termed Key Enabling Technologies (KETs) and include micro and nanoelectronics, nanotechnology, industrial

biotechnology, advanced materials, photonics and advanced manufacturing technologies.<sup>26</sup>

The automotive sector is not considered an enabling sector or an enabling technology.

#### 4.2.5 What integration opportunities are there for local businesses?

Much of the automotive sector in Pakistan is based on collaborations with multinational firms:

- All three passenger car manufacturers are collaborative ventures with Japanese firms Toyota, Honda and Suzuki
- Both tractor manufacturers are also collaborative ventures: Millat tractors manufactures under license from Massey Furgusen, and Al-Ghazi is a technical collaboration with Case New Holland
- In the commercial vehicle sector, Hinopak Motors is a collaboration with Hino Motors Japan and Toyota Tsusho Corporation, and Master Motor Corporation Limited with Chinese firms Foton and Yuejin
- Honda Atlas, the leading motorcycle manufacturer, is a collaborative venture with Honda
- Many of the auto parts manufacturers produce under technical collaborations and licenses from global auto parts manufacturers. Over 100 technical assistance agreements and collaborations with foreign firms in the auto parts sector have been documented (Afraz et al (2016))

The joint ventures in the vehicle manufacturing segment support joint ventures downstream. For example, Toyota Japan has a partnership with Toyota Indus in Pakistan. Radiators for Toyota Indus Pakistan's cars are manufactured locally by Thal Engineering Pakistan. Thal Engineering, in turn, has a Technical Assistance Agreement with Denso, Toyota's global supplier of radiators. Tier 1 firms such as Denso are themselves global firms. Denso, for example has 38,000 active patents and operates in 189 sites in multiple countries at the moment. These technical assistance agreements help the domestic firm produce parts to Toyota's global standards and specifications. They are also an opportunity to transfer technology and build domestic capacity.

However, while these opportunities exist, it is not necessary that joint ventures or technology transfer will take place. To further facilitate transfer of technology, countries like China have followed active policies such as mandating that FDI has to be in the shape of joint ventures, where greater technology transfers are expected, or through incentivising and subsidising R&D in China to encourage firms to locate their technology development in China.

<sup>26</sup> For a discussion of Key Enabling Technologies see [https://ec.europa.eu/growth/industry/key-enabling-technologies\\_en](https://ec.europa.eu/growth/industry/key-enabling-technologies_en)

#### 4.2.6 Are there good investor prospects in this sector?

Several key vehicle manufacturers have expressed an interest in locating to Pakistan following the new Auto Policy 2016-21. The French company, Renault, and two South Korean companies, Kia and Hyundai have announced plans to start assembly in Pakistan.<sup>27</sup> Renault's first cars are expected to be in the market from 2018. Several other companies have also been reported to have visited for scoping the Pakistani market, indicating that there are good investor prospects in this sector.

#### 4.2.7 Does Punjab have the underlying assets and natural endowments to be competitive in this sector?

Since the production of automotive products does not depend on climate and land conditions, there is as such, no *natural* comparative advantage for any country in this sector. All countries that have successful automotive industries today have undertaken active industrial policy, some of which is no longer permissible under WTO rules (e.g., shutting the market completely to imports and local content requirements).

In terms of raw material, automotive parts use a range of material including metals and plastics, much of which is imported. Copper used in radiators, for example is imported. Many grades of steel that are used in forged parts are imported, though some parts use steel that is produced locally too. Plastic used for plastic parts is largely imported.

#### 4.2.8 Can Pakistan develop the infrastructure to compete in this sector? Are the barriers to growth in this sector easy to remove?

Several impediments to the growth of the automotive sector have been identified in recent research studies. Some of the impediments are common to all manufacturing industries, the most important of which are energy and business environment issues. Plans are already underway, as part of CPEC and otherwise, to improve these impediments.

Automotive specific growth constraints include a lack of domestic infrastructure to develop and implement quality standards. This impacts domestic consumers, but more importantly it impacts global competitiveness. The necessary infrastructure will require large investments and may not be realistic in the short term. In the absence of this, the Auto Policy 2016-21 proposes membership of Working Party 29 of the World Forum for Harmonisation of Vehicle Regulations under the United Nations. However, a more detailed plan with firm time-lines will be required for this to be an effective solution.

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<sup>27</sup> "Enter the New Players" (February 13, 2017) Dawn News <http://www.dawn.com/news/1314521>

Secondly, the sector has had inconsistent policies in the past: heavy tariff protection without an end time has been combined with frequent policy changes and lack of implementation of any of the investment incentive schemes that were part of the last Auto Policy. Together, these conditions have prevented the industry from maturing, and have led to a highly concentrated industry with little domestic or foreign competitive pressure and with low incentives to invest, upgrade and price competitively. This has meant that the expected benefits of technology spillovers and value addition have not been realized to their full potential. The Auto Policy 2016-21 has taken some steps in the direction of opening the domestic market to new entrants, and several new entrants are expected to start production by 2018. Policy stability is the remaining challenge and will be crucial to ensure that large investments are not deterred.

Additionally, the motorcycle and auto parts industry in particular are characterized by under- and over-invoicing and smuggling. These unregulated imports are typically low price and low quality, which precludes investment by Pakistani manufacturers. This also leads to a loss of revenue for the exchequer. Other trade issues include customs irregularities and informal payments, discrepancies in import valuation of parts and SROs, which create a disproportionate burden on small assemblers. This will require substantial improvements in the functioning of trade and customs regulations and implementation.

### 4.3 Social Inclusiveness

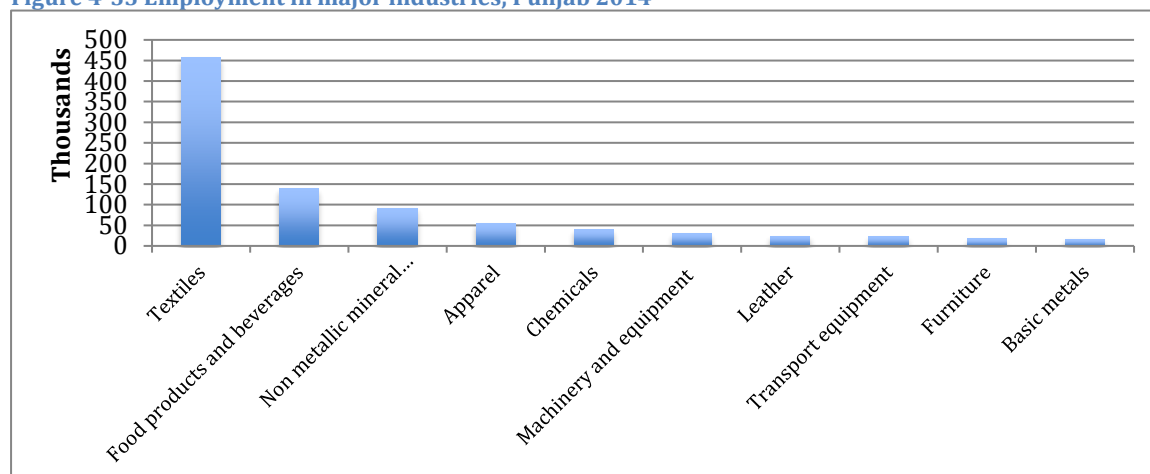
Social inclusiveness through industrial development can happen through two routes: employment creation and income distribution. Manufacturing creates direct and indirect jobs, and also plays an important role in generating and diffusing new technologies by creating feedback loops for accumulating human capital and improving institutions. In this way it can also increase average productivity, wages and family incomes.<sup>28</sup>

#### 4.3.1 Employment creation: Impact on quantity

In Punjab, transport equipment manufacturers employ 22,331 people, 2.25% of Punjab's industrial employment (Figure 4-33).

<sup>28</sup> This is articulated and developed in UNIDO (2016) "Industrial Development Report: The Role of Technology and Innovation in Inclusive and Sustainable Industrial Development" available at [https://www.unido.org/fileadmin/user\\_media\\_upgrade/Resources/Publications/EBOOK\\_IDR2016\\_FULLREPORT.pdf](https://www.unido.org/fileadmin/user_media_upgrade/Resources/Publications/EBOOK_IDR2016_FULLREPORT.pdf) downloaded February 2017

Figure 4-33 Employment in major industries, Punjab 2014



Source: Punjab Development Statistics 2015, Bureau of Statistics, Govt of Punjab

In addition, there is a large vending chain, and the Engineering Development Board, in conjunction with industry stakeholders, estimates that this comprises 2000 formal and informal auto parts manufacturers employing 200,000 people in Pakistan as a whole. These manufacturers in turn create jobs for their own sub-contractors, in raw material markets, in the transport companies that carry their products, in retail etc. These ripple effects in employment are known as employment multipliers.

Economy wide input-output tables can be used to calculate these employment multipliers by industry. While such detailed and recent input-output tables are not available for Pakistan, multipliers calculated for other countries suggest that automobiles have one of the highest employment multipliers. In the US, for example, Bivens (2003) calculates that every job in automotive parts and assembly creates 4.64 additional jobs, more than five times that in retail. In comparison, every job in the textiles sector creates 2.81 additional jobs, and every job in manufacturing in general creates 2.91 additional jobs in the economy.<sup>29</sup>

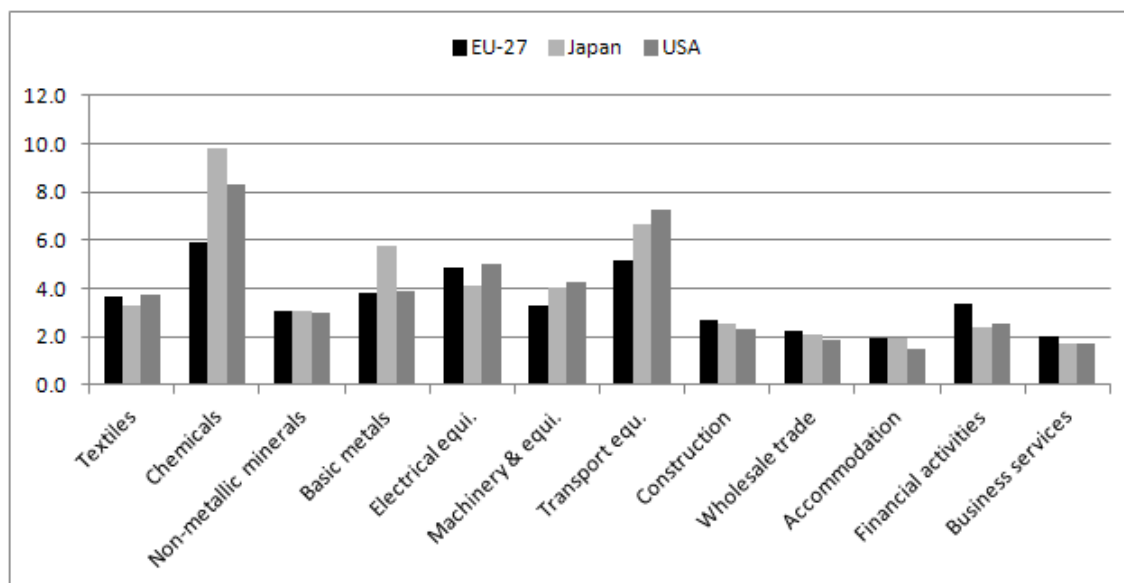
Similarly, a study for the European Commission that uses World input-output data (available for 43 countries, not including Pakistan), calculates that the automotive sector has the second highest employment multipliers, after chemicals, for the European Union, Japan and for USA, as shown in Figure 4-34.<sup>30</sup> It is important to note also that textiles, Pakistan's predominant industrial and export output currently has the second lowest employment multiplier.

<sup>29</sup> Bivens, Jogh (2003) "Updated Employment Multipliers for the U.S. Economy" Economic Policy Institute

<sup>30</sup> Stehrer, Robert and Terry Ward (2012) "Monitoring of Sectoral Employment" European Commission, DG Employment, Social Affairs and Inclusion



Figure 4-34 Employment multipliers by industry, 2005



Note: EU-27 calculated as average over individual Member states.

Source: WIOD Input-Output Database (Version July 2011); own calculations.

Source: Stehrer and Ward (2012)

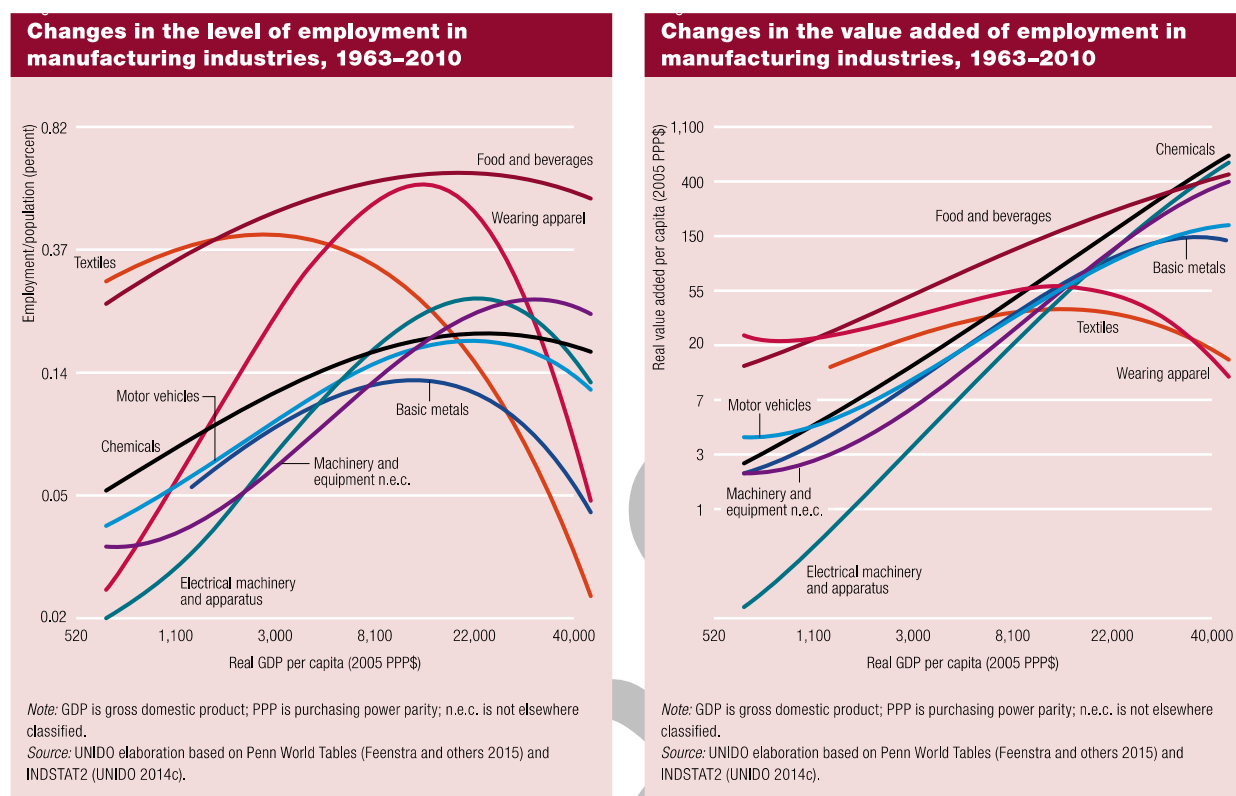
In terms of quantity of employment created in the economy, therefore, the automotive sector maximises indirect jobs for every direct job created.

The number of domestic jobs created in a specific auto factory depends on several factors including the scale of the investment and the specific process (assembly, forging, casting, plastic injection moulding, sheet metal). The automotive sector has not, however, been found to be a particularly labour intensive industry overall. Sen and Das (2014)<sup>31</sup> for example define labour intensive industries as those with labour-capital ratios higher than 0.84 – the average labour-capital ratio for India. For India this list includes grain mill products, other food products, tobacco products, knitted and crocheted fabrics, wearing apparel, dressing and dyeing of fur, tanning and dressing of leather, footwear, saw milling, wood products, railway locomotives, furniture and manufacturing not elsewhere classified.

Figure 4-35 shows how employment and value addition by industry changes by income per capita. Food and beverages is the dominating employer at almost all income levels. Textiles peaks early, and has contributed diminishing numbers to employment at higher levels of income. This suggests diversification into those sectors that pick up employment pace as the country develops to compensate for the expected drop in employment from textiles, such as in wearing apparel, machinery and motor vehicles.

<sup>31</sup> Sen, Kunal and Deb Kusum Das (2014), 'Where have the workers gone? The Puzzle of Declining Labour Intensity in Organised Indian Manufacturing', DEPP Working Paper No. 36, IDPM, University of Manchester.

Figure 4-35 Changes in employment in manufacturing industries, 1963-2010



Source: UNIDO (2016) "Industrial Development Report: The Role of Technology and Innovation in Inclusive and Sustainable Industrial Development"

#### 4.3.2 Are there prospects for improving inclusiveness on gender?

This depends on the specific investment and hiring policies.

#### 4.3.3 Is the proposal likely to improve geographic disparities?

This depends on the proposed destination for the specific investment.

#### 4.3.4 Provision for SMEs

Vehicle manufacturing and auto parts manufacturing for GVCs are activities that require large-scale investments, and therefore are not geared towards SMEs. While auto parts manufacturers that produce for replacement markets and for niche markets can be smaller sized, this sector is not likely to promote SMEs specifically.

#### 4.3.5 Skills and resource match

The extent to which the auto industry can create inclusive employment i.e. employment that is accessible to a wider portion of the labour market, depends on the skill and education match with Pakistan's existing labour force. A skill mismatch

can increase inequality by providing opportunities only for the small, educated segment that has greater absorptive capacity for new technologies. Details for the skills profile required for Pakistan's auto sector is not available. However, this can be benchmarked using the labour profile in the Indian Auto sector (Figure 4-36). Firstly, the large proportion of jobs are in the relatively lower skilled manufacturing/operations function. Secondly, it is evident that as the distance to the OEM increases, the proportion of lower-end jobs (manufacturing/operations) increases and higher-end jobs (design and development, industrial engineering, sales and marketing) decreases.

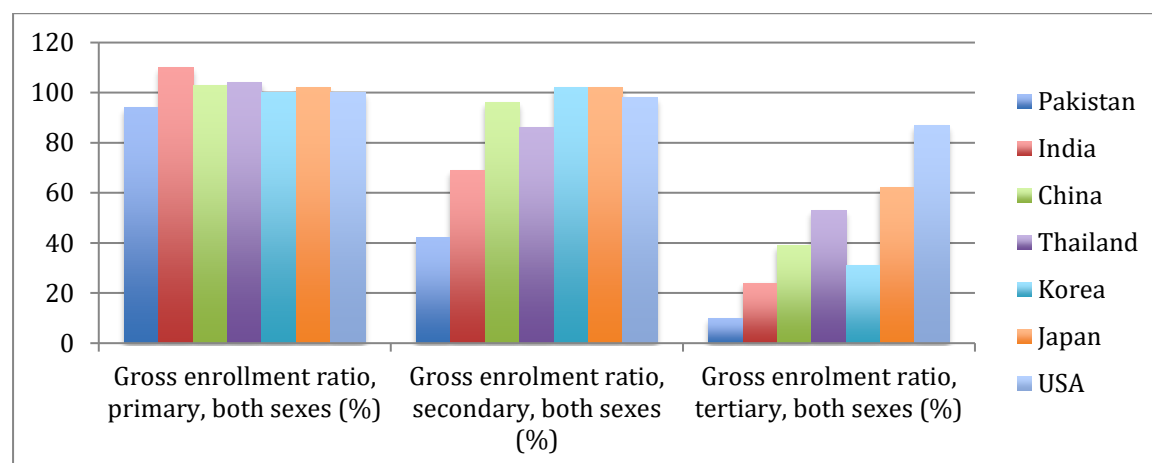
**Table 4-3 Functional distribution of Auto OEMs and suppliers, India 2009**

Function	Distribution at Auto OEM's	Distribution at Large Tier I suppliers	Distribution at Small Tier I suppliers, Tier II, Tier III and lower suppliers
Manufacturing / Operations	55-60%	70-75%	80-85%
Design and Development, Production Engineering	7-8%	5-6%	1-2%
Vendor Development / Purchase	4-5%	2-3%	Minimal
Projects	1-2%	Minimal	-
Tool Room	2-3%	2-3%	1-2%
Industrial Engineering / Technical Services	4-5%	2-3%	Minimal
Sales and Marketing	5-6%	3-4%	3-4%
Service / Spares	7-8%	1-2%	1-2%
Support functions (HR, Admin, Finance, Accounts)	7-8%	4-5%	2-3%

Source: National Skills Development Corporation, India (2009) "Human Resource and Skills Requirements in the Auto and Auto Components Sector (2022)"

Pakistan's current education profile is shown below. While there isn't a substantial difference in primary school enrolment between Pakistan and other regional competitors such as China and India, this gap grows with the level of education (Figure 4-36) and for both secondary and tertiary education Pakistan's labour force is less educated.

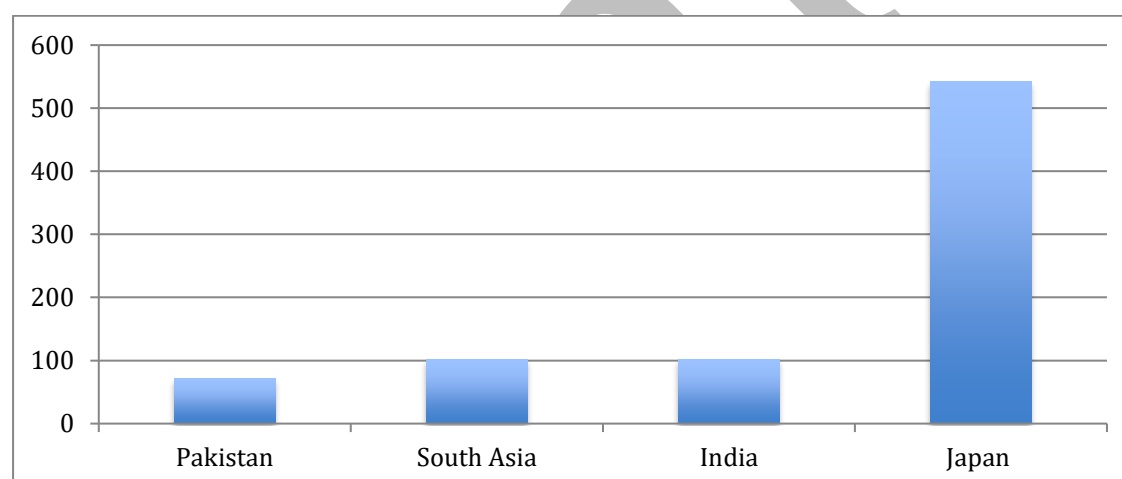
**Figure 4-36 Education enrolment rates for Pakistan relative to competitors, 2014**



Source: World Development Indicators, available at <http://data.worldbank.org/data-catalog/world-development-indicators>, downloaded February 2017

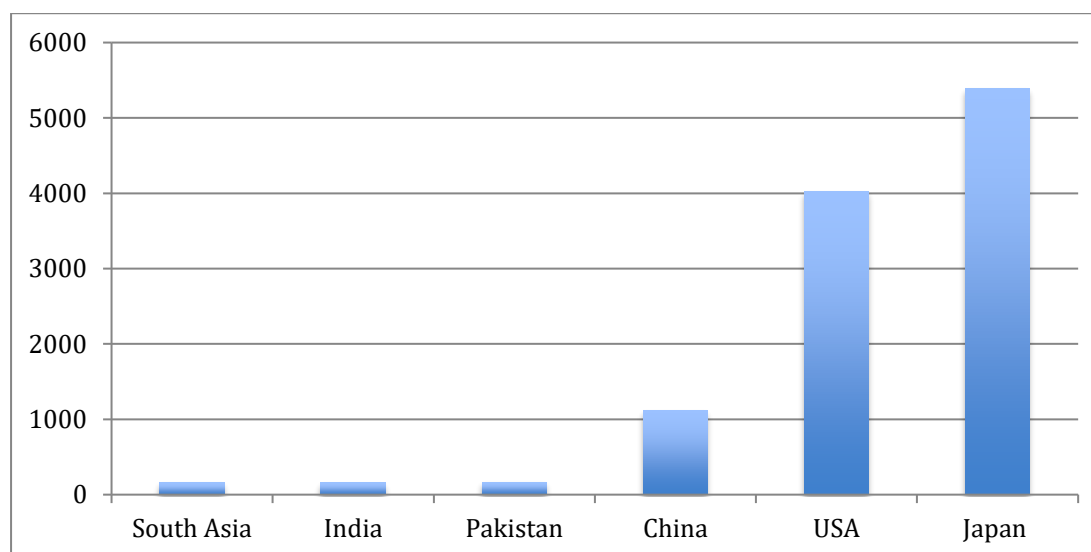
Consequently, there is a far smaller proportion of the population engaged as technicians and researchers (Figure 4-37, Figure 4-38).

**Figure 4-37 Technicians in R&D per million people, 2013**



Source: World Development Indicators, available at <http://data.worldbank.org/data-catalog/world-development-indicators>, downloaded February 2017

Figure 4-38 Researchers in R&amp;D per million people



Source: World Development Indicators, available at <http://data.worldbank.org/data-catalog/world-development-indicators>, downloaded February 2017

In addition, just 32% of Pakistani firms offer formal training to their employees, compared to 36% in India and 79% in China.

All these indicators point towards Pakistan's low level of readiness for absorbing technology and mismatch for higher technology processes such as product development. The current labour profile makes Pakistan more suited for assembly and basic manufacturing, at least in the short term.

However, it is important to have avenues for moving to higher value addition processes in the medium and long term. In general, education, skill formation, training in ICT and related areas and a facilitating environment for R&D (such as protection of intellectual property right, creation of labs and science parks, and incentives for in-house technology development) all help ensure that absorptive capacity is widespread throughout the population. It will be important to align educational policies and curricula with the labour market to ensure that opportunities presented by the auto sector are leveraged, and contribute to inclusive and employment generating growth. This is particularly important for Pakistan at the moment to help accommodate the demographic bulge productively.

#### 4.4 Innovation

The auto industry in Pakistan is currently producing largely to blueprints that have been developed in other countries i.e. labour employment is in basic manufacturing, without the R&D and services that bring higher value employment. However, the auto sector, if developed properly, has a high capacity for producing these higher valued jobs.

The auto sector is amongst the most innovative industries in the world, filing 12% of the world's 1.2 million patents in 2014 (after Information technology and telecommunications, which filed 30% and 13% of the world's patents respectively).<sup>32</sup> Table 4-4 shows that, on the basis of R&D spend, five of the top 20 innovating companies in the world are in the automotive sector, one of which already has a presence in the Pakistani market. Additionally, the automotive sector was the third largest in the world in terms of R&D spending by industry (Figure 4-39). It also showed the strongest increase in corporate R&D, with auto sector companies increasing exported R&D by 45%. Most of this increase was directed at US and China. China, in fact, imported 14% of Auto R&D.<sup>33</sup>

**Table 4-4 Top 20 R&D spenders globally, 2016**

2016 Rank		2015 Rank	Company	Geography	Industry	R&D Spend (\$Bn)*
1	▶	1	Volkswagen	Germany	Automotive	13.2
2	▶	2	Samsung	South Korea	Computing and electronics	12.7
3	▶	7	Amazon	United States	Software and Internet	12.5
4	▶	6	Alphabet	United States	Software and internet	12.3
5	▶	3	Intel Co	United States	Computing and electronics	12.1
6	▲	4	Microsoft	United States	Software and internet	12
7	▲	5	Roche	Switzerland	Healthcare	10
8	▼	9	Novartis	Switzerland	Healthcare	9.5
9	▼	10	Johnson & Johnson	United States	Healthcare	9
10	▼	8	Toyota	Japan	Automotive	8.8
11	▲	18	Apple	United States	Computing and electronics	8.1
12	▶	11	Pfizer	United States	Healthcare	7.7
13	▼	13	General Motors	United States	Automotive	7.5
14	▼	14	Merck	United States	Healthcare	6.7
15	▶	15	Ford	United States	Automotive	6.7
16	▶	12	Daimler	Germany	Automotive	6.6
17	▲	17	Cisco	United States	Computing and electronics	6.2
18	▲	20	AstraZeneca	Britain	Healthcare	6
19	▶	32	Bristol-Myers Squibb	United States	Healthcare	5.9
20	▲	22	Oracle	United States	Software and internet	5.8

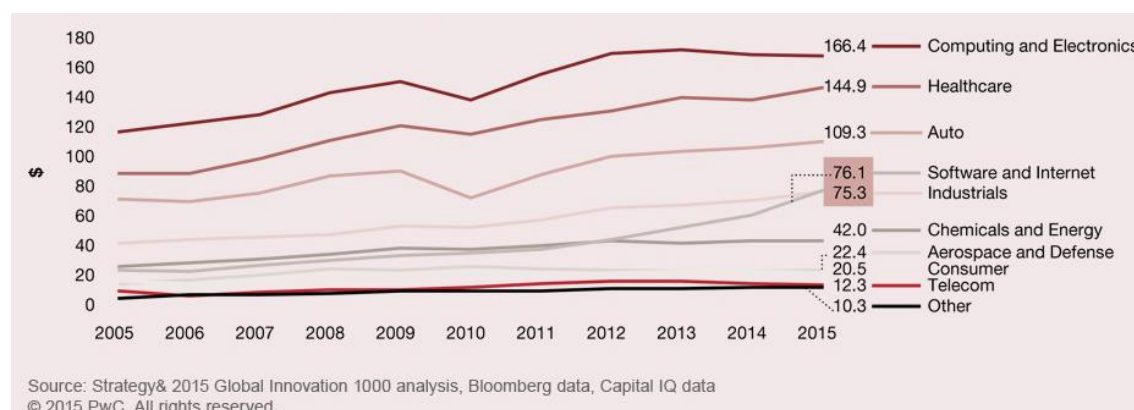
R&D spend data is based on the most recent full-year figures reported prior to July 1st.

Source: <http://www.strategyand.pwc.com/innovation1000>

<sup>32</sup> Friedman, Lauren (May 29m 2015) "The IT industry is out-innovating all others by a longshot" Business Insider. Available at <http://www.businessinsider.com/most-innovative-industries-2015-5>

<sup>33</sup> The 2015 Global Innovation 1000: Innovation's New World Order <http://www.strategyand.pwc.com/reports/2015-global-innovation-1000-media-report>

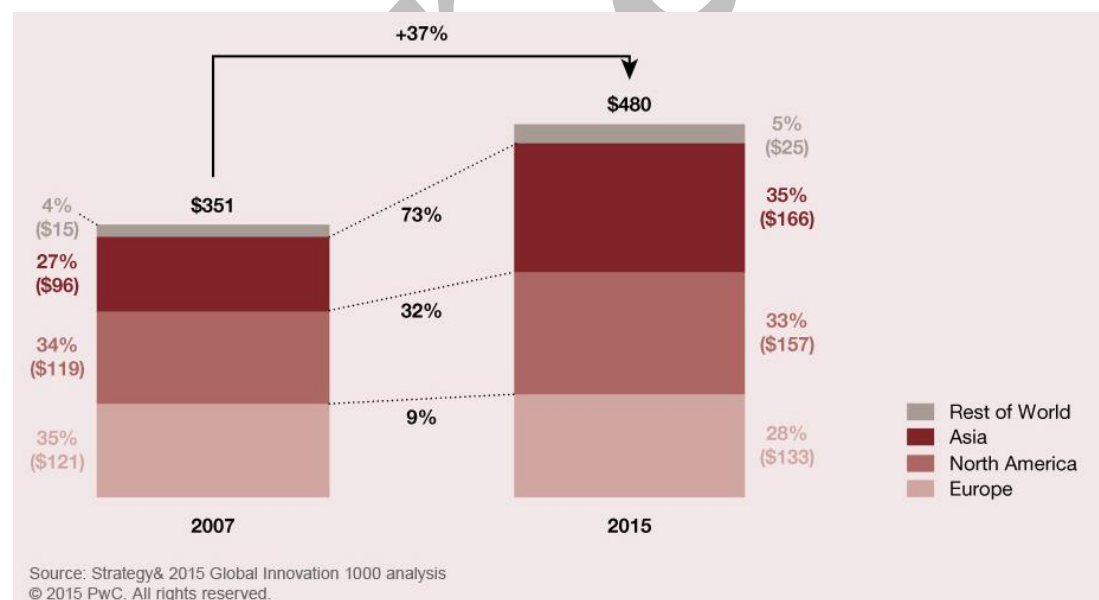
Figure 4-36 Corporate R&D spending by Industry (US\$ billions), 2005-2015



Source: <http://www.strategyand.pwc.com/innovation1000>

Asia is also now the largest destination for in-country R&D (Figure 4-40), driven primarily by India and China. There are lucrative opportunities potentially present here for Pakistan if it finds a place in China's auto GVCs that harnesses the strength of the auto sector in R&D and capitalizes on the trend in R&D location to China. This can initially take place in the form of acquiring and adapting technologies that have been developed in China and elsewhere, and finally in developing technologies in Pakistan.

Figure 4-37 Change in corporate R&D spending by region (US\$ billions), 2017-15



Source: <http://www.strategyand.pwc.com/innovation1000>

However, the challenge is to ensure that this opportunity is not lost. Continuing with business as usual would mean that the R&D and innovation bypasses Pakistan as it has done so far. It will be imperative to tie in transfer of technology and training to Pakistan in order for foreign investors to qualify for greater investment incentives.

This is discussed in detail in the box below, extracted from UNIDO's Industrial Development Report (2016).

Box 2.3

#### Bridging the technology gap depends on the type of value chain

De Marchi, Giuliani and Rabellotti (2015) conducted a study for this report, aimed at clarifying the role of GVCs in fostering innovation and learning by developing countries' firms that join GVCs. They collect evidence from case studies on topics such as the governance mode of the GVC, the degree to which GVCs produce innovations and the forms of learning inside and outside GVCs.

The authors discern three archetypal kinds of innovators in value chains. The one that puts GVCs most central in technology transfer (but present in only 9 cases of 50) is the group of *GVC-led* innovators, in which firms score high on innovation and use intensive learning channels within the GVC, such as face-to-face interaction between participants within the chain, training of the local workforce by the lead firm in the chain, direct knowledge transfer to local firms (usually confined to a narrow range of tasks), and pressure to adopt international quality standards. (An illustrative case of this group is the coffee GVC in Brazil, described by Cafaggi and others [2012]).

A second and slightly more common pattern (14 of 50 cases) is that of *independent* innovators. In this case, innovation is frequent and important, but learning takes place mostly in channels that are not directly related to the value chain. The important learning mechanisms in this category include within-firm and external learning mechanisms, including—but certainly not limited to—R&D. Other

important learning mechanisms in this category are hiring skilled personnel and acquiring technology through licensing, joint ventures and mergers. Learning also takes place in local clusters, with close, short-distance interactions between firms. And learning is obtained from competitors (such as through reverse engineering) and from suppliers and buyers (from outside the value chain). The development of China's wind turbine industry exemplifies this group (Lema, Berger and Schmitz 2013).

The largest category consists of *weak* innovators (27 of 50 cases). In these value chains, the (non-lead) firms do not frequently innovate and they do not make extensive use of learning mechanisms. Among the numerous cases in this group are the clothing industry in Kenya and Madagascar (Kaplinsky and Wamae 2010). Local firms received some technical assistance from buyers, but it has not generated much product or process innovation.

That firms in developing countries, even when part of one or more GVCs, do not always use the GVCs as a privileged source of knowledge and technology implies that GVCs are not always crucial in closing technology gaps or spurring development. The prevalence of GVCs with weak innovators shows that the innovation road to development remains rocky and requires government policy to smooth it (see Chapters 3 and 6).

Source: UNIDO (2016) "Industrial Development Report: The Role of Technology and Innovation in Inclusive and Sustainable Industrial Development"

## 4.5 Sustainability

There are three aspects for sustainable growth: economic, social and environmental. Social sustainability has been discussed earlier under social inclusiveness. In this section, we discuss the two remaining aspects to sustainability: the ability to contribute to sustained growth, and environmental sustainability.

### 4.5.1 Sustained growth

Sustained growth has three characteristics: It is rapid enough to achieve substantial increases in welfare and to allow catch-up with advanced economies, the episodes of high growth are long enough to be meaningful, and there is low volatility from one year to the next.

UNIDO's Industrial Development Report (2016) provides evidence to show that the structure of the economy is an important determinant of the ability to sustain growth. Technology plays an important role, driving structural change in which new



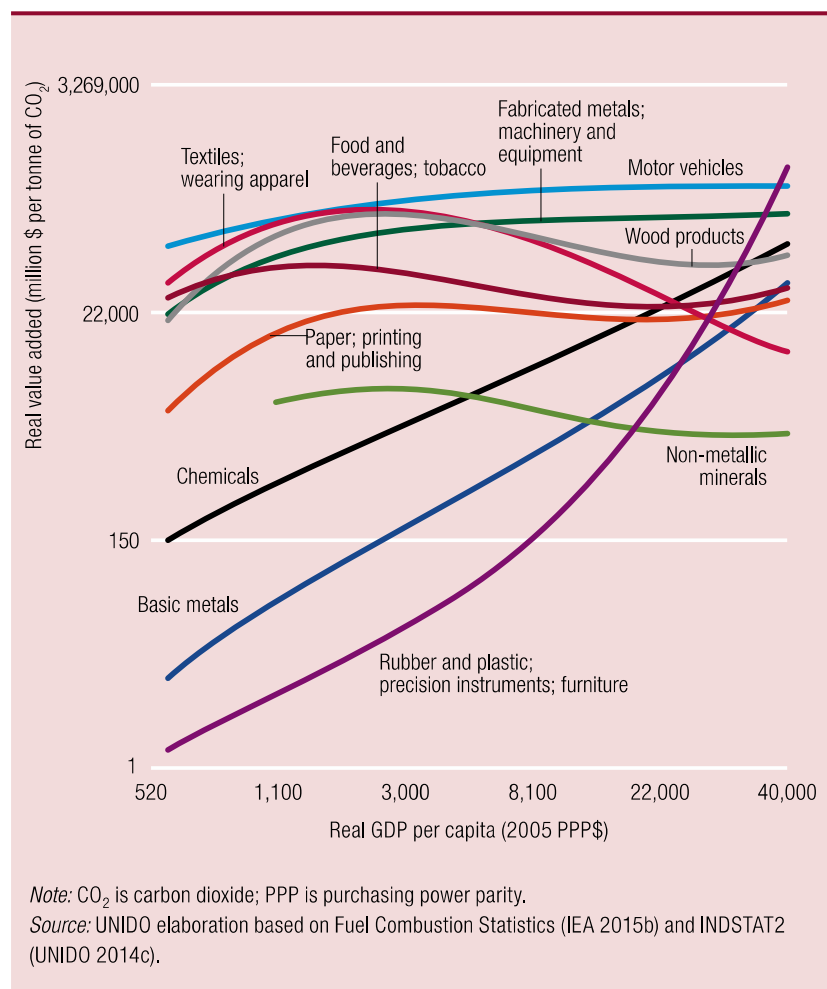
sectors emerge and others become obsolete. If the underlying investments in human capital and innovation systems have been made, the economy will have good absorptive capacity and will be resilient to, and able to leverage, this structural transformation to fit into new vents for growth as the old ones atrophy.

This lends support to the use of high technology industries, which help develop the underlying human capital. The automotive sector is considered a medium technology sector, and has spillovers on building absorptive capacity for technology and therefore resilience to structural change. Furthermore, as shown in Figure 7-35, the employment generated by the motor vehicle is sustained as the economy develops, in contrast to textiles and wearing apparel.

#### 4.5.2 Growth that is environmentally sustainable

There are several ways in which an industry could contribute to the environment. One of these is by the environmental impact of the production process, where certain production processes create more damaging effluents. The second is by the environmental impact of the product itself, i.e. the use of a vehicle, once manufactured and sold, contributes to environmental degradation.

The assembly of motor vehicles itself is not a particularly polluting process. The manufacturing of auto parts can vary in terms of environmental impact. Metal forging, for example, contributes heavily to air pollution. Plastic moulding, in contrast, is a relatively clean process. Figure 4-41 shows the impact per industry on one type of pollution – carbon dioxide emissions. Motor vehicle manufacturing leads to higher value addition per unit of pollution – in this case the carbon dioxide emissions.

**Figure 4-38 Real value added per unit of CO<sub>2</sub> emission in various manufacturing industries, 1963-2010**

Source: UNIDO (2016) "Industrial Development Report: The Role of Technology and Innovation in Inclusive and Sustainable Industrial Development"

Muthukumara and Wheeler (1998) have also identified transport equipment as one of the five cleanest industries in the world. They define "dirty industries" as those that firstly, have incurred high levels of abatement expenditure per unit of output in the United States and other OECD economies. Secondly, "dirty industries" are those that rank high on actual emissions intensity (emissions per unit of output). The industries identified as particularly polluting are shown in Table 4-5. They also define the "cleanest industries" on the same basis. This includes transport equipment, in addition to textiles, nonelectrical machinery, electrical machinery, and instruments.

**Table 4-5 Most polluting industries in the world**

Rank	Air	Water	Metals	Overall
1	371 Iron and Steel	371 Iron and Steel	372 Non-Ferrous Metals	371 Iron and Steel
2	372 Non-Ferrous Metals	372 Non-Ferrous Metals	371 Iron and Steel	372 Non-Ferrous Metals
3	369 Non-Metallic Min. Prd.	341 Pulp and Paper	351 Industrial Chemicals	351 Industrial Chemicals

4	354 Misc. Petroleum, Coal Prd.	390 Miscellaneous Manufacturing	323 Leather Products	353 Petroleum Refineries
5	341 Pulp and Paper	351 Industrial Chemicals	361 Pottery	369 Non-Metallic Min. Prd.
6	353 Petroleum Refineries	352 Other Chemicals	381 Metal Products	341 Pulp and Paper
7	351 Industrial Chemicals	313 Beverages	355 Rubber Products	352 Other Chemicals
8	352 Other Chemicals	311 Food Products	383 Electrical Products	355 Rubber Products
9	331 Wood Products	355 Rubber Products	382 Machinery	323 Leather Products
10	362 Glass Products	353 Petroleum Refineries	369 Non-Metallic Min. Prd.	381 Metal Products

Source: Mani, Muthukumara and David Wheeler (1998) "In Search of Pollution Havens? Dirty Industries in the World Economy, 1960-1995" Journal of Environment & Development, Vol. 7, No. 3, September 1998

The auto industry has a carbon footprint of 720kf CO<sub>2</sub>e per £1000 spent. Component manufacturing and assembly accounts for less than 12%. Several remaining processes share the rest of the carbon footprint, for example metal extraction (33%), rubber manufacturing (3%), manufacture of tools and machines (5%).<sup>34</sup>

In terms of environmental impact in use, this can vary depending on national regulations. Fierce competitive pressure in the global auto industry coupled with increasingly stricter international and national environmental requirements has driven rapid improvements in fuel efficiency technologies. However, Pakistan does not have or enforce any national standards, for the environment or for consumer safety – a highly unusual situation for a country with a domestic auto industry. In the absence of standards, the auto carmakers follow their minimum global standards for the production of new cars.

There is also no enforcement of emissions on older vehicles in use, as there are in other countries. In the UK for example, every car older than three years must undergo an MOT evaluation to certify that the vehicle continues to meet road safety and environmental standards. It is illegal to drive a vehicle without an MOT certificate in the UK.

The auto industry is globally a heavily regulated industry, with regulations on the manufacturing process, product use, and end-of-life recycling that vary across countries. Global carmakers including those operating in Pakistan (Toyota, Honda and Suzuki) can and do comply with the highest standards of developed countries in a fiercely competitive and fast paced market. Moreover, they are able to comply differently in countries with unique standards. India, for example, does not implement the Euro standard system, opting instead for national Bharat standards. Carmakers that want to sell to the Indian market must tweak their specifications

<sup>34</sup> "What's the carbon footprint of a new car?" The Guardian (23 September 2010) <https://www.theguardian.com/environment/green-living-blog/2010/sep/23/carbon-footprint-new-car>

accordingly. As shown in Section 1.5, these global firms already engage in extensive R&D, and the marginal expenditure required to extend the technology to Pakistan is minimal.

Auto parts manufacturers in Pakistan that supply to markets abroad are also already complying to these international standards.

In light of this, there is no reason that Pakistan cannot hold up these carmakers to high standards, not just for the environment, but also for consumer safety. Moreover, given the amount of research and development of regulatory frameworks that have taken place across the globe, there is no reason for Pakistan to start from scratch, and global standards can be replicated in Pakistan.

However, this will require implementation, not just of auto standards, but of effluent standards as with any other manufacturing industry.

## 5 Summary

### 5.1.1 Economic benefit

Pakistan's vehicle manufacturing sector has shown a sharp increase recently and several new investors have announced plans to enter the Pakistan market, both to take advantage of increased demand and also to avail the incentives offered by the new auto policy 2016-21.

Investment in the auto sector is likely to improve export performance. Within the auto sector, Pakistan currently exports significant quantities of auto parts and tractors. Logistics and energy improvements planned under the CPEC are likely to make these sectors more competitive, and make it easier and cheaper to access existing export markets. In addition, there is scope for accessing new markets and for new products. China, in particular, imports a negligible part of Pakistani exports, despite the fact that China imports those categories of auto parts that Pakistan exports. Despite the Pak-China FTA, Pakistan does not have preferential access to Chinese markets relative to the other ASEAN countries that are world leaders in auto parts manufacturing.

The auto parts sector presents an opportunity for Pakistan if it can access Chinese markets and manufacture for Chinese GVCs. Rising labour costs in China make Pakistan's labour intensive auto parts a realistic option, especially given the proximity and improved connectivity between the two countries. However, this will require negotiating access to the Chinese market in the FTA to ensure that it is on at least a level playing with competitors to fully exploit the export opportunities.

Investment in the auto sector is likely to improve competition in the highly concentrated domestic auto industry. In addition, the auto sector is characterised by joint ventures. All passenger and commercial cars and tractors are joint ventures

with international firms and there are over 100 technical assistance agreements or joint ventures in the vending chain, as the parts have to be produced to global standards. Investment in the auto sector is likely to facilitate further JVs and integration of domestic firms in the value chain.

There are strong prospects for private investment in the auto sector, as evidenced by the announcement of four new carmakers to locate in Pakistan.

#### 5.1.2 Social inclusiveness

Transport equipment manufacturers currently employ approximately 22,000 (2.25% of Punjab's industrial employment people), with an additional 200,000 in the vending chain. The auto sector also has one of the highest employment multipliers amongst other manufacturing sector, second after chemicals, though the auto sector itself is not a particularly labour intensive industry itself. The strong employment multipliers are one of the key factors that the auto sector has been a specific part of industrial policy in several countries.

Employment in auto parts manufacturing in smaller Tier 2 and 3 firms matches Pakistan's low skill labour profile, as these firms offer largely basic manufacturing and assembly jobs. However, the auto-sector also offers a high proportion of higher value jobs, such as branding and R&D as the distance to the OEMs decreases. Vehicle manufacturing and Tier 1 suppliers (who supply directly to the OEMs) typically offer a large proportion of these higher value jobs. The ability of firms to locate these higher value processes to Pakistan will depend on Pakistan's ability to upgrade higher and technical education in Pakistan, and to provide incentives and institutions that support R&D.

#### 5.1.3 Innovation

The auto industry in Pakistan is currently involved in basic manufacturing. Globally, however, the auto sector is amongst the most innovative industries in the world and Asia is now the largest destination for in-country R&D. There are lucrative opportunities potentially present here for Pakistan if it finds a place in China's auto GVCs that harnesses the strength of the auto sector in R&D and capitalizes on the trend in R&D location to China. This can initially take place in the form of acquiring and adapting technologies that have been developed in China and elsewhere, and finally in developing technologies in Pakistan.

#### 5.1.4 Environmental sustainability

The assembly of motor vehicles itself is not a particularly polluting process, and transport equipment has been identified as one of the five cleanest industries in the world. The manufacturing of auto parts can vary in terms of environmental impact. Metal forging, for example, contributes heavily to air pollution. Plastic moulding, in contrast, is a relatively clean process.

In terms of environmental impact in use, this can vary depending on national regulations. Pakistan does not have or enforce any national standards, for the environment or for consumer safety – a highly unusual situation for a country with a domestic auto industry. However global carmakers including those operating in Pakistan (Toyota, Honda and Suzuki) can and do comply with the highest standards of developed countries in a fiercely competitive and fast paced market, so it is certainly realistic to hold them to them to stringent national standards in Pakistan too.

Draft

## 6 Industrial Cooperation between Pakistan and China

**PostScript:** This section is based on the detailed LTP shared by China with Ministry of Planning, Development and Reform. Subsequently, a much shorter version of LTP was submitted, with only broad principles included. Nevertheless, the industrial cooperation threads from detailed LTP were reviewed to help Government of Punjab devise its own strategy.

### 6.1 Industrial Cooperation Under CPEC

Industrial cooperation forms a key theme for the CPEC's Long-Term Plan and covers a number of related issues. Industrial cooperation is also one of the five key areas in CEPC around which dedicated working groups have been established. According to LTP, the foundation of future industrial cooperation should be laid out on the relative strengths of the two countries, with China bringing 'experience, technology, financing and industrial capacity' to the table, while Pakistan can contribute through favorable resources, labor forces and market opportunities. Moreover, under the CPEC framework, the both sides have identified two industrial cooperation projects, namely Haier-Ruba Economic Zone (2006) phase II and Gwadar Free Zone (being developed by China Overseas Ports Holding Company Ltd.).

According to LTP, the Chinese side is willing to provide high quality industrial capacities to Pakistan and encourage reputable Chinese companies to make investment in Pakistan. But it also expects Pakistan to carry out in-depth research on the locations of industrial zones, and provide preferential policies and necessary services to mutually agreed zones in this regard.

Going forward, each province has to see if this definition of founding principles of industrial cooperation is aligned with their respective industrial policies and how could they possibly ensure their own interest within the given scenarios.

### 6.2 Industrial Cooperation under LTP

It is important to identify various threads of industrial cooperation related to Punjab, highlighted in LTP across multiple sections and to understand the integrated picture they portray.

#### 6.2.1 LTP's Industrial Priorities

LTP mentions a number of industries. These include the following:

- **Textile and garments industry** - The draft LTP mentions the importance of its garment and textile industry in Kashgar Economic Development Zone in Xinjiang province of China and emphasizes on importing raw materials from Pakistan to support it. LTP also highlights that textile and garment centers or export processing zones should be built in Lahore and Karachi through

‘absorbing foreign capital, increasing investment, updating technology and overall transformation’. Additionally, LTP stresses the need for Pakistan to focus on producing top grade cotton yarn to enrich cotton textiles varieties, besides producing jacquard fabric, printing and dyeing fabric, jeans fabric and knitted fabric, and others with high value-added.

- **Household appliances sector** - LTP specifically highlights the development space for household appliance industry in Pakistan, as demonstrated by previous Chinese investments in this area. LTP proposes to establish a household appliance industrial park near Lahore on joint venture basis, to produce refrigerators, washing machines, air conditioners, TVs and other small appliances, by absorbing foreign capital, adding investment and introducing technology. LTP emphasizes that Pakistani household appliance industry should move from assembling imported parts to producing them locally.
- **Cement industry** - LTP suggests that existing cement production capacity in Pakistan should be maintained, while replacing outdated equipment by environment-friendly processing equipment with high-energy efficiency.
- **Light industrial products and transportation machinery** - LTP mentions extending the processing and manufacturing links and building economic growth engine by combining local resource conditions and Pakistani needs in industrialization, and developing light industrial products production and transportation machinery equipment assembly<sup>35</sup>.
- **Mining** - On mining, LTP suggests Pakistan to fully exploit the rich marble resources available in the western region by introducing foreign advanced mining technology and technical equipment to expand exports to China, Europe and the Middle East.
- **Agri-Business** - LTP mentions keen interest on part of Chinese agricultural enterprises to invest in agri-business sector in Pakistan and indicates Chinese interest in introducing modern agricultural product processing equipment and facilities, improving the quality and quantity of grains, fruits, vegetables, meat, milk, fish and other processed products and increasing farm employment along the corridor. The plan calls for developing an agricultural industry cluster around Islamabad, Lahore and Karachi, where a processing base with international standards can be established and building warehousing and logistics facilities in Peshawar, Islamabad, Lahore and Gwadar (along the corridor). LTP also proposes to focus, under the CPEC, on biotechnology-based seed breeding, production, processing, storage and transport, infrastructure, disease prevention and control, water resources utilization, land reclamation, agricultural informatization and development of the agricultural product

<sup>35</sup> This suggestion also mentions Gwadar as a possible region for this development.



market. Draft LTP also includes a number of potential projects in Punjab in this regard, such as the following:

- *Biotechnology-based Seed Breeding Demonstration Project (northern Punjab for paddy and wheat and Multan for cotton)* - Building four seed production and production demonstration bases
- *Grain, Fruit and Vegetable Processing Project<sup>36</sup>(Lahore)* - Building a vegetable processing plant; a fruit juice and jam processing plant; a grain processing plant; and a cotton processing plant<sup>36</sup>.
- *Storage & Distribution Equipment Construction Project (Lahore<sup>37</sup>)* - Building two storage and transport demonstration bases in Islamabad and Lahore to store and distribute the local agricultural products and reduce the loss of agricultural products.
- *Livestock Breeding Project (Lahore)* - Establishing livestock and poultry breeding production facilities, a laboratory, display and promotion platform and ancillary standardized breeding equipment.
- *Livestock and Poultry Breeding Base Cleaning Project (Faisalabad)* - Construction of standardized clean production and farming equipment of livestock and poultry, livestock and poultry shed and environment purification equipment, livestock and poultry waste treatment and resource utilization technology and equipment, precision feeding and whole-process management digital equipment, physiological and biochemical laboratories, quality analysis laboratories, quarantine laboratory.
- *Fishery Production Demonstration Project (Lahore)* - Establishing fish farming facilities of different sizes, varieties and functions, and supporting fishing, logistics, storage and other facilities and equipment.
- *Aquatic Product Processing Center Project<sup>37</sup>(Gujranwala)* - building aquatic product processing factory, cryogenic warehouse and ice-making plants and other facilities in line with international standards
- *Agricultural Mechanization Demonstration and Machinery Leasing Project (Rawalpindi)* - Building machinery manufacturing and leasing-related enterprises with the ability to manufacture and lease large and medium-sized tractors and related farm machinery, efficient plant protection machinery, efficient energy-saving pump equipment, precision fertilization drip irrigation equipment, small farming, planting and harvesting machinery in hills and mountains.
- *Fertilizer Production Project (Lahore)* - Constructing an NPK fertilizer plant and a bio-organic fertilizer plant.
- *Disease Prevention and Control System Project<sup>37</sup>(Faisalabad and Lahore)* - Building the biological vaccine manufacturing plant and plant disease

<sup>36</sup> Four locations have been mentioned for these four facilities (Asadabad, Islamabad, Lahore and Gwadar)

<sup>37</sup> In 2016-2019, Islamabad and Gwadar will each build two storage bases; in 2020-2025, Karachi, Lahore and Gwadar will each build a storage base; in 2026-2030, Karachi, Lahore and Peshawar will also each build a storage base.

- prevention center.
- *Water Resources Utilization Project (Multan)* - water resources utilization demonstration center and launching water storage, underground water and new irrigation technology utilization projects
- *Land Reclamation Project (Faisalabad)* - introducing advanced land reclamation technology, and develop barren land, medium and low-yield fields, and saline and alkaline lands.
- *Agricultural Informatization Project (Lahore)* - Building an advanced agricultural product information network platform, upload the agricultural product transaction information of China, Pakistan and other countries and regions to the platform; building data launch stations and receiving stations based on satellite remote sensing monitoring technologies.
- **Other Industries** - LTP also highlights important sectors that should be promoted within major cities of Pakistan, besides Kashgar and Tashkurgan in China. Within Punjab, the LTP mentions finance, cultural and creative industries, IT, textiles and tourism for Lahore; manufacturing, farm produce processing, prevention and control, agriculture, and chemicals for Faisalabad; and chemical fertilizer, chemicals, glass, cotton textiles, electricity, culture, agriculture, animal husbandry and mineral industry for Multan.

## 6.2.2 Development of Industrial Clusters and Parks under LTP

Development of industrial clusters and parks forms an important theme under CPEC. The draft Long-Term Plan mentions the need for the government to drive industrial park construction on its own to ensure the location and construction of parks accord with energy supply projects. LTP proposes that Pakistan should develop industries of textiles, household appliances and cement in 'central areas' and specifically mentions industrial parks in Punjab (central areas) for these three industries:

**Textiles and Garments** – LTP includes Pakistan's plan to establish a city of textiles and garments or an export processing zone in Lahore and Faisalabad (besides Karachi) to transform its textile industry by means of introducing foreign capital, increasing inputs and upgrading techniques.

*According to LTP, Shandong Ruyi Group of China has started to invest in the construction of a textiles & garments industry park in Punjab. Specifically, the groundbreaking ceremony of Masood Textile Park (along with two 1.35 million kW coal-fired power projects) was held in Faisalabad on May 28, 2014. For this project, Ruyi plans to invest 6 billion yuan to produce high-grade cotton yarn, high-grade jacquard fabrics, printing & dyeing materials, jean fabrics and knitted fabrics.*

**Household Appliances** – LTP gives specific example of Haier, which established the "Haier & Ruba Economic Zone" in 2006 and formulated a perfect

localization mode in Pakistan. In addition to Haier, other famous enterprises from the Chinese household appliance industry, i.e. Gree and Changhong, have also invested. In the wake of these investments, LTP sees much space for further development in this area and emphasizes that production of household appliances should be centered around medium and small-sized cities close to consumer markets, such as Faisalabad and Lahore (besides Karachi and Islamabad)<sup>38</sup>. It also specifically mentions the new household appliance industrial park near Lahore, through a joint venture.

**Cement & Building Materials** – LTP highlights a larger space of cooperation for China to invest in the cement process transformation and the sectors of marble and building materials of Pakistan. It is suggested that cement cluster areas be located in Daudkhel, Khushab, Esakhel and Mianwali along the CPEC. LTP looks at Pakistan's marble and granite exports to potentially take maximum advantage of envisaged construction boom in China, as well as higher exports to UAE, Saudi Arabia and Italy. It is suggested that the processing industry parks of marble and granite be located in Taxila, Daudkhel, Khushab, Esakhel, Mianwali in Punjab (besides other areas in other provinces).

**Science and technology zones** - According to LTP, Pakistan's high and new technology development also has high potential, owing to CPEC. Pakistan should develop science and technology zones within the surrounding industrial park to form an area that integrates talent supply, scientific research, manufacturing and production, sales and other services, especially around Lahore (besides Islamabad and Karachi)<sup>39</sup>.

**Government-led development mode** – LTP recognizes the exorbitant land prices and land ownership structure as a key constraint for existing enterprises (especially foreign-funded) to expropriate land independently and expand. Industrial parks result in development of surrounding cities, leading to a sharp rise in land prices. LTP therefore proposes that Pakistan should adopt the government-led mode of development, whereby government develops these parks and provides land to industries.

**Management reforms for industrial parks** – LTP proposes that government should integrate all governmental functions (i.e. planning, land, taxation and public utilities) in these cluster areas and establish unified and relatively independent government regulatory agencies to manage the administrative affairs of these industrial areas including local government functions as well as investment and financing issues. LTP provides the example of Kashgar Economic Development Zone in China, being managed in a similar fashion, with Management Committee taking charge of the regulatory functions.

<sup>38</sup> LTP gives specific example of Haier & Ruba Industry Park where the Phase-1 project is located in Raiwind Industrial Zone, Lahore, and the Phase-2 project is planned for the New City Area of Lahore.

<sup>39</sup> At present, Tus-Holdings Co., Ltd. has signed a strategic cooperation agreement with Pakistan's National University of Sciences and Technology (NUST), to jointly construct the NUST Park.

**Formulation of preferential policies for industrial parks** – LTP suggests that Pakistan should put in place preferential policies – relating to land prices, enterprise income tax, tariff reduction and exemption and sales tax rate – to attract enterprises to settle in industrial parks. LTP also proposes that government should offer policy support, tax preference, investment promotion and land transfer to eligible projects.

### 6.2.3 Modes of Industrial Cooperation Given in LTP

It is important to mention various modes of industrial cooperation under CPEC, as defined in LTP. These include the following:

**Technological cooperation** – It is stated that the Chinese side would mainly provide technological services for relevant products and would invest in part of production equipment, while Pakistan would provide raw materials, production workers and market for product sales, such as the textile and clothing industry. (Need to remove misalignments and extend to other sectors)

**Joint ventures** – Chinese and Pakistani enterprises would establish joint ventures, where Pakistan may provide the land or established buildings for a joint venture, while the Chinese side would invest in technology and equipment. According to LTP, both countries may distribute dividends according to the equity ratio and share the profits. LTP specifically mentions that this mode is more suitable for the cooperation sectors like textiles and household appliances.

**Cooperative development or leasing** – LTP also includes cooperative development or leasing mode, as a more suitable option for resource development projects, such as mineral exploitation. Chinese technologies would be used in the exploitation, development construction, business and sale of Pakistan minerals.

**Joint financing** – LTP recognizes high financing costs as another constraint to development of Pakistani enterprises and proposes a close liaison between Chinese and Pakistani financial institutions at all levels for development and construction of industrial parks, ensuring their participation in project financing. LTP expects that Pakistan should provide special financing preferential policies and loans to key industry projects in these industrial parks. It suggests that national development banks, export-import banks, export and credit insurance corporations and other policy-based financial institutions can actively provide credit and overseas investment insurance for intergovernmental agreements or established projects in the plan. LTP also recommends accelerating the establishment of a ***China-Pakistan Industry Cooperation Investment Fund***.

**Formulation of preferential policies for Kashgar** – Draft LTP includes a number of specific preferential investment policies regarding Kashgar in Xinjiang such as reduction of border import taxes and the value-added tax incurred at import links by

half by Pakistan; implementation of “gradually increasing” policy of financial transfer payment for border trade by Pakistan; cancellation of export restrictions for products produced with the resources of Kashgar and exported via land ports in the border of Khunjerab by Pakistan; relaxation of import and export restrictions on Pakistan commodities in the Kashgar Economic Development Zone by China; strengthening the special transfer payment in the border areas with Pakistan, etc.

#### 6.2.4 Other Initiatives

The LTP envisages major hubs in both countries (including Lahore in Punjab<sup>40</sup>) to be engines of economic growth, with development of new industrial parks and increased inflow of investment, spreading the benefits from ‘core areas’ to ‘radiation areas’ as per CPEC’s spatial development strategy. However, LTP identifies the poor quality labor force – low level of skills and low labor enthusiasm - in Pakistan as a key bottleneck, overshadowing the benefits of its large population and abundant cheap labor. On the upside, LTP makes a note of opportunities for relocating Chinese factories to Pakistan, due to decrease in the workforce and increase in labor costs in China, if these bottlenecks are addressed.

LTP includes construction of China-Pakistan Technical Training Center at a suitable location, without mentioning the specifics, where Chinese communication enterprises and Pakistani universities can jointly provide technical training and establishing a complete training base of the telecoms technology industry. Similarly, LTP also mentions establishment of Chinese and Pakistani products exhibition centers and a cross-border e-commerce platform

### 6.3 Pak-China Free Trade Agreement

Pakistan and China signed a free trade agreement in 2006. The FTA is the primary document defining trade relations between China and Pakistan. Since many of the related issues covered in LTP pertain to trade, it is also important to review the FTA.

Data shows that after the FTA, Pakistan’s imports have increased much more sharply than exports. The bilateral trade balance itself is not problematic: if imports from China allow Pakistan, to become more globally competitive, the overall trade balance can improve. However, as shown in the chart below, the overall trade balance of Pakistan with the World has been falling unabated.

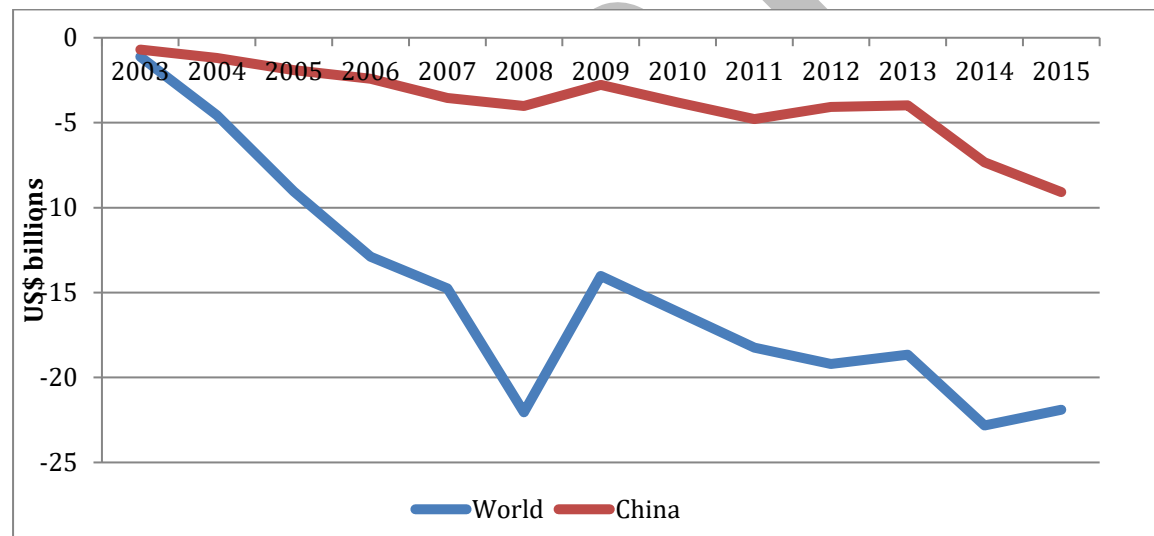
<sup>40</sup> Others include Kashgar, Gwadar and Karachi

Figure 6-1 Trade flows with China, 2003-2015, as reported by Pakistan



Source: UN Comtrade, downloaded February 2017

Figure 6-2 Pakistan's trade balance with the world and with China, 2003-2015



Source: ITC Trade maps, downloaded February 2017

Pakistan Business Council (PBC)'s study<sup>41</sup> looks to explore the impact of the Pak-China FTA. The aim of the study was to:

- Identify how bilateral trade between the two countries progressed after the agreement came into effect.
- Identify what products Pakistan could potentially negotiate with China for attaining more favorable tariff concessions for its exports for a better trade balance between the two countries.
- Identify items that Pakistan apparently has considerable capability to produce,

<sup>41</sup> Pakistan Business Council (2013) "Preliminary Study of Pakistan China trade partnership post FTA"

but may not be competitive enough due to cheaper Chinese imports.

## Key findings

### a) Tariff concessions and Pakistani exports Post FTA

- By 2011, more than 35% of products that were part of FTA were subjected to 0% tariff for Pakistan. However, the average tariff for these products for ASEAN countries is also 0%.
- Exports have grown 433% between 2006 and 2012, but 12% growth of exports to China was seen in products that were not included in FTA.
- Pakistan's exports to China remain below 10% even in products that are Pakistan's top exports to the world, for instance cotton. On the other hand, China's share in Pakistan's imports has increased substantially since FTA has been signed.

### b) Product coverage and utilization Post-FTA

- Out of 7,550 products at 8-digit HS code that are part of the FTA with China, exports to China were concentrated along 350 product lines only in 2012. In the zero-rate tariff category, exports were along 169 products of the 2,681 products which are part of this category. Around 1,400 products recorded no exports to China or to the world.
- Concessions offered to China by Pakistan under the FTA appeared to be more beneficial as compared to those offered by China to Pakistan; both in terms of the coverage and variety of products along which trade was witnessed.
- Low cost of production together with tariff concessions makes import of Chinese products cheaper.

### c) Protection of local industries

- Many small and medium sized industries as well as large scale industries in Pakistan have been adversely impacted by the energy crisis. For instance, the textile sector is producing at 60% of its capacity.
- Although China can support Pakistan with advanced technology and provide cheaper raw material, the tariff concessions have also led to imports of finished products, such as clothing and footwear. This has reduced the profitability and/or underutilized capacity of local industries.

Despite the FTA being in place for more than 10 years, Pakistan has not been able to cater significantly to Chinese markets. It would require a detailed investigation to explore the factors that have prevented Pakistani producers from accessing Chinese markets. In particular, tariff structure for Pakistan should be at par with that offered to China's other trading partners, and non-tariff barriers should be rationalized and minimized through effective negotiation. Trade policy and industrial policy have to



mutually complement each other to be effective. Pakistan's federal industrial policy in fact explicitly recognizes trade policy as an instrument of industrial policy.<sup>42</sup>

#### 6.4 Analysis of Industrial Cooperation Framework Under CPEC's LTP

Looking at these various threads of industrial cooperation, pertaining to Punjab, following are some of the important highlights. This section provides specific comments on some of the details, or the lack thereof, in the LTP, while also presenting some key principles that should form part of LTP and be agreed upon by both parties.

**Approach towards LTP** - LTP proposes a broad framework, with specific details at very few places. Additionally, the plan is also quite vague. There are two distinct options to deal with industrial cooperation issues in LTP. If both sides had done adequate planning, the plan could be made at a very detailed level. Alternatively, the two sides should agree on broad principles of cooperation laid out very clearly, which can set the tone for working out the details in future. Looking at level of preparedness of Pakistan towards industrial cooperation under CPEC, the latter approach seems much more appropriate. Moreover, there are two versions of LTP – a detailed plan and a summary version. While the detailed version covers specific details at various places, the summary plan is quite brief. However, it should be made very clear that if Pakistan ratifies the summary plan, it would not be bound by the detailed plan and its provisions.

**FTA and LTP** - The FTA between China and Pakistan is an important tool for governing bilateral trade, and one which Pakistan has not been able to use to its advantage yet. While the present analysis did not cover a thorough review of FTA, a closer look at two of the sectors revealed a number of areas where Pakistan's position should be improved. It is important to highlight in the LTP that the plan should be approved in conjunction with FTA, which should later on be modified in light of agreed priorities in LTP. This would also give sufficient time to Punjab (and federal and other provincial governments) to undertake relevant diagnostics and have a fully informed view before re-negotiating FTA.

**China's priority industries** - As explained earlier, LTP particularly focuses on three key industries: textiles and garments; household appliances; and cement and construction material. Agri-business and agro-processing industries are also included in LTP. Additionally, LTP also makes a mention of finance, cultural and creative industries, IT, textiles and tourism, chemicals, glass, minerals, etc. Some of the issues within these respective industries are as follows:

<sup>42</sup> "Pakistan's industrial Policy: It's Spatial Aspects and Cluster Development in Pakistan" (2010) available at [https://www.researchgate.net/publication/266211382\\_INDUSTRIAL\\_POLICY\\_ITS\\_SPATIAL\\_ASPECTS\\_AND\\_CLUSTER\\_DEVELOPMENT\\_IN\\_PAKISTAN](https://www.researchgate.net/publication/266211382_INDUSTRIAL_POLICY_ITS_SPATIAL_ASPECTS_AND_CLUSTER_DEVELOPMENT_IN_PAKISTAN)



- **Textile and garments** - China seems keen to feed the textile industry in Kashgar Economic Zone through raw material supply from Pakistan, as mentioned in LTP. Chinese focus on textiles is stemming from its plan to stimulate textile-led growth in the under developed province of Xinjiang. China has also asked Pakistan for multiple concessions in this regard, such as reduction of border import taxes by half as well as cancellation of export restrictions for products produced in Kashgar and exported via Khunjerab. In return, China is expected to relax import and export restrictions on Pakistani commodities entering the Kashgar Economic Zone.

This would essentially result in seamless flow of cotton crop (for which Pakistan is already the second largest import source for China) and yarn into Kashgar, turning into finished goods entering Pakistan destined for international markets. The textile industry already had to rely on expensive raw material imports in the wake of recent cotton crisis and any increased demand for raw material from neighboring China is going to further raise prices and limit availability. The textile industry has also raised concerns about the possible glut of textile goods from Xinjiang to create serious competition in future. There is a need to respond to local industry's concerns and re-think any special incentives by Pakistan for textile products or even by the Chinese on relaxation of import duties on Pakistani commodities (for textile sector) destined for Kashgar economic zone.

While the LTP correctly emphasizes the insertion of foreign capital and updated technology for the textile and garments sector, it is important for Pakistan to develop concrete plans to ensure this. There will facilitate the location of higher valued production in Pakistan, rather than just in China.

Furthermore, it is important to recognize that Punjab's growth strategy has singled out one specific focus industry: the readymade garments industry. Industrial cooperation that is in line with Punjab's vision should include efforts to promote the location of the RMG industry in Punjab.

- **Household appliances** - China is looking to scale up its investment in household appliances sector with the aim to target Pakistani consumers. The proposed household appliance industrial park planned near Lahore is expected to attract new Chinese investment. Additionally, the LTP has also mentioned the need for Pakistan's industrial base, for household appliances, to move from assembly of imported parts to local manufacturing. This move towards value addition and local manufacturing should form part and parcel of LTP and any incentives by Pakistani side should be centered on this theme. Ideally, the proposed industrial park should also be only open to those investors aiming for increasing local content in the manufactured products.
- **Cement and construction-related industries** - China's plan to replace outdated equipment in cement plants by environment-friendly processing equipment

with high-energy efficiency seems like a healthy suggestion and should be reciprocated positively. Similarly, the plan to bring Chinese investment in marble and granite processing is also positive, however, the government should ensure a focus on value addition. For this Pakistan will need to develop concrete plans and tie in investment incentives to the preconditions of environmentally-friendly processing and value addition.

LTP highlights that China is planning to increase its exports of finished construction goods such as ceramic tiles to Pakistan, where Chinese tiles already claim more than 50% market share. Similar to household appliances, any incentive from Pakistani side in this regard should be linked to local manufacturing and setting up of new plants by Chinese.

- **Agri-business** - Agri-businesses claim significant attention in the LTP with a number of specific projects included (as listed above). This provides a promising avenue to attract foreign investment and must be capitalized on. On one hand there is a need to further solidify Chinese commitments for this sector and on the other to prepare the local industry to get benefit from potential investments. The LTP should clearly mention if the Chinese would be investing in these projects and the given list should be validated or modified by local industry. Moreover in the wake of Chinese plans to seek raw materials for its Kashgar textile cluster, it is important to invest in increasing cotton productivity and start producing enough cotton to cater for local industry as well as for Kashgar textile cluster. This area is also mentioned in LTP but should be further clarified.

**Industrial priorities of Pakistan and Punjab** – The Chinese have clearly spelt out their industrial priorities, as mentioned above. Even in terms of demanded concessions, they have mostly focused on Kashgar Economic Zone. This scope of industrial cooperation in LTP should now be supplemented by Pakistani perspective by including other high potential industries for Pakistan. While, details on such priorities could only be informed through rigorous diagnostics and extensive public-private consultations, to begin with, all the economically significant sectors for Punjab (and Pakistan) should be included in LTP and concessions should also be demanded for them. It is important to consider clusters that not only lie within the core areas (along the CPEC route) but also in the radiation zone, surrounding the route. This should also lead to a well thought out spatial development strategy balancing between promoting core areas and radiation areas. More details on these sectors as well as the required diagnostics are provided in subsequent section.

**Overlapping priorities** – Those industries, where there are overlapping Chinese and Pakistani priorities offer immediate opportunities. For instance these include: garments industry, automotive assembly and production, replacing outdated equipment by environment-friendly processing equipment with high-energy efficiency, developing agriculture industry clusters in Punjab, absorbing foreign capital, increasing investment, updating technology and overall transformation,

developing science and technology zones, China-Pakistan Technical Training Center, etc. There is a need that Punjab should immediately start developing detailed plans on these priorities, without waiting for Chinese side to take initiative, as these are top level priorities for Pakistan that will ensure that Pakistan maximizes the benefit from the increased investment. Furthermore, the draft LTP also mentions a number of other industries such as finance, cultural and creative industries, IT, tourism, glass, etc. Punjab should commission detailed planning on these sectors and assess what could be done to develop these industries in cooperation with China.

**Public-private dialogue** - There is a need to develop a clear understanding of these Chinese priorities amongst policymakers and to form a view on how to safeguard interests of local industries. It is important to seek private sector's feedback, especially in the above-mentioned four industries to inform any response of demanded concessions by Chinese side. This feedback should include an analysis of the reasons that Pakistani industrial products have not been able to enter Chinese markets so far.

**Preferable modes of industrial cooperation** - LTP mentions a number of modes for industrial cooperation under CPEC, all of which provide viable approaches. However, some of them may be more beneficial to local economy than the others such as JVs and technological cooperation should take precedence over cooperative development or leasing. Therefore, any incentives should correspond with the attractiveness of respective modes for Pakistan.

**Structure of joint ventures** - While the LTP mentions JVs as a potential mode, it is also stated that Chinese and Pakistani enterprises would jointly invest to establish joint ventures, where Pakistan may provide the land or established buildings for a joint venture, while the Chinese side would invest in technology and equipment. When this provision is read with Chinese demand for public sector sponsored industrial parks, it becomes unclear as to who would make investment in land. Also, if industrial land is subsidized by the government, the investment requirement on account of land would be quite less, not only diminishing Chinese interest to look for a local partner but also likely to result in a small equity contribution by local enterprise. There is a need to promote more meaningful JVs, where local industry can also provide some solid complementary support, through existing access to local market, trained workforce, licensing, existing supply chain, etc. For all potential investments, joint ventures should be a preferable mode to ensure technology transfer and broadening of local industrial base. Therefore, there is a need to tie all future incentives on investments with joint ventures with local enterprises.

**Stressing technological cooperation** - On technological cooperation, the LTP states that the Chinese side would mainly provide technological services for relevant products and would invest in part of production equipment, while Pakistan would provide raw materials, production workers and market for product sales, such as the textile and clothing industry. This in fact provides a sounder basis for JVs. Moreover, technological cooperation with the ultimate objective of technology transfer should be of prime importance to Pakistan and should be highlighted further.

## 6.5 Fundamental Tenets of Industrial Cooperation for LTP

Based on the proposed contours of industrial policy, it is suggested that the following section may be added to the LTP, defining key principles that will then drive industrial cooperation framework<sup>43</sup>:

- *Any future industrial cooperation would be built on principle of mutual benefit, aligned with industrial policies of both countries. The cooperation framework should then inform trade relations between China and Pakistan.*
- *Any investment incentives under CPEC will be given by Pakistan to those activities that are new to its economy to help diversify the economic base and generate new comparative advantages. This would mean that these incentives could be for manufacturing new products, which were not being manufactured here before, or those that will develop new capabilities.*
- *All industrial policy incentives or interventions should have clear benchmarks/criteria for success and failure and after careful evaluation of the results, both the countries will reserve the rights to calibrate their approach in line with their industrial policy objectives after a pre-announced time period. This will ensure close alignment of industrial policy interventions with desired policy outcomes*
- *All investment incentives under CPEC should be given for a limited period of time, which should be clearly stated to help the respective beneficiaries become competitive after the government support is concluded.*
- *Any incentives or industrial interventions by the government should target activities and not be sector-specific, to the extent possible, to address the identified market failures instead of providing generic support for specific sectors.*
- *The activities targeted under industrial incentives must have the clear potential of providing spillovers and demonstration effects so that any investment generated can crowd in other, complementary investments or generate informational or technological spillovers.*
- *All industrial policy interventions under CPEC (and otherwise) must be informed through close consultation with private sector.*

<sup>43</sup> These are based on design principles for industrial policy given by Dani Rodrik, Harvard University: Industrial Policy for the twenty First Century; 2004

## 6.6 Immediate Sector-Specific Considerations

As mentioned earlier, there is a need to immediately develop an initial response towards and any sector diagnostics (as per the framework defined earlier) can further validate Punjab's position on China's priority sectors, economically significant sectors for Punjab and any environmental concerns and safeguards regime.

For now, however, it is proposed that Punjab should recommend the following changes in LTP:

- Pakistan welcomes the opportunity to collaborate with China on textiles and garments sector, however the proposal for Pakistan to reduce border import taxes by half and to cancel export restrictions for products produced in Kashgar and exported via Khunjerab and the proposal for China to relax import and export restrictions on Pakistani commodities entering the Kashgar Economic Zone should be taken out of the draft LTP. These specific provisions must be looked at in an integrated picture and can be taken up during the FTA renegotiations, as proposed in the response to draft LTP. Pakistan's concern is that these concessions, once effective, would essentially result in seamless flow of cotton crop and yarn into Kashgar, turning into finished goods entering Pakistan. The textile industry is already facing with a domestic cotton crisis and any free movement of cotton across borders would further raise prices and limit availability, putting pressure on the domestic textile industry. Pakistan looks forward to a concessionary regime, which is mutually beneficial and promotes Chinese investment in its domestic textile industrial base, which in turn can promote value-addition.*
- It is encouraging to note that China is looking to scale up its investment in household appliances sector in Pakistan. The draft LTP has mentioned the need for Pakistan's industrial base, for household appliances, to move from assembly of imported parts to local manufacturing. This move towards value addition and local manufacturing is in line with Pakistan's ambition and draft LTP should also include emphasis on any incentives by Pakistan to be centered on this theme. The proposed household appliance industrial park planned near Lahore is expected to attract new Chinese investment and draft LTP should include that those investors aiming for greater value addition would be given preference in this industrial park.*
- The provision in draft LTP for China to replace outdated equipment in Pakistani cement plants by environment-friendly processing equipment with high-energy efficiency is a step in the right direction. Draft LTP also mentions China's plan to invest in marble and granite processing, which is a positive development. In addition, the draft plan also mentions increase of China's exports of finished construction goods such as ceramic tiles to Pakistan. It is proposed that the draft LTP should mention a focus on value addition and any incentive from*

*Pakistan should be linked to local manufacturing and setting up new plants by Chinese investors.*

- *The draft LTP highlights Chinese investors' interest to invest in agriculture sector in Pakistan. The plan also mentions a number of specific projects. Agriculture sector provides a promising avenue to attract foreign investment and Pakistan encourages Chinese interest in the sector. The LTP should however, clearly mention the mode for Chinese investment in these projects.*
- *The draft LTP should make a mention of critically important sectors for Punjab and should state that Chinese investment should be promoted in these sectors and mutually beneficial investment concessions will be given for these industries. These priority sectors should include agriculture products, fertilizers, leather goods, surgical instruments, sports goods, auto parts and pharmaceuticals besides all the textile related industries such as spinning, weaving, composite textiles, cotton ginning, ready-made garments and towel, hosiery and knitted garments. Furthermore, it is important to note that within sectors, there are certain considerations that make an investment more attractive for Pakistan such as the use of local contractors, the development of the domestic vending chain, training opportunities for Pakistan labour, relocation of technology and skilled jobs. It will be important to tie investment incentives to these specific considerations.*
- *Any future investment incentives by Pakistan to promote industrial cooperation under CPEC will give priority to green investments – those that use environmentally friendly production and those that produce products that are environmentally friendly, while any investments likely to result in negative environmental effects would be required to have appropriate safeguards regime. The draft LTP should also mention that any future industrial cooperation should discourage any re-location of pollution-intensive industries. Both China and Pakistan will eliminate any subsidies with harmful effects on the environment and would be free to levy ecological charges and taxes to internalize environmental costs. Any future collaboration on financing should promote instruments for environmental investments.*



## 7 Conclusion and Way Forward

Going forward, there are a number of steps that Punjab needs to take to prepare itself for industrial cooperation under CPEC. Some of these steps are outlined below:

- **Response to draft LTP** – The immediate priority for Industries Department Punjab should be to furnish comprehensive comments on industrial cooperation framework in draft LTP. LTP is essentially a Chinese document, which needs to be validated by Pakistani side, however at the moment, there is not a shared view amongst various provincial governments on how to respond to it. There is a need to inform government's thinking on this plan, which should then shape Pakistan's views on the document. This report provides multiple comments on draft LTP, which can help Industries Department to develop a comprehensive response.
- **Industrial Policy** – There is an urgent need to develop the provincial industrial policy that is part of the work plan of the Department of Industries, as detailed in the Industries Sector Plan (2018). This would include detailed sector diagnostics, and provide comprehensive sector and cluster mapping in Punjab to inform any intervention by Punjab. This report provides a broad framework for such assessment, which can then lead to validation Punjab's position on China's priority sectors; confirm Punjab's priorities on its own economically significant sectors; and deepen sector knowledge.
- **Industry observatory** – Besides sector diagnostics, government would need sound evidence and data to inform any analysis. There is a need for the government to take a look at the available sources of primary information embedded in national statistics system or from elsewhere and identify gaps, which need to be addressed. The ultimate goal is to have adequate information to assess industrial trends, competitiveness of various sectors, value chain dynamics and identifying bottlenecks and failures, etc. Such intelligence should regularly feed into government's policy making and help calibrate any government interventions. It is proposed to create dedicated capacity within Industries Department (an Industrial observatory) to take on this role, besides driving continuous public private dialogue. Both these roles have already been assigned to the Department of Industries in the Industries Sector Plan 2018 which sets out a work plan for the Department in line with the Punjab Growth Strategy.
- **Alignment with provincial growth strategy** - Punjab already has a provincial growth strategy, which highlights number of priority areas. There is a need to revisit this document and align the growth targets with CPEC objectives and opportunities to create a unified vision for the province.

- **Public-private dialogue** - There is a need to look for all possible positive and negative implications of industrial cooperation initiatives under CPEC. The ultimate objective of CPEC for Pakistan is to promote economic growth and there is a need to take utmost care to support specifically those industries and areas, which are likely to contribute towards future growth and not undermine the existing economic base of the country or province. This could be ensured through a structured continuous public-private dialogue, which should be central to CPEC planning to inform the government of the market pulse and to timely request for any corrective action on part of the government.
- **Environmental concerns and safeguards regime** - It is expected that CPEC will also lead to industry relocation from China to Pakistan. While this is good news, as it would lead to more investment and greater employment opportunities, there is a need to look for any environmental concerns due to relocation of 'dirty industry' and accordingly the government should think through any necessary safeguards regime. It is expected that future diagnostics would further inform this aspect, which should then lead to tightening of regulatory and safeguards regime. This will also require building capacity and incentives to implement environmental regulations.
- **Integration of local industry** - It is also critical that any new industry, especially in sectors supported by government, should focus on technology transfer and strengthening of local business. Efforts should also be made for upstream and/or downstream integration of local partners. There is a need to build capacity of local industry so that they can take maximum benefit of these upcoming investments.
- **Alignment of existing public investment portfolio** - Government of Punjab is already making massive investments through its annual development portfolio in a number of areas that are relevant to CPEC, such as skills development, industrial parks development, rural and urban roads development, etc. There is a need to review all such investments in the context of CPEC and align the existing portfolio so that it creates readiness for local industrial clusters to take benefit of CPEC.
- **Skill readiness** - A similar readiness would also be required for the local workforce, so that they are employable within the industries that would be relocated from China. Presently, the skill development programs may be in line with present employment opportunities. However, with CPEC, the industrial landscape is expected to undergo a change and therefore, it is recommended to look at existing skill development roadmap and align that with CPEC plans. Pakistan has poor secondary and tertiary school enrolment compared to competitors, and it is imperative to provide basic competencies and higher and technical education to a wider section of the population. This will ensure that labour is resilient to structural change and has absorptive capacity for new technologies. It will also be important to provide specific incentives to firms



to train their workforce, rather than pre-empt all the possible types of specific labour skills that might be required by new investors.

- **Regulatory reform package** - In order to promote foreign investments and being a preferred destination for such investors, there is a need to improve investment climate and to reduce the cost of doing business. Government of Punjab therefore should think about necessary business environment reforms that could make the environment friendly for future investments. These reforms could come as a comprehensive regulatory package in the wake of CPEC.
- **Strengthened public sector capacity** - As CPEC is rolled out, there would be need for a responsive public sector, especially on industrial cooperation side to respond to demands and requests by foreign investors. Moreover, there is a need for meticulous planning and implementation. All of this calls for the need to enhance existing institutional capacity at Industries Department.

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## 9 Appendix: Template for sector diagnostics

### Economic benefit

7. Domestic market profile
8. Will growth in this sector have a significant impact on balance of trade?
  - a. What is the scope for export promotion?
    - i. Trends in export, including main trading partners
    - ii. What is the global demand, prices, and growth rates for the product?
    - iii. What is the demand, prices, and growth rates for the output in the specific set of countries for which the most substantial reduction of logistics costs is expected following completion of CPEC?
    - iv. What is the demand, prices, and growth rates for any imported inputs in the specific set of countries for which the most substantial reduction of logistics costs is expected following completion of CPEC?
    - v. What are current market access conditions like in these countries (FTAs)? What is the likelihood of negotiating access to regional and global markets for the products? What are the current impediments to export to these countries and can they realistically be relieved?
  - b. What is the scope for import substitution?
    - i. Is the product being imported currently?
    - ii. Trends in import, including main trading partners
9. Will growth in this sector have a significant impact on competitiveness of other sectors?
  - a. Does it produce an input for another good?
  - b. Will it reduce market concentration and/or prices and increase choice?
  - c. Is it an enabling sector or an enabling technology?
  - d. What integration opportunities are there for local businesses?
10. Are there good investor prospects in this sector?
11. Does Pakistan have the underlying assets and natural resources to be competitive in this sector?

### Social Inclusiveness

7. What is the expected impact on the quantity of jobs?
  - a. Scale of investment
  - b. Employment multipliers
  - c. Labour intensity of production
8. What is the expected impact on the quality of jobs?
  - a. Typical composition of higher value addition, permanent jobs

- b. Proportions of different grades of labour expected to be used—management, high skill, low skill
- 9. Are there prospects for improving gender inclusiveness?
- 10. Are there prospects for improving geographical disparities within Pakistan?
- 11. Provision for SMEs
- 12. Skills and resource match with current population profile

#### **Innovation**

- 5. How much R&D is undertaken in the industry globally?
- 6. What proportion of skilled personnel and R&D workers are hired globally?
- 7. How many patents does the industry file globally?
- 8. What are the prospects for Pakistan for acquiring technology?

#### **Sustainability**

- 4. Economic sustainability: how does it contribute to growth that is high, non-volatile and long-lasting enough to be meaningful
- 5. Social sustainability: covered under Social inclusiveness
- 6. Environmental sustainability in production process and product use
  - a. Energy and material efficiency
  - b. Resource depletion
  - c. Effluent damage
  - d. What are the safeguards available in current environmental policy to contain this?
  - e. Does government have the capacity to make the required rules and/or implement existing rules practically?
  - f. Is the investment likely to improve energy efficiency in the future?