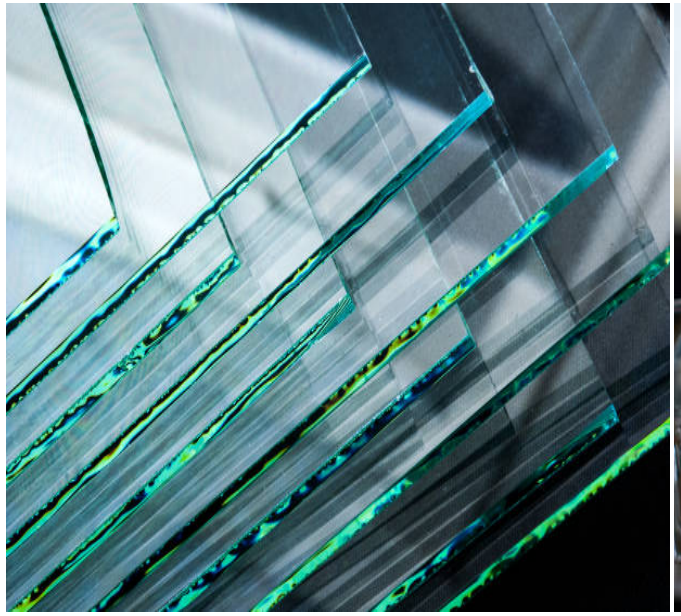
SECTOR STUDY . DECEMBER 2024

Together. Creating Value.

GLASS



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Introduction

Glass

Glass is a silica-based, non-crystalline amorphous solid material that has broad practical and technological properties as well as imperative function in decorative applications such as windows, tableware, and household appliances. Glass transmits, reflects, and refracts light, all qualities that can be enhanced through cutting and polishing for use in optical lenses, prisms, fine glassware, and optical fibres for high-speed data transmission that uses light.

Raw materials

The production of glass requires materials such as Silica Sand (Silicon Dioxide), Limestone (calcium carbonate), Soda Ash (sodium carbonate) and waste glass (obtained through recycling of used glass). Soda ash reduces the melting point of sand and thus reduces energy consumption. Meanwhile, limestone acts as a stabilizer, which prevents the loss of chemical durability that occurs due to the use of soda ash. Soda-lime glass accounts for ~90% of all manufactured glass.

Production Process

The manufacturing of glass is a relatively straightforward process. The raw materials are combined and heated in a furnace at ~1,500 Celsius (2,732 F). Once the liquid state is achieved, they are either poured on a flat surface to make sheets of glass or poured into molds to make bottles and other containers. Some types of glass containers are also made through 'blowing', where a lump of molten glass is wrapped around an open pipe. Air is blown through the pipe while it is rotated to give the glass its shape.

Different types of glass can have slightly different processes. For example, colored glass is made by adding various chemicals, oven-proof glass is made by adding boron oxide, and tempered glass is made by rapidly cooling the molten glass to increase its strength.

Some key benefits of soda-lime glass include its affordability, chemical stability, relative strength, and extremely malleable properties. It is also possible to remelt and soften soda-lime glass numerous times, making it an ideal material for recycling.

Source: Glass Alliance Europe, Brittanica

Glass

Global | Overview

- The glass manufacturing industry was valued at USD~120.3bln in CY24, up by ~5.3% compared to the same period last year (CY23: USD~114.7bln). It is expected to grow at a CAGR of ~5.6% to reach USD~168.3bln by CY30.
- The glass manufacturing industry includes flat glass for the construction and automotive industries, container glass for packaging, and specialty glass for electronics, pharmaceuticals, and solar energy.
- Rising urbanization, technological advancements, and shifting towards sustainable and recyclable materials drive glass demand.
- The industry is fueled by trends such as smart glass innovation, tempered glass manufacturing, and investments in renewable energy solutions. The push for green buildings, efficient packaging, and touch-enabled devices further enhances growth opportunities.
- Fluctuations in raw material costs, stringent environmental regulations on CO2 emissions, and fierce competition present hurdles for manufacturers, potentially limiting growth in certain segments.
- Leading glass manufacturers focus on technological innovation and product diversification to enhance their market presence.
- R&D investments drive the advancements in smart lenses and high-performance glass products, while expansion into emerging markets addresses rising demand from urbanization and technological growth.
- Some major players operating in the glass manufacturing industry include: Saint-Gobain S.A, China Glass Holding Ltd., AGC Inc., and CSG Holdings Ltd.

Source: Research and Markets

Glass

Local | Overview

- Pakistan's glass manufacturing industry consists of ~5–6 large players and several smaller competitors in segments such as float glass, containers, and tableware.
- The sector caters to direct consumer demand and industrial needs, including construction, pharmaceuticals, and food & beverages.
- The sector's revenue was estimated at PKR~85.2bln in FY24, reflecting a YoY growth of ~12.8%. However, revenue for 1QFY25 declined by ~13.9% YoY to PKR~17.6bln.
- Glass plate and sheet production has been declining since FY19, dropping by ~11.2% to ~20.2mln Sq. M in FY24 (FY23: ~22.7mln Sq. M). In 1QFY25, the production was ~3.3mln Sq. M, down ~41.5% YoY.
- The decline in the production of glass plates and sheets in FY24 is mainly attributed to a key sector player's furnace closure for maintenance, coupled with overall sluggish demand in the industry.
- On the other hand, revenue increased as sector players passed on costs to final consumers through higher prices.
- In FY24, the average price/sq. M rose by ~27.3% while in 1QFY25 the average price rose by ~47.2% compared to the same period last year.
- A significant portion of local demand is met through imports, which increased to USD~83.2mln in FY24 from USD~75.9mln in FY23.
- Major imports include glass fibers (~32.0%) and glass containers (~26.0%). On the other hand, imports in 1QFY25 surged ~69.3% YoY to USD~27.3mln (SPLY: USD~16.1mln).
- Glass exports rose by ~4.2% YoY to USD~41.1mln in FY24 (FY23: USD ~39.4mln) and increased by ~18.7% in 1QFY25.

Sector Snapshot	FY22	FY23	FY24	1QFY24	1QFY25
Estimated Revenue (PKR mln)	66,779	75,588	85,248	20,503	17,654
Production of Glass Plates & Sheets ('000' Sq/ M)	22,269	22,759	20,205	5,691	3,330
Glass Imports (USD 000)	123,522	75,855	83,233	16,137	27,320
Glass Exports (USD '000')	42,293	39,423	41,068	11,335	13,458
No. of Players	~5-6 major players				
Market Structure	Oligopoly				
Product Segments	Float Glass, Tableware & Containers				
Industry Association	Pakistan Glass Manufacturers Association (PGMA)				

***Note**: Revenue estimate is reflective of ~4 listed players in the sector.*

Source: PBS, SBP, PACRA Database

Glass

Local | Market Segments and Capacities

Local glass manufacturers are currently operating in three broad categories/segments, which can be classified as follows:

1. **Float Glass:** This type of glass is largely used in the construction of windows with different varieties that include clear, tinted, and mirrored float glass. There are three main players in this segment, Tariq Glass, Ghani Glass, and Ghani Value Glass, with a production capacity of ~1600 tpd.

2. **Tableware:** This includes products such as dinner sets, cups, mugs, etc. Tariq Glass is the largest player in this segment, with ~60.0% of total production capacity while many other players are also operating within this segment such as Balochistan Glass and Gunj Glass. The estimated total production capacity of this segment stands at ~570 tpd.

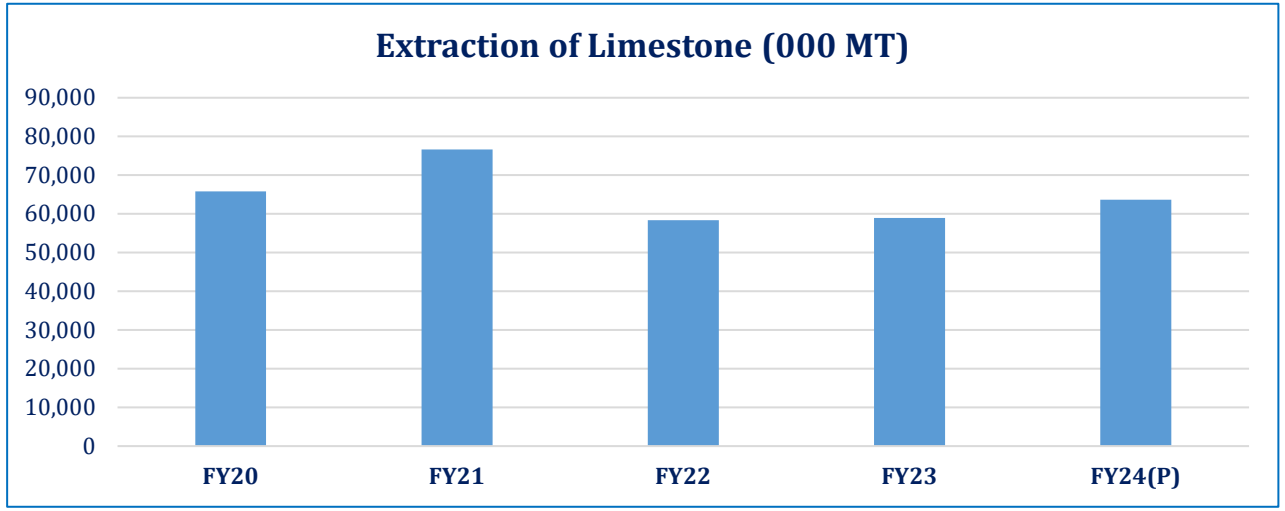
3. **Containers:** This segment can be further divided into the following sub-segments:
    - *I.* *Food & Beverage Containers*: This includes products such as Pyrex containers and jars for food as well as glass bottles used for carbonated beverages. The main players in this segment are Ghani Glass, Murree Brewery, and Tariq Glass with a production capacity of ~435 tpd.
    - *II.* *Pharmaceutical Containers*: This segment includes medicine bottles and containers of different specifications as well as vials, ampoules, and tubes (which are converted into ampoules). Ghani Global is the only local manufacturer of tubes, with the remaining demand being met through imports. It occupies a market share of ~54.0% in this subsegment. In the ampoules sub-segment, there is significant competition with Ghani Global accounting for ~16.0% of ampoules supply. Other large manufacturers of ampoules include pharmaceutical companies meeting their requirements such as Sami, Bosch, and Indus as well as commercial producers such as Friends Glass and TechnoGlass. Ghani's total manufacturing capacity stands at ~24.0 tpd. Meanwhile, Ghani Glass holds a significant market share in the medicine sub-segment with a production capacity of ~315.0 tpd.

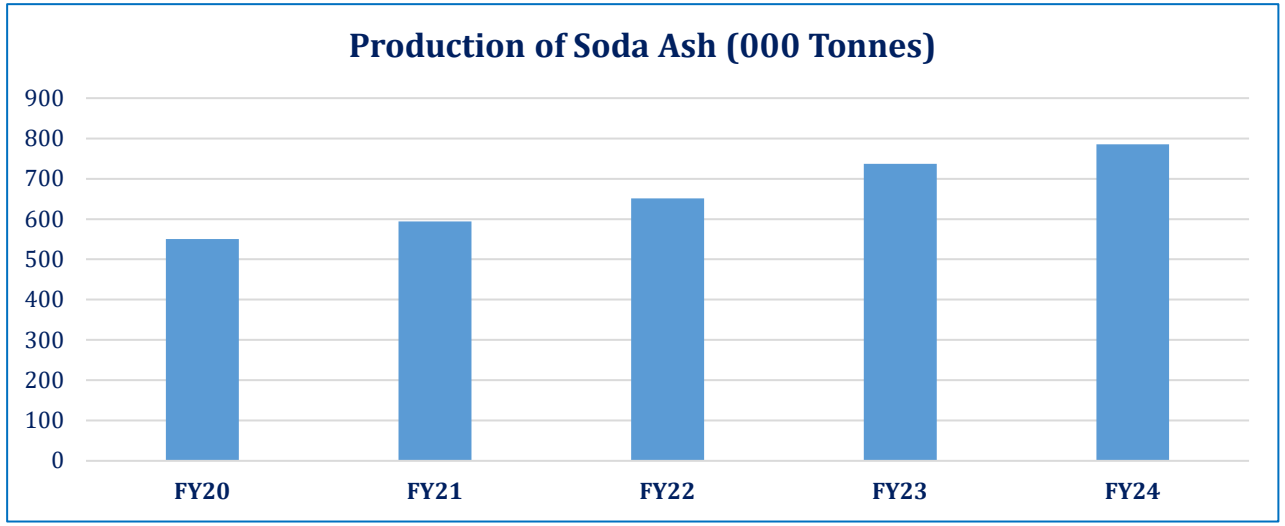
Source: PACRA Database

Glass

Local | Raw Material

- The primary raw material for glass production is silica sand. However, most types of glass also require limestone (reduces viscosity to make the molten glass easier to shape) and soda ash (accelerates the fusion process).
- During FY24, the industrial sector remained constrained by subdued domestic demand, tight monetary policy, fiscal consolidation, and higher input costs.
- The mining and quarrying sub-segment, having ~9.0% share in the industry segment of the economy, posted a marginal growth of ~0.3% YoY (FY23: ~-0.3%).
- The extraction of limestone saw an increase of ~8.0 YoY and its production was recorded at ~63.6mln MT in FY24 (FY23: ~58.9mln MT).
- Production of soda ash has steadily increased in the past five years with an average growth rate of ~7.0%. During FY24, the local production of soda ash stood at ~0.8mln MT, an increase of ~6.6% as compared to the previous year (FY23: ~ 0.7mln MT).





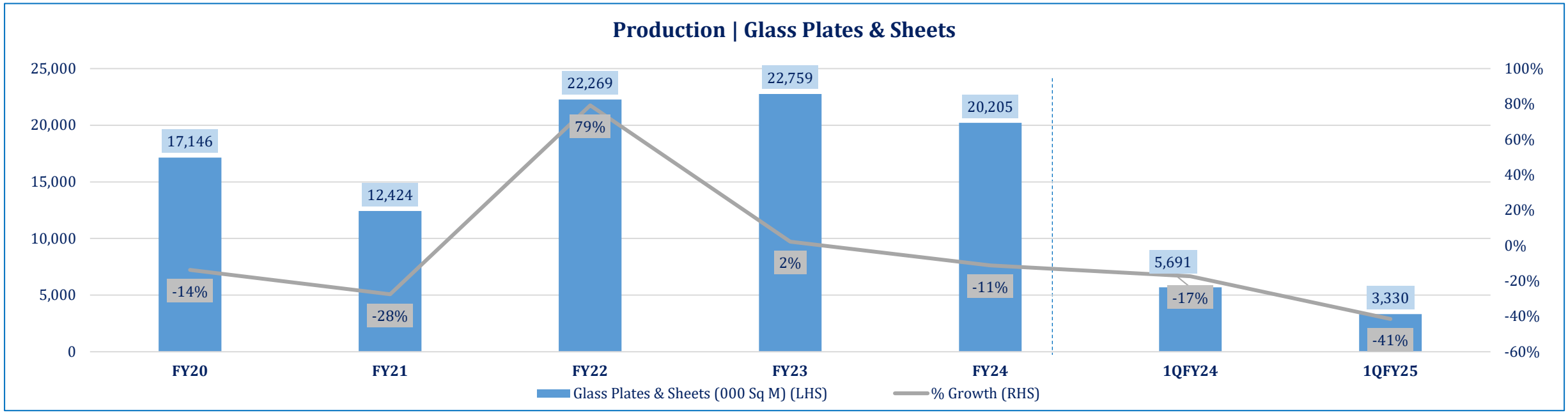
***Note**: Provisional data of Limestone for FY24.*

Source: PBS, Pakistan Economic Survey

Glass

Local | Production

- Local glass production, as measured against the production of glass plates and sheets, declined year over year in FY24.
- In FY24, the production clocked at ~20.2mln Sq. M, down by ~11.0% (FY23: ~22.8mln Sq. M).
- The declining production trend persisted in 1QFY25, with the output recording at ~3.3mln Sq. M, a decrease of ~41.0% compared to the last year.
- The decline is mainly due to reduced demand in the sector and the delayed restart of operations by key players whose plants underwent repairs in FY24, leading to sluggish production.

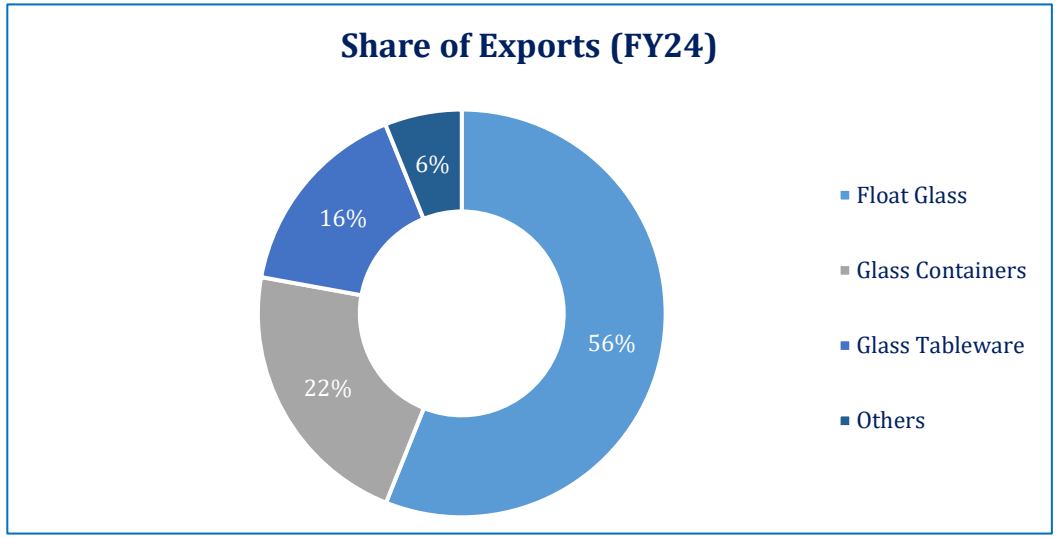


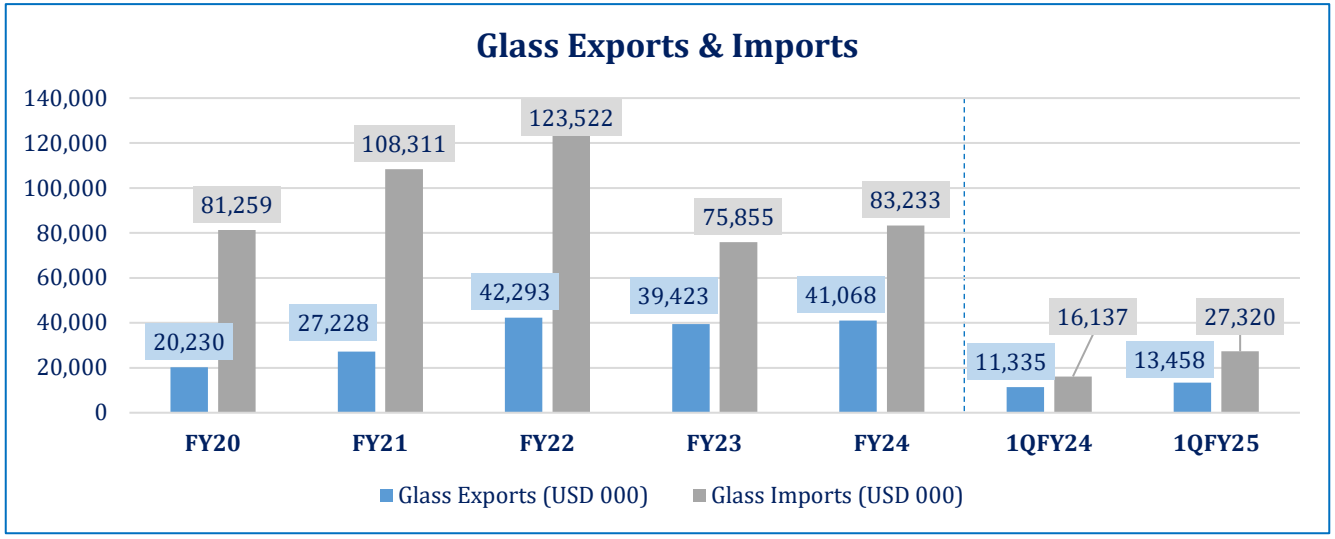
Source: PBS

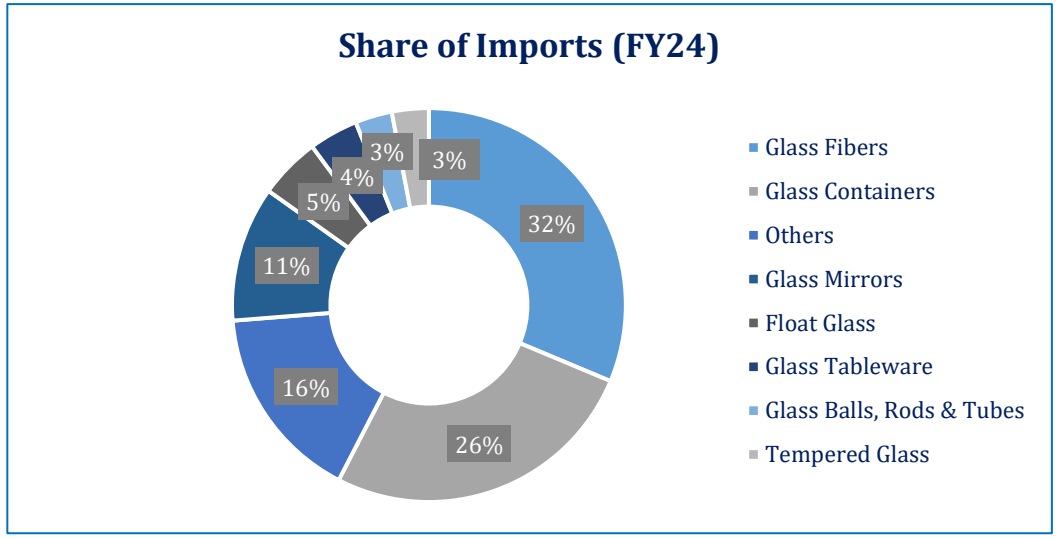
Glass

Local | Imports & Exports

- Glass exports have grown at a CAGR of ~20.0% during FY20-24.
- During FY24, total exports clocked in at USD~41.1mln, up by ~4.0% YoY, while imports also increased by ~9.7% YoY to clock at USD~83.2mln (FY23: ~75.9mln).
- In 1QFY25, the imports and exports of glass rose by ~69.3% and 18.7% respectively.
- Float Glass was the most exported glass category accounting for ~56.0% of the total export share while Glass Fiber had the highest share in imports accounting for ~32.0% of the total imports. The import price of Float Glass was accounted to be USD~3.4/ SQ. M.
- Local glass manufacturers are currently limited to three segments: float glass, tableware, and containers. Consequently, imports are increasing to meet the demand for other types of glass. In FY24, USD~25.9mln Glass Fibers were imported while ~21.9mln Glass Containers were imported for the same period, up by ~14.0% each, respectively.







Source: SBP

Glass

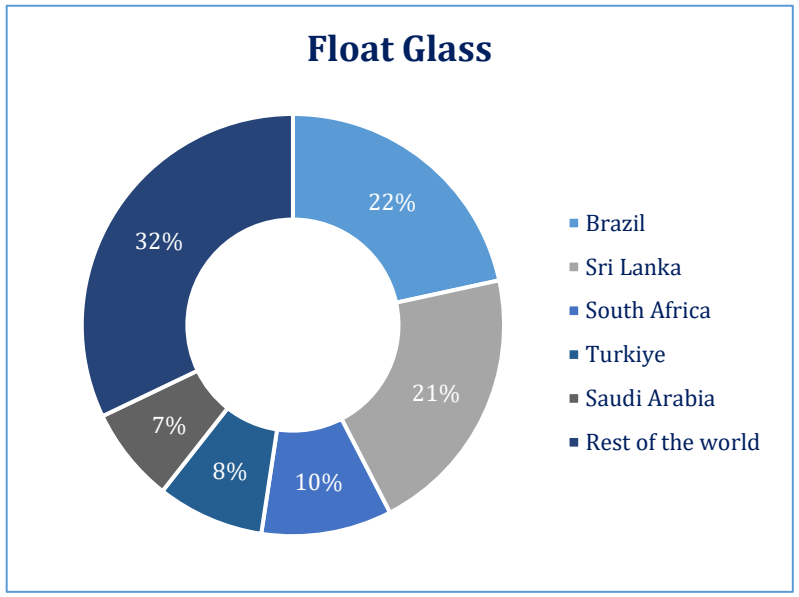
Export Destinations

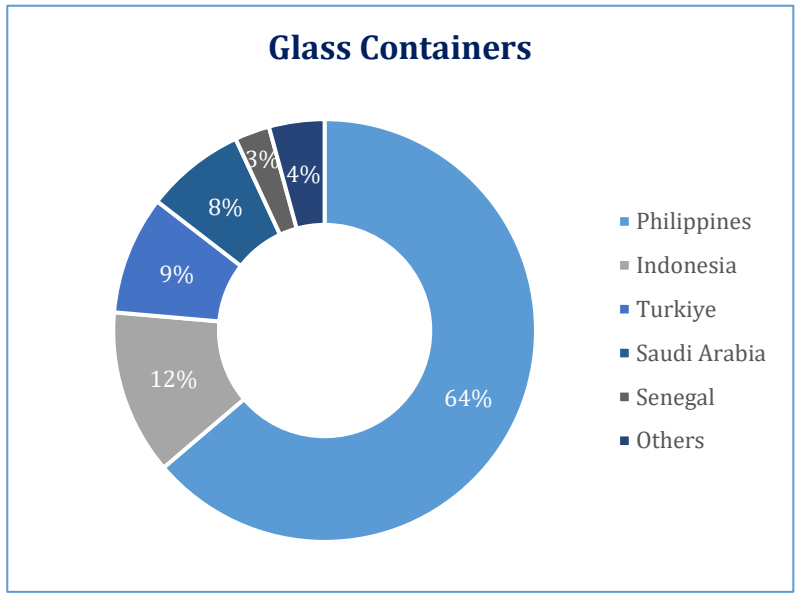
Of the glass products, the most significant exports are of the following types:

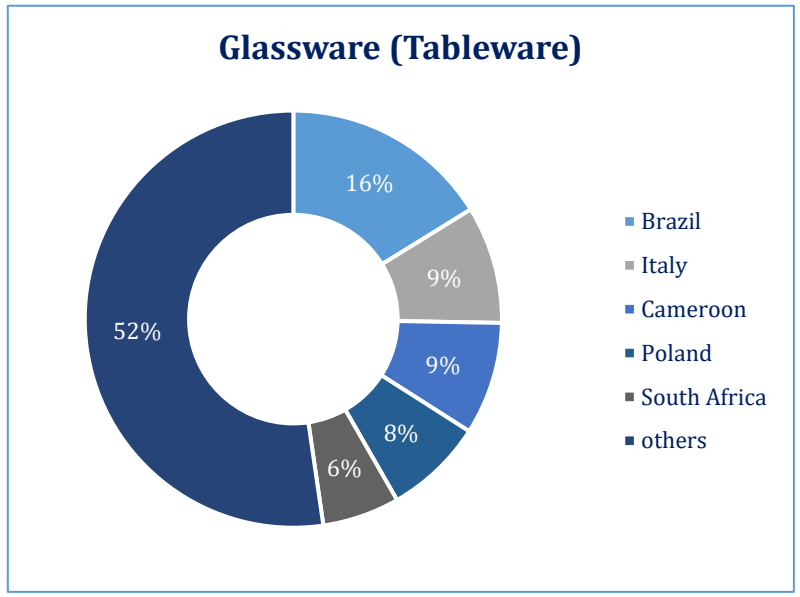
i. **Float Glass:** In FY24, the total export share of float glass was ~56.0%. Among the individual countries, Brazil, Sri Lanka, and South Africa had the highest share (~22.0%, ~21.0% & ~10.0%) respectively.

ii. **Containers:** Glass container exports made up ~22.0% of the total glass exports in FY24. The Philippines had the highest individual nation import share from Pakistan (~64.0%, USD~5.7mln), followed by Indonesia (~12.0%, or USD~1.1mln).

iii. **Tableware:** Glassware (or Tableware) exports made up ~16.0% of total glass exports in FY24. Apart from Brazil with an export share of ~16.0%, the rest of the exports were made up of smaller shares from various countries.







Source: SBP

Glass

Local | Business Risk

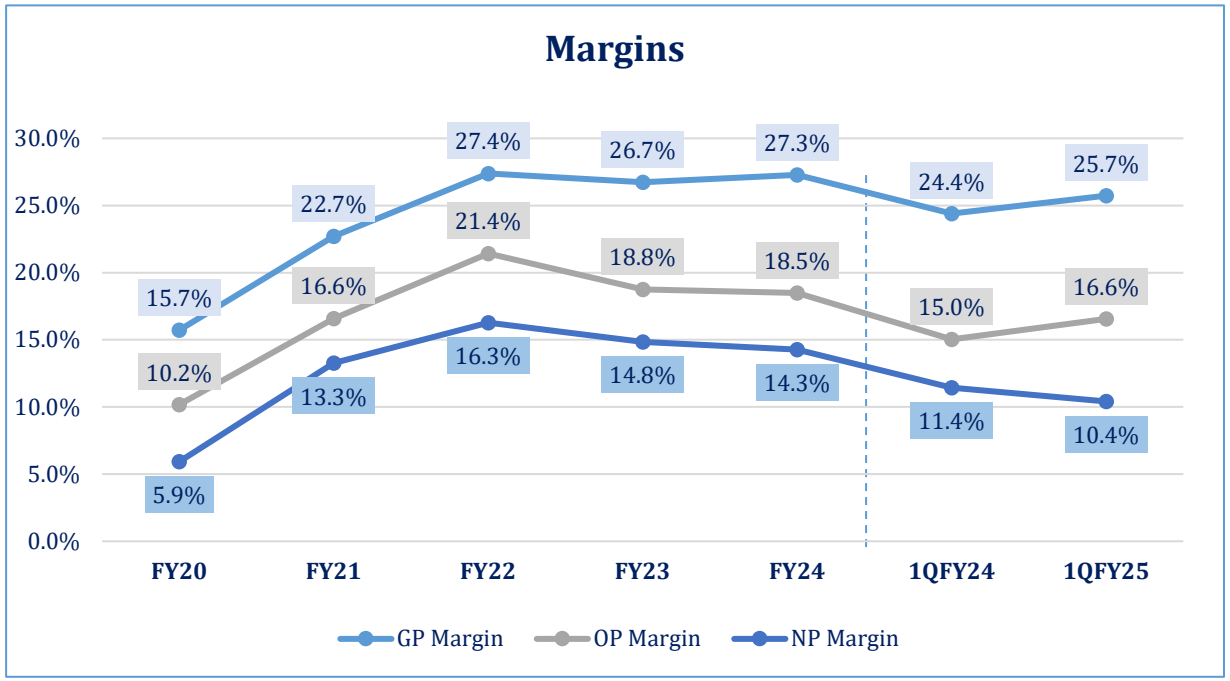
- **Demand Drivers:** The glass sector derives its demand from a number of industries including construction, food & beverages, and pharmaceuticals. While the food & beverage, as well as pharmaceutical industries, have relatively inelastic demands, they account for smaller segments within the glass sector.
- The largest segment is the float glass, which derives its demand from the construction industry. Demand from the construction industry can fluctuate depending on overall economic conditions. In addition, the purchasing power of end consumers is also reduced during periods of economic downturn, which can reduce demand for some segments such as glass tableware.
- **Significant Energy Consumption:** The production process for manufacturing glass and glass products consumes a large amount of energy to power the furnaces at required temperatures. Fuel and energy account for ~18.0% of the direct costs incurred during the manufacturing process. The country often faces a shortage of fuel, particularly during winter months, which can halt or slow down production activities.

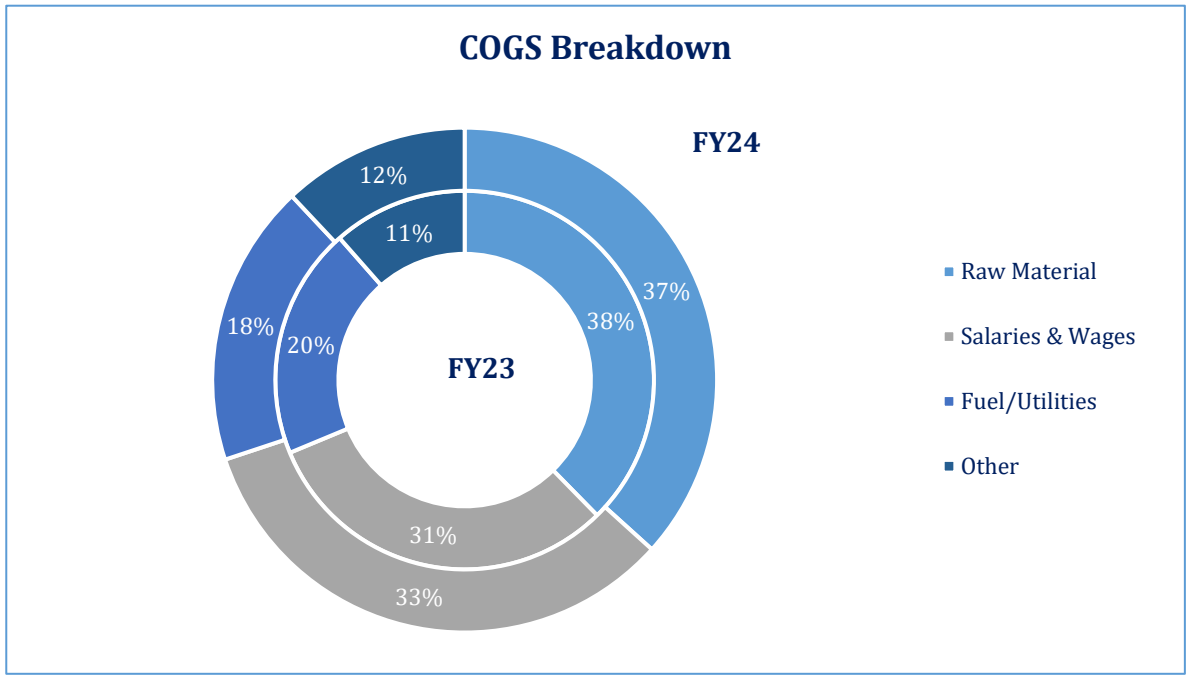
***Note**: Data for fuel and energy costs is based on ~4 listed players in the sector.*

Glass

Local | Margins & Cost Structure

- Over FY20–FY24, the sector's average gross margins stood at ~24.0%, while average net margins for the past 5 years were ~13.0%.
- In FY24, gross profit margins improved to ~27.3% (FY23: ~26.7%), driven by a ~12.8% increase in revenue, primarily due to higher prices.
- Operating profits slightly declined as other expenses remained high, resulting in operating margins of ~18.5%, down by ~0.3% YoY.
- Net profit margins dropped by ~0.5%, settling at ~14.3% in FY24 (FY23: ~18.8%), mainly due to higher operational costs and increased taxation.
- During 1QFY25, gross and operating profit margins improved, supported by controlled expenditures and a shift by key players from traditional energy to solar power to reduce energy costs. However, net profit margins were slightly affected by high taxation.





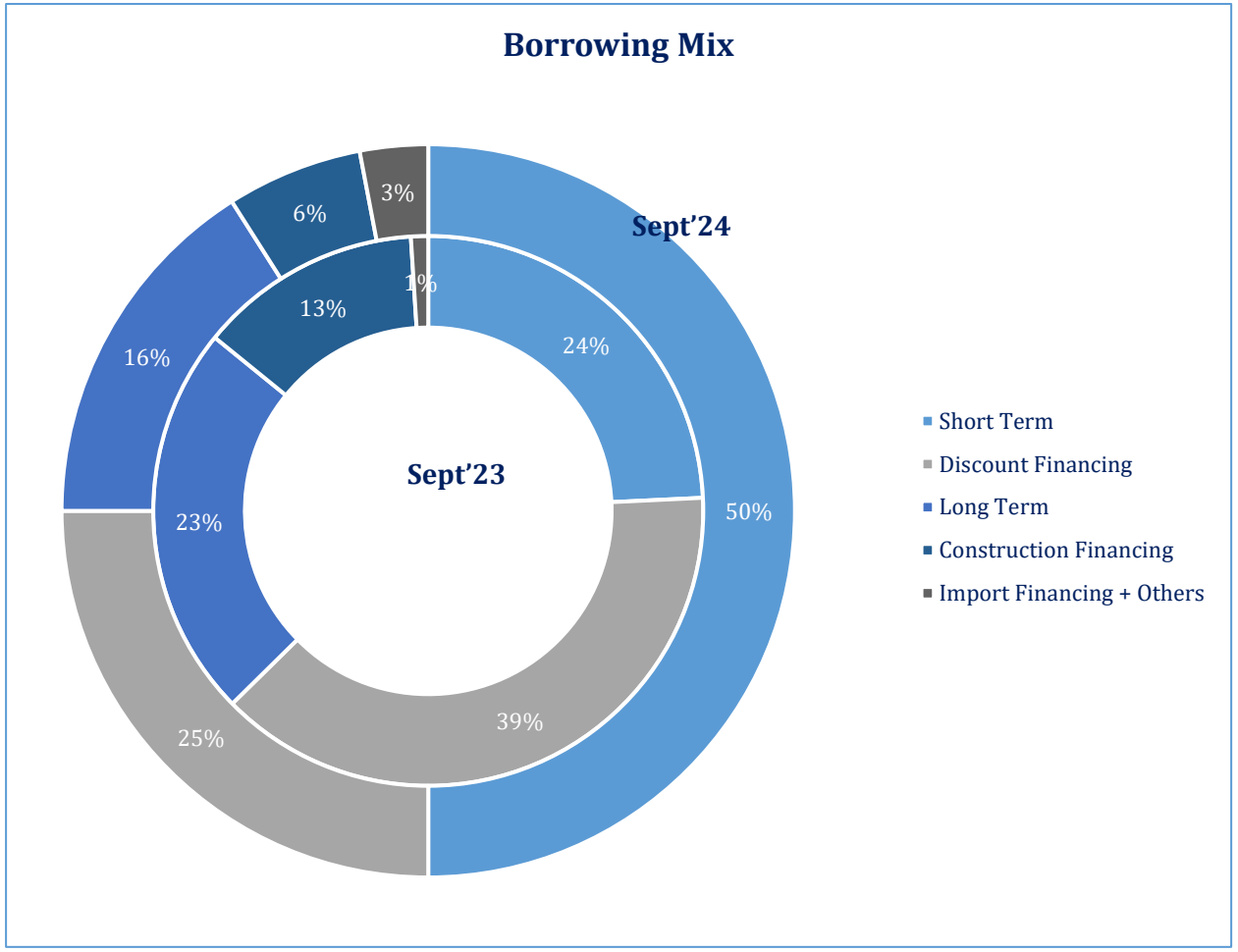
***Note**: Margins & Cost Structure are reflective of ~4 listed players.*

Source: PSX, PACRA Database

Glass

Financial Risk | Borrowing Mix

- The glass sector's borrowings stood at PKR~13.4bln as of End-Sep'24, up ~39.6% YoY compared to PKR~9.6bln as of End-Sep'23.
- Short-term financing accounted for ~50.0% of the total borrowing mix, marking a ~185.0% increase YoY (FY24: PKR~6.7bln ; FY23: PKR~2.3bln).
- Discount financing comprised ~25.0% of the borrowings, including the Long-Term Finance Facility (LTFF) at PKR~2.4bln and the Export Finance Scheme at PKR~0.9bln.
- Long-term financing was recorded at PKR~2.1bln, contributing ~16.0% to the borrowing mix.
- Construction financing accounted for PKR~0.8bln, representing ~6.0% of the mix, while import financing stood at PKR~0.3bln, comprising ~3.0%.
- The leverage ratio (Debt/Debt+equity) of the sector remained low and was recorded at ~12.3% (FY23: ~13.2%), down by ~0.9%.



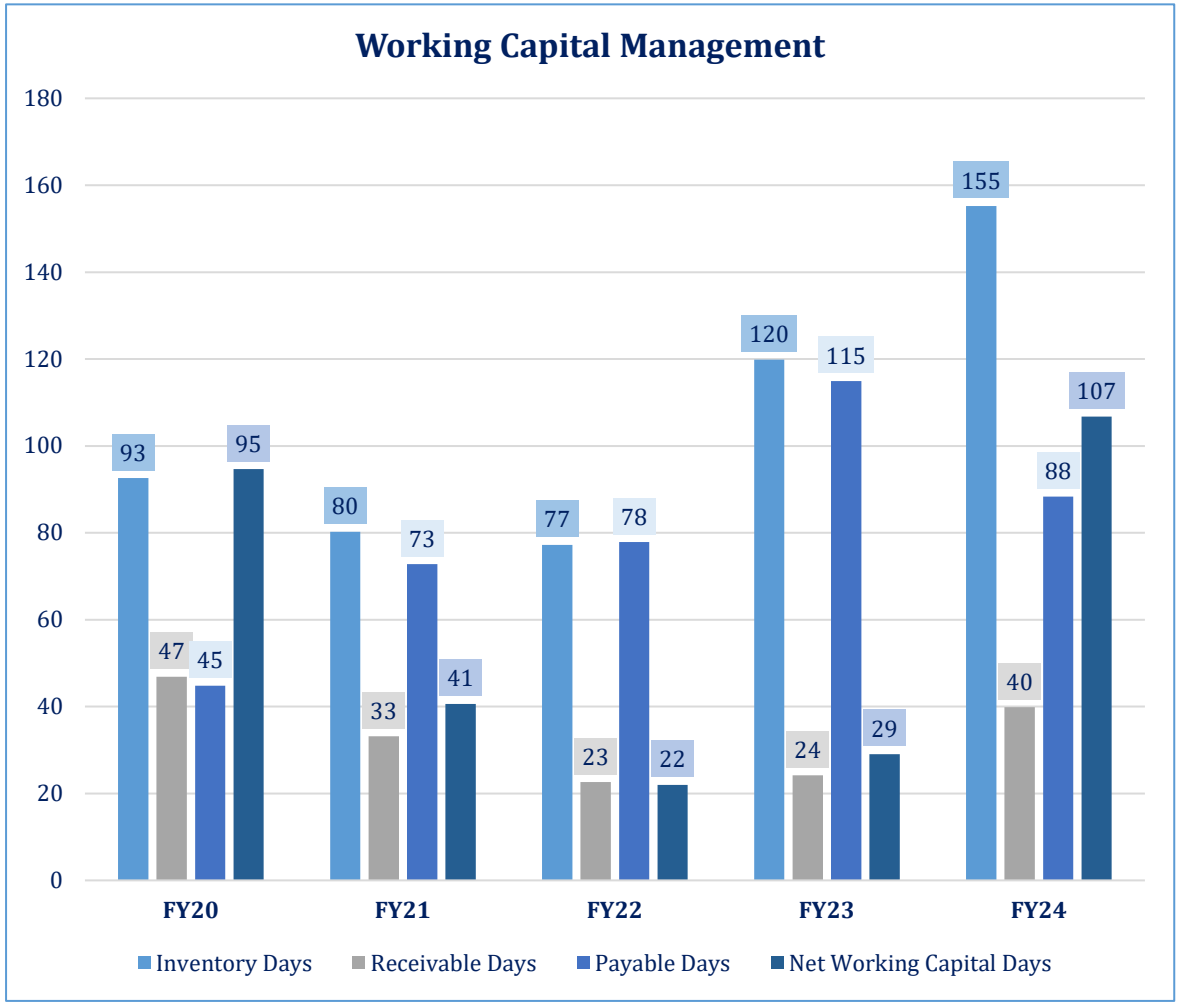
***Note**: The leveraging figure is reflective of ~4 listed players. Borrowing Mix is reflective of SBP data under the category 'Manufacture of Glass and Glass Products'*

Source: SBP, PACRA Database

Glass

Financial Risk | Working Capital Management

- The sector's working capital is largely a function of inventory and trade receivables.
- Inventory majorly consists of raw material and finished goods with work-in-process making a small contribution. However, payable days have also become an important factor since FY23.
- The sector's average working capital was calculated at ~59 days (FY20-24).
- During FY24, average working capital days stood at ~107 days (SPLY: ~29 days), an increase of ~78 days YoY.
- The increase in net working capital is due to the rise in inventory levels by ~29.1% due to sluggish demand and slow economic progress in the country.
- Receivable days increased by ~16 days, rising from ~24 days in FY23 to ~40 days in FY24, due to the sector offering favorable credit terms to customers. This has added pressure on the overall cash flow of the sector.
- Payables were down by ~27 days and were recorded at ~88 days compared to ~115 days in FY23.



Note: *Working Capital Management is reflective of ~4 listed players.*

Source: PSX, PACRA Database

Glass

Duty Structure

HS Code	Description	Unit of Measure	Custom Duty FY23	Custom Duty FY24	Regulatory Duty FY23	Regulatory Duty FY24	Additional Custom Duty (FY24)
7001.1000	Cullet & Other waste/ scrap of glass	Kg	11%	11%	N.A.	0%	2%
7002.1000	Glass in Balls, Rods or Tubes	Kg	20%	20%	N.A.	0%	6%
7003.3000	Cast and Rolled Glass in Sheets or Profiles etc.	m^2	20%	20%	N.A.	0%	6%
7004.2000	Drawn and Blown Glass in Sheets	m^2	20%	20%	N.A.	0%	6%
7005.1000	Float Glass	m^2	20%	20%	15%	0%	6%
7006.0002	Glass of Bent, Edge worked, Engraved	Kg	20%		30%	0%	
7007.1111	Tempered Glass	u	35%	35%	N.A.	0%	11%
7010.1000	Glass Bottles	Kg	20%	20%	20%	20%	6%
7011	Glass Envelopes						
	For electric lighting	Kg	16%	16%	20%	20%	4%
	For cathode-ray tubes	Kg	11%	11%	20%	20%	2%
7013.1000	Glassware (Tableware)	Kg	20%	20%	20%	20%	6%
7015.1000	Glasses of Clock, watch, Spectacle etc.	u	11%	11%	N.A.		2%
7016.1000	Glass Paving Blocks, Bricks, Squares	Kg	20%	20%	20%	20%	6%
7017.9000	Laboratory, Hygienic or Pharmaceutical	Kg	3%	3%	N.A.		2%
7018.1000	Glass Bead etc. and Articles NES						
	Precious stones etc.	Kg	16%	16%	20%	20%	4%
7018.9010	Glass microspheres	Kg	3%	11%	20%	20%	2%
7018.9010	Glass eyes	Kg	11%	11%	20%	20%	2%

Source: Pakistan Customs Tariff

Glass

Ratings Chart

- PACRA rates 2 entities in the Glass sector with a long-term rating bandwidth of A+ to BBB+

Source: Pakistan Customs Tariff

Glass

SWOT

- Diverse product segments that derive demand from multiple industries.
- Ample local production capacity.

- Some segments have low level of competition, which reduces the incentive to increase efficiency.
- Regular maintenance of fixed assets (furnaces) reduces production levels.

- Slowdown in other industries such as construction, pharmaceuticals or reduced consumer spending power can hamper demand.
- Spillover effect of the Russia-Ukraine conflict.
- High energy cost.

- The incentives provided to the construction industry are likely to create demand for float glass.
- Opportunity for import substitution

Glass

Outlook: Stable

- In FY24, Pakistan's nominal GDP clocked in at PKR ~106.0trn (FY23: PKR~83.9trn), growing by ~2.4% YoY in real terms (FY23: ~-0.21% decline).
- Industrial activities contributed ~21.9% to the GDP, with manufacturing accounting for ~62.9% of the total value added.
- During FY24, average CPI inflation level dropped to ~9.6% from ~27.4% in FY23. GDP growth was also recorded at ~2.4%, with SBP lowering the policy rate to ~19.5% at the end of FY24.
- In 1QFY25, inflationary pressures eased, boosting business confidence. The policy rate dropped to ~15.0% in 2QFY25, with expectations of a further reduction, while large-scale manufacturing grew by ~2.4% YoY.
- However, the construction sector is underperforming with falling sales of cement and steel. Reduction in construction activity will impact the demand for float glass which is directly linked to the construction activity.
- The sector's profitability in 1QFY25 remained stable and promising, despite a ~13.9% decline in revenue as the market is adjusting to the price hikes of FY24.
- Gross and operating profit margins in 1QFY25 improved by ~1.3% and ~1.6% YoY, driven by controlled expenditures and energy costs. However, net profit margins experienced a slight impact primarily due to increased taxation costs.
- The glass industry is facing significant challenges driven by inflation-induced rising costs, political instability, and law and order concerns.
- A major challenge lies in the industry's limited capacity to transfer increased power and fuel costs to consumers due to competition, which exerts downward pressure on prices.
- The sector operates in only three major glass segments, characterized by intense competition and rising costs, which are passed on to consumers to maintain profitability.
- Furthermore, the sector faces challenges in meeting overall demand through local production across various glass categories. As a result, imports are on the rise, with glass fiber accounting for ~34.0% of the total glass imports, highlighting a significant dependency on international markets for this specific category.
- Consequently, the industry is navigating a challenging landscape to maintain stability, meet domestic demand, and drive sustainable growth.

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- Glass Alliance Europe
- Research and Markets

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