



SEPTEMBER, 2020

Enhancing the Competitiveness of Pakistan's Refrigerator Industry

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Acronyms

ATL	Active Taxpayers List
AUP	Average Unit Price
CAGR	Compound Annual Growth Rate
DB	Doing Business
FBR	Federal Board of Revenue
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
FERA	Foreign Exchange Regulation Act
FY	Fiscal Year
GDP	Gross Domestic Product
GCI	Global Competitiveness Index
HS	Harmonized System
ITC	International Trade Center
JVs	Joint Ventures
LPI	Logistic Performance Index
LC	Letter of Credit
LTFF	Long Term Financing Facility
MoC	Ministry of Commerce
PRAL	Pakistan Revenue Automation Limited
RCA	Revealed Comparative Advantage
SEZ	Special Economic Zone
SBP	State Bank of Pakistan
TUF	Technology Upgradation Fund
TDAP	Trade Development Authority of Pakistan
USD	United States Dollars

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Disclaimer

The findings, interpretations and conclusions expressed do not necessarily reflect the views of the Board of Directors and Members of the Pakistan Business Council or the companies they represent. Any conclusions and analysis based on the data from ITC Trade Map, ITC Market Access Map, Federal Board of Revenue, Pakistan Bureau of Statistics and the World Bank are the responsibility of the author(s) and do not necessarily reflect the opinion of the ITC, World Bank, or the Pakistan Bureau of Statistics. Although every effort has been made to cross-check and verify the authenticity of the data, the Pakistan Business Council, or the author(s), do not guarantee the data included in this work. All data and statistics used are correct as of 25th June, 2020 and may be subject to change.

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The Pakistan Business Council: An Overview

The Pakistan Business Council (PBC) is a business policy advocacy platform, established in 2005 by 14 (now 83) of Pakistan's largest private-sector businesses and conglomerates, including multinationals. PBC businesses cover nearly all sectors of the formal economy. It is a professionally-run organization headed by a full-time chief executive officer.

The PBC is a not-for-profit entity, registered under Section 42 of the Companies Ordinance 1984. Though it is not required under the law to do so, the PBC follows to the greatest extent possible, the Code of Corporate Governance as applicable to listed companies.

The PBC is a pan-industry advocacy group. It is not a trade body nor does it advocate for any specific business sector. Rather, its key advocacy thrust is on easing barriers to allow Pakistani businesses to compete in regional and global arenas. The PBC conducts research and holds conferences and seminars to facilitate the flow of relevant information to all stakeholders in order to help create an informed view on the major issues faced by Pakistan.

The PBC works closely with relevant government departments, ministries, regulators and institutions, as well as other stakeholders including professional bodies, to develop consensus on major issues which impact the conduct of business in and from Pakistan. The PBC has submitted key position papers and recommendations to the government on legislation and other government policies affecting businesses. It also serves on various taskforces and committees of the Government of Pakistan as well as those of the State Bank, the SECP and other regulators with the objective to provide policy assistance on new initiatives and reforms.

The PBC's Founding Objectives

To provide for the formation and exchange of views on any question connected with the conduct of business in and from Pakistan.

To conduct, organize, set up, administer and manage campaigns, surveys, focus groups, workshops, seminars and fieldwork for carrying out research and raising awareness in regard to matters affecting businesses in Pakistan.

To acquire, collect, compile, analyze, publish and provide statistics, data analysis and other information relating to businesses of any kind, nature or description and on opportunities for such businesses within and outside Pakistan.

To promote and facilitate the integration of businesses in Pakistan into the World economy and to encourage in the development and growth of Pakistani multinationals.

To interact with governments in the economic development of Pakistan and to facilitate, foster and further the economic, social and human resource development of Pakistan.

The PBC's Member Companies





Executive Summary

Manufacturing plays a key role in the economic development of any country and has a multiplier impact on growth through value addition. The contribution of the manufacturing sector to the GDP of Pakistan is around 13-14 percent and it provides employment to around 16.1 percent of the labor force. Large-scale manufacturing accounts for 78 percent of the overall manufacturing sector and 10.2 percent of the GDP of Pakistan¹.

Pakistan's engineering sector offers immense potential to contribute far more to GDP and exports. The refrigerator industry is a subcategory of the home appliance industry and is a part of the engineering sector. It got established in Pakistan in the 1980s and has undergone major shifts since then. The industry suffers from an intricately and inconsistently applied customs tariff regime, ad-hoc changes to the policy environment, lack of localization and a poor business climate.

To get a deeper insight into the challenges faced by industry, the PBC has initiated a series of sectoral studies with the ultimate aim of increasing the competitiveness of sectors in which Pakistan has a comparative advantage. This study aims to improve the competitiveness of the refrigerator industry of Pakistan which is a part of Large-Scale Manufacturing (LSM) and can potentially generate employment opportunities as well contribute to exports. This report titled "Enhancing the Competitiveness of Pakistan's Refrigerator Industry" is the first in the engineering sector series.

Global Refrigerator Industry

The global refrigerator industry is segmented primarily into two types of refrigerators based on cooling technology i.e. direct cool and no frost/frost-free refrigerators. Direct cool refrigerators are generally more popular in South Asia, Africa and the Middle East while frost-free refrigerators have greater penetration in the Americas and Europe. Global demand for refrigerators has been witnessing a consistent increase with revenues expected to reach USD 114 billion in 2023 with a Compound Annual Growth Rate of 2.5 percent over the period 2020 – 23.

China is the largest refrigerator market with a 23 percent share in value terms followed by India (11 percent), and the USA (8 percent). In export markets, the top exporters for refrigerators include China with a market share of about 29 percent followed by Mexico (17 percent), Thailand (7 percent), Turkey (6.6 percent), Korea (6 percent), and Poland (4.5 percent). Top importers include the USA with a share of 21 percent in world imports of refrigerators, Germany (6 percent), France (4.5 percent), the UK (3.8 percent) and Canada (3.3 percent)².

Pakistan's Refrigerator Industry

The refrigerator industry in Pakistan contributed around 2.5 percent to the country's GDP in 2018-19. Pakistan's refrigerator industry is well established and has reached a level of maturity where some exports have taken place to regional markets and the industry is confident that given the right policy framework, they can capture a sizeable portion of the international markets in the coming years. Domestic production of refrigerators in the last 10 years has been between 1 and 2 million units per annum with production in 2019 estimated at 1.03 million units. The domestic demand for refrigerators has reflected the economic conditions within the country where an IMF program has brought the economy to a standstill. A policy framework that encourages domestic manufacturers to tap into growing regional

¹Pakistan Economic Survey 2019-20

²Statista, 2019

markets will, therefore, allow them to reduce their dependence on just the domestic market.

Pakistan is a market for direct cool refrigerators with a share of around 95 to 98 percent. The refrigerator industry has witnessed an increase in demand as a result of rapid rural-urban migration, electrification of villages, and a general improvement in living conditions. The market is expected to grow further as the penetration rate at 42 percent is much lower than regional and global averages. Glass door and smart refrigerators are trending across the world and the Pakistani market has also been witnessing the same.

Pakistan had small exports of refrigerators i.e. USD 2.8 million in FY 2018-19 and has seen a downward trend since FY 2013-14. Imports of refrigerators were USD 257 million which is mainly driven by imports of components (such as compressors, heat pumps, and other parts).

Measuring Competitiveness

This study uses a hybrid of top-down and bottom-up approaches for measuring competitiveness at the industry level. The top-down approach employs comparing global competitiveness indicators as well as calculating competitiveness indicators at the industry level while the bottom-up approach relies on interviews of individual manufacturers to understand their perspectives on the industry's competitiveness.

Pakistan performed poorly than India and China on global competitiveness indicators such as trading across the borders, logistic performance, and global competitiveness indicators. It reflects the relatively weak institutional framework available in the country and below-average governance. Factors such as time to import and cost compliance for imports are impacting the refrigerator industry in Pakistan because of the industry's dependence on the imported raw material. Improvements in the real effective exchange rate (REER) reflects the improvements in competitiveness for exports while imports become more expensive.

The industry-specific indicators also portray the current non-competitive position of Pakistan's refrigerator industry in the global market. A declining export market share, comparative disadvantage, and a low level of competitiveness on Vollrath's indices of competitiveness when compared with regional and global competitors. the refrigerator industry of Pakistan.

The bottom-up approach used in this study includes interviewing individual manufacturers and aggregating their responses at the industry level. The responses were systematically recorded against attributes of augmented Porter's diamond model for firm's competitiveness which are summarized as follows:

Factor Conditions

- ♦ **Absence of domestic raw materials:** Lack of locally available raw materials increases import dependency with around 85% of the raw materials used needing to be imported including plastic, steel, and components including compressors.
- ♦ **Cost Components of Pakistan's refrigerator industry:** The breakup of the cost component for a refrigerator depending on the manufacturer ranges between (1) Utilities: 5 to 7% (2) Labor cost: 3 to 5 % (3) Raw material: 70 to 80%, and (4) Overheads 8 to 12 %.

- ♦ **Customs duties on raw material imports:** Most of the imported raw materials and components are rightly classified and hence there is no duty on these products. However, glass is not classified as a raw material for the industry as it is an intermediate or finished product for other domestic industries.
- ♦ **The competitive advantage of cheap labor:** The assembly line of the refrigerator industry is labor-intensive and the availability of cheap labor in Pakistan provides a competitive edge to the industry.

Demand Conditions

- ♦ **Domestic market and cyclical nature:** Pakistani market is estimated by the local manufacturers as between 1.3 to 1.6 million refrigerators per annum. A substantial decline in demand in recent years is evidence of the cyclical nature of the industry due to demand's correlation to the economy.
- ♦ **Consumer preferences:** Demand is heavily concentrated in direct cool refrigerators which account for 98% of the overall refrigerator market in Pakistan. Direct cool as compared to no-frost refrigerators consume less energy and also ice formation in the freezer compartment is a plus in areas where load shedding is frequent and prolonged.
- ♦ **The demand for imported refrigerators:** The demand for no-frost refrigerators is roughly 15 to 20 thousand units per annum in Pakistan which is entirely being met through imports.
- ♦ **Size ranges for refrigerators:** Prevailing size range of refrigerators in Pakistan varies from 3.5 cubic feet to 22 cubic feet. The average size is 12 cubic feet comparable to that of India with an average size of 10 cubic feet.

Related and Supporting Industries

- ♦ **Vendors for refrigerator industry:** Components for refrigerators, other than direct imports, are being procured through local vendors. These components are up to the mark and manufacturers are satisfied with the quality of components.
- ♦ **The local steel industry complements the refrigerator industry to some extent:** It complements the refrigerator industry to some extent but manufacturers utilize locally produced steel sheets for internal manufacturing and for the manufacture of rear parts of the refrigerator. For exterior design and aesthetics, pre-coated steel sheets are imported.
- ♦ **The domestic glass industry is unable to meet the demand of the refrigerator industry:** The refrigerator industry demands cold-rolled (CR) sheets coated with tempered glass which is very thin and technologically sophisticated. This is not manufactured by the local glass industry.

Firm Strategy, Structure, and Rivalry

- ◆ **Higher production lead time:** Refrigerator manufacturers in Pakistan have to import most of the raw materials and components and lead time for importing these is higher than that of the remaining production cycle.
- ◆ **Lack of an internationally recognized Pakistani brand:** Consumers of home appliances around the world are brand conscious whereas Pakistani manufacturers do not have an internationally recognized brand. This is a major handicap in export markets.
- ◆ **Competition and price wars:** Pakistani refrigerators are competitively priced and are available to consumers at a lower price than that of India and Bangladesh. The market structure follows monopolistic competition as manufacturers offer products that are slightly different based on brand and quality.
- ◆ **Underutilized production capacity:** The average production capacity utilization rate is between 75-80 percent.
- ◆ **Market Concentration:** The market is concentrated with only a few companies. The top four manufacturers account for nearly 90 percent of the sales of refrigerators.

Government Interventions

- ◆ **Policy focusing refrigerator industry is missing:** The refrigerator industry has no preferential treatment by the government and the industry is not working under any specific SRO.
- ◆ **A non-competitive corporate tax regime:** The corporate tax rate of 29 percent in Pakistan is higher than that of India (22 percent and 15 percent for new companies) and China (25 percent).
- ◆ **An uneven playing field:** The government provides tax holidays and other advantages for new entrants while heavily taxing existing companies. Chinese participants are seeking investment opportunities in Pakistan in the wake of CPEC. With tax advantages and an already relatively low-cost manufacturing advantage, they are expected to hurt the already established refrigerator manufacturers operating in Pakistan.
- ◆ **Regulation on foreign transactions:** Manufacturers require international certifications for different products. On average, a certification costs USD 25,000 whereas SBP limits transactions to USD 10,000 a year.
- ◆ **100% LC Margin:** Nearly 18 percent of the raw materials required by the refrigerator industry are facing a 100 percent LC margin.

International Factors

- ◆ **Potential markets for exports:** Countries in SAARC, Africa, and the Middle East are potential markets for exports of direct cool refrigerators. Pakistani refrigerators can have a market in Afghanistan and Bangladesh in the near to medium term.

- ◆ **International competitiveness:** Pakistani refrigerators are internationally competitive in terms of quality but not in terms of prices relative to China. Economies of scale are tilted towards China because of large production volumes.
- ◆ **Risks in sourcing raw material:** High import dependency on raw material exposes the refrigerator manufacturing industry in Pakistan to exchange rate and operational risks.

Government Policies For The Refrigerator Industry

This report briefly covers government policies as applicable to the refrigerator industry. These policies are not specific to the refrigerator industry but focus on the engineering sector as a whole. The list of relevant SROs and policies are as follows:

- ◆ Long Term Financing Facility (LTFF) for Plant & Machinery
- ◆ Standard Duty Drawback Notification (S.R.O 211(I)/2009)
- ◆ Local Taxes & Levies Drawback (Non-Textile) Order, 2018 (S.R.O. 711(I)/2018)

Strategies Followed By Competitor Countries

This chapter compares the strategies of India and China favoring their refrigerator industry. China's subsidy programs for penetration of home appliances in the countryside, strategic entry in the MENA region, and multiple sales channels have worked for the Chinese refrigerator industry.

India attracted FDI from world-renowned manufacturers like Samsung. Another competitive edge comes from national subsidy programs such as the Merchandise Exports from India Scheme (MEIS), protectionist fiscal policies, and economies of scale because of the production of a large number of units.

Swot Analysis

Strengths: The core strength of Pakistan's refrigerator industry includes the manufacturing of direct cool refrigerators which matches the demand of less developed countries. Unlike other engineering goods, Pakistan remains competitive in manufacturing refrigerators of international quality which are competitively priced.

Weaknesses: High dependency on imported raw material (around 85%) and technology reduce margins to a large extent, moreover, lack of an international brand restricts entry into international markets.

Opportunities: Lower penetration rate of appliances and improvements in power availability in the domestic market provide scope for further expansion of the market to cater to increased demand. A competitive exchange rate and surplus capacity of the domestic industry are favorable factors for entering regional markets.

Threats: Supply-side disruptions for imported raw materials are a continuous threat to the industry. Entry of large Chinese manufacturers with deep-pockets and enjoying duty-free access to plant & machinery can seriously impact the viability of current players. Exchange rate volatility and continuous economic slowdown also threaten the demand for refrigerators. Other threats including shifts in consumer preferences and unknown acts of God like COVID-19.

Recommendations For Improving Competitiveness Of Pakistan's Refrigerator Industry

Government needs to promote the setting-up of primary industries.

Refrigerator manufacturers need to import about 85 percent of the raw material used in the manufacture of a refrigerator. Even locally procured components are mostly made from imported raw materials. This reliance on imported raw materials not only reduces profits but also exposes the local industry to currency and supply-side risks.

To ensure sustainable supplies of raw materials not just for the refrigerator industry but also for other engineering industries, the government needs to encourage investments in the primary raw material sectors such as steel & other metals, plastics, glass, and wire, among others.

Removing the anti-export bias in the trade policy

By increasing the cost of imported raw materials either through tariffs or non-tariff barriers such as the requirement of 100% LC margins for imports of raw materials and components which are not locally available, raises the costs for the domestic manufacturers. The manufacturer can pass on the additional cost to the local consumer but is unable to do so for international consumers due to stiff competition.

Suspension of minimum turnover taxes

Refrigerator manufacturers reported their effective tax rate as up to 55 percent. Moreover, there is a decline of 16.5 percent in total units of refrigerators produced during July-March FY2020 as compared to the same period of FY2019. A suggested relief measure is to remove the minimum turnover tax of 1.5 percent under Section 113 of the Income Tax Ordinance.

Consumer durables loan regime should be optimized

Most consumer lending products offered by banks are on floating rates tied with the treasury bills and bonds' yield which varies with benchmark policy rates³. The otherwise fixed rate consumer lending schemes generally charge mark-up higher than similar floating rate consumer financing.

The SBP should optimize the consumer financing regime and also initiate soft loan schemes particularly to enhance penetration of consumer durable products in rural areas.

³ <https://www.dawn.com/news/1463159>

Participation in international trade fairs

Not only should TDAP hand-hold the participation of Pakistani refrigerator manufacturers but also their local suppliers by facilitating their participation in international trade fairs. Participating in international trade fairs will improve the visibility of the Pakistani brands in international markets.

Targeted subsidies/allowances for R&D

Pakistani origin refrigerators have to compete with Chinese origin refrigerators which are cheaper as the Chinese government offers hidden subsidies reportedly up to 18 percent. Other publicly announced subsidy programs such as home appliances for the countryside, old for new, energy-saving home appliance subsidy are also worth mentioning.

The government of Pakistan should extend support for enhancing R&D activities which may include the following:

- ◆ Governments could waive off duty for imports of R&D equipment.
- ◆ Government could subsidize the cost of obtaining product certification from international bodies.

National brand-building program

A major impediment for refrigerator exports is the absence of well recognized international brands from Pakistan. This has been pointed out by all domestic manufacturers.

It is imperative to develop a brand development program at the national level similar to TURQUALITY program of the Turkish government which aimed to create 10 global brands in 10 years. Focusing the refrigerator industry in this regard would be an optimal approach as these products are already conforming to international standards.

High corporate tax rate, inconsistent tariff regimes and volatile exchange rate discourages FDI

Pakistan has a relatively higher corporate tax rate than either India or China, in addition, inconsistent tariffs and duty regimes have meant that potential FDI has moved away from Pakistan towards other low wage countries like India, Viet Nam, and China. The exchange rate has also remained volatile and the PKR depreciation of around 50 percent in the last couple of years has led to foreign investors incurring significant losses.

Need to revisit incentives for Special Economic Zones (SEZs)

Government needs to revisit the set of rules for Special Economic Zones. The incentives offered to entities being set up in the SEZs should be available to all industries being set up in Pakistan. If this is not possible, then the incentives should be limited to units that manufacture for exports.

Realistic exchange rates

A competitive exchange rate is important for competitiveness. An overvalued exchange rate subsidizes imports at the expense of the domestic industry and an undervalued currency subsidizes global customers at the expense of the Pakistani consumers.

Lack of focused investment strategy in home appliances sub-sector

Investment Promotion Strategy, FY 2020-2024 of Board of Investment has identified 11 focal sectors. The refrigerator industry has not been included among these sectors although it follows the criteria for being shortlisted under a sector scan. The joint ventures with international partners allow easy access to international markets as domestically manufactured refrigerators can be sold under international brands. Industry participants have also stressed the significance of synergies as a result of JVs.

The Board of Investment should include the home appliances sub-sector as a whole in the investment promotion strategy and focus should be given to attract FDI in this particular sub-sector.

Ensuring industry works at high volumes

The home appliances industry in general and the refrigerator industry in particular relies on economies of scale. The number of units and cost of production are inversely related as cost (particularly fixed cost) is divided over a large number of units when there is an increase in production.

In the current economic scenario, the production of refrigerators in terms of units has contracted by nearly 30 percent severely impacting profitability. To jump-start the economy, consumer financing of domestically manufactured home appliances needs to be encouraged.

Simplifying complex customs regimes and inefficiencies

Complexities in customs procedures have raised lead time significantly. Pakistan's time to export, time to import, cost to export, and cost to import are significantly higher than that of India and China (Doing Business Indicator-World Bank, 2020). Moreover, Pakistan's ranking over Logistics Performance Indicator (LPI) is poorer than that of India and China. Industry participants also endorsed the burdensome custom procedures and troublesome timeliness, roughly 80 percent of lead time is consumed primarily in procuring imported raw material.

It is crucial to implement the Pakistan National Single Window System at the earliest which will allow parties involved in trade and transport to lodge standardized information and documents with a single-entry point to fulfil all import, export, and transit-related regulatory requirements in real-time.

National standards for engineering products need to be enforced

In the absence of national standards that are comparable with global standards, the exports of Pakistani engineering goods to markets other than underdeveloped markets will always remain a challenge. Government and industry need to ensure that national standards are set and implemented so that Pakistani exports are able to access the developed markets which require high compliance standards.

The government should encourage the utilization of e-commerce platforms

Refrigerator manufacturers have their products available online on their website or at local e-platforms which have limited outreach, there is a need to register products in international portals like Alibaba.com, AliExpress, Amazon and others. The government should encourage Pakistani manufacturers to list on global platforms and SBP should facilitate the setting up of warehouses in regional markets to allow quick deliveries. Another advantage of selling on global portals is in the form of increased awareness of Pakistani brands.



CHAPTER 01

The Global Refrigerator Industry

The Domestic Refrigerator

Arguably, without the domestic refrigerator, the modern chilled food cold chain is not possible. Refrigeration is important in both maintaining the safety and quality of many foods and enabling food to be supplied and consumed in an increasingly urbanized world. It consists of thermally insulated compartments with a heat pump that transfers heat from the inside of the appliance to its external environment thereby maintaining the inside refrigerator temperature below the ambient room temperature. Refrigerators are typically one of the first assets, after a television set that a low-income family acquires.

Overview of the global refrigerator market

The global refrigerator market has witnessed substantial growth in recent years due to an increase in demand for consumer goods primarily due to general economic growth, rapid rural-urban migration, and greater availability of grid electricity in different parts of the world. Consumer buying behavior is driven by a number of factors including features, energy conservation, price, aesthetics, size, brand name, availability and quality of grid power, ease of cleaning etc. Newer models of refrigerators (i.e. smart refrigerators) are meticulously designed with integrated technologies for enhancing energy efficiency and to gain benefits from internet connectivity.

Global demand for refrigerators has been witnessing a consistent upward trend with the market expected to reach USD 114.0 billion with a compound annual growth rate of 2.5 percent over 2020-2023⁴. The refrigerator market in the developed world, which has high levels of penetration is growing at a slower pace as most sales are replacement sales. With an average lifespan of 10 to 15 years, a refrigerator has a relatively longer replacement cycle as compared to other home appliances.

The global household refrigerator market is segmented in terms of the cooling technology used, the storage capacity, and geography. Classification based on cooling technology is, however, more common, this classifies refrigerators into the following two categories:

Direct Cool Refrigerators

In this type of refrigerators, refrigeration takes place by circulation of cool air without any external aid such as fans. Hence, there is no way to control the temperature distribution which is bound to be uneven. Frost or ice collects in and around the freezer compartment which has to be manually removed. Despite this drawback, direct cool refrigerators are popular in countries which have an erratic grid supply as the frost or ice helps maintain the temperature for a longer time duration. In addition, direct cool refrigerators consume less electricity as they don't have electric fans for cooling purposes. Direct cool refrigerators are generally more popular in South Asia, Africa and the Middle East.

⁴ Statista.com

Frost Free Refrigerators

This appliance cools evenly through air circulation in its compartments using electric fans. No manual defrosting is needed as ice does not form on its surfaces. Frost-free refrigerators have greater penetration in the Americas and the European regions.

Table 1:

Comparison Between Direct Cool and No-frost Refrigerators

	Direct Cool	Frost Free
Cost	Relatively inexpensive	Costly
Cooling method	Cooling is achieved by convection	Electric fans are responsible for cooling
Frost/No frost	Manual defrosting is needed	Includes automatic defrost options
Technology	Becoming obsolete	Relatively new technology
Energy Efficiency	The average consumption is 1.25 units of power per day	The average consumption is 4.5 units of power per day
Freshness of Food	Food remains moderately fresh	This technology is best for keeping food fresh

There is another classification for refrigerators which is based on the harmonized system (HS) codes and which brings comparability to the analysis. This study employs both classifications, one that is based on cooling technology and the other one which is based on HS codes. The figures below describe the classification of refrigerators employed for the analysis of exports and imports at the HS-06-digit level. This study includes the HS codes for parts and components for import analysis.

HS Codes for Exports

Figure 1:

HS Codes for Refrigerator Exports at HS-06-digit

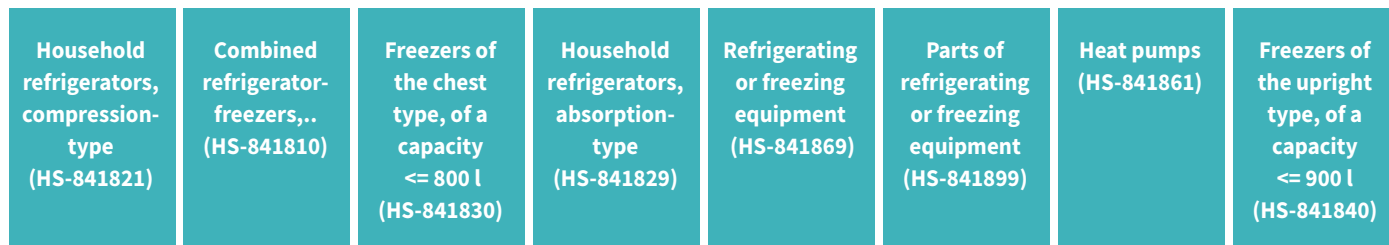
Household refrigerators, compression-type (HS-841821)	Combined refrigerator-freezers (HS-841810)	Freezers of the chest type, of a capacity ≤ 800 l (HS-841830)	Freezers of the upright type, of a capacity ≤ 900 l (HS-841840)	Household refrigerators, absorption-type (HS-841829)
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REFRIGERATORS

HS Codes for Imports

Figure 2:

HS Codes for Refrigerator Imports at HS-06-digit



REFRIGERATORS

Trends in the Global Refrigerator Market

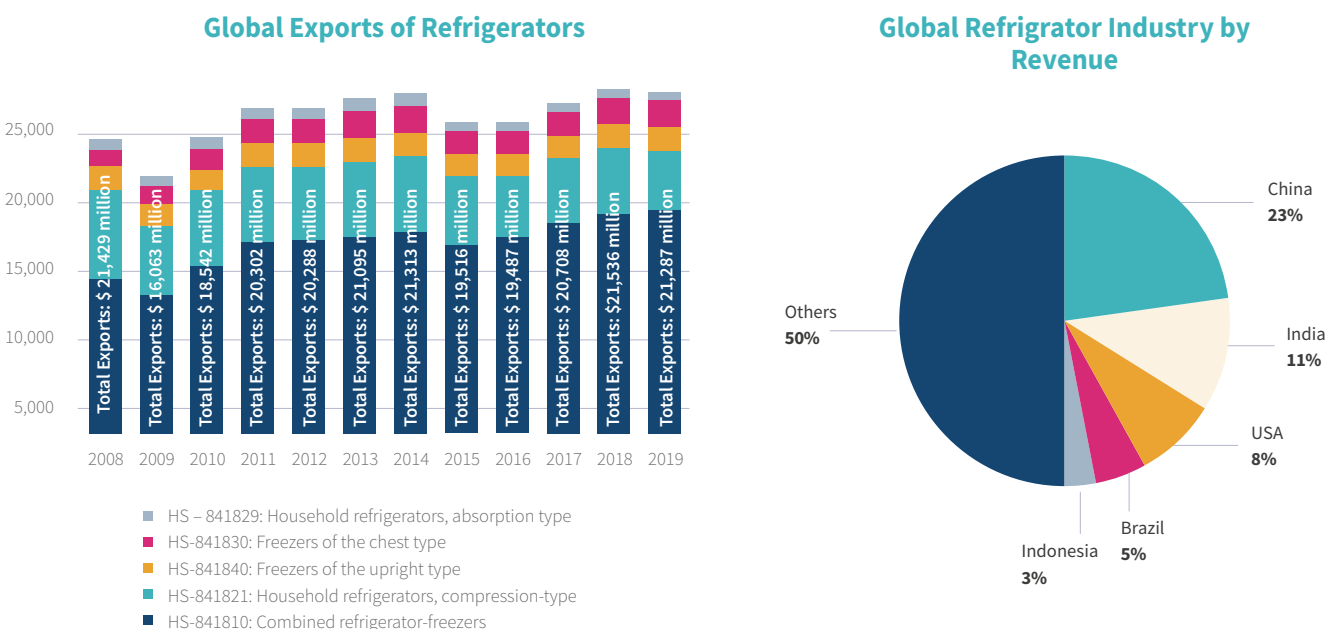
Favorable trends have been observed in global refrigerator markets; state-of-the-art technology, higher energy efficiencies, increasing per capita income, and evolving preferences have increased the global demand for refrigerators. The following figures represent the global supply of refrigerators both in units and by revenue. World exports of refrigerators have been witnessing an increasing overall trend, however, a sharp decline (approximately -22%) was observed in 2009, primarily as a result of the Global Financial Crisis of 2008 confirming the cyclical nature of the industry.

In terms of sales revenue as depicted in the right panel below, China leads the way with a share of 23 percent in global sales revenues followed by India (11 percent) and the USA (8 percent). The market is relatively concentrated with the top five countries accounting for nearly 50 percent of the global market in revenue terms.

Figure 3:

Global Exports of Refrigerators, 2008-2019; Share in Refrigerator Sales, 2019

Source: ITC Trade map, Statista



The Top Refrigerator Exporters

The following table lists the top 15 global exporters of refrigerators and Pakistan's rank in 2019. China ranked first with a market share of about 29 percent followed by Mexico (17 percent), Thailand (7 percent), South Korea (6 percent) and Turkey (7 percent). Pakistan ranked at the 61st position in terms of global exporters of refrigerators with a market share of 0.01 percent and with a decline of 7.6 percent in 2019 as compared to 2018.

Table 2:

Top 15 Refrigerator Exporters in the World

Ranks	Exporters	Values in 2018*	Values in 2019*	Change 2018-19 (%)	CAGR 2015-2019 (%)	Export Share 2019 (%)
	World	21,536.2	21,287.8	-1.2	2.2	
1	China	6,278.2	6,375.7	1.6	8.0	29.2
2	Mexico	3,592.8	3,492.8	-2.8	1.7	16.7
3	Thailand	1,530.1	1,658.9	8.4	2.1	7.1
4	Korea, Republic of	1,360.2	1,503.1	10.5	-5.6	6.3
5	Turkey	1,427.4	1,349.6	-5.5	2.1	6.6
6	Poland	976.5	1,088.0	11.4	2.5	4.5
7	Germany	976.1	866.9	-11.2	-0.3	4.5
8	Italy	649.2	611.8	-5.8	-0.1	3.0
9	United States of America	440.0	402.3	-8.6	-7.7	2.0
10	Netherlands	336.3	343.5	2.1	13.5	1.6
11	Hungary	365.7	318.2	-13.0	-1.2	1.7
12	Romania	321.4	313.7	-2.4	1.4	1.5
13	Indonesia	278.5	309.0	10.9	5.4	1.3
14	Bulgaria	218.2	232.2	6.4	4.5	1.0
15	Sweden	208.1	212.4	2.0	2.1	1.0
61	Pakistan	2.7	2.5	-7.6	-13.9	0.0

Source: ITC Trade Map

*Figures are in USD million

The Top Refrigerator Importers

Table 3 lists the top 15 refrigerator importers along with Pakistan's ranking. The USA accounts for 21 percent of world imports of refrigerators followed by Germany (6 percent), France (4.5 percent), the UK (3.8 percent) and Canada (3.3 percent).

Pakistan's share in world imports of refrigerators is only 0.26 percent and it is mainly composed of imports of components and parts that support the domestic manufacturing of refrigerators. Only a small percentage of imports include completely built units (CBU) which are mostly frost-free refrigerators. Although imports of refrigerators in Pakistan has decreased in 2018-19, a CAGR of 1 percent since 2015 represents an increasing trend.

Table 3:

Top 15 Importers of Refrigerators in the World

Ranks	Importers	Values in 2018*	Values in 2019*	Change 2018-19 (%)	CAGR 2015-2019 (%)	Import Share 2019 (%)
	World	41,052.5	40,590.5	-1.1	2.8	
1	United States of America	8,936.0	8,663.3	-3.1	2.5	21.3
2	Germany	2,504.9	2,473.9	-1.2	4.2	6.1
3	France	1,826.7	1,843.6	0.9	5.0	4.5
4	United Kingdom	1,489.1	1,530.2	2.8	1.0	3.8
5	Canada	1,397.6	1,352.1	-3.3	3.1	3.3
6	Japan	1,055.3	1,199.8	13.7	4.5	3.0
7	China	1,239.6	1,094.3	-11.7	-1.0	2.7
8	Netherlands	997.4	1,083.2	8.6	14.7	2.7
9	Italy	1,074.3	1,063.1	-1.0	3.9	2.6
10	Spain	908.2	936.1	3.1	4.0	2.3
11	Australia	877.8	846.2	-3.6	-3.0	2.1
12	Russian Federation	766.4	809.4	5.6	9.3	2.0
13	Mexico	808.8	796.2	-1.6	0.8	2.0
14	Poland	643.2	649.6	1.0	5.4	1.6
15	Korea, Republic of	476.8	627.4	31.6	17.3	1.5
64	Pakistan	106.42	85.80	-19.38	0.93	0.21

Source: ITC Trade Map

*Figures are in USD million

The stacked area chart shown in figure 6 portrays the trend in world imports of refrigerators over the period 2008-2019. The United States of America remained a major importing country showing steady growth in imports in this period. It is followed by Germany also with steady growth in imports. Trends in imports of the remaining countries appear upward but linear. A drop in imports of refrigerators for the top importers is observed in 2009 which could be explained by the cyclical nature of the industry as the world faced a Global Financial Crisis in 2008-09.

Figure 6:
Stacked Area Chart for the World's Top Importers of Refrigerator, 2008-2019

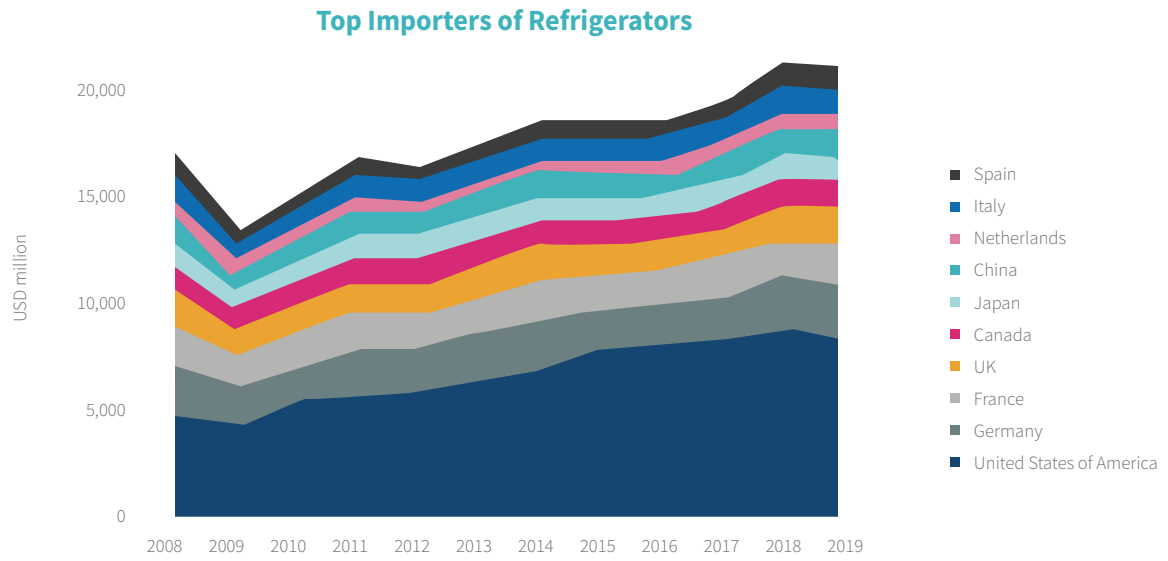
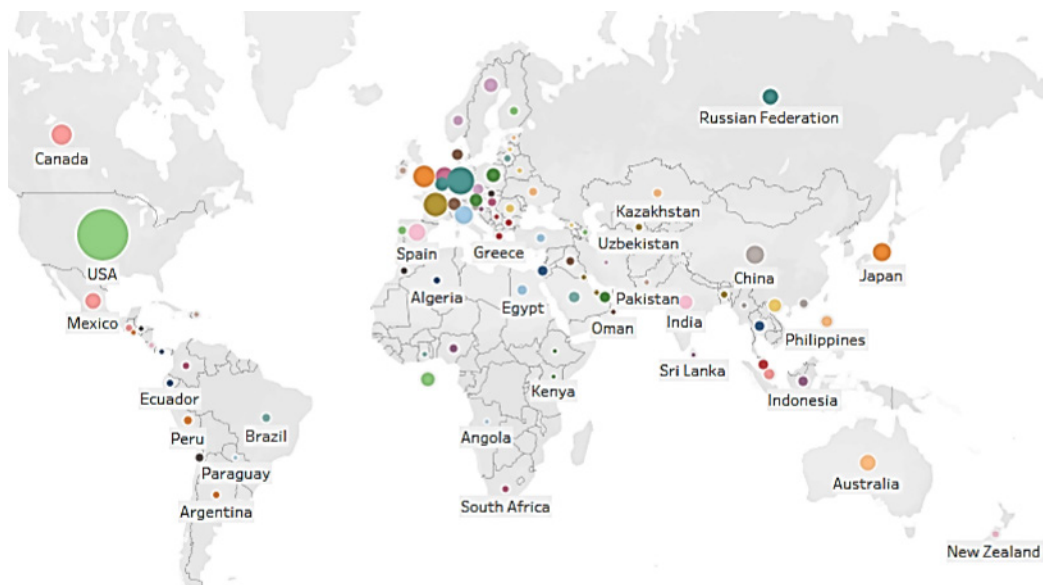


Figure 7 shows the major importers of refrigerators. The size of the circles on the map is proportional to the value of imports. A cursory look shows that Europe, the Americas, and the Middle Eastern region are major importers of refrigerators.

Figure 7:
The World's Major Importers of Refrigerators, 2019



A teal refrigerator is the central focus, positioned in a room with light-colored walls and a decorative ceiling. Several green plants are placed around the refrigerator, adding a natural touch. In the foreground, a wooden chair is partially visible. The overall atmosphere is clean and modern.

CHAPTER 02

Pakistan's Refrigerator Industry

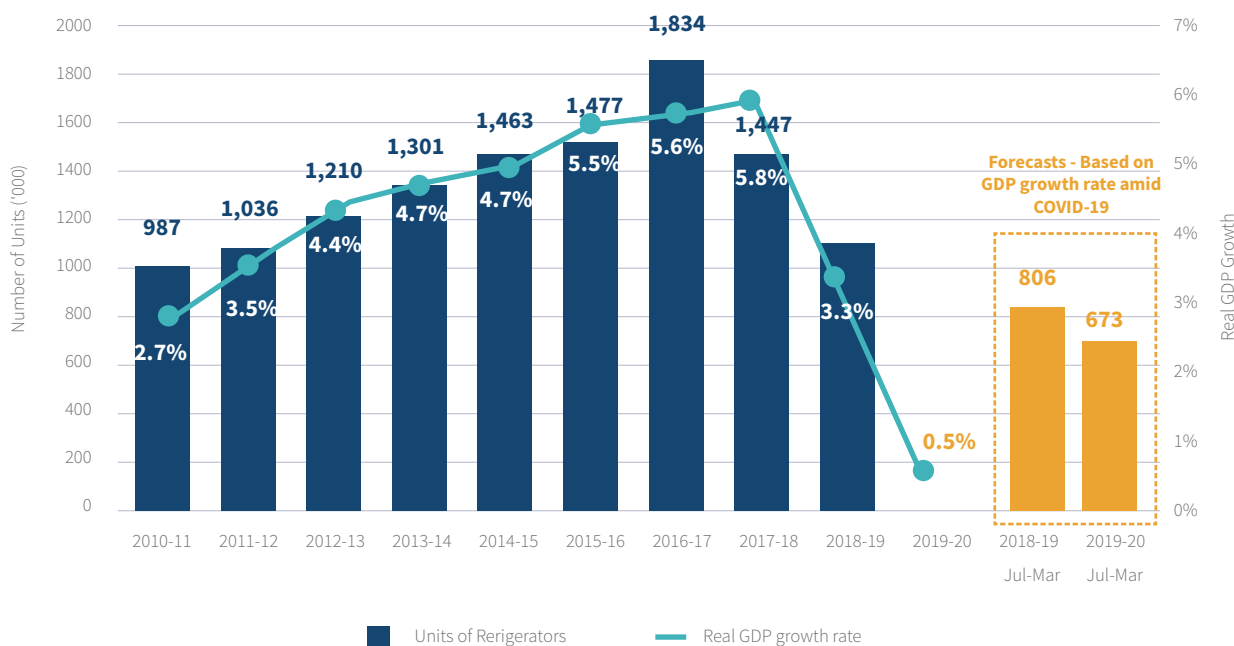
Overview Of Pakistan's Refrigerator Industry

In the past few years, the refrigerator industry has witnessed tremendous growth in Pakistan, which is driven by an increase in demand as a result of rapid rural-urban migration, electrification of villages, and improvement in living conditions. In Pakistan, the refrigerator industry is classified under the Engineering sector. While there is an increasing tendency towards no frost refrigerators in international markets, in Pakistan their demand has been subdued due to higher prices, greater power consumption, erratic grid power supply, and prolonged hours of load shedding. The refrigerator industry got established in Pakistan in the 1980s and has undergone major shifts since then. The industry suffers from an intricately and inconsistent customs tariff regime, ad-hoc changes to the policy environment, lack of localization and a poor business climate. The Pakistani market is dominated by a few large domestic manufacturers which include Dawlance Private Limited, (a wholly-owned subsidiary of Arcelik, Turkey), Pak Elektron Limited, Orient Private Limited, Waves Singer Limited, and Haier Pakistan Limited (a Chinese owned subsidiary).

The contribution of the manufacturing sector to the GDP of Pakistan is around 13-14 percent and it provides employment to around 16.1 percent of the labor force. Large-scale manufacturing accounts for 78 percent of the overall manufacturing sector and 10.2 percent of the GDP of Pakistan. Domestic production of refrigerators in the last 10 years has varied between 1 and 2 million units per annum with production in 2019 estimated at 1.03 million units. The refrigerator industry of Pakistan accounts for nearly 2.5 % of the GDP of Pakistan. However, Pakistan's exports of refrigerators have been declining since FY 2016-17. Annual production in terms of the number of units of refrigerators produced has fallen by nearly 25% in FY 2018-19 as compared to FY 2017-18 whereas a decline of 16.5 percent is evident in July-March 2019-20 relative to similar period in the previous year as illustrated in figure 8. This decline can be explained by a general slowdown in the economy.

Figure 8:
Refrigerator Production and Real GDP Growth Rate, FY 2011- FY2019

Source: Pakistan Economic Survey 2019-20, State Bank of Pakistan



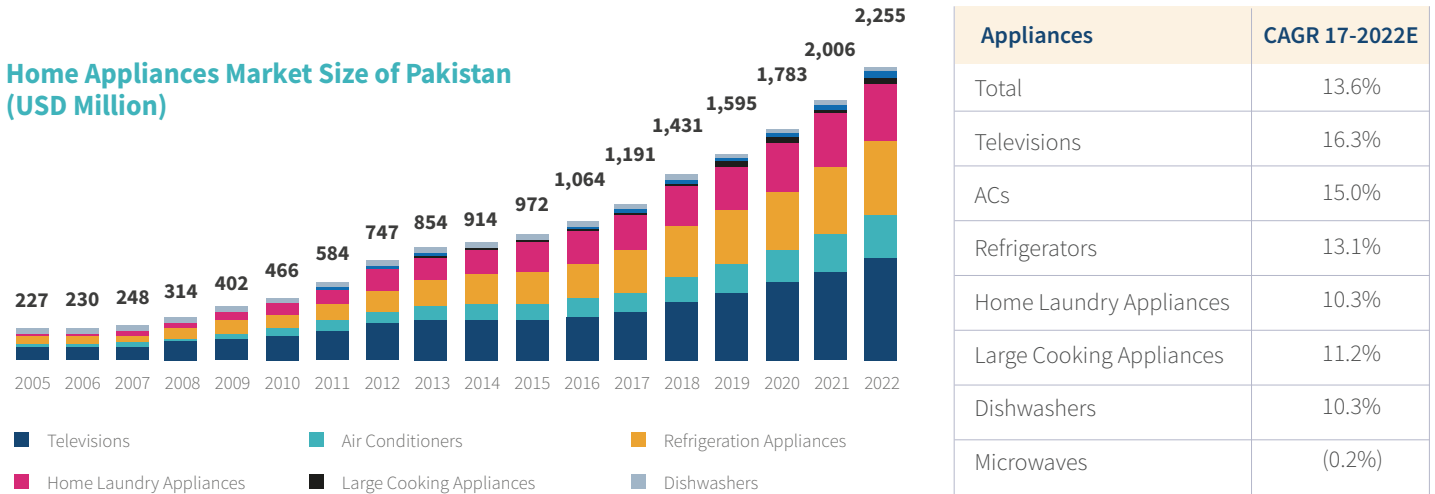
Characteristics of Pakistan's Refrigerator Industry

- ◆ **Cyclical nature of the industry:** Similar to other consumer durables, the refrigerator industry of Pakistan also exhibits cyclical trends. This implies that the sales and production of refrigerators are directly related with the business cycles in Pakistan.
- ◆ **Monopolistic competition:** The market follows monopolistic competition as manufacturers offer products that are slightly different based on brand and quality. Pakistani refrigerators are competitively priced and are available to consumers at a lower price as compared to those in China, India, and Bangladesh.
- ◆ **Market concentration:** The market is concentrated with a few large suppliers. The top four manufacturers account for nearly 90 percent of the sales of refrigerators in Pakistan.
- ◆ **Underutilized production capacity:** The average capacity utilization rate for domestic manufacturers hovers between 75 & 80 percent.
- ◆ **Size ranges for household refrigerators:** The sizes of refrigerators available in the domestic market range from 3.5 cubic feet to 22.0 cubic feet. The 12 cubic feet refrigerator is however, the most popular size among domestic consumers. The World's largest direct-cool refrigerator is also manufactured in Pakistan by Dawlance.
- ◆ **Major cost components in a Pakistani refrigerator:** The breakup of costs for domestic refrigerator manufacturers ranges between (1) Utilities: 5 to 7% (2) Labor: 3 to 5 % (3) Raw materials: 70 to 80% & (4) Overheads 8 to 12 %.
- ◆ **Domestic market trends:** Glass door refrigerators are becoming increasingly popular due to their trendy designs. Another emerging trend is the introduction of smart refrigerators.

According to Euromonitor; the markets in Pakistan for televisions, air conditioners and refrigerators are expected to grow faster than other home appliances in terms of their values measured in USD million. Figure 9 below shows this trend. The CAGR for the 2017-2022 period based on forecasted sales of refrigerators is 13.1 percent.

Figure 9:
Home Appliances Market Size and Forecast, 2005-2022

Source: Pakistan Revenue Automation Limited



Pakistan's Refrigerator Exports And Imports

Pakistan's Exports of Refrigerators

Figure 10 shows the negative trend in Pakistan's exports of refrigerators since FY 2013-14. These stood at USD 2.77 million in 2018-19 witnessing a drop of 16 percent from 2017-18. Before FY 2013-14, the exports of refrigerators from Pakistan showed an increasing trend and touched a peak in 2013-14 of USD 41.7 million. Major export destinations for Pakistani refrigerators are Afghanistan, Iraq and Yemen.

Figure 10:
Pakistan's Exports of Refrigerators to World, FY 2010 - FY2019

Source: Pakistan Bureau of Statistics

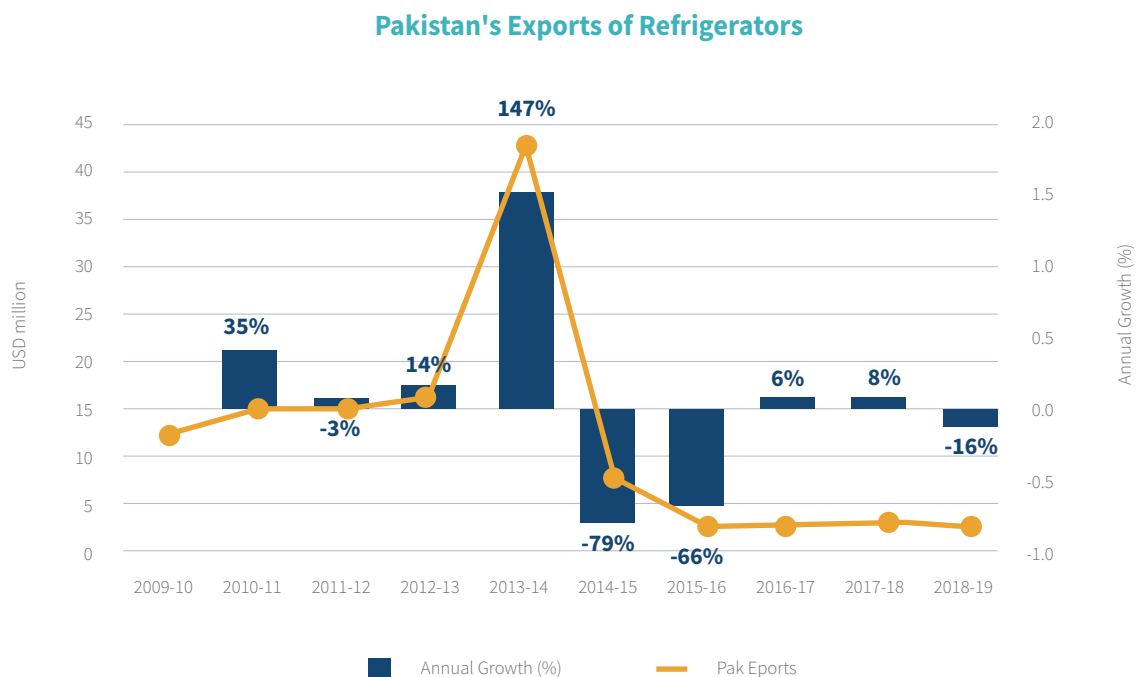


Table 4 shows the HS code wise export statistics for Pakistan. Refrigerator exports of Pakistan were USD 2.77 million in 2018-19. Exports are primarily directed towards Afghanistan, Iraq and Yemen. Products 'Freezers of the chest type not exceeding 800 l capacity (HS-84183000)' and 'Combined refrigerator-freezers, with separate external doors (HS-84181000)' are the major export products at HS-08 digit within the refrigerator group.

Table 4:

Pakistan's Exports of Refrigerators

HS Code	Description	Quantity (No.)			%Change in Quantity 2018-19	Quantity (No.)		%Change in Quantity 2018-19	Average Unit Price (USD)
		2016-17	2017-18	2018-19		2017-18	2018-19		
	Total	3.07	3.32	2.77	-16.5	12,988	11,151	-14.1	248.8
84183000	Freezers of the chest type, not exceeding 800 l capacity	0.34	0.53	1.28	144	1,892	5,152	172.3	249
84181000	Combined refrigerator-freezers, fitted with separate external doors	0.3	0.8	0.49	-38.5	2,314	1,421	-38.6	345.7
84181010	Combined refrigerator-freezers, fitted with separate external doors in CKD/SKD condition	0	0	0.41	-	-	1,747	-	234.8
84182100	Refrigerators, household compression type	2.29	1.95	0.34	-82.7	8,294	1,420	-82.9	237.3
84184000	Freezers of the upright type, not exceeding 900 l capacity	0.03	0.02	0.21	1070.4	75	967	1189.3	212.8
84182900	Refrigerators, household – Other	0.12	0.01	0.04	244	65	150	130.8	248.4
84181090	Combined refrigerator-freezers, fitted with separate external doors – Other	0	0	0.01	-	-	74	-	100.7
84182190	Refrigerators, household compression type – Other	0	0	0	-	-	2	-	451.4
84182990	Refrigerators, household – Other	0	0	0	-	-	4	-	128.4
84186990	Other Refrigerating, Freezing machine	0	0.02	0	-94.3	348	214	-38.5	5.2

Source: Pakistan Bureau of Statistics

Pakistan's Imports of Refrigerators

Pakistan's overall imports of refrigerators (including components) in 2018-19 was USD 257 million, reporting a decrease of 3 percent as compared to 2017-18. These are concentrated mainly in imports of components used in manufacturing refrigerators. Except for some periods of decline, overall trend in imports of refrigerators has been upward.

Figure 11:

Pakistan's Imports of Refrigerators from the World, 2003-18

Source: Pakistan Bureau of Statistics

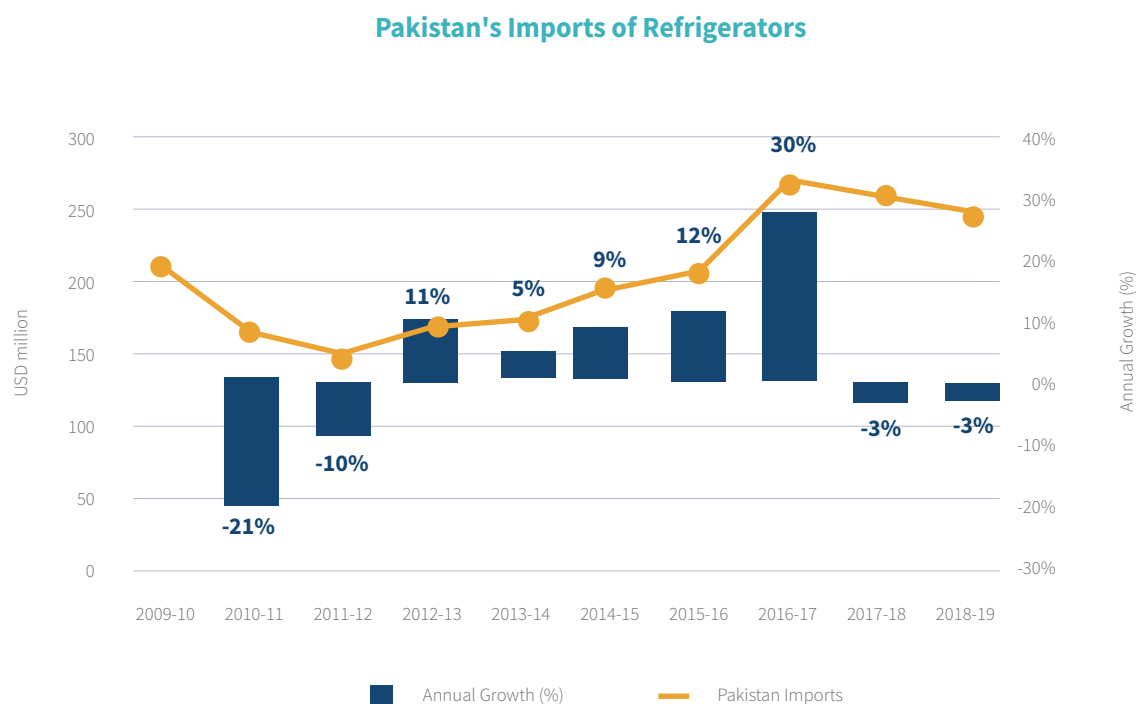


Table 5 shows imports of refrigerators and parts/components thereof at HS-08-digit level. The highest share in imports is that of Compressors (HS-84143010) which accounted for USD 192 million followed by Evaporators (HS-84189910), Other parts (HS-84189990), and Wire Condensers (HS-84189920) with imports of USD 19.7, 13.7, and 9.7 million respectively. China, Europe, and Turkey are the major suppliers of refrigerator parts and components to Pakistan.

Table 5:
Pakistan's Imports of Refrigerators and parts thereof.

HS Code	Description	Imported Value (USD million)		%Change in Value 2018-19	Imported Quantity			%Change in Quantity 2018-19
		2016-17	2017-18		Unit	2017-18	2018-19	
	Total	266	257.4	-3.3		16,954,901	15,818,810	-6.7
84143010*	Compressors of a kind used in refrigerating equipment: Used with HCFC and non-CFC gases	199.1	191.94	-3.6	NO	5,609,181	5,337,604	-4.8
84189910	Evaporators (roll bond / fin / tube on plate types)	23.01	19.72	-14.3	KG	4,932,903	4,061,325	-17.7
84189990	Other Parts of Refrigerator Freezers	16.11	13.67	-15.1	KG	745,285	441,466	-40.8
84189920	Wire condensers	10.71	9.68	-9.6	KG	4,197,204	4,465,659	6.4
38247800	Containing perfluorocarbons (PFCs) or hydrofluorocarbons (HFCs), but not containing chlorofluorocarbons (CFCs) or hydrochlorofluorocarbons (HCFCs)	5.51	5.66	2.8	KG	1,234,747	1,245,919	0.9
84144000	Compressors of a kind used in refrigerating equipment: Air compressors mounted on a wheeled chassis for towing	5.9	5.45	-8.2	NO	19,060	20,881	9.6
84181090	Combined refrigerator- freezers, fitted with separate external doors – Other	--	4.18	--	NO	--	14,244	--
84182190	Refrigerators, household compression type – Other	--	1.62	--	NO	--	6,134	--
84186920	Refrigerating machines with engine fitted on a common base for refrigerator containers	1.54	1.42	-7.9	NO	174	2,206	1167.8
84143090	Compressors of a kind used in refrigerating equipment: Others	1.3	0.95	-26.9	NO	36,085	31,533	-12.6
84184090	Freezers of the upright type, not exceeding 900 l capacity -Other	--	0.84	--	NO	--	1,137	--
38247900	Prepared binders for foundry moulds or cores; chemical products and preparations of the chemical or allied industries (including those consisting of mixtures of natural products), not elsewhere specified or included- Others	0.83	0.76	-8.2	KG	147,398	100,728	-31.7
84182990	Refrigerators, household – Other	--	0.71	--	NO	--	2,272	--
84183090	Freezers of the chest type, not exceeding 800 l capacity – Other	--	0.37	--	NO	--	1,628	--
29012990	Acyclic Hydcarbon – Other	0.1	0.24	138.9	KG	28,910	85,339	195
84186100	Heat pumps other than air conditioning machines of heading 84.15.	1.94	0.11	-94.4	NO	3,733	95	-97.5

Table 5:

Pakistan's Imports of Refrigerators and parts thereof.

HS Code	Description	Imported Value (USD million)		%Change in Value 2018-19	Imported Quantity			%Change in Quantity 2018-19
		2016-17	2017-18		Unit	2017-18	2018-19	
84184010	Freezers of the upright type, not exceeding 900 l capacity in CKD/SKD	--	0.03	--	NO	--	134	--
84181010	Combined refrigerator- freezers, fitted with separate external doors in CKD/SKD condition	--	0.01	--	NO	--	52	--
84182110	Refrigerators, household compression type in CKD/SKD condition	--	0.01	--	NO	--	41	--
84183010	Freezers of the chest type, not exceeding 800 l capacity in CKD/SKD	--	0.01	--	NO	--	30	--
84189930	Parts of machine of heading 8418.6910	0.01	0	-54.5	KG	221	383	73.3

*Appears to include imports of compressors for appliances other than refrigerators

Source: Pakistan Bureau of Statistics

Potential Growth Drivers for Pakistan’s Refrigerator Industry

The potential growth drivers for the domestic industry are:

- ♦ **Low penetration levels:** The domestic market is largely untapped with a substantially lower penetration rate for refrigerators as compared to other countries. Pakistan has an average penetration rate of 42% which is lower than the global average (see Figure 12).
- ♦ **Urban population growth rate:** The overall population growth rate of Pakistan is around 2% whereas, the urban population growth rate is 2.6%. The demand for refrigerators is highly correlated with the urban population growth rate.
- ♦ **Higher disposable income:** GDP per capita has been increasing over the period 2011-18 and has led to an increase in demand for consumer durables.
- ♦ **Access To Electricity:** The average capacity utilization rate for domestic manufactures hovers between 75 & 80 percent.
- ♦ **Foreign direct investment in pakistan’s consumer durable industry:** Pakistan’s Refrigerator industry has attracted FDI in the recent past. Prominent market players such as Dawlance, Haier, and PEL either have foreign shareholding or have Joint Ventures with global players.

Figure 12:

Appliances Penetration Rate

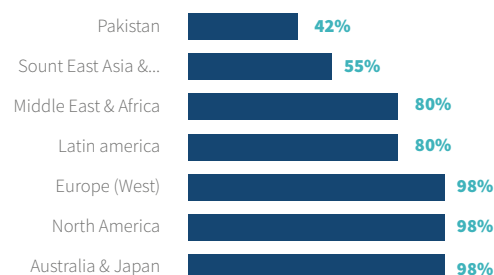
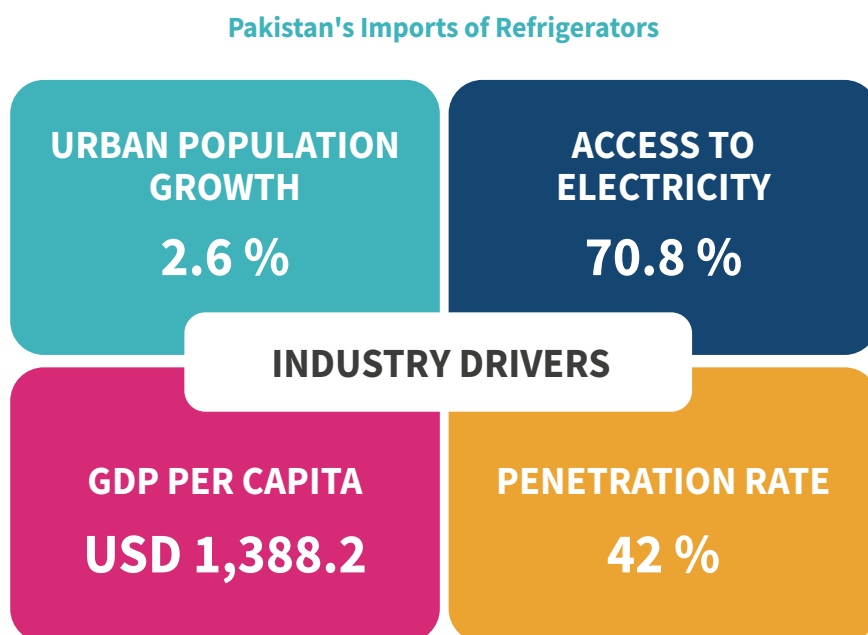


Figure 13:

Potential Growth Drivers for Pakistan’s Refrigerator Industry

Source: World Development Indicators, World Bank; Statista 2019



Correlation Analysis of Refrigerator Sales with Demographic and Macroeconomic Indicators

Correlation between refrigerator sales and socio-economic indicators is measured using the Pearson correlation coefficient (presented in Table 6). Direction and magnitude of correlation can be summarized as follows:

- ◆ **Refrigerator sales are highly and positively correlated with access to electricity, per capita GDP, urban population growth, and the exchange rate.** This implies that the electrification of villages, a further growth in the urban population, and an increase in GDP per capita would increase refrigerator sales. A sliding currency discourages imported refrigerators, thereby increasing the demand for locally manufactured refrigerators.
- ◆ **A moderately negative correlation is found between refrigerator sales and inflation & the unit wage.** Higher inflation increases the retail prices of refrigerators which causes sales to decline, similarly, an increase in unit wage would raise the cost of production, and cost-push inflation also contracts refrigerator sales. A positive correlation between unit wage and inflation endorses the same.
- ◆ **Refrigerator sales and policy rate is negatively correlated.** Industry participants indicated 30-50 percent debt financing for their businesses, therefore, a higher policy rate can potentially deteriorate capital structures which can eventually slow down the sales of refrigerators.

Table 6:

Correlation Matrix

Correlation Coefficient	Access to electricity (% of population)	GDP per capita (current US\$)	Urban population	Inflation	Productivity Growth	Unit Wage	Exchange Rate	Policy Rate	Refrigeration Appliances Sales (USD)
Access to electricity (% of population)	1.00								
GDP per capita (current US\$)	0.81	1.00							
Urban population	0.84	0.99	1.00						
Inflation	-0.72	-0.56	-0.61	1.00					
Productivity Growth	0.25	0.14	0.18	-0.57	1.00				
Unit Wage	-0.74	-0.53	-0.57	0.80	-0.15	1.00			
Exchange Rate	0.77	0.89	0.92	-0.48	0.13	-0.57	1.00		
Policy Rate	-0.62	-0.40	-0.42	0.73	-0.29	0.64	-0.16	1.00	
Refrigeration Appliances Sales (USD)	0.85	0.93	0.96	-0.62	0.20	-0.67	0.95	-0.42	1.00

Source: Author's estimates based on data from World Development Indicators and Pakistan Bureau of Statistics

Impact of Covid-19 on Pakistan's Refrigerator Industry —

- ♦ **A high dependency on China for imports** has shown that the refrigerator industry is vulnerable to disruptions in the supply chain in case there are any production-related issues in China.
- ♦ **Around 85% of the raw materials used are imported.** Imported raw materials used by the refrigerator industry including plastics, steel, and compressors were vulnerable to delays during the Pandemic.
- ♦ **The consumer durables industry has a higher exposure to COVID-19** relative to other industries in global markets (as depicted in Figure 14). The COVID-19 Heat Map presents industry-wise risk exposure, it illustrates that COVID-19 induced disruption is affecting disproportionately some sectors more as compared to others.
- ♦ **Consumer Confidence Survey of May 2020 witnessed a substantial decline** over all three consumer confidence indices compared to March 2020. A decline of 10.4 percent is apparent in the Consumer Confidence Index (average of Current Economic Condition and Expected Economic Condition indices).
- ♦ **Consumer Economic Conditions (CEC) index showed a decline of 11 percent.** CEC reflects consumer attitude toward buying consumer durable items such as furniture, refrigerators, TVs, etc.

Figure 14:

Global Impact of COVID-19 on industries

Source: Moody Analytics

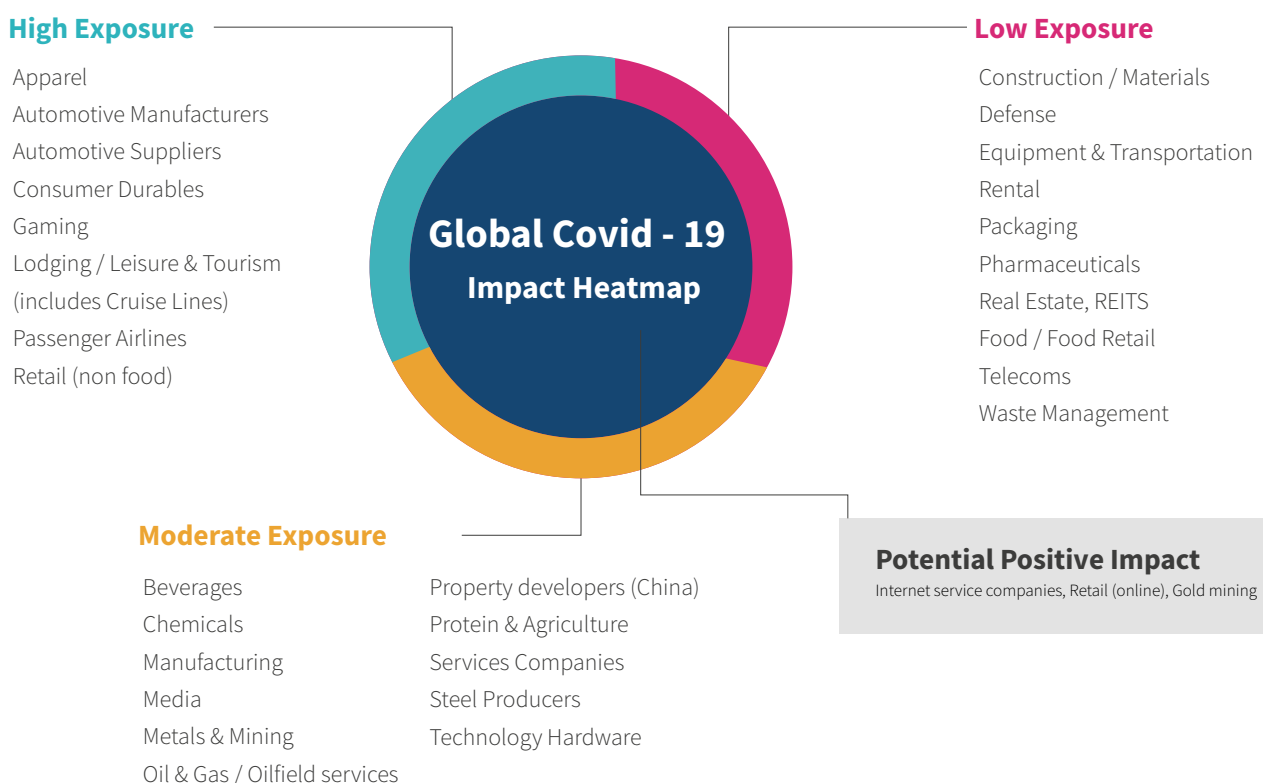
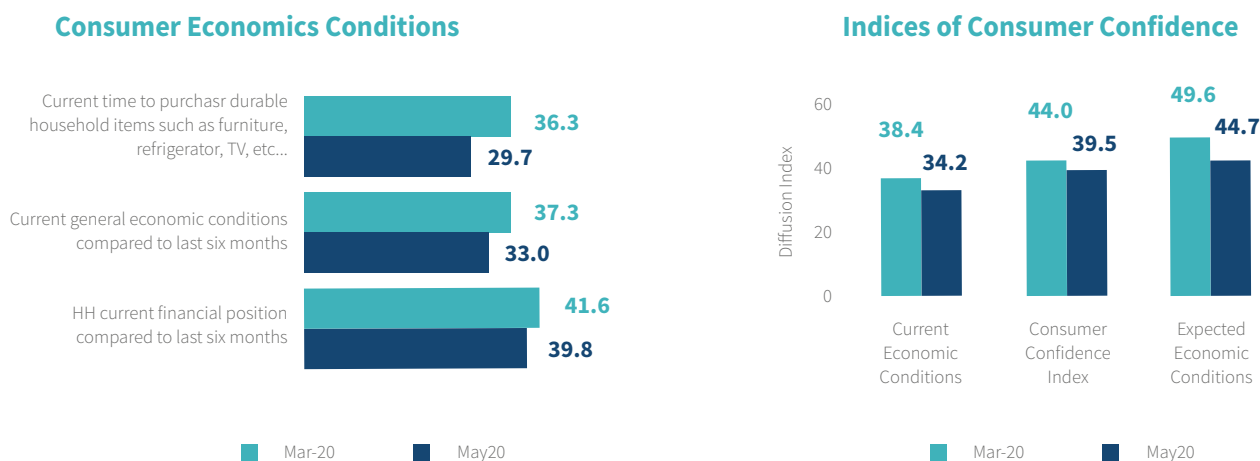


Figure 15:
Consumer Confidence Indices, May-2020

Source: Consumer Confidence Survey, State Bank of Pakistan



Future Outlook for Pakistan’s Domestic Refrigerator Market

Post COVID-19 Projections

The forecasting approach utilized here is the top-down approach i.e. using macroeconomic variables to forecast trends in the refrigerator market. The World Bank projected real GDP growth for Pakistan to contract by 1.3 percent in FY 2020 as domestic and global economic activity slowed down sharply in the last four months of the last fiscal year. The outbreak of COVID-19 will impact growth beyond FY 2020. Under the baseline scenario, growth will remain muted in FY 2021 at 0.9 percent before reaching 3.2 percent in FY 2022.⁵

The share of the refrigerator industry in GDP in FY2019 was 0.4 percent. The GDP for FY2020, FY 2021, and FY 2022 is forecasted using the World Bank’s forecasted growth rates. The sales for refrigerators is projected using the following:

$$\text{Forecasted Sales of Refrigerator}_t = \text{Forecasted GDP}_t \times \text{Share of Refrigerator Industry}_t$$

where ‘t’ denotes the fiscal year. The average unit price of a refrigerator is calculated by averaging the retail prices of refrigerators (with size 12 cubic feet⁶ as the standard unit) quoted by major refrigerator manufacturers in Pakistan as their main selling size.

⁵ <https://www.worldbank.org/en/country/pakistan/overview>

⁶ 12 Cubic Feet is the most common refrigerator size in Pakistan

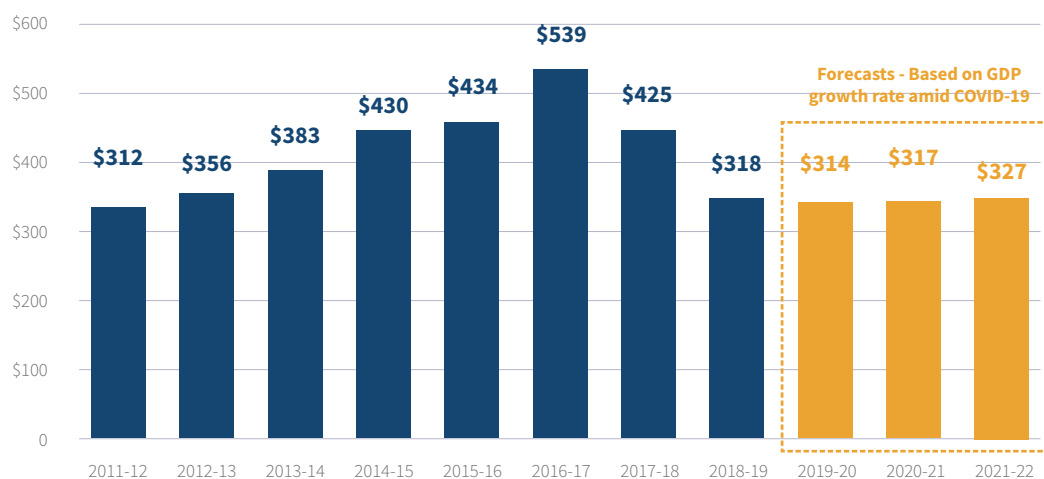
Table 7:

Post COVID-19 Refrigerators Revenues Forecast

Fiscal Year	GDP (million rupees) of Pakistan	GDP growth rate of Pakistan	Number of Refrigerators produced in Pakistan (million units)	Value of refrigerator sold in Pakistan (PKR million)	Value of refrigerators sold in Pakistan (USD million)
2018-19	12,750,126.00	3.29	1,083.70	50,632.7	318.44
2019-20	12,584,374.36	-1.30	1,069.61	49,974.5	314.30
2020-21	12,697,633.73	0.90	1,079.23	50,424.3	317.13
2021-22	13,103,958.01	3.20	1,113.77	52,037.8	327.28

Source: State Bank of Pakistan, World Bank, Author's calculation

Figure 16:

Post COVID-19 Refrigerators Revenue Forecast

Pre COVID-19 Projections

The projection made in this section is based on historic data. Compounded Annual Growth Rate (CAGR) is used to forecast revenues for global markets as well as for Pakistan. The pre-COVID forecast provides the trend in global market demand. Although pandemic has slashed the demand substantially in the short-run, it is expected to converge to the projected trend once market conditions improve.

Table 8:

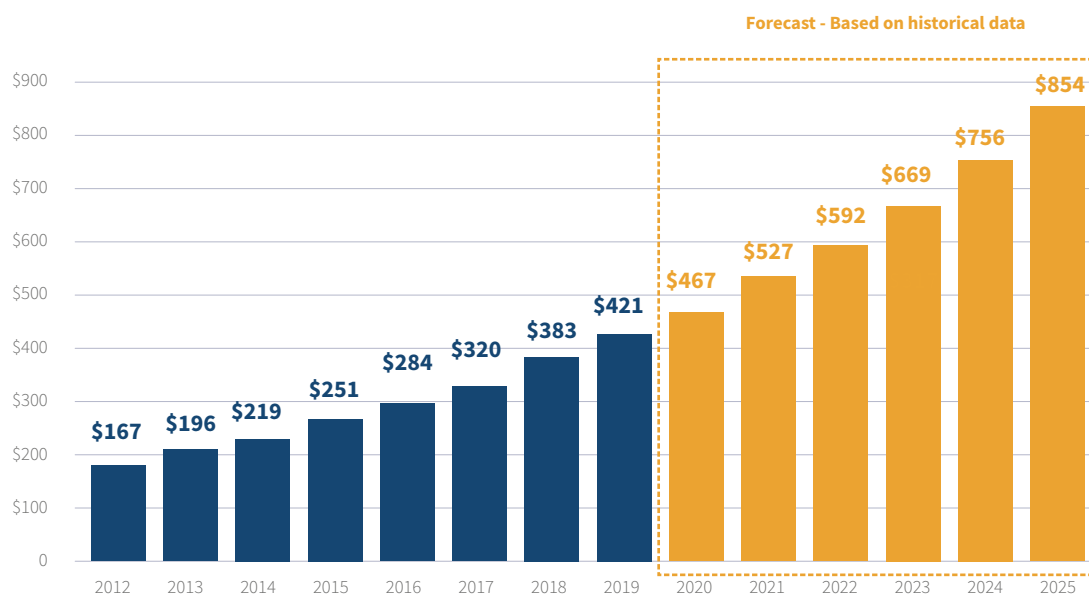
Pre COVID-19 Refrigerator Revenues Forecasts

Calendar Year	Refrigerator Market - Revenues Forecast (USD million)				
	Africa	Europe	Asia	World	Pakistan
2018	12,197	17,007	56,388	108,368	383
2019	12,877	17,350	57,644	111,130	421
2020	13,582	17,689	58,927	113,929	467
2021	14,333	18,037	60,233	116,788	527
2022	15,129	18,837	61,596	119,738	592
2023	15,944	18,736	62,973	122,697	669
2024	16,819	19,099	64,382	125,767	756
2025	17,743	19,468	65,824	128,914	854

Source: Statista, Pakistan Revenue Automation Limited (PRAL)

Figure 17:

Pre COVID-19 Refrigerator's Revenue Forecast



Market Demand Projections (Chain-Ratio Method)

The chain ratio method is a series of logical steps to identify the potential market demand. It starts with a base number as an estimate for the market size (i.e. total population). This base estimate is systematically fine-tuned by applying a string of percentages to come up with the most meaningful estimate for total market potential.

Total Market for Refrigerators_t = (Population)_t X (Access to Electricity)_t X (Penetration rate)_t X (1/Average Household Size)

Where 't' denotes year. Average penetration rate of refrigerators in Pakistan is 42 percent whereas average household size 6.45 persons⁷. It is assumed that each household of 6.45 persons requires at least one single refrigerator.

Table 9 presents the market demand for refrigerators in subsequent years. With a growing population and improvements in electrification, the market demand for refrigerators is projected to increase with CAGR (2019-22) 2.04 percent.

Table 9:

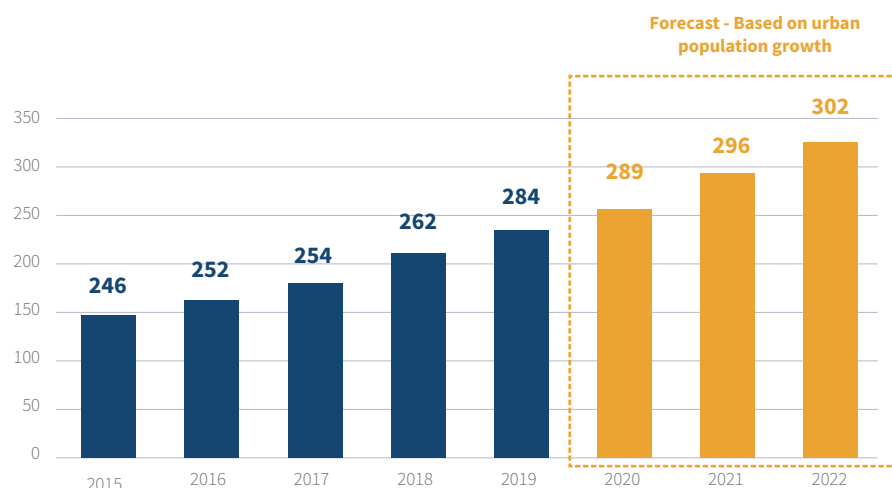
Number of Units of Refrigerators Forecast for Pakistan

Source: World Development Indicators, World Bank

Calendar Year	Access to electricity (% of population)	Population growth (annual %)	Population (million)	Total Market (million units)	Demand based on urban population growth (million units)
2015	71.20	2.088	199.43	9.25	0.246
2016	71.41	2.084	203.63	9.47	0.252
2017	70.79	2.075	207.90	9.58	0.254
2018	71.13	2.056	212.22	9.83	0.262
2019	71.11	2.072	216.61	10.03	0.284
2020	71.01	2.068	221.09	10.22	0.289
2021	71.09	2.065	225.66	10.45	0.296
2022	71.07	2.068	230.32	10.66	0.302

Figure 18:

Number of Units of Refrigerators Forecast for Pakistan



⁷ Ministry of Finance

A large container ship is docked at a port. The ship's deck is covered with stacks of colorful shipping containers in shades of orange, blue, and red. Several large white gantry cranes are positioned over the ship, with the name "SSA TERMINALS" visible on their horizontal beams. The sky is a pale, overcast blue. In the top right corner, there is a decorative pattern of white circles of varying sizes. The overall scene depicts a busy maritime logistics hub.

CHAPTER 03

Potential Export Markets For Pakistani Manufactured Refrigerators

Potential Markets for Exports

Pakistani refrigerator manufacturers only produce direct cool refrigerators and these cater to around 98 percent of the local market demand. Thus, countries that import/use direct cool refrigerators are the potential markets for Pakistan. Regional, African, and Middle Eastern markets are, therefore, relevant to this discussion.

The potential markets are identified based on the following criteria:

- ◆ Presence of direct cool refrigerators in the market
- ◆ Imports in 2019 were greater than or equal to USD 60 million, or
- ◆ The Country shares a land border with Pakistan

As indicated by market participants, the potential markets are mostly in Pakistan's immediate or near region.

- ◆ **Bangladesh and Afghanistan:** According to industry players, "Pakistani refrigerators can potentially have a good market in Bangladesh and Afghanistan as they are competitively priced and have a better quality".
- ◆ **Middle East and Africa:** Both the Middle East and Africa possess considerable market potential for direct cool refrigerators. Pakistani manufacturers have a freight advantage over China in these markets.

Table 10:

Trade Statistics for Top Potential Markets

Ranks	Importers	Imported value in 2018	Imported value in 2019	CAG (%) 2015 2019	Import share (%) 2019	Potential Products				
						HS Codes	Product Title	Imported value in 2019	Average tariff (%)	
Neighbouring Countries										
57	Bangladesh	140.6	124.5	8.9	0.3	841810	Combined Refrigerators-Freezers	34.91	25	
						841830	Freezers of the chest type	10.38	25	
142	Afghanistan	0	7.6	-	0.14	841810	Combined Refrigerators-Freezers	2.56	8	
						841821	Household refrigerators	1.71	8	
Middle East Countries										
22	Saudi Arabia	433.6	430.9	-16.6	1.1	841810	Combined Refrigerators-Freezers	147.34	5	
						841830	Freezers of the chest type	19.38	5	
26	United Arab Emirates	468.8	374.1	4.4	0.9	841810	Combined Refrigerators-Freezers	160.41	5	
						841821	Household refrigerators	48.73	5	
70	Kuwait	116.0	66.2	-9.4	0.2	841810	Combined Refrigerators-Freezers	28.78	5	
						841821	Household refrigerators	8.86	5	
73	Oman	68.6	59.8	-8.9	0.1	841810	Combined Refrigerators-Freezers	25.94	5	
						841821	Household refrigerators	9.77	5	

Table 10:

Trade Statistics for Top Potential Markets

Ranks	Importers	Imported value in 2018	Imported value in 2019	CAG (%) 2015 2019	Import share (%) 2019	Potential Products				
						HS Codes	Product Title	Imported value in 2019	Average tariff (%)	
Africa										
33	Egypt	273.9	287.4	0.4	0.7	841821	Household refrigerators	81.28	60	
						841810	Combined Refrigerators-Freezers	35.61	60	
48	Morocco	200.4	190.4	4.5	0.5	841810	Combined Refrigerators-Freezers	81.84	25	
						841830	Freezers of the chest type	24.63	10	
49	South Africa	201.2	187.4	-0.2	0.5	841810	Combined Refrigerators-Freezers	34.83	25	
						841829	Household refrigerators	11.97	25	

Source: ITC Trade Map

*Imported values are in USD million

Opportunities Under Bilateral Trade Agreements

The table below only presents bilateral trade agreements where either Pakistan offers duty concession or is being offered concessions by the partner country for refrigerator imports/exports. Some opportunities under these agreements are as follows:

- ◆ **Parts of refrigerating or freezing equipment and heat pumps (HS-841899)** could be a potential export product to Indonesia and China. Although Pakistan itself imports components for refrigerator manufacturing, localization could benefit both domestic industries as well as exports.
- ◆ Refrigerators and freezers can be exported to China under zero duty as China is now moving towards large size refrigerator manufacturing. Moreover, a competitive exchange rate provides Pakistan with an opportunity to export to China.
- ◆ **Freezers of the chest type (HS-841830)** are subject to zero duty in Malaysia. Manufacturers in Pakistan have been producing chest type deep freezers to cater to local demand and have excess production capacity. Malaysia's current imports are worth USD 24.2 million under HS-841830.

Table 11:

Concessions under Bilateral Trade Agreements

HS Code	Product Title	Indonesia PTA				China FTA				Malaysia FTA			
		Pakistan Offer		Indonesia Offer		Pakistan Offer		China Offer		Pakistan Offer		Malaysia Offer	
		HS code	%	HS code	%	HS code	%	HS code	%	HS code	%	HS code	%
841821	Household refrigerators, compression-type	84182100	24			84182100	24	84182110	0	84182100	20	841821110	20
								84182120	0			841821120	20
								84182130	0			841821910	20
												841821990	20
841810	Combined refrigerator-freezers					84181000	24	84181010	0	84181000	20	841810110	20
								84181020	0			841810120	20
								84181030	0			841810900	20
841830	Freezers of the chest type, of a capacity <= 800 l					84183000	24	84183010	5 to 0 in 5 years	84183000	20	841830100	0
								84183021	18.4			841830900	0
841829	Household refrigerators, absorption-type	84182900	24			84182900	20	84182910	30	84182900	20	841829110	20
								84182920	12 to 0 in 10 years			841829120	20
								84182990	30			841829910	20
												841829990	20
841869	Refrigerating or freezing equipment					84186910	5 to 0 in 10 years	84186920	5 to 0 in 10 years	84186900	20	841869100	20
						84186920	5 to 0 in 10 years	84186990	5 to 0 in 5 years			841869900	20
						84186990	20						
841899	Parts of refrigerating or freezing equipment and heat pumps			84189910	0	84189910	0	84189910	4 to 0 in 5 years	84189910	0	841899111	20
				84189990	0	84189920	0	84189991	4 to 0 in 5 years	84189920	0	841899112	20
						84189930	5 to 0 in 5 years	84189992	4 to 0 in 5 years	84189930	0	841899119	20
										84189990	10	841899210	20
								84189999	4			841899290	20

Table 11:

Concessions under Bilateral Trade Agreements

HS Code	Product Title	Indonesia PTA				China FTA				Malaysia FTA			
		Pakistan Offer		Indonesia Offer		Pakistan Offer		China Offer		Pakistan Offer		Malaysia Offer	
		HS code	%	HS code	%	HS code	%	HS code	%	HS code	%	HS code	%
841861	Heat pumps					8418610	25 to 0 in 10 years	84186120	5 to 0 in 5 years	84186110	10		
								84186190	7 to 0 in 10 years	84186120	10		
										84186190	20		
841840	Freezers of the upright type, of a capacity <= 900 l					84184000	20	84184010	5 to 0 in 5 years	84184000	20	841840100	20
								84184021	12 to 0 in 10 years			841840900	20
								84184029	0				

Source: Ministry of Commerce of Pakistan

The background of the slide is a photograph of a large industrial structure, possibly a power plant or refinery, silhouetted against a bright sunset sky. The structure consists of a complex network of steel beams, pipes, and platforms. In the upper right corner, there is a decorative pattern of white circles of varying sizes, some of which are semi-transparent, overlapping the industrial structure. The overall color palette is dominated by the warm tones of the sunset, with oranges, yellows, and browns.

CHAPTER 04

Competitiveness Definition, Facets And Approaches

Defining Competitiveness —

Literature pertaining to competitiveness is quite rich in dimensions, however, there is no clear consensus on defining competitiveness. The current study benchmarked the definition from a European Commission study on measuring competitiveness and defines competitiveness at three levels for analysis: firm-level, sectoral/industrial level, and the macroeconomic level (Penender & Rammer, 2018). The definitions of competitiveness from literature based on relevance at the stated levels are as follows:

Firm-level Competitiveness:

The OECD (1992) defines competitiveness at the firm level as the “capacity of firms to compete, to increase their profits, and to grow”. It is based on cost, prices, technology, quality and performance of products.

Sectoral-level Competitiveness:

The European Commission cited Momaya’s (1998) definition of sectoral competitiveness as “extent to which a business sector offers potential for growth and attractive returns on investment”.

Economy-Wide Competitiveness:

The European Commission defines the economy-wide or macroeconomic level of competitiveness as “an economy is competitive if its population can enjoy a high standard of living and high rates of employment while maintaining a sustainable external position”.

The Facets Of “Competitiveness” —

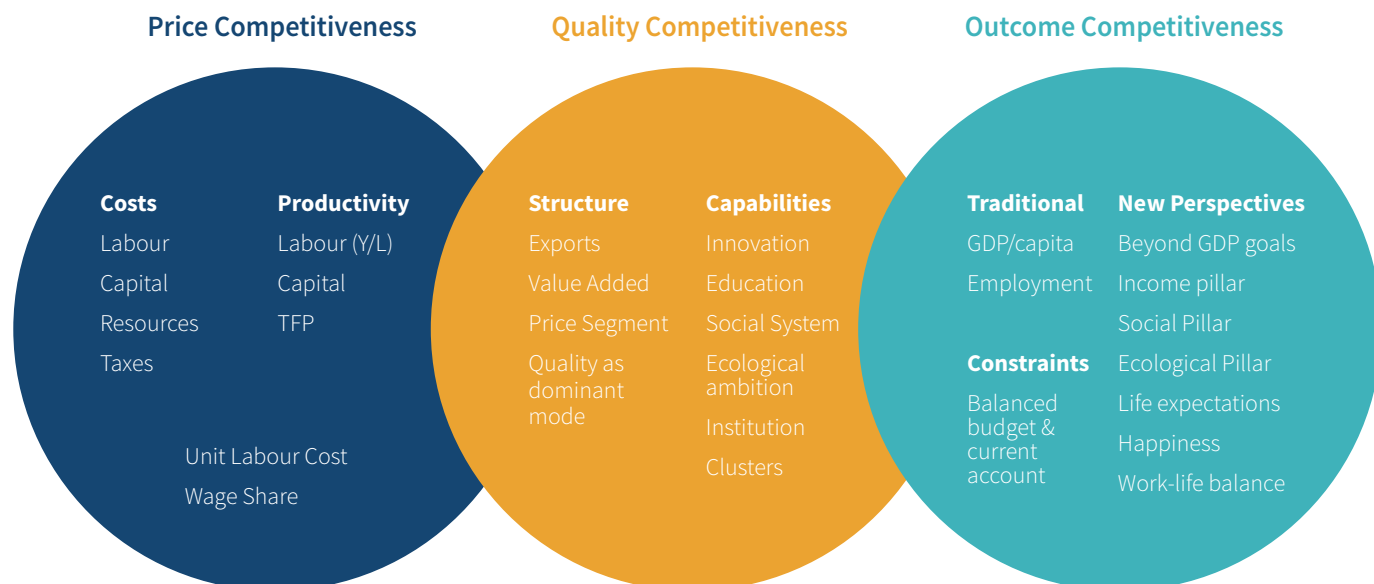
According to the European Commission (WWFOREUROPE Working Paper no 44), the three facets of competitiveness are as follows:

- ◆ **Price Competitiveness:** The price competitiveness includes cost structure of inputs along with productivity at the input level as well as at the aggregate level.
- ◆ **Quality Competitiveness:** Two broader notions here are the structure of an economy (such as the structural composition of the manufacturing sector which can be broken down into value addition, input sophistication etc) and its capabilities, for instance, innovation and education system.
- ◆ **Outcome Competitiveness:** It defines competitiveness as the ability of a country, region or location to deliver the beyond GDP goals. It aggregates the indicator into three pillars: an income pillar, a social pillar, and an ecological pillar.

Figure 19:

Facets of competitiveness

Source: WWWFOREUROPE Working Paper No.44



Approaches For Measuring Competitiveness

This study employs a hybrid of top-down and bottom-up approaches for measuring competitiveness at the industry level. The top-down approach employs comparing global competitiveness indicators as well as calculating competitiveness indicators at the industry level. The bottom-up approach includes interviewing individual manufacturers and aggregating their inputs at the industry level. A hybrid of these approaches (i.e. top-down and bottom-up) provides a comprehensive view of the industry's competitiveness by encompassing multiple dimensions. Chapter 05 and Chapter 06 are based on the top-down and the bottom-up approaches for measuring competitiveness



CHAPTER 05

Competitiveness Indicators

This chapter is devoted to measuring the competitiveness of the refrigerator industry of Pakistan using the top-down approach. It employs analysis of global competitiveness indicators as well as industry competitiveness indicators which are given in subsequent sections.

Global Competitiveness Indicators

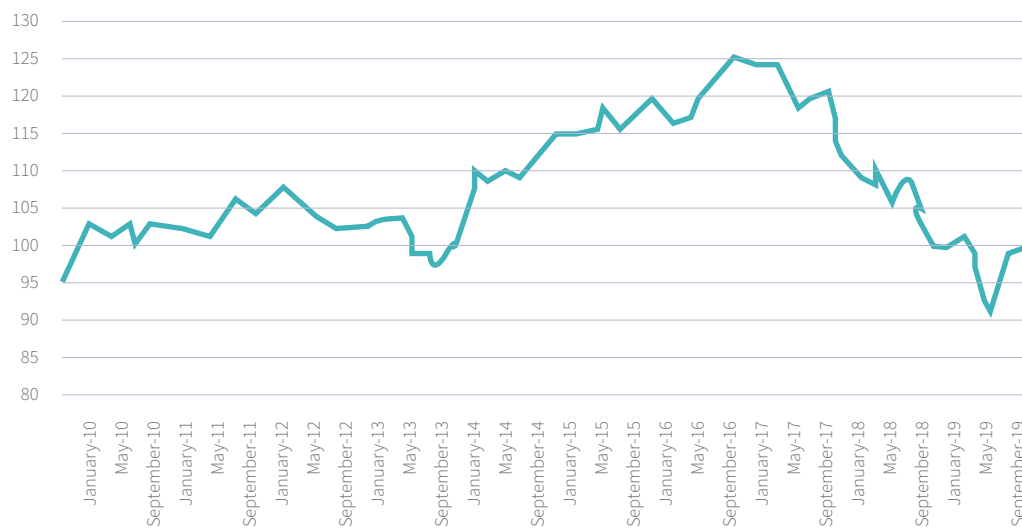
Real Effective Exchange Rate (REER)

Exchange rate competitiveness, also known as price competitiveness, is a major driver of the external competitiveness of any country and determines its economic performance to a large extent. An increase in REER implies that exports become more expensive and imports become cheaper; therefore, an increase indicates a loss in trade competitiveness and vice versa (IMF).

Pakistan has witnessed a substantial depreciation of the real exchange rate since 2017, this implies that exports became cheaper in terms of price, resulting in an improvement in price competitiveness. Relatively fewer dollars are required by foreign buyers to buy Pakistani products as compared to before the REER depreciation.

Figure 20:

Trend in Real Effective Exchange Rate, Jan 2010 - Sep 2019



Doing Business Indicator

Doing Business Indicator of the World Bank Group measures the regulations that enhance business activity and those that constrain it. Doing Business covers 12 areas of business regulation. Ten of these areas—starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts, and resolving insolvency—are currently included in the ease of doing business ranking.

Pakistan improved 28 positions, from 136 to 108 on Doing Business Indicators in 2020. A sub-indicator i.e. 'Trading across the Borders', which measures the time and cost to export or import a product, is shown in the table below. It is evident from the table that Pakistan performed poorly as compared with the other countries in the table and none of the sub-indicators represents a competitive edge for Pakistan. Austria is ranked 1st in the 'Trading across the Borders' indicator whereas India and China which have a comparable refrigerator industry to that of Pakistan are ranked at 68 & 56 respectively.

Table 12:

Trading across the borders sub-indicator, Doing Business indicator 2020

Economy	Doing Business Indicator	Trading across Borders rank	Trading across Borders score	Time to export: Border compliance (hours)	Cost to export: Border compliance (USD)	Time to export: Documentary compliance (hours)	Cost to export: Documentary compliance (USD)	Time to import: Border compliance (hours)	Cost to import: Border compliance (USD)	Time to import: Documentary compliance (hours)	Cost to import: Documentary compliance (USD)
Pakistan	108	111	68.8	58	288	55	118	120	287	96	130
China	31	56	86.5	21	256	9	74	36	241	13	77
India	63	68	82.5	52	212	12	58	65	266	20	100
Austria	27	1	100	0	0	1	0	0	0	1	0

Source: Doing Business 2020, World Bank

Global Competitiveness Index (GCI)

The global competitiveness index of the World Economic Forum integrates the macroeconomic and micro/business aspects of competitiveness into a single index. The index "assesses the ability of countries to provide high levels of prosperity to their citizens". This, in turn, depends on how productively a country uses available resources. Therefore, the Global Competitiveness Index measures the set of institutions, policies, and factors that set the sustainable current and medium-term levels of economic prosperity. The index comprises of 12 pillars of competitiveness which are shown in the table below.

Pakistan ranks poorest among the countries selected and is only more competitive than India on the 11th pillar i.e. business dynamism. Singapore attained the highest rank on GCI in 2019.

Table 13:
Global Competitiveness Indicator, 2019

Economy	Ranks												
	Overall	Institutions	Infrastructure	ICT adoption	Macroeconomic stability	Health	Skills	Product market	Labour market	Financial system	Market size	Business dynamism	Innovation capability
Pakistan	110	107	105	131	116	115	125	126	120	99	29	52	79
China	28	58	36	18	39	40	64	54	72	29	1	36	24
India	68	59	70	120	43	110	107	101	103	40	3	69	35
Austria	1	2	1	5	38	1	19	2	1	2	27	14	13

Source: World Economic Forum

Logistics Performance Indicator (LPI)

A useful measure of logistics efficiency is the Logistics Performance Index (LPI) which is calculated by the World Bank. The index is based on perceptions of a country's customs clearance process, quality of trade and transport-related infrastructure, ease of arranging competitively priced shipments, quality of logistics services, ability to track and trace consignments, and frequency with which shipments reach the consignee within the scheduled time.

Pakistan's performance on LPI is again poor as compared to selected countries in table 14. An important development that is likely to improve Pakistan's logistics and connectivity is the Pakistan-China Economic Corridor.

Table 14:
Logistic Performance Indicator, 2018

Economy	Ranks						
	Overall LPI	Customs	Infrastructure	International shipments	Logistics quality and competence	Tracking and tracing	Timeliness
Germany	1	1	1	4	1	2	3
Pakistan	122	139	121	97	89	136	136
China	26	31	20	18	27	27	27
India	44	40	52	44	42	38	52

Source: Logistic Performance Indicator, World Bank

Industry Competitiveness Measures

This section discusses some indicators for measuring competitiveness at the industry level. Lack of industry level competitiveness is a critical impediment in tapping global markets. In this section, we quantitatively assess the competitiveness of the Pakistani refrigerator industry using indicators including change in market share, revealed comparative advantage, and Vollrath's indices for competitiveness.

Change in Market Share:

Measuring changes in export market shares is a natural way to assess a country's competitiveness as rising market shares reveal a strong performance of a country's producers in international markets. According to the OECD's definition of competitiveness⁸, "Competitiveness is a measure of a country's advantage or disadvantage in selling its products in international markets", mathematically,

$$M_1 = \text{Market Share (\%)} = \left\{ \left(\frac{X_{ijt}}{X_{njt}} \right) - \left(\frac{X_{ij(t-1)}}{X_{nj(t-1)}} \right) \right\} \times 100$$

Where X represents exports, i is the country, j is a commodity (i.e. refrigerators in this case), n is the set of countries (world), and t is the period.

Revealed Comparative Advantage (RCA)

Revealed comparative advantage (RCA) is based on the Ricardian trade theory, which posits that patterns of trade among countries are governed by their relative differences in productivity. Although such productivity differences are difficult to observe, an RCA metric can be readily calculated using trade data to "reveal" such differences. It can be calculated as follows:

$$M_2 = \text{RCA} = \frac{X_{ij} / X_j}{X_{iw} / X_w}$$

Where X_{ij} are the exports of product i of country j, X_j is the total exports of country j, X_{iw} are the exports of product i by the world and X_w are total exports of the world. A country has a comparative advantage if $\text{RCA} > 1$ and a comparative disadvantage if $\text{RCA} < 1$.

Vollrath's Indices for Competitiveness

Vollrath indices are used to measure comparative advantage as well as trade competitiveness. These three indices discussed below use exports and imports for measuring competitiveness. According to Vollrath (1991), positive indices reveal a competitive advantage whereas negative values reveal a competitive disadvantage. These indices are defined as follows:

⁸ <https://stats.oecd.org/glossary/detail.asp?ID=399>

◆ Relative Trade Advantage

The first measure of Volrath (1991) is the relative trade advantage (RTA) which accounts for exports as well as imports. It is the difference between the relative export advantage (RXA) and relative import advantage (RMA).

$$M_3 = RTA = RXA - RMA = \frac{x_{ij} / x_{it}}{x_{nj} / x_{nt}} - \frac{m_{ij} / m_{it}}{m_{nj} / m_{nt}}$$

Where x and m represent exports and imports respectively, i is the country, j is a commodity, t is a set of commodities and n is a set of countries.

◆ Revealed Export Advantage

Volrath's second measure is simply the logarithm of the relative export advantage.

$$M_4 = \ln(RXA) = \frac{x_{ij} / x_{it}}{x_{nj} / x_{nt}}$$

Where x represents exports, i is the country, j is a commodity, t is a set of commodities and n is a set of countries.

◆ Revealed Competitiveness

The third measure of Volrath is the revealed competitiveness and is calculated as the difference between the logarithm of relative export advantage and logarithm of relative import advantage

$$M_5 = RC = \ln(RXA) - \ln(RMA)$$

Table 15 presents the results of the cross-country competitiveness indicators defined above for the refrigerator industry.

Change in market share indicates that China, Thailand, Korea, Poland, Viet Nam, and Malaysia appear competitive in the global refrigerator industry. However, Pakistan's competitiveness is downgraded significantly on the aforementioned indicator.

Revealed Comparative Advantage (RCA) highlights that comparative advantage is revealed for China, Mexico, Thailand, Korea, Turkey, Viet Nam, and Malaysia. Pakistan does not exhibit a comparative advantage as far as the refrigerator industry is concerned.

Next is the interpretation of Vollrath indices (M3 – M5). The advantage of these indices is that it incorporates both exports as well as imports. Comparing these indices across countries, Turkey appears more competitive than China on Vollrath indices. Mexico and Turkey have somewhat similar relative trade and relative export advantages while Turkey revealed higher competitiveness over revealed competitiveness measures. Pakistan performed poorly in terms of competitiveness of the refrigerator industry measured using Vollrath Indices.

Overall, China, Mexico, and Turkey are relatively competitive in manufacturing and exporting refrigerators to the global markets. Turkish and Chinese investments in Pakistan's refrigerator industry provides hope that this FDI will lead to enhanced competitiveness.

Table 15:

Competitiveness Measures at Industry Level

Ranks Based on exports	Exporters	Change in Market Share over 2018-19 (M_1)	Revealed Comparative Advantage (M_2)	Relative Trade Advantage (M_3)	Relative Export Advantage (M_4)	Revealed Competitiveness (M_5)
1	China	2.74	2.25	2.00	0.81	2.20
2	Mexico	-1.65	6.52	5.72	1.87	2.10
3	Thailand	9.68	5.96	5.38	1.78	2.33
4	Korea	11.80	2.44	1.86	0.89	1.43
5	Turkey	-4.35	6.95	6.36	1.94	2.47
6	Poland	12.71	3.81	2.57	1.34	1.12
7	Germany	-10.16	0.51	-0.43	-0.67	-0.60
8	Italy	-4.67	1.01	-0.04	0.01	-0.04
18	Viet Nam	9.87	0.46	-0.44	-0.79	-0.67
23	India	-7.18	0.28	-0.28	-1.28	-0.69
43	Malaysia	38.39	0.04	-0.59	-3.19	-2.73
61	Pakistan	-6.49	0.09	-0.71	-2.37	-2.15

Source: Author's Estimation using data from ITC Trade Map, 2019

A red refrigerator stands in a kitchen. On top of it are two potted plants. To the right, there are shelves with dishes and a countertop with jars and fruit. The background wall is grey with a stone-like pattern. In the top right corner, there are several white circles of varying sizes.

CHAPTER 06

Industry View On
Competitiveness Of
Pakistan's Refrigerator
Industry

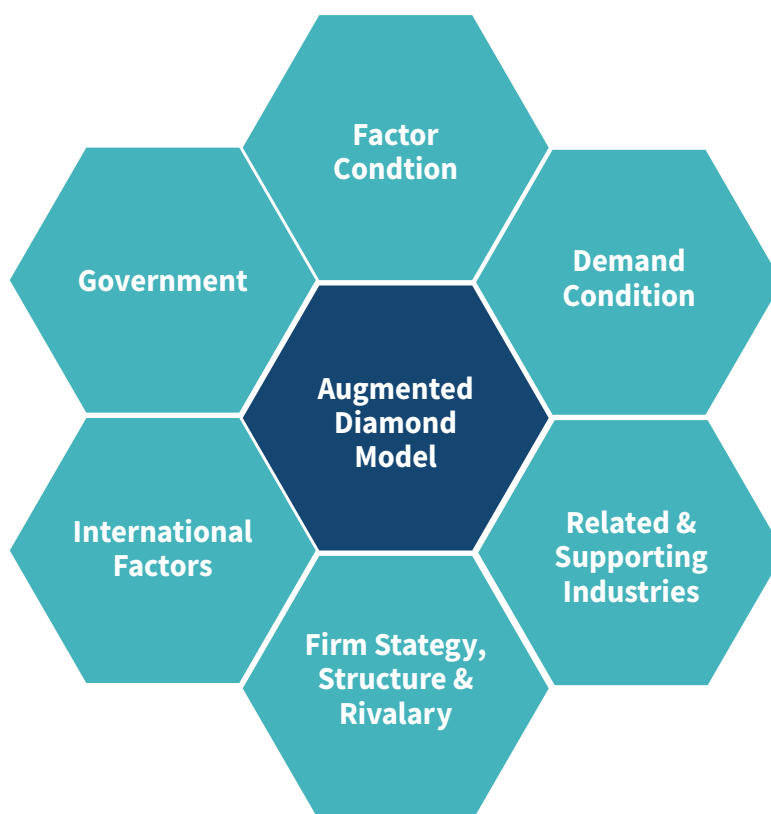
The bottom-up approach implies measuring competitiveness at the firm level and aggregating it to make inferences about the industry. Interviews were conducted with major refrigerator manufacturers of Pakistan to get deeper insights into the challenges faced by the industry, policy shortcomings and opportunities available. A questionnaire was developed using Porter's Diamond model (1980) of competitive advantage as a basis. Porter's Diamond includes the following attributes:

- ◆ **Factor Condition.** The industry's position in factors of production, such as labor, raw material, utilities, etc.
- ◆ **Demand Condition.** The nature of home-market demand for the industry's product or service.
- ◆ **Related and Supporting Industries.** The presence or absence of supplier industries and other related industries that are internationally competitive.
- ◆ **Firm Strategy, Structure and Rivalry.** The conditions in the country governing companies as well as the nature of domestic rivalry.

This study augments the model with two additional attributes i.e. government interventions and international factors which are crucial for open economies.

Figure 21:

Augmented Porter's Diamond Model



Factor Conditions —

Absence of domestic industry for the supply of raw materials

Around 85% of the raw materials required are imported. Imported raw materials used include plastics, steel, glass and components such as compressors. Reasons for reliance on imports are:

- ◆ **Steel:** Local steel mills do not produce steel sheets of the desired grade and quality to allow their use on external panels. Industry however uses locally available sheets for internal parts of the refrigerator but pre-coated sheets need to be imported for exteriors.
- ◆ **Plastics:** Pakistan does not have a basic naphtha cracker plant; hence localization is not expected in the foreseeable future.
- ◆ **Compressors and other components:** The Pakistani market's annual demand is 1.2 – 1.6 million refrigerators whereas the minimum production capacity of a compressor factory is upwards of 15 million compressors a year. Unless there is a rapid increase in demand, compressors will need to be imported.

Cost components of Pakistan's refrigerator industry

The primary cost component of the industry is raw materials and components. The cost breakup for producing a refrigerator varies across manufacturers, however, the best estimates are :(1) Utilities: 5 to 7% (2) Labor: 3 to 5 % (3) Raw materials: 70 to 80% (4) Overheads 8 to 12 %.

Customs duties on raw material imports

Most of the raw materials imported are rightly classified and hence have no duty on them. The only exception is that of glass imports which though a raw material for the refrigerator industry, is an intermediate or finished product for other industries. It is suggested that industry be allowed duty-free import of glass for its production needs.

The competitive advantage of cheap labor

The refrigerator industry is a labour-intensive industry and Pakistan has a competitive advantage of having relatively cheap labor. Each manufacturer in the industry on average employs 900 to 1,100 laborers.

Demand Conditions —

Domestic market and Cyclical Nature of the Industry

The annual demand for refrigerators in Pakistan is estimated to be between 1.3 to 1.6 million units. In 2018 however, demand contracted by between 15 & 20 percent due to the economic slowdown.

Consumer preferences

More than 98% of the demand in Pakistan is for direct cool refrigerators. Such preference is mainly because of power outages and erratic supply of electricity, especially in rural areas. The perception with direct cool is that it can preserve things longer as compared to no frost in case of long spells without electricity.

The demand for imported refrigerators

Demand for no frost refrigerators is roughly 10-15 thousand units per annum out of a total demand of 1.3 – 1.6 million units. None of the local manufacturers produce a no frost refrigerator. These types of refrigerators are therefore imported but constitute only 2-3 percent of the total refrigerator market of Pakistan. The absence of a technologically advanced domestically manufactured no frost model hampers entry into export markets for Pakistani manufacturers.

Popular sizes of refrigerators demanded in the local market

The sizes of refrigerators manufactured in Pakistan range between 3.5 and 22 cubic feet. The world's largest direct cool refrigerator is manufactured in Pakistan by Dawlance. A large variation in refrigerator sizes implies similar variations in capacities of compressors and other components impeding localization. The popular sizes of refrigerators in Pakistan, India, and Korea are 12, 10, and 25 Cubic feet respectively.

Related And Supporting Industries —

Vendors for the refrigerator industry

Components for refrigerators, other than direct imports, are being procured through local vendors. These components are up to the mark and manufacturers are satisfied with the quality of components. It includes condensers, evaporators, cooling coils, thermostats, and others. Vendors produce some of these components locally whereas remaining components are imported in order to meet industry requirements.

Local steel industry complements the refrigerator industry to some extent

Manufacturers utilize locally produced steel sheets for manufacturing internal frames of the refrigerators. However, for exterior design and aesthetics, pre-coated steel sheets need to be imported as the quality of local steel sheets is not acceptable for exteriors.

Local glass industry unable to fully meet demand of the refrigerator industry

Pakistan's glass industry is still in its infancy and cannot produce state-of-the-art glass with pleasing aesthetics. The refrigerator industry requires cold-rolled (CR) sheets coated with tempered glass which is very thin and technologically sophisticated and not manufactured in Pakistan. In this regard, there is a demand and supply mismatch between the refrigerator industry and the glass industry.

Local universities and R&D facilities

Industry suffers from a lack of local institutions providing R&D support to the local industry. Technology, therefore, is mostly imported and difficult to adapt to local conditions.

Firm Strategy, Structure, And Rivalry

Extended supply chains lead to longer lead times

Refrigerator manufacturers in Pakistan have to import most of their raw materials which significantly increases lead time as compared to manufacturers in India and China. The lead time for importing raw materials is the longest in the production cycle.

Lack of an internationally recognized brand

There are a large number of markets where direct cool refrigerators are in demand. In these markets, distributors ask for a 15-20 percent discount for Made in Pakistan refrigerators. Moreover, consumers of home appliances around the world are brand conscious whereas Pakistani manufacturers do not have any internationally recognized brands. This is a major impediment for entering international markets.

Competition and price wars

The market follows monopolistic competition as manufacturers offer products that are slightly different based on brand and quality. Competition in the domestic market is fierce as products are sold in a narrow price range and price is an important consideration. Pakistani refrigerators are competitively priced and are available to consumers at a lower price as compared to those from China.

Underutilized production capacity

The average production capacity utilization rate is between 75-80 percent. The first six months of a calendar year are peak production and sales periods while the last six months are marked as low periods for production. Refrigerator production capacity utilization rate is better than that for other home appliances.

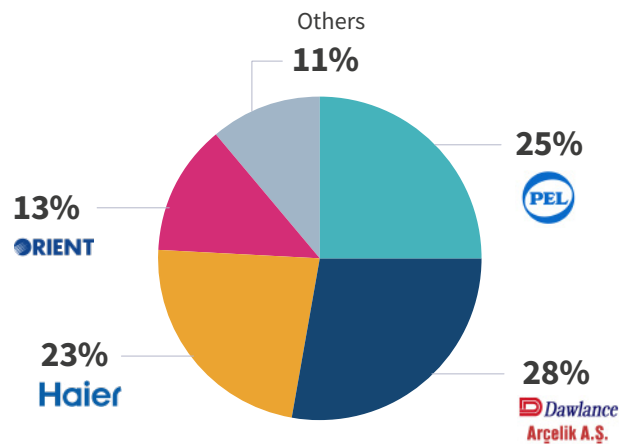
Market concentration

The market is concentrated with only a few companies. The dominant players in the refrigerator industry are Orient, Haier, PEL, and Dawlance with market shares of 13 percent, 23 percent, 25 percent, and 28 percent respectively. The industry is already underutilizing its production capacity so there exists a high barrier to entry.

Figure 22:

Share in Sales of refrigerators in Pakistan, 2018

Source: Pakistan Revenue Automation Limited (PRAL)

**Government Interventions****The high cost of borrowing**

Banks account for nearly 50 percent of the before-tax profits of companies in the refrigerator industry in the form of financial charges. The capital structure of the industry participants, on average, requires 30 to 50 percent debt. In the recent past, a double-digit policy rate and excessive government borrowing from the banking system had raised the cost of borrowing for the industry.

Policy focus on the refrigerator industry is missing

The refrigerator industry has no preferential treatment by the government and the industry is not working under any specific SRO. General tax remissions and rebates are available but market participants believe that these regimes are mostly designed for the textile sector.

A non-competitive corporate tax rate

The average effective tax rate of companies manufacturing refrigerators is claimed to be as high as 55 percent which includes a 29 percent corporate tax rate. India is offering a corporate tax rate of 15 percent for new entrants and 22 percent for existing market participants.

The uneven playing field between already established manufacturers and new entrants

The government provides tax holidays and other advantages for new entrants while heavy taxes are collected from existing companies. Chinese participants are seeking investment opportunities in Pakistan in the wake of CPEC. With tax advantages and an already relatively low-cost manufacturing base in China, it is feared that the new Chinese entrants will hurt the established refrigerator players in Pakistan.

Foreign exchange regulations are hampering international transactions

SBP foreign exchange regulations need to be revisited. In cases where manufacturers require international certifications, they face problems in remitting funds as the SBP limits transactions to USD 10,000 per year⁹.

Letter of Credit (LC) margins

Since most of the raw material and components need to be imported, the State Bank of Pakistan's requirement of 100 percent LC margin on certain imports hampers cashflows¹⁰. Nearly 18 percent of the raw materials required by the refrigerator industry is facing a 100 percent LC margin requirement. Pakistan Customs Tariff (PCT) code for the relevant components are as follows:

Table 16:

List of PCT for Refrigerator Components Subjected to LC Margin

Pakistan Custom Tariff	Product label	LC Margin
84189910	Evaporators	100%
84189920	Condensers	100%
84186990	Others	100%

Source: State Bank of Pakistan

Sales operation of refrigerators is primarily carried out through dealer networks generally on credit. Advance payments in terms of 100 percent LC margins and credit sales create liquidity issues.

International Factors —

Potential markets for exports

Countries in Africa and the Middle East are potential markets for exports of direct cool refrigerators which is the major strength of the Pakistani refrigerator industry. Pakistani refrigerators can have a market in Afghanistan and Bangladesh because of their low prices and quality.

International Competitiveness

The newly installed factory of Arcelik in India has the advantage of 75% locally available raw material. In global markets, economies of scale are tilted towards China because of large production volumes. On average, the annual production of refrigerators in China is 12 times larger than that in Pakistan.

⁹ <https://fbr.gov.pk/categ/travel-guide/51149/80881/%20131184>

¹⁰ BPRD Circular No. 05 of 2018, State Bank of Pakistan

Table 17:

Pakistan's Position on Competitiveness Attributes

Inputs/Attributes	Pakistan's position
Labor	Competitive advantage
Exchange rate	Competitive advantage for exports but a disadvantage for imports
Quality	Up to international standards
Cost	Disadvantage because of import dependency
Economies of Scale	Relatively lower than that of India and China

Source: Industry's feedback

Risks in sourcing raw material

High import dependency for raw materials (e.g. plastics, glass, metal sheets, etc.) and components (such as compressors) exposes the refrigerator manufacturing industry of Pakistan to additional risks. These include:

- ♦ **Exchange rate risk:** This refers to the losses incurred due to currency fluctuations as a weaker currency makes imports more expensive. The Pakistani rupee has lost nearly 50 percent of its value in the last couple of years.
- ♦ **Operational risk:** The recent cases of COVID-19 in China and the resultant delays in shipments due to border closure has increased operational risk.



CHAPTER 07

Government Policies And The Refrigerator Industry

Long Term Financing Facility (LTFF) for Plant & Machinery

Industries under the Engineering sector are eligible for the LTFF scheme for importing plant & machinery required for producing engineering goods.

Participating Financial Institutions (PFIs) for LTFF may consider the financing requests for new projects or expansion / BMR of existing projects based on projected exports. Such export-oriented projects will be required to meet the minimum export target prescribed under LTFF [viz. annual exports equivalent to US\$ 5 million or at least 50% of their sales constituting exports, whichever is lower] within a maximum period of four (04) years as under:

Table 18:

Eligibility Criteria for LTFF Scheme

Exports in the First Two Years	Total exports of US\$ 2 million or 20% of the total sales of the project, whichever is lower.
Exports in Third Year	US\$ 3 million or 30% of sales, whichever is lower.
Exports in Fourth Year	US\$ 5 million or 50% of sales, whichever is lower.

Source: State Bank of Pakistan

Standard Duty Drawback Notification (S.R.O 211(I)/2009)

The Federal Board of Revenue has authorized repayment of customs duties for exports. The table below only reproduces the HS codes related to the refrigerator industry under the aforementioned S.R.O.

Table 19:

Duty Drawback on Imported Raw Materials Relevant to the Refrigerator Industry

Raw materials imported	Goods produced or manufactured	HS codes	Extent of repayment of custom duties
Steel tube copper coated, tin plate, paint polyester	Condensers for refrigerator	8418.9920 8418.9990	1.48% of the f.o.b. value
Compressor, thermostat, filter drier, copper tube/capillary, fan motor, copper strips, PVC coated steel sheet, electric galvanized steel sheet, plastic polystyrene	Electric water cooler, all sizes	8418.6990	1.92% of the f.o.b. value
Compressor, thermostat, adhesive tape, aluminum sheet, baytherm/polyol, capillary tube, copper tube, CRC sheets/coils, desmodur (isocyanate), electric heating, evaporator freezer, filter drier, freon, holt melt, lamp bulb with holder, light switches, magnetic strip, plastic moulding compound, plastic resin (soft PVC compound) powder paint, PVC coating compound, VCM	Refrigerators	8418.2100	1.71% of the f.o.b. value
Accumulator, adhesive tape, aluminium finstock, aluminium stucco embossed sheet, capillary tube, compressors, copper tube, CRC steel sheets, desmodur, fan motor with accessories, filter drier, freon, grease paste, PVC coating, plastic resin, polymers, thermostat	Deep freezers	8418.3000 8418.4000 8418.5000	3.56% of the f.o.b. value

Source: State Bank of Pakistan

Local Taxes & Levies Drawback (Non-Textile) Order, 2018 (S.R.O. 711(I)/2018)

The drawback on exports under this order will be provided for shipments made from the 1st July 2018 till 30th June 2021 on the following terms:

- ◆ Fifty percent of the rate of drawback shall be provided without the condition of increment in exports of goods
- ◆ The remaining fifty percent of the rate of drawback shall be provided if the exporter achieves an increase of ten percent or more in exports for any FY between FY2019 and FY2021.
- ◆ The actual rate of drawback against clause (b) shall be determined based on the annual performance of the exporter, but to improve his cash flow, the disbursement against clause (b) shall be allowed on the performance during July-December of each year, subject to the submission of a bank guarantee that the exporter shall return the excess amount, in case his annual exports are less than the eligibility criteria stipulated in clause (b); and
- ◆ An additional two percent drawback shall be allowed for exports to non-traditional markets including countries in Africa, Latin America, non-EU European countries, Commonwealth of Independent States and Oceania at the time of submission of claims mentioned in clause (a).

Transactions under dealership arrangements [Section 108B - Income Tax Ordinance, 2001]

A new section 108B has been inserted in the Income Tax Ordinance 2001, vide the Finance Act 2019, which states that where products listed in the Third Schedule to the Sales Tax Act, 1990 are supplied to a person under a dealership arrangement with a dealer and if such a dealer is not registered under the Sales Tax Act, 1990 and also not appearing in the ATL, an amount equal to 75% of the dealer's margin shall be added to the income of the person making supplies. Further, it is stated that 10% of the sale price shall be deemed/treated as dealer's margin.



CHAPTER 08

Competitors Strategies

The table below provides a comparison of Pakistan's fiscal and demographic indicators with China & India, two major competitors for Pakistan's refrigerator industry. Pakistan's corporate tax rate and policy rate are higher than that of both India and China making Pakistan's industry less competitive. A low level of productivity growth of labor also shapes a less competitive environment for manufacturing in Pakistan.

The share of urban population and the growth in urban population is crucial in projecting demand for home appliances. The higher growth in the urban population of Pakistan as compared to that of both India and China translates into higher expected demand for refrigerators.

Table 20:

Macroeconomic and Demographic Indicators

Indicators	Pakistan	India	China
Corporate tax rate (2019, %)	29	25.17	25
Policy rate (August 2020, %)	7	4	3.85
Labor Productivity Growth in Manufacturing (%) 2010-2017	0.3	0.7	2.4
Urban Population (2018, %)	36.6	34.03	59.2
Urban Population growth (2018, %)	2.66	2.3	2.50

Source: Asian Productivity Organization, World Bank

Competitive Edge for the Chinese Refrigerator Industry

China is the world's largest supplier and market for refrigerators. The retail volume of China is roughly 33-34 million units per annum. Competitive advantage and government support available to Chinese manufacturers are as follows:

First-mover advantage in the Middle East and Africa (MENA) region

In the late 1990s and the beginning of the 2000s, Chinese refrigerator manufacturers made a strategic entry into numerous African and Middle Eastern countries. At that time, foreign investors were very reluctant to set up manufacturing facilities locally. Early movers are in the best position to determine the rules of the game (Bouyoucef and Chung, 2015).

Table 21:

Timeline for Strategic Entry of China into MENA Region, 1997-2012

Year	Haier's most significant milestones in Africa and the Middle East between 1997-2012
1997	20 years exclusivity contract signed with Tunisia Hachicha Group to distribute Haier's products in Tunisia, Algeria, Libya, and Morocco.
1999	Haier Middle East was established in The United Arab Emirates*; Haier Sodinco Algeria was incorporated as a subsidiary of the Tunisian Group Hachicha to serve the Algerian market.
2000	Haier Sodinco Algeria Factory started operations in Algeria; Haier and the Tunisian group set up Hachicha Haier Worldwide (HHW), a joint venture factory in Tunisia.
2001	Haier Middle East trading company was established in Jordan (HMT) as a joint venture with South Electronics Company (SEC) and Syrian and Lebanese partners; Haier Group and the UK PZ Cussons Group signed a joint venture agreement to build up a factory in Nigeria; Tunisian plant construction plant started in November.
2002	Industrial park construction project started in Jordan; Tunisian factory put into operation in October.
2005	Jordan Industrial park officially opened.
2010	Sales in Nigeria reached \$200 million: \$21 million in Tunisia and \$17 million in Algeria.
2012	Exclusivity contract signed with IBS to distribute Haier's appliances in Egypt

Source: Bouyoucef and Chung (2015) study on 'The internationalization of Chinese multinationals in the Middle East and Africa: The case of Haier'

State-owned multinational enterprises

Most Chinese multinational enterprises investing abroad are state-owned or closely tied to China's central government. Companies can take excessive risks even securing lower returns in the short-term. Haier is one such example in the refrigerator industry.

Comparative economic advantage

Refrigerators of a wide size range at relatively lower cost provide the comparative advantage to Chinese manufacturers. Low cost is primarily driven by the availability of local raw material, cheap labor and strong government support.

Sales channels

Sales channels for home appliances in China fall into two categories: traditional channels and new channels (see Table 22).

The new channel is growing and rapidly expanding. After several years of development, home appliance retail chain stores have become the major channel for people buying household appliances. It is estimated that specialized home appliance chain stores account for over 70% of the home appliance retail market in large and medium-sized cities. These are now expanding to smaller cities.

Table 22:
Sales Channels in China

Traditional Channels	New Channels
Large, medium and small departmental stores	1. Home Appliance retailers <i>Examples: GuoMei, SuNing</i>
Franchised stores	2. Building Material Chain Stores <i>Examples: HomeMart</i>
	3. General Merchandise Stores <i>Examples: Carrefour, Wal-Mart</i>
	4. E-commerce <i>(a) Individual e-commerce platforms</i> <i>(b) Taobao Tmall: B2C online retail (operated by Alibaba group)</i>

Source: Research on fridge market in China, Daxue Consulting

Government policies

The table below summarizes some favorable government policies which has substantially improved penetration of home appliances in the Chinese market.

Table 23:
Government Subsidies for Appliances in China

Date	Policies
"Home appliances to the countryside" (1 February 2009 to 31 January 2013, nationwide)	
Dec 2007	Pilot programme (3 provinces, 3 types of home appliances, subsidy: 13% of product sales price)
28 Nov 2008	Extended to 14 provinces in Dec 2008, planned to have a nationwide rollout in Feb 2009, began to include a washing machine, subsidy: 13% of product sales price
26 Feb 2009	Expanded subsidies coverage for 10 types of home appliance, raised unit purchase limit for rural households, expected to stimulate over RMB 1 trillion rural consumption
16 Apr 2009	Raised subsidized TVs' limiting price from c.RMB 2k to c. RMB 3.5k
"Old-for-new" (June 2009 - December 2011)	
28 June 2009	Pilot programme (9 provinces and municipalities, subsidy: 10% of product sales price)
04 June 2010	Extended to another 19 provinces and municipalities, subsidy: 10% of the product sales price
Total subsidies	Chinese central government subsidized RMB 32 billion for the "old-for-new" program during 2009 and 2011.
"Old-for-new" (June 2009 - December 2011)	
4 June 2012	Promote energy-saving home appliance by introducing subsidy with proposed subsidies of RMB 26.5 billion

Source: Ministry of Finance, Ministry of Commerce; China

Competitive Edge for the Indian Refrigerator Industry

Availability of raw materials

The market share of direct cool and frost-free segments in FY18 is estimated at 70 percent and 30 percent respectively. Almost 70 percent of the input requirements for manufacturing both types of refrigerators are being met through local suppliers

Economies of scale

The competitiveness of the Indian refrigerator industry is primarily driven by the number of units produced. In the refrigerator industry there exists the concept of economies of scale i.e. reduction in per-unit cost with an increase in the number of units produced.

The number of units of refrigerators produced in India was 11.88 million units in FY18 which were more than 11 times that of Pakistan.

Foreign Direct Investment (FDI) in India

India is among the lucrative markets for foreign investments. According to Kearney Foreign Direct Investment Confidence Index 2019, India has been ranked as the 16th most attractive destination for FDI. A notable landmark in the refrigerator industry in India was the commissioning of a refrigerator manufacturing plant by Samsung Electronics in 2003.

Recently, in 2017, Arcelik's subsidiary (i.e. Ardutch B.V) and Voltas Limited (part of Tata Group) announced to enter into a 50:50 joint venture (JV) for consumer durables¹¹.

Government policies

- ◆ **Expansion of funds for consumer durable loans**

Consumer durable loans in India increased by 83 percent in 2017-18¹². Availability of consumer finance for home appliances is intended to increase the penetration rate of home appliances.

- ◆ **Merchandise Exports from India Scheme (MEIS)**

With the aim of making Indian products more competitive in the global markets, this scheme provides an incentive in the form of duty credit scrip to the exporter to compensate for his loss on payment of duties. The incentive is paid as a percentage of the realized FOB value (in free foreign exchange) for notified goods going to notified markets. MEIS reward rate for HS codes under 8418 is 2% of the FOB value of exports.

¹¹ <https://www.arcelikglobal.com/en/company/press-room/press-releases/update-on-the-joint-venture-between-voltas-and-arcelik/>

¹² India Brand Equity Foundation, 2019

◆ **Protectionist fiscal policies¹³**

Budget 2020 of India has increased customs duties on home appliances including refrigerators reflecting the protectionist stance of the Indian government. The policy aims to address the following issues:

- ◆ Attract foreign investments for expediting Indian local demand rather than through imports.
- ◆ To prevent the dumping of products from China in the wake of US sanctions as Chinese manufacturers have surplus capacities and the higher duty will prevent any indiscriminate imports.
- ◆ To protect and encourage domestic manufacturing of home appliances.

¹³ <https://economictimes.indiatimes.com/industry/cons-products/durables/budget-2020-acs-refrigerators-imported-kitchen-appliances-set-to-get-costly/articleshow/73850377.cms>



CHAPTER 09

Swot Analysis – Pakistan's Refrigerator Industry

Strengths

- ◆ Pakistan's capacity to produce direct cool refrigerators matches the demand of relatively less sophisticated markets.
- ◆ The industry over the years has managed to develop strong backward linkages with its suppliers/vendors to ensure there are no supply-side issues.
- ◆ Over the years, the industry has managed to build up a sizeable base of technical and managerial staff.
- ◆ The entry of major foreign players whether through acquisitions, joint ventures or technical collaboration has increased the quality and competitiveness of domestic firms.
- ◆ Pakistani brands have a strong presence in the minds of domestic consumers.
- ◆ Pakistani refrigerators are competitive in international markets in terms of both quality and price of the product.
- ◆ Around 97% of the domestic demand is being met by local manufacturing and this provides some economies of scale to the local industry.
- ◆ The presence of a strong distribution network in both urban and rural areas facilitates sales and enhances the reach of companies.

Weaknesses

- ◆ No production of frost-free refrigerators in Pakistan takes a large chunk of the international market out from the potential markets for this industry to export to.
- ◆ Compressors and a few other critical components are not manufactured locally and have to be imported which increases the cost of production.
- ◆ Globally, consumers for refrigerators and other home appliances are brand conscious. However, none of the local refrigerator brands is recognized in international markets.
- ◆ Firms don't have strong in-house R&D facilities; this increases dependence on foreign suppliers.
- ◆ Domestic firms are leveraged and hence highly susceptible to demand changes and interest rate fluctuations.

Opportunities

- ◆ Pakistan is the sixth-largest country in terms of population. Rapid rural-urban migration, improvements in power generation, and other notable factors (such as electrification of villages, improvements in living standards, etc.) have improved the demand for refrigerators as well as other home appliances.
- ◆ Pakistan has the highest urbanization rate in South Asia i.e. 36.6 percent and growth in urban population is 2.61 percent which is greater than that of India and China. The demand for refrigerators is closely tied with rural-urban migration.
- ◆ The industry has freight advantage over Chinese competitors in the Middle East and African markets.
- ◆ The appliances penetration rate of Pakistan is only 42 percent, this is relatively lower than that of China and the other regional averages around the globe. It indicates an opportunity for the industry to expand further.
- ◆ The refrigerator industry of Pakistan is currently underutilizing its production capacity which can be used to rapidly enter export markets.
- ◆ In the identified regional markets, there is a large Pakistani diaspora which has had some exposure to domestic brands.
- ◆ Pakistan's Real Effective Exchange Rate (REER) has depreciated significantly which improves price competitiveness. Refrigerator industry players can exploit this opportunity to enter into the international markets.

Threats

- ◆ The high cost of borrowing along with a variety of taxes are impeding the industry's competitiveness. Moreover, lower demand due to sluggish economic activity threatens the survival of companies in the industry.
- ◆ Dependence on imported raw material supplies imposes a threat to the refrigerator industry of Pakistan. For instance, any delays or suspension of supplies in the wake of a corona-virus pandemic or due to a natural disaster or other factors in the supplying economy will affect the industry.
- ◆ Volatility of raw material prices and/or increase in import duty pose additional risks. Moreover, a weakening currency could also worsen the cost structure of the industry.
- ◆ The domestic market is seasonal in nature increasing the vulnerabilities of manufacturers to demand conditions
- ◆ Consumer preferences are shifting toward 'no-frost' refrigerators globally. Although not in the short-term, the demand for no-frost refrigerators is expected to emerge in the Pakistani market as well.
- ◆ Inconsistent tariff and tax policies deter foreign investments in the manufacturing sector of Pakistan.
- ◆ Entry of Chinese manufacturers in Special Economic Zones (SEZs) availing tariff and fiscal concessions could pose a threat to the domestic manufacturers

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Annexure

Table 24:

List of Refrigerator Manufacturers Interviewed

S.No.	Company Name	Address	Focal Person
1	Dawlance Private Limited	Dawlance Head Office: Dawlance Center 7/4. Civil Lines – 9, Dr. Zia-Ud-din, Karachi	1. Mr. Omar Ahsan, CEO 2. Mr. Farhan Akram, CFO
		DPL-1: Dawlance Private Limited, DPL1, Plot # S-476, Main National Highway, Landhi Karachi	1. Mr. Rizwan Ul Haq, Plant Manager 2. Muhammad Yamin Khan, Manager Production
		DPL-2: Dawlance Private Limited, DPL 2, Plot # 89, Deh Khanto, Bin Qasim Town, Main National Highway, Landhi Karachi	1. Mr. Tasawar Iqbal, Manufacturing Manager 2. Asif Khan, Team Leader
2	Waves Singer	9 Km, Hanjarwal, Multan Road, Lahore 54790	1. Mr. Haroon Ahmad Khan, CEO 2. Arslan Shahid, Chief Strategy Officer
3	PEL	14km, Ferozepur Rd, Lahore 54000	1. Mr. Murad Siagol, CEO 2. Syed Manzar Hassan, Director Finance
4	Orient Pakistan	Orient Head Office, Gate No:3, 26 Km Multan Road, Lahore	1. Mr. Humaer Waheed, Director Operations

Table 25:

Pakistan's Imports of Refrigerators and Components/Parts thereof, Country-wise

HS Code/ PCT	Commodity / Top Importing Destinations	Unit	Quantity 2018-19	Import Value (USD Million) 2018-19	Tariff (%)
	TOTAL IMPORTS OF REFRIGERATORS AND COMPONENTS			257.38	
84143010	Compressors of a kind used in refrigerating equipment: Used with HCFC and non-CFC gases	NO	5,337,604*	191.94	3
	China		4,506,336	165.09	0
	European Union		200,692.00	6.93	
	Slovakia/Slovak R.		204,734.00	6.89	
84189910	Evaporators (roll bond / fin / tube on plate types)	KG	4,061,325	19.72	3
	China		3,879,801	18.56	0
	Turkey		159,565.00	1.05	
	Italy		8,985.00	0.04	
					20
84189990	Other Parts of Refrigerator Freezers	KG	441,466	13.67	
	China		344,539	10.58	
	Italy		28,750	0.96	
	Turkey		21,331	0.65	
84189920	Wire condensers	KG	4,465,659	9.68	11
	China		4,459,210	9.66	0
	Turkey		2,771.00	0.01	
	Thailand		2,308.00	0.01	
38247800	Containing perfluorocarbons (PFCs) or hydrofluorocarbons (HFCs), but not containing chlorofluorocarbons (CFCs) or hydrochlorofluorocarbons (HCFCs)	KG	1,245,919	5.66	11
	China		996,083	4.01	
	Italy		5,550	0.03	
	Netherlands		15,984	0.10	
84144000	Compressors of a kind used in refrigerating equipment: Air compressors mounted on a wheeled chassis for towing	NO	20,881	5.45	3
	China		13,331	3.55	0
	Hong Kong S.A. Republic. China		1,226	0.39	
	Korea, Republic of		1,167	0.31	
84181090	Combined refrigerator- freezers, fitted with separate external doors – Other	NO	14,244.00	4.18	20
	China		8,646.00	2.68	
	Denmark		2,340.00	0.69	
	Thailand		2,509.00	0.65	

Table 25:

Pakistan's Imports of Refrigerators and Components/Parts thereof, Country-wise

HS Code/ PCT	Commodity / Top Importing Destinations	Unit	Quantity 2018-19	Import Value (USD Million) 2018-19	Tariff (%)
84182190	Refrigerators, household compression type – Other	NO	6,134.00	1.62	20
84186920	China		4,004.00	1.04	
	Thailand		735	0.23	
	Korea, Republic of		239	0.07	
	Refrigerating machines with engine fitted on a common base for refrigerator containers	NO	2,206.00	1.42	11
	China		2,026.00	1.13	5 to 0 in 10 years
	U.S.A.		164	0.26	
	Afghanistan		5	0.02	
84143090	Compressors of a kind used in refrigerating equipment: Others	NO	31,533	0.95	11
	U.S.A.		10,561.00	0.35	
	Spain		6,484.00	0.19	
	China		5,275.00	0.15	5 to 0 in 10 years
	Freezers of the upright type, not exceeding 900 l capacity -Other	NO	1,137.00	0.84	20
84184090	European Union		530	0.30	
	Thailand		115	0.28	
	Poland		33	0.06	
	Prepared binders for foundry moulds or cores; chemical products and preparations of the chemical or allied industries (including those consisting of mixtures of natural products), not elsewhere specified or included- Others	KG	100,728	0.76	11
38247900	Australia		41,962	0.32	
	Bahrain		17,752	0.14	
	Belgium		9,658	0.07	
	Refrigerators, household – Other	NO	2,272.00	0.71	20
84182990	Turkey		1,616.00	0.47	
	China		285	0.11	
	Poland		118	0.05	
	Freezers of the chest type, not exceeding 800 l capacity – Other	NO	1,628.00	0.37	20
84183090	China		880	0.18	
	Thailand		556	0.12	
	Germany		44	0.03	

Table 25:

Pakistan's Imports of Refrigerators and Components/Parts thereof, Country-wise

HS Code/ PCT	Commodity / Top Importing Destinations	Unit	Quantity 2018-19	Import Value (USD Million) 2018-19	Tariff (%)
29012990	Acylic Hydcarbon – Other	KG	85,339	0.24	3
	Spain		43,951	0.10	
	European Union		23,042	0.09	
	China		13,848	0.04	
84186100	Heat pumps other than air conditioning machines of heading 84.15.	NO	95	0.11	20
	U.S.A.		31	0.05	
	Germany		49	0.02	
	China		4	0.01	25 to 0 in 10 years
84184010	Freezers of the upright type, not exceeding 900 l capacity in CKD/SKD	NO	134	0.03	20
	China		133	0.03	
	United Kingdom		1	0.00	
84182110	Refrigerators, household compression type in CKD/SKD condition	NO	41	0.01	20
	Italy		13	0.00	
	Slovenia		20	0.00	
	China		8	0.00	
84183010	Freezers of the chest type, not exceeding 800 l capacity in CKD/SKD	NO	30	0.01	20
	China		30	0.01	
84181010	Combined refrigerator- freezers, fitted with separate external doors in CKD/SKD condition	NO	52	0.01	20
	China		43	0.00	
	Thailand		5	0.00	
	Korea, Republic of		3	0.00	
84189930	Parts of machine of heading 8418.6910	KG	383	0.00	11
	U.S.A.		25	0.00	
	Germany		260	0.00	
	European Union		25	0.00	
	China		73	0.00	5 to 0 in 5 years

*Appears to include imports of compressors for appliances other than refrigerators

Source: Pakistan Bureau of Statistics, Federal Board of Revenue



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