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Trade, Industry and Competition in Pakistan

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ABSTRACT

We believe that high tariff rates have increased the overall cost of production in Pakistan, and the domestic prices of many products have become much higher than the international market prices. Reducing import tariffs will reduce not only the domestic prices but will also increase the export competitiveness of the country because many imported products are complementary intermediate inputs in various exporting industries. Further, it will allow the country to take advantage of the augmented technology in the new imported products, which will be helpful to add new products to its export portfolio. Hence, we eliminate the import tariffs of the 10 major import items of Pakistan such as cooking oil from Indonesia; textiles, chemicals, basic metals, machinery and electrical equipment from China; mining, coke and petroleum from the United Arab Emirates; and mining and chemicals from the Kingdom of Saudi Arabia. Our simulation results show that eliminating the import tariff reduces domestic production in most of these sectors. Among them, however, the mining, textile, and chemical industries still grow moderately. On the other hand, domestic production of all other sectors increases moderately indicating that access to more economic intermediate inputs allows these industries to contribute to economic growth, and the overall GDP increases by around 0.5% in the country.

*JEL Classifications:* C67, C68, F1, L5
Keywords: Import Tariffs, Industry, Trade, CGE, Pakistan

1. INTRODUCTION

Depleting foreign exchange reserves, rising trade deficit, and protection to the domestic industry through import tariffs restrict imports in Pakistan. Najib (2022) argues that an import ban in the country is highly insignificant, and does not make a real impact on the import bill rather it leads towards smuggling and loss of customs duties, impeding the overall economic growth. Trade restrictions through import tariffs create export distortions because domestic prices of similar products increase in a country compared to the world market, adversely affecting the trade balance of the country (Shapiro, 2021).

Stagnant export products also add to the trade deficit (Nasir, 2020). Textile is the key exporting industry in Pakistan, which has around 51 percent share in total exports, and the key export destinations are Germany (GER), the United States (USA), Great Britain (GBR), and China (CHN) (Zeshan, 2022c). In a similar case, copper used to account for nearly half of the total exports in Chile, but the country managed a successful diversification of its exports, and gained new comparative advantages. However, export product diversification was not easy for Chile rather it was the result of its persistent commitment to the trade liberalisation policy during 1973-90, and the country reaped the fruit later in the 1990s and onwards (Lebdioui, 2019).

Fig. 1. Major Exports of Pakistan by Sector and by Source Country (USD Million)
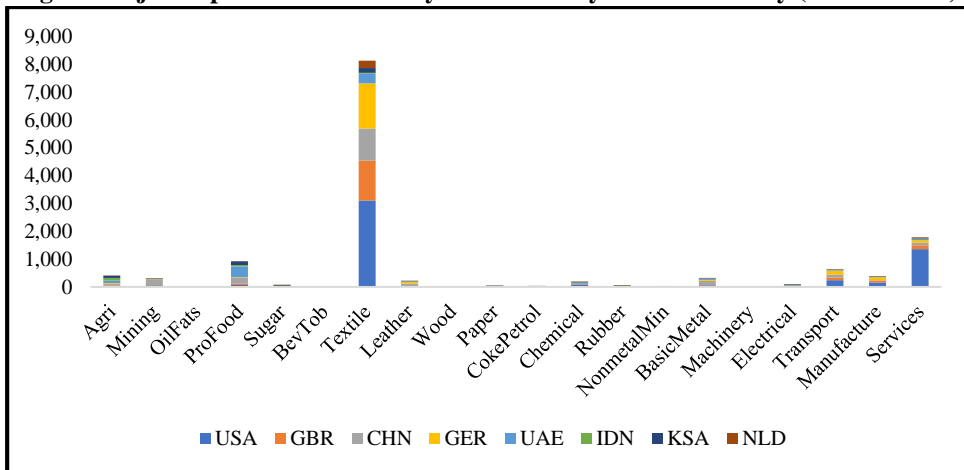
Source: Own calculations, GTAP database version 11.[1]

It is believed that diversifying export products can significantly add to the trade surplus (Akbas and Sancar, 2021). New imported inputs provide easy access to new technologies, and a suitable combination of domestic and imported intermediate inputs

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[1] Author of this study is the sole contributor of Pakistan input-output table to the GTAP database version 11.

makes a way toward new export products (Castellani, 2019). In today's competitive environment, many firms introduce new items to their export portfolio, and reduce the scale of existing items simultaneously (Cirera *et al*. 2015).

New imported inputs allow firms to take advantage of the embodied technology in the imported capital goods as well as cheaper and better intermediate inputs (Carrasco and Tovar-Garcia, 2021). The government of China launched various policies to promote imports, and also reduced the average import tariff rate to 7.5 percent in 2018 (Tian and Yu, 2019). As a result, Chinese firms invested more in research and development activities to adjust to the more liberalised and competitive international trade environment.

However, trade is heavily regulated in Pakistan, and the average import tariff rate is around 12 percent in the country.[2] High import tariff rates reallocate factors of production such as labour and capital from the competitive export sectors to the less competitive domestic manufacturing industry (Asif *et al.* 2022). This reduces the incentive to innovate in domestic firms, and the long-run economic growth is adversely affected. The protection of the domestic industry through high import tariff rates does not encourage firms to increase research and development activities in Pakistan. Hence, the overall expenditure on research and development has decreased from 0.33 percent of GDP in 2011 to 0.20 percent of GDP in 2019.[3]

International trade can play a key role to bridge the gap of large productivity differences between different countries (Dayna *et al.* 2018). Endogenous-growth models emphasise that imports can lead to long-run economic prosperity through a higher level of productivity in firms through diversified intermediate inputs (Ethier, 1982). Imperfect substitution between different intermediate products preserves a complementarity relation between imported and domestic intermediate inputs, which adds to productive externalities (Krugman, 1979).

Hence, this research work argues that trade liberalisation in Pakistan through reduced import tariff rates can provide the country with economical intermediate inputs, final products, and capital goods. It will increase the productive capacity of domestic firms, the welfare level of households will rise through rising income levels due to lower international prices, and export product diversification can be gained through new imported products. By applying real-world data, this study examines the impact of a liberalised trade policy on domestic production in various sectors, market prices, trade activities, and overall economic growth and welfare level. More precisely, it eliminates the import tariffs of the 10 major import items of Pakistan such as cooking oil from Indonesia; textiles, chemicals, basic metals, machinery and electrical equipment from China; mining, coke and petroleum from the United Arab Emirates; and mining and chemicals from the Kingdom of Saudi Arabia.

The rest of the study is as follows. The next section discusses the structure and sources of imports in Pakistan whereas Section 3 describes the modeling framework. Simulation design and database are provided in Section 4 while the simulation results are discussed in Section 5. Finally, the conclusion and discussion are elaborated in Section 6.

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[2] https://data.worldbank.org/indicator/TM.TAX.MRCH.SM.AR.ZS?locations=PK

[3] https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS?locations=PK

2. STRUCTURE AND SOURCES OF IMPORTS IN PAKISTAN

Based on the scale of imports, they can be categorised into three groups of source countries. Group one constitutes China and United Arab Emirates (UAE). Pakistan relies heavily on imports from China, which are more than 47 percent (around 19 billion) of its total imports from its major trading partners, whereas total imports from UAE are around 7 billion. The second group constitutes the USA, Indonesia (IDN), and the Kingdom of Saudi Arabia (KSA), and imports from these countries range from 2.8 to 3.7 billion. The third group comprises the United Kingdom, Germany and the Netherlands (NLD), and imports from these countries range from 1.2 to 1.7 billion.

Fig. 2. Overall Imports of Pakistan
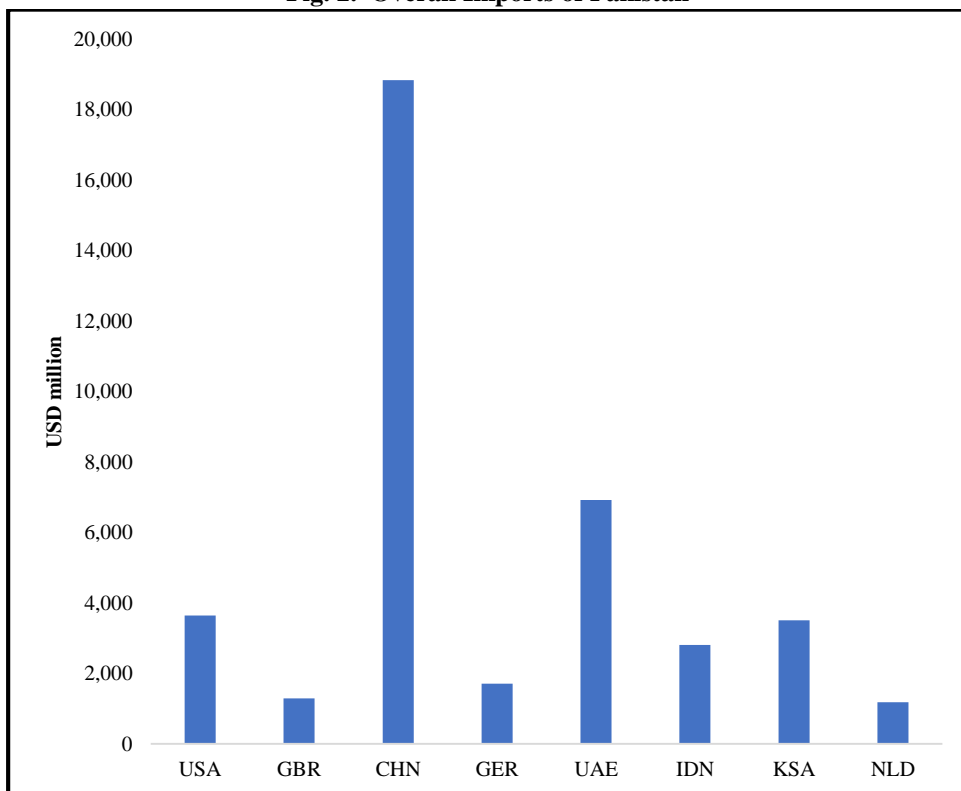
Source: Own calculations, GTAP DB 11.

Pakistan imports a wide range of products from its importing partners. In group 1, it imports electrical equipment, basic metals, machinery, chemicals, and textile products from China whereas coke and refined petroleum products, and mining products are the key imports from United Arab Emirates (Table). In group 2, agriculture, services, and transport products are the key imports from the USA; cooking oil is the main product from Indonesia whereas mining and chemical products are the key imports from the Kingdom of Saudi Arabia. In group 3, important import items are basic metals from the United Kingdom; machinery from Germany; and coke and refined petroleum products from the Netherlands.

Table 1

Breakdown of Imports in Pakistan (USD million)

	USA	GBR	CHN	GER	UAE	IDN	KSA	NLD
Agri	885	10	311	6	17	153	4	9
Mining	16	2	11	3	2,101	203	1,871	3
OilFats	56	0	1	0	4	1,729	4	0
ProFood	94	34	114	25	33	32	5	52
Sugar	9	1	8	3	19	0	0	2
BevTob	9	1	4	5	18	1	0	1
Textile	36	95	2,153	20	21	123	6	2
Leather	1	2	245	4	3	2	8	0
Wood	15	1	61	27	0	0	0	0
Paper	53	14	269	35	23	117	12	5
CokePetrol	24	1	50	5	3,175	0	388	758
Chemical	199	139	2,325	301	362	105	1,154	58
Rubber	24	12	708	25	21	60	9	4
NonmetalMin	7	2	483	11	28	3	1	0
BasicMetal	437	391	3,072	116	642	11	19	40
Machinery	225	71	2,545	362	71	11	0	21
Electrical	227	87	4,567	238	201	17	0	26
Transport	486	66	1,068	123	93	200	23	29
Manufacture	38	16	557	73	31	31	0	22
Services	807	344	276	332	55	13	2	154
Total	**3,648**	**1,289**	**18,829**	**1,714**	**6,919**	**2,812**	**3,506**	**1,184**

Source: Own calculations, GTAP DB 11.

3. MODELING FRAMEWORK

The present study uses a multi-sector, multi-regional global computable general equilibrium (CGE) framework. It is a system of non-linear equations followed by constrained optimisation behaviours of different economic agents including consumers, producers, importers, exporters, savers, investors, and the government. This framework combines economic theory with non-linear programming and employs a global dataset on general equilibrium theory rooted in Corong, *et al*. (2017). Previous notable CGE models developed for different policy objectives in Pakistan are Ahmed (2013), Khan, *et al.* (2018), Zeshan (2022a, 2021, 2019a), Zeshan and Shakeel (2020), and Zeshan and Ko (2017, 2016).

The following Equations (1-2) explicitly represent how import tariffs along with other factors affect domestic market prices and how they are linked with the tax payment system in the current CGE framework:

Domestic market price $(i, r, s) = f[tm(i, s), tms(i, r, s), pcif(i, r, s)]$ … (1)

Where,

i, r, s – represents commodities, and both r and s indicate countries;
$tm(i, s)$ – source generated change in tax on imports of i into s;

tms(*i, r, s*) – source specific change in tax on imports of *i* from *r* into *s*;

pcif(*i, r, s*) – cost, insurance, freight (CIF) based world price of commodity *i* supplied from *r* to *s*;

$$\textit{Import tax payments }(i, r, s) = f[\textit{VIMS}(i, s, r), \textit{tm}(i, r), \textit{tms}(i, s, r)$$
$$\textit{MTAX}(i, s, r), \textit{ pcif}(i, s, r) \textit{ qxs}(i, s, r)] \quad \ldots \quad \ldots \quad \ldots \quad (2)$$

Where,

VIMS(*i, s, r*) – imports of *i* from *s* to *r* valued at domestic mkt prices;

MTAX(*i, s, r*)– tax on imports of good *i* from source *s* in destination *r*;

pcif(*i, s, r*) – CIF world price of commodity *i* supplied from *s* to *r*;

qxs(*i, s, r*) – imports of commodity *i* from *s* to region *r*;

4. SIMULATION DESIGN AND DATABASE

We believe that high tariff rates have increased the overall cost of production in Pakistan, and the domestic prices of many products have become much higher than the international market prices. Reducing import tariffs will reduce not only the domestic prices but will also increase the export competitiveness of the country because many imported products are complementary intermediate inputs in the exporting industries. Further, it will allow the country to take advantage of the augmented technology in the new imported products, which will be helpful to add new products to its export portfolio. Hence, we eliminate the import tariffs of the 10 major import items of Pakistan such as cooking oil from Indonesia; textiles, chemicals, basic metals, machinery and electrical equipment from China; mining, coke and petroleum from the United Arab Emirates; and mining and chemicals from Kingdom of Saudi Arabia (see Table 1).

This analysis uses a multi-regional social accounting matrix including the most recent Pakistan input-output table in the Global Trade Analysis Framework (GTAP) database version 11 (Zeshan, 2022a).[4] This database comprises 65 sectors and 151 countries/regions. For the sake of convenience, the 65 sectors are aggregated into 20 sectors and the major trading partners of Pakistan are separated from the 151 countries such as the United States (USA), United Kingdom (GBR), China (CHN), Germany (GER), United Arab Emirates (UAE), Indonesia (IDN), Kingdom of Saudi Arabia (KSA), and Netherlands (NLS). A complete sectorial aggregation scheme is provided in the Appendix. The simulation results of the global CGE modeling framework are discussed in the next section.

5. SIMULATION RESULTS

The simulation results show that imports have increased in almost all the sectors where import tariff rates are eliminated. It increases the most in the textile sector by around 20.4 percent whereas it grows from around 4.3 percent to 1.6 percent in all other sectors where tariffs are eliminated (Fig). However, imports reduce in all other sectors where tariff rates are not changed. On the other hand, exports of all the sectors increased where the electrical equipment, mining and machinery sectors are the fastest growing industries and their exports increased by 13.5 percent, 12.5 percent, and 10.06 percent, respectively.

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[4] A history of the Pakistan input-output tables can be traced in Zeshan and Nasir (2019).

Fig. 3. Overall Trade Performance in Pakistan (% change)
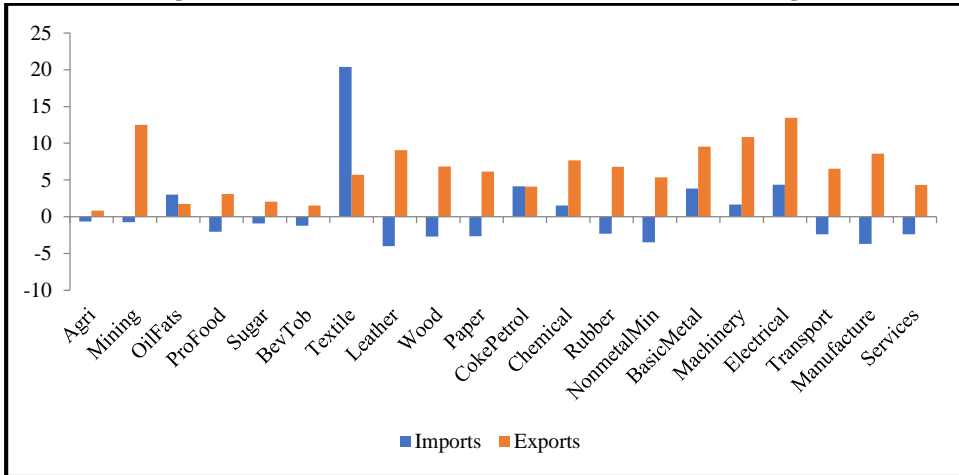
Source: Own calculations.

It is interesting to note that the growth rates of exports are higher than imports in most of the sectors where import tariff rates are eliminated such as electrical equipment, machinery, basic metals, chemicals, and mining. The textile sector is the backbone of Pakistan's exports, and the growth in its imports is much larger than its exports. There are two important points to consider here. First, its value-added has reduced over time, and the industry needs a major overhaul to increase its productivity (Zeshan, 2022c). We believe, new technology augmented intermediate inputs through reduced tariff rates provide a revival of value-addition in this industry. Second, the change in the trade balance in the textile sector is still positive (increases by USD 143.7 million, Fig). The overall trade balance of the country increases by around 338.14 million, which indicates that the advantages of reducing trade barriers are far more than their disadvantages.

Fig. 4. Trade Balance in Pakistan (Change in USD Million)
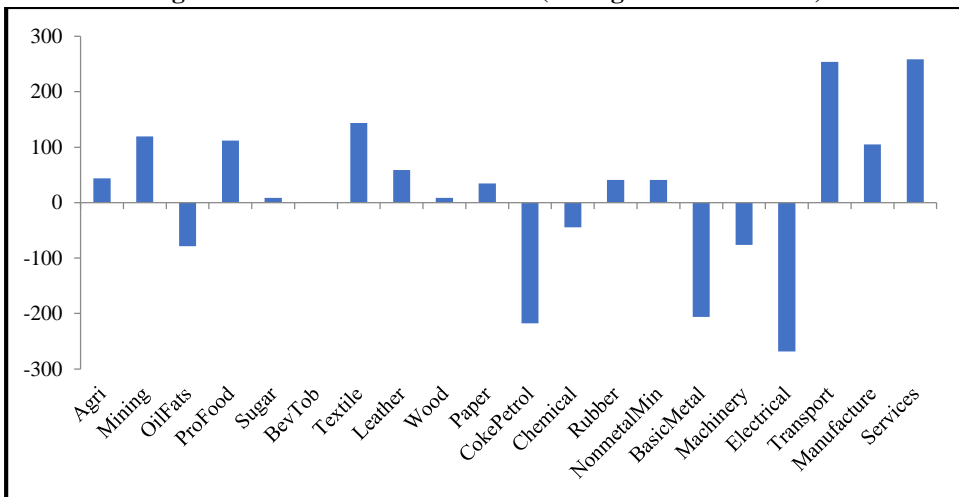
Source: Own calculations.

Generally, the government is reluctant to reduce the import tariffs because it believes that the lower revenues from the import tariffs will enlarge its fiscal deficit. The Strategic Trade Policy Framework (2019) states that import tariffs contribute around 50 percent in the total tax revenues in Pakistan (see Fig). However, the simulation results show that reducing trade barriers (import tariff) expand the trade activity in Pakistan, adding an additional 101 million to the overall tax revenues.

Fig. 5. Share of Tariffs in Tax Revenues (%)
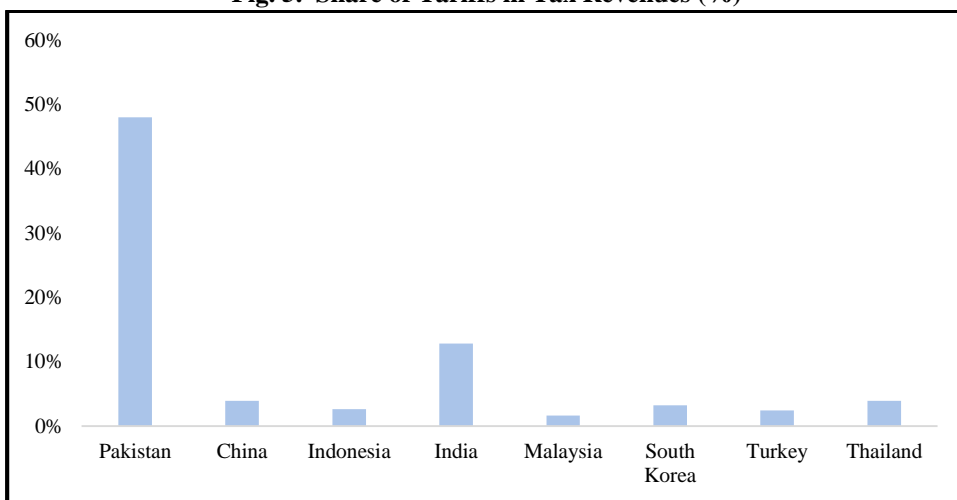
Strategic Trade Policy Framework (2019).

As discussed in Section 4 (Simulation design and database), we eliminate the import tariff rates of mining, coke and petroleum, cooking oil, textile, chemicals, basic metals, machinery and electrical equipment from major importing countries. The flexible trade policy encourages these products from importing countries at cheaper prices compared to the expensive domestic market. The consumer demand for these products reduces in the domestic market, but it increases for the imported products. The highest reduction is observed in cooking oil by the households (15.5 percent) and the government (13.6 percent). Other domestic industries, where the demand for domestic products reduces, are basic metals and electrical equipment (Table). On the other hand, cheaper imports increase the demand for imported textile products the most. Further, there is a noticeable increase in the demand for imported coke and petroleum products.

Previously, in the presence of high import tariff rates, the firm in Pakistan had to use expensive domestic inputs to run their production operations. However, now the firms have access to cheaper imports globally after the elimination of import tariffs. This reduces the firm demand for domestic products where the import tariffs are removed, and the firms increase their demand for imported intermediate inputs (Table - Table). The average demand for domestic cooking oil in domestic firms is reduced the most by more than 10 percent followed by electrical equipment and basic metals where the demand for domestic products reduces by 8.4 percent and 5.7 percent, respectively. On the other hand, the average demand for imported textile products in domestic firms increases the most by more than 20.8 percent, followed by cooking oil and electrical equipment.

Table 2

Change in Demand for Domestic and Imported Products (% change)

	HHD-D	HHD-M	GOVD-D	GOVD-M
Agri	-0.1	-0.7	-1.0	-1.6
Mining	0.0	0.2	0.0	0.2
OilFats	-15.5	2.8	-13.6	4.7
ProFood	0.1	-2.2	0.0	-2.2
Sugar	0.1	-1.3	0.1	-1.3
BevTob	0.1	-1.3	0.1	-1.4
Textile	-2.4	21.7	-2.1	22.0
Leather	1.0	-4.4	2.9	-2.5
Wood	1.2	-3.4	1.8	-2.8
Paper	0.8	-3.2	0.1	-3.9
CokePetrol	-3.1	4.2	0.1	7.4
Chemical	-0.3	1.1	-0.6	0.7
Rubber	1.8	-2.8	2.1	-2.4
NonmetalMin	0.6	-3.8	0.8	-3.6
BasicMetal	-4.6	3.2	-4.8	3.1
Machinery	-2.7	1.0	-2.0	1.8
Electrical	-9.6	2.3	-7.5	4.3
Transport	0.3	-3.6	0.6	-3.3
Manufacture	0.8	-4.4	2.1	-3.1
Services	0.3	-2.6	0.3	-2.6

Source: Own calculations.

Table 3

Demand for Domestic Products in the Domestic Industry (% change)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Agri	0.4	0.4	-11.6	0.4	1.4	0.4	0.7	3.4	2.2	1.6	-2.5	0.7	2.4	1.1	-2.2	-1.5	-5.8	0.9	2.3	0.6
2	Mining	0.4	0.3	-12.2	0.2	1.2	0.1	0.6	3.3	1.9	1.4	-2.7	0.5	2.2	0.9	-2.5	-1.7	-6.0	0.7	2.2	0.4
3	OilFats	-17.2	-8.3	-25.0	-10.9	-15.2	-4.9	-7.0	-12.4	-6.3	-7.2	-20.7	-7.9	-14.8	-6.8	-9.8	-8.0	-12.9	-6.3	-4.8	-8.5
4	ProFood	0.6	0.4	-11.9	0.4	2.5	0.4	0.6	3.3	2.2	1.6	-2.1	0.7	2.5	1.1	-2.4	-1.5	-5.8	0.8	2.3	0.6
5	Sugar	1.2	0.6	-11.7	0.8	1.4	0.4	0.8	4.4	2.3	1.7	-2.0	0.8	2.4	1.2	-2.3	-1.4	-5.7	1.0	2.4	0.8
6	BevTob	0.4	0.4	-11.9	0.4	1.4	0.4	0.6	3.3	2.2	1.6	-2.5	0.7	2.5	1.1	-2.4	-1.5	-5.8	0.8	2.3	0.6
7	Textile	-3.1	-2.4	-15.2	-2.5	-2.5	-2.3	-4.8	-2.5	-0.4	-1.0	-5.0	-1.8	-0.6	-1.4	-4.9	-3.5	-7.6	-1.6	-0.7	-2.1
8	Leather	0.9	4.3	-10.1	1.3	4.2	3.5	3.1	4.1	2.6	2.0	-1.8	2.7	4.6	1.5	-2.0	-1.1	-5.5	1.3	5.4	1.3
9	Wood	2.9	4.5	-11.0	1.3	2.4	1.3	1.5	4.8	3.1	2.4	-1.9	1.5	3.2	2.0	-0.3	-0.2	-4.4	4.1	3.4	1.6
10	Paper	2.9	1.2	-9.5	2.7	3.0	2.7	1.4	6.1	2.8	2.3	-0.5	1.3	4.5	1.8	-0.7	0.5	-4.7	1.5	3.0	1.4
11	CokePetrol	-4.6	-3.7	-16.2	-3.4	-3.6	-3.4	-4.8	-0.3	-1.6	-2.1	-6.5	-3.1	-1.2	-2.7	-7.5	-4.5	-9.4	-2.9	-1.3	-3.1
12	Chemical	-0.2	-0.6	-13.1	-0.6	0.6	-0.5	-0.2	2.7	1.5	0.8	-3.1	0.0	1.7	0.5	-2.9	-1.9	-6.4	0.3	1.8	0.1
13	Rubber	3.1	3.2	-9.6	2.3	3.1	2.0	2.8	5.0	3.5	3.1	1.3	2.3	3.8	2.9	-1.0	0.0	-4.4	3.7	4.1	2.3
14	NonmetalMin	0.9	0.9	-11.4	0.9	1.9	0.8	1.0	3.7	2.6	2.0	0.9	1.2	2.9	1.6	-2.0	-1.2	-5.3	1.3	2.7	1.0
15	BasicMetal	-6.6	-5.5	-17.7	-5.0	-4.1	-4.9	-4.0	-3.7	-3.1	-4.8	-8.8	-4.1	-3.5	-4.1	-6.8	-5.6	-10.2	-4.1	-3.3	-4.4
16	Machinery	-3.3	-3.3	-15.1	-2.7	-1.9	-2.4	-2.7	-0.4	-1.5	-1.9	-6.0	-1.9	-0.2	-1.7	-4.9	-4.3	-8.6	-2.3	-1.2	-2.2
17	Electrical	-9.7	-11.3	-20.5	-7.4	-7.6	-6.6	-4.8	-3.3	-8.6	-9.0	-14.1	-5.6	-4.0	-4.6	-8.6	-7.7	-13.4	-6.0	-7.7	-7.6
18	Transport	0.9	0.5	-11.6	0.7	1.9	0.6	1.3	3.3	2.4	1.6	-2.6	0.8	2.6	1.2	-2.0	-0.2	-4.5	2.0	2.3	0.8
19	Manufacture	1.7	0.9	-11.2	1.0	2.6	1.2	2.2	5.4	3.0	2.4	-1.5	1.2	2.9	1.7	-1.8	-1.1	-5.1	1.7	2.9	1.2
20	Services	0.4	0.5	-11.9	0.4	1.4	0.4	0.6	3.5	2.1	1.6	-2.5	0.7	2.5	1.1	-2.4	-1.5	-5.8	0.8	2.3	0.7

Source: Own calculations.

Table 4

Demand for Imported Products in the Domestic Industry (% change)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Agri	-0.2	-0.2	-12.3	-0.2	0.8	-0.2	0.0	2.7	1.6	1.0	-3.1	0.0	1.8	0.5	-2.8	-2.1	-6.4	0.2	1.7	-0.1
2	Mining	0.6	0.5	-11.9	0.4	1.4	0.4	0.8	3.5	2.1	1.6	-2.5	0.7	2.4	1.2	-2.3	-1.5	-5.8	0.9	2.4	0.6
3	OilFats	1.1	9.9	-6.7	7.3	3.1	13.3	11.2	5.8	11.9	11.0	-2.5	10.3	3.4	11.4	8.4	10.3	5.3	11.9	13.4	9.8
4	ProFood	-1.6	-1.8	-14.1	-1.8	0.3	-1.8	-1.6	1.1	0.0	-0.6	-4.3	-1.6	0.3	-1.1	-4.6	-3.7	-8.0	-1.4	0.1	-1.6
5	Sugar	-0.2	-0.8	-13.1	-0.7	0.0	-1.1	-0.6	3.0	0.9	0.3	-3.4	-0.6	1.0	-0.2	-3.7	-2.8	-7.1	-0.5	1.0	-0.7
6	BevTob	-1.0	-1.1	-13.4	-1.1	0.0	-1.1	-0.8	1.9	0.7	0.1	-4.0	-0.8	1.0	-0.3	-3.9	-2.9	-7.3	-0.6	0.8	-0.9
7	Textile	20.9	21.7	8.9	21.6	21.6	21.8	19.2	21.5	23.6	23.0	19.1	22.3	23.5	22.7	19.2	20.5	16.4	22.5	23.3	22.0
8	Leather	-4.5	-1.1	-15.5	-4.2	-1.2	-1.9	-2.3	-1.3	-2.9	-3.5	-7.2	-2.7	-0.8	-3.9	-7.5	-6.5	-10.9	-4.1	0.0	-4.1
9	Wood	-1.7	-0.1	-15.6	-3.3	-2.1	-3.3	-3.1	0.2	-1.5	-2.2	-6.5	-3.1	-1.3	-2.6	-4.8	-4.8	-9.0	-0.4	-1.2	-3.0
10	Paper	-1.1	-2.9	-13.5	-1.4	-1.1	-1.3	-2.7	2.1	-1.2	-1.8	-4.6	-2.7	0.4	-2.3	-4.8	-3.6	-8.8	-2.6	-1.1	-2.7
11	CokePetrol	2.7	3.6	-8.9	3.9	3.7	3.9	2.5	7.0	5.7	5.2	0.8	4.3	6.1	4.6	-0.2	2.8	-2.1	4.4	6.0	4.2
12	Chemical	1.1	0.8	-11.7	0.8	2.0	0.9	1.2	4.1	2.9	2.2	-1.8	1.4	3.1	1.9	-1.5	-0.5	-5.0	1.7	3.2	1.5
13	Rubber	-1.5	-1.3	-14.2	-2.2	-1.4	-2.5	-1.7	0.5	-1.0	-1.5	-3.2	-2.2	-0.7	-1.7	-5.5	-4.5	-8.9	-0.8	-0.4	-2.3
14	NonmetalMin	-3.5	-3.4	-15.7	-3.5	-2.4	-3.5	-3.3	-0.6	-1.8	-2.4	-3.5	-3.2	-1.4	-2.8	-6.4	-5.5	-9.7	-3.1	-1.7	-3.4
15	BasicMetal	1.3	2.3	-9.8	2.8	3.7	2.9	3.9	4.2	4.8	3.1	-1.0	3.7	4.4	3.7	1.0	2.3	-2.3	3.7	4.6	3.5
16	Machinery	0.4	0.5	-11.4	1.0	1.8	1.3	1.0	3.3	2.2	1.8	-2.3	1.8	3.5	2.0	-1.2	-0.6	-4.9	1.4	2.5	1.5
17	Electrical	2.2	0.6	-8.6	4.5	4.3	5.3	7.1	8.6	3.3	2.9	-2.3	6.2	7.8	7.2	3.3	4.2	-1.5	5.8	4.2	4.2
18	Transport	-3.0	-3.5	-15.6	-3.2	-2.0	-3.4	-2.6	-0.6	-1.5	-2.3	-6.5	-3.2	-1.3	-2.7	-5.9	-4.1	-8.4	-2.0	-1.6	-3.1
19	Manufacture	-3.5	-4.3	-16.4	-4.2	-2.6	-4.0	-3.0	0.2	-2.2	-2.8	-6.7	-4.0	-2.3	-3.5	-7.0	-6.3	-10.3	-3.5	-2.3	-4.0
20	Services	-2.5	-2.5	-14.8	-2.5	-1.5	-2.5	-2.3	0.6	-0.8	-1.4	-5.4	-2.3	-0.5	-1.8	-5.4	-4.4	-8.7	-2.1	-0.6	-2.3

Source: Own calculations.

The factors of production relocate due to the structural changes in the economy caused by the elimination of import tariffs. It has a strong impact on the coke and petroleum, and cooking oil sectors; a moderate impact on the basic metals, machinery and electrical equipment and a very small impact on the mining and textile sectors. After eliminating the import tariffs, the demand for land reduces in most of the sectors, and it reduces the most in the cooking oil and electrical sectors by 7.0 percent, and 4.2 percent, respectively (Fig). Further, the demand for capital stock, skilled and unskilled labour reduces mainly in the cooking oil and electrical equipment sectors. On the other hand, the demand for various factors of production increases largely in leather, rubber and manufacturing sectors.

Fig. 6. Demand for Factors of Production (% change)
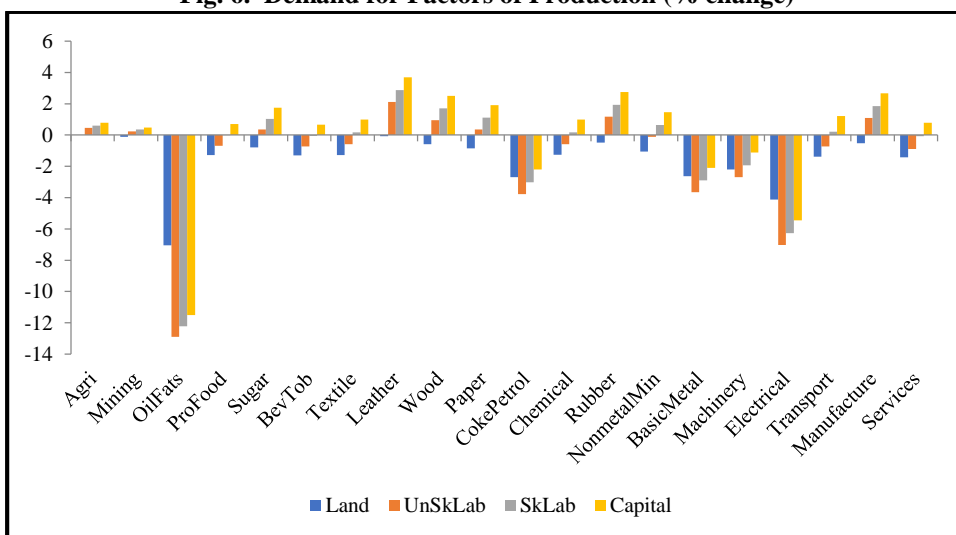
Source: Own calculations.

After eliminating the tariff protection for domestic firms, the domestic production of most of these firms reduces except for mining, textile, and chemical industries which grow slightly by 0.4 percent, 0.6 percent, and 0.6 percent, respectively, translating directly into the value-addition of these firms (Fig). However, a moderate increase in the domestic production of all other industries indicates that these industries have access to better and more economic intermediate inputs in the production process. Although the domestic sales of many local industries are now subject to the elimination of tariffs, but the domestic sales of other industries rise. Overall, the gross domestic product (GDP) increases by 0.5 percent in Pakistan.

Fig. 7. Prices and Production in Pakistan (% change)
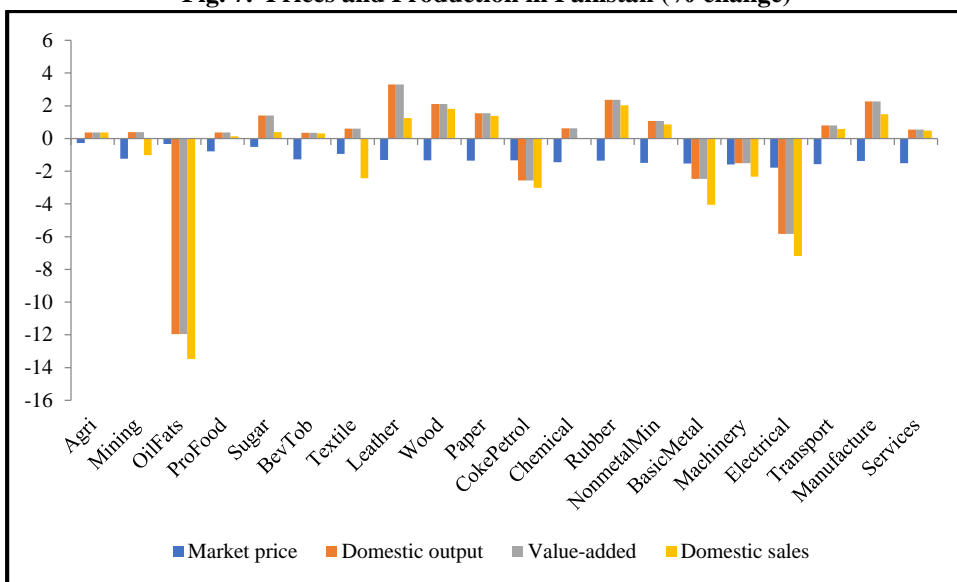
Source: Own calculations

On the other hand, market prices of all the products reduce in Pakistan due to a sustained supply of cheaper domestic and imported products. It reduces the most in the electrical equipment industry and machinery by 1.7 percent and 1.5 percent, respectively (Fig). The higher income effect of the reduced market prices and the substitution effect of the flexible import policy both provide consumers with better options with the given income level, increasing the overall welfare level by 214 million in the country.

6. CONCLUSION AND DISCUSSION

The import substitution policy was in fashion till the 1950s worldwide, but it was abandoned by many countries in the late 1960s. The supporters of the import substitution policy claim that developing countries must reduce the dependence on the imports of manufacturing commodities to support the domestic manufacturing sectors, which ultimately was supposed to decrease the dependence on foreign exchange reserves for imports. Sooner, it was realised by many developing countries that the chances of sustainable economic growth were very slim through this policy.

The inward-looking import substitution policies had high economic costs, therefore, the world opted for export-led growth policies. This shift in the global trade regime was more obvious in the late 1960s, and many countries enjoyed sustained economic prosperity. Notable examples are the four Asian Tigers such as Singapore, Hong Kong, Taiwan, and South Korea. These countries realised the potential of unlimited international trading markets and started to link domestic prices with international prices.

Similarly, the manufacturing sector in Pakistan was heavily protected since independence through various trade barriers. The countries initiated a more liberalised trade regime in the 1980s, but it was unable to link domestic prices with the international market over a long period of time. As a result, the domestic industry has large distortions in production emerging from the high import tariff rates at the moment. The distortions from the protectionist policy make factors of production shift from the competitive exporting industries to the protected and incompetent domestic industry.

On the other hand, domestic industry in Pakistan is unable to substitute for imports, which is obvious from the persistently large trade deficits. Further, the protectionist trade policy encourages smuggling, loss of customs duties, export distortions, stagnant exports, the narrow scale of export items, and no incentive towards research and development in the domestic industry.

We believe that diversification of export products and markets can be achieved through a more liberalised trade regime, by reducing tariff and non-tariff barriers. New imported inputs provide easy access to new technologies, and a suitable combination of domestic and imported inputs, making a way towards new export products. Moreover, new imported inputs allow firms to take advantage of the embodied technology in the imported capital goods as well as cheaper and better intermediate inputs.

Our simulation results show that eliminating the import tariff on the top ten importing products reduces domestic production in most of these sectors. Among them, however, mining, textile, and chemical industries still grow moderately. On the other hand, domestic production of all other sectors increases moderately where tariff rates are not changed. It indicates that access to more economic intermediate inputs allows these industries to contribute to economic prosperity in the country. Overall, the GDP increases by 0.5 percent in Pakistan if we reduce the import tariffs of the top ten importing products.

APPENDIX

A-1

Aggregated Set of Countries

1	PAK	Pakistan
2	USA	United States
3	GBR	United Kingdom
4	CHN	China
5	GER	Germany
6	UAE	United Arab Emirates
7	IDN	Indonesia
8	KSA	Kingdom of Saudi Arabia
9	NLD	Netherlands
10	ROW	Rest of the World

A-2

Aggregated Set of Sectors

1	Agri	Agriculture
2	Mining	Mining
3	ProFood	Processed food
4	OilFats	Cooking oil
5	Sugar	Sugar
6	BevTob	Beverage and tobacco
7	Textile	Textile
8	Leather	Leather
9	Wood	Wood
10	Paper	Paper
11	CokePetrol	Coke and petroleum
12	Chemical	Chemicals
13	Rubber	Rubber
14	NonmetalMin	Non-metallic minerals
15	BasicMetal	Basic metals
16	Electrical	Electrical equipment
17	Machinery	Machinery
18	Transport	Transport
19	Manufacture	Manufacturing industry
20	Services	Services

A-3

Disaggregated Set of Countries

No.	Short description	Long Description
1	ROW	Australia
2	ROW	New Zealand
3	ROW	Rest of Oceania
4	CHN	China
5	CHN	China, Hong Kong Special Admi
6	ROW	Japan
7	ROW	Republic of Korea
8	ROW	Mongolia
9	ROW	Taiwan, China
10	ROW	Rest of East Asia
11	ROW	Brunei Darussalam
12	ROW	Cambodia
13	IDN	Indonesia
14	ROW	Lao People's Democratic Republ
15	ROW	Malaysia
16	ROW	Philippines
17	ROW	Singapore

Table A-3—(*Continued*)

18	ROW	Thailand
19	ROW	Viet Nam
20	ROW	Rest of Southeast Asia
21	ROW	Bangladesh
22	ROW	India
23	ROW	Nepal
24	PAK	Pakistan
25	ROW	Sri Lanka
26	ROW	Rest of South Asia
27	ROW	Canada
28	USA	United States of America
29	ROW	Mexico
30	ROW	Rest of North America
31	ROW	Argentina
32	ROW	Bolivia (Plurinational State o
33	ROW	Brazil
34	ROW	Chile
35	ROW	Colombia
36	ROW	Ecuador
37	ROW	Paraguay
38	ROW	Peru
39	ROW	Uruguay
40	ROW	Venezuela (Bolivarian Republic
41	ROW	Rest of South America
42	ROW	Costa Rica
43	ROW	Guatemala
44	ROW	Honduras
45	ROW	Nicaragua
46	ROW	Panama
47	ROW	El Salvador
48	ROW	Rest of Central America
49	ROW	Dominican Republic
50	ROW	Jamaica
51	ROW	Puerto Rico
52	ROW	Trinidad and Tobago
53	ROW	Caribbean
54	ROW	Austria
55	ROW	Belgium
56	ROW	Bulgaria
57	ROW	Croatia
58	ROW	Cyprus
59	ROW	Czechia
60	ROW	Denmark

Table A-3—(*Continued*)

61	ROW	Estonia
62	ROW	Finland
63	ROW	France
64	GER	Germany
65	ROW	Greece
66	ROW	Hungary
67	ROW	Ireland
68	ROW	Italy
69	ROW	Latvia
70	ROW	Lithuania
71	ROW	Luxembourg
72	ROW	Malta
73	NLD	Netherlands
74	ROW	Poland
75	ROW	Portugal
76	ROW	Romania
77	ROW	Slovakia
78	ROW	Slovenia
79	ROW	Spain
80	ROW	Sweden
81	GBR	United Kingdom of Great Britai
82	ROW	Switzerland
83	ROW	Norway
84	ROW	Rest of EFTA
85	ROW	Serbia
86	ROW	Albania
87	ROW	Belarus
88	ROW	Russian Federation
89	ROW	Ukraine
90	ROW	Rest of Eastern Europe
91	ROW	Rest of Europe
92	ROW	Kazakhstan
93	ROW	Kyrgyzstan
94	ROW	Tajikistan
95	ROW	Rest of Former Soviet Union
96	ROW	Armenia
97	ROW	Azerbaijan
98	ROW	Georgia
99	ROW	Bahrain
100	ROW	Iran (Islamic Republic of)
101	ROW	Iraq
102	ROW	Israel
103	ROW	Jordan

Continued—

Table A-3—(*Continued*)

104	ROW	Kuwait
105	ROW	Lebanon
106	ROW	Oman
107	ROW	State of Palestine
108	ROW	Qatar
109	KSA	Saudi Arabia
110	ROW	Syrian Arab Republic
111	ROW	Turkey
112	UAE	United Arab Emirates
113	ROW	Rest of Western Asia
114	ROW	Egypt
115	ROW	Morocco
116	ROW	Tunisia
117	ROW	Rest of North Africa
118	ROW	Benin
119	ROW	Burkina Faso
120	ROW	Cameroon
121	ROW	C te d'Ivoire
122	ROW	Ghana
123	ROW	Guinea
124	ROW	Nigeria
125	ROW	Senegal
126	ROW	Togo
127	ROW	Rest of Western Africa
128	ROW	Chad
129	ROW	Congo
130	ROW	Gabon
131	ROW	Central Africa
132	ROW	South Central Africa
133	ROW	Ethiopia
134	ROW	Kenya
135	ROW	Madagascar
136	ROW	Malawi
137	ROW	Mauritius
138	ROW	Mozambique
139	ROW	Rwanda
140	ROW	Sudan
141	ROW	United Republic of Tanzania
142	ROW	Uganda
143	ROW	Zambia
144	ROW	Zimbabwe
145	ROW	Comoros
146	ROW	Rest of Eastern Africa
147	ROW	Botswana
148	ROW	Namibia
149	ROW	South Africa
150	ROW	Rest of South African Customs
151	ROW	Rest of the World

A-4

Disaggregated Set of Sectors

No.	Short Description	Long Descriptoin
1	Agri	Paddy rice
2	Agri	Wheat
3	Agri	Cereal grains nec
4	Agri	Vegetables, fruit, nuts
5	Agri	Oil seeds
6	Agri	Sugar cane, sugar beet
7	Agri	Plant-based fibers
8	Agri	Crops nec
9	Agri	Bovine cattle, sheep and goats, horses
10	Agri	Animal products nec
11	Agri	Raw milk
12	Agri	Wool, silk-worm cocoons
13	Agri	Forestry
14	Agri	Fishing
15	Mining	Coal
16	Mining	Oil
17	Mining	Gas
18	Mining	Other Extraction (formerly omn Minerals nec)
19	ProFood	Bovine meat products
20	ProFood	Meat products nec
21	OilFats	Vegetable oils and fats
22	ProFood	Dairy products
23	ProFood	Processed rice
24	Sugar	Sugar
25	ProFood	Food products nec
26	BevTob	Beverages and tobacco products
27	Textile	Textiles
28	Textile	Wearing apparel
29	Leather	Leather products
30	Wood	Wood products
31	Paper	Paper products, publishing
32	CokePetrol	Petroleum, coal products
33	Chemical	Chemical products
34	Chemical	Basic pharmaceutical products
35	Rubber	Rubber and plastic products
36	NonmetalMin	Mineral products nec
37	BasicMetal	Ferrous metals
38	BasicMetal	Metals nec
39	BasicMetal	Metal products
40	Electrical	Computer, electronic and optical products
41	Electrical	Electrical equipment
42	Machinery	Machinery and equipment nec
43	Transport	Motor vehicles and parts
44	Transport	Transport equipment nec
45	Manufacture	Manufactures nec
46	Services	Electricity
47	Services	Gas manufacture, distribution
48	Services	Water
49	Services	Construction
50	Services	Trade
51	Services	Accommodation, Food and service activities
52	Transport	Transport nec
53	Transport	Water transport
54	Transport	Air transport
55	Services	Warehousing and support activities
56	Services	Communication
57	Services	Financial services nec
58	Services	Insurance (formerly isr)
59	Services	Real estate activities
60	Services	Business services nec
61	Services	Recreational and other services
62	Services	Public Administration and defense
63	Services	Education
64	Services	Human health and social work activities
65	Services	Dwellings

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