SECTOR STUDY . JANUARY 2025

Together. Creating Value.

Machinery

Research Team

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Machinery

Contents

Machinery

Introduction

- A machine uses power to control movement to perform a task or action, reducing the amount of human work required to complete it. Machines can also be mechanical systems, which include computers and sensors to control and monitor output.
- Machinery manufacturing encompasses a wide number of segments broadly classified into Agricultural machinery, Construction, Mining, and Industrial machinery. Other categories include Commercial and Service industry machinery, Metalworking machinery, and Heating & Refrigeration equipment. It also includes Engines, Turbines Power transmission equipment, and other general-purpose machinery.

Agricultural Machinery: It includes tractors, cultivators, plows, harvesters, threshers, and many other types of machinery employed by the agriculture industry in order to assist in various processes such as cultivating, planting, and harvesting.

Construction Machinery: Includes machinery such as bulldozers, excavators, cranes, graders, and drilling machines.

Industrial Machinery: There is a wide variety of machines used by various industries for example spindles and looms used in textile manufacturing, heating and mixing machinery used in the food and beverage industry, packaging machinery, and various types and components of assembly lines.

Machinery

Global | Overview

- **Market Size**: The global machinery market is expected to grow from USD~3,581bln in CY23 to USD~3,849bln in CY24 at an annual growth rate of ~7.5%. The growth experienced an uptick due to the growing demand for sustainable and eco-friendly machinery.

- **Demand**: Rapid advances in technology are expected to drive innovation in industrial machinery manufacturing, thus driving growth for the industry, going forward. Furthermore, technologies such as 3D printing, artificial intelligence, and big data analytics are being used in manufacturing thus resulting in higher productivity, lower operating costs, and higher margins.

- **Region**: The top global machinery manufacturers are Asia-Pacific, China, Western Europe, Eastern Europe, North America, USA, South America, Middle East and Africa. Among these regions, the Asia-Pacific machinery manufacturing market accounts for the largest share of the global machinery manufacturing market.

- **Major Players**: The major players involved in the manufacturing of industrial machinery are Caterpillar Inc. and Deere & Co., based in the United States, CNH Industrial, ABB Group, and Linde AG, based out of the UK, Switzerland, and Germany, respectively and Daikin Industries and Komatsu Limited which are based in Tokyo, Japan. The companies account for a significant share of the global market due to high levels of R&D and technological advancements.

Source: Business Research Company

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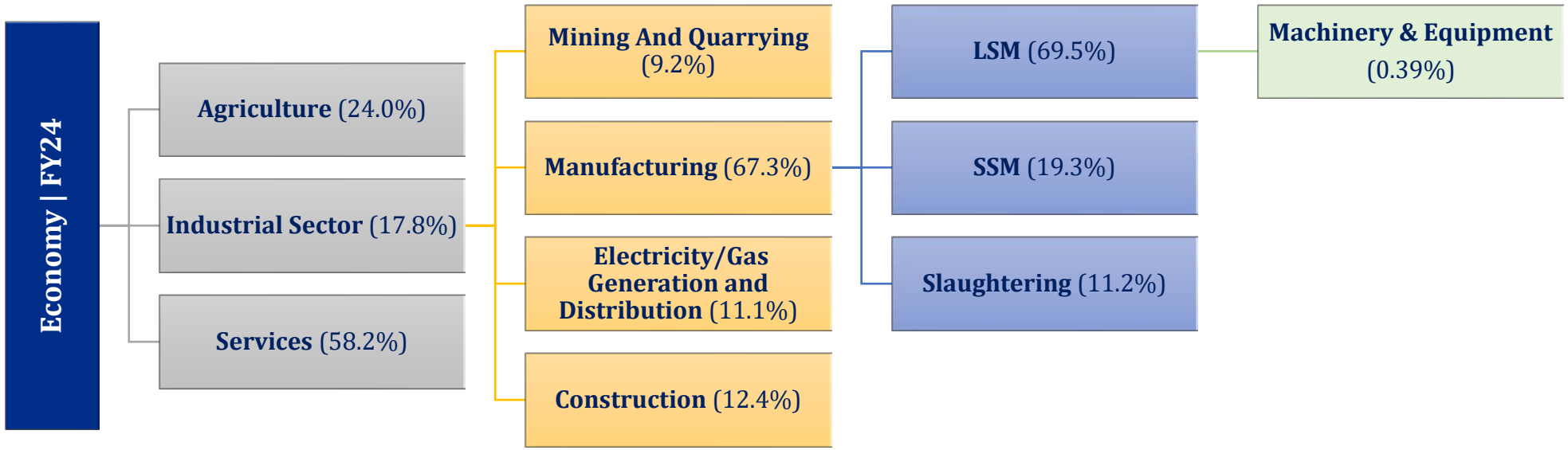
Local | Overview

- In FY24, Pakistan's GDP (nominal) stood at PKR~105.7trn (FY23: PKR~84.0trn), expanding by ~2.5% YoY (FY23: ~-0.2% growth). The country's economy is classified into three main sectors: Agriculture, Industrial Sector, and Services. The Industrial Sector represented ~17.8% share of the GDP in FY24 (FY23: ~18.4%), taken at constant prices while recording a YoY negative sector growth rate of ~1.2%.
- Large Scale Manufacturing (LSM) in Pakistan is essential for economic growth, considering its linkages with other sectors, as it represents ~69.5% value of all manufacturing activities in FY24. The QIM increased by ~0.9% during FY24 when compared with the same period of the last year, while it decreased by ~0.64% in 4MFY25 as compared to SPLY. Machinery has a weightage of ~0.4% in the Large-scale Manufacturing of the country, as of FY24.



Source: PBS

Machinery

Local | Snapshot

- Majority of the demand for machinery emanating from large industries such as construction, textile, energy, etc are met through imports. In addition, there is a lack of investment in technology and research & development (R&D) in Pakistan, due to which the country's machinery sector lags behind the international market in terms of production and quality.
- During FY24, the import of machinery was up ~46.4% YoY and stood at USD~8,501mln. This increase was due to companies importing machinery again in FY24, as restrictions were imposed on imports of machinery and opening LCs in FY23. While during 4MFY25, import value was recorded at USD~2,708mln, an increase of ~15.3% from SPLY.
- Imported machinery includes Electrical Machinery, Power Generating Machinery, and others (including, but not limited to, printing machinery, laundry machinery, and shoemaking machinery among others).
- Local machinery production, including agricultural (chaff cutters, sugarcane machines, wheat thrashers) and industrial (Power looms, Electric motors, Switch gears, Electric transformers) machinery, declined by ~18.0% to ~58,040 units in FY24. In 4MFY25, machinery production figures were recorded at ~11,822 units, a decrease of ~24.0% YoY. The demand for machinery is met mainly through imported machinery as it is more advanced technology and has better quality.
- Export of machinery increased by ~1.7% YoY and stood at USD~183mln during FY24. For 4MFY25, export value was recorded at USD~83mln, an increase of ~33.9% YoY.
- Exports of machinery include Electrical Machinery, Specialized Machinery, and Other Machinery (includes but is not limited to mechanical appliances, agriculture machinery, and tobacco machinery among others).

Sector Overview	FY23	FY24	4MFY24	4MFY25
Imports (USD mln)	5,808	8,501	2,350	2,708
Total Country Imports (USD mln)	55,330	54,779	16,977	17,972
Imports (% of Total Country Imports)	10.5%	15.5%	13.8%	15.1%
Local Production* (Units)	70,804	58,040	15,550	11,822
Exports (USD mln)	180	183	62	83
Industry Association	Engineering Components & Machinery Manufacturing Association of Pakistan (ECMMA)			

Note: *Imports data is reflective of machinery Group imports. *Data pertains to 3MFY24, HS code: 8413, 8414, 8417, 8432, 8433, 8501, 8502*

Source: PBS

Machinery

Local | Production

- Although most machinery demand is met through imports, there is some local production of agricultural and industrial machinery as well. Agricultural machinery comprises chaff cutters, sugarcane machinery, and wheat thrashers, while industrial machinery includes power looms, electric motors, switch gears, and electric transformers.
- The Agricultural machinery produced posted an increase of ~3.1% YoY, recording at ~8,886 units during FY24 as against ~8,617 units in FY23. This marginal increase could be attributed to the lifting of restrictions on the import of raw materials.
- The production, however, decreased in 3MFY25 by ~2.0% YoY. The declining trend may be attributed to an increased reliance on imports and less demand for local machinery, driven by the lower quality of local machinery and customers returning to imported machinery after temporarily opting for local alternatives during the LC/import ban in FY23.
- On the other hand, Industrial machinery production stood at ~49,154 units in FY24, a decrease of ~26.5% YoY from FY23 during which production was recorded at ~62,187 units. Production of industrial machinery further registered a decline of ~27.6% during 4MFY25.
- Overall, the number of units produced has been declining since FY20. Initially, this was because the COVID-19 pandemic disrupted various industries. However, this reduction is expected to continue due to several factors including availability of raw materials, limited project financing options, untrained workforce, lack of R&D facilities, and better quality of import options.

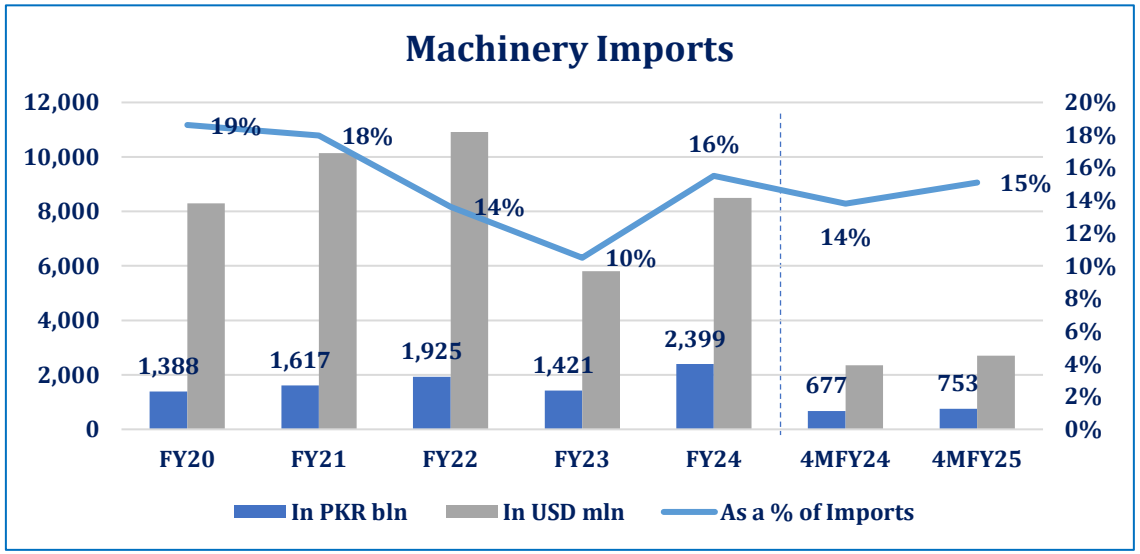
Local Production (Units)							
Category	**FY20**	**FY21**	**FY22**	**FY23**	**FY24**	**3MFY24**	**3MFY25**
Agricultural	**16,911**	**13,878**	**11,450**	**8,617**	**8,886**	**2,210**	**2,166**
Chaff Cutters	13,298	11,086	9,720	8,246	8,276	2,052	1,993
Sugarcane Machines	202	105	83	40	31	8	6
Wheat Thrashers	378	259	204	331	579	150	167
Industrial	**93,250**	**65,034**	**65,690**	**62,187**	**49,154**	**13,340**	**9,656**
Power Looms	708	379	468	552	605	143	156
Electric Motors	37,675	30,054	22,832	18,756	16,539	4,193	4,160
Switch Gears	3,444	6,476	13,358	11,103	9,660	2,434	1,308
Electric Transformers	23,207	28,781	34,833	31,776	22,350	6,570	4,032
Total	**110,161**	**78,912**	**77,140**	**70,804**	**58,040**	**15,550**	**11,822**

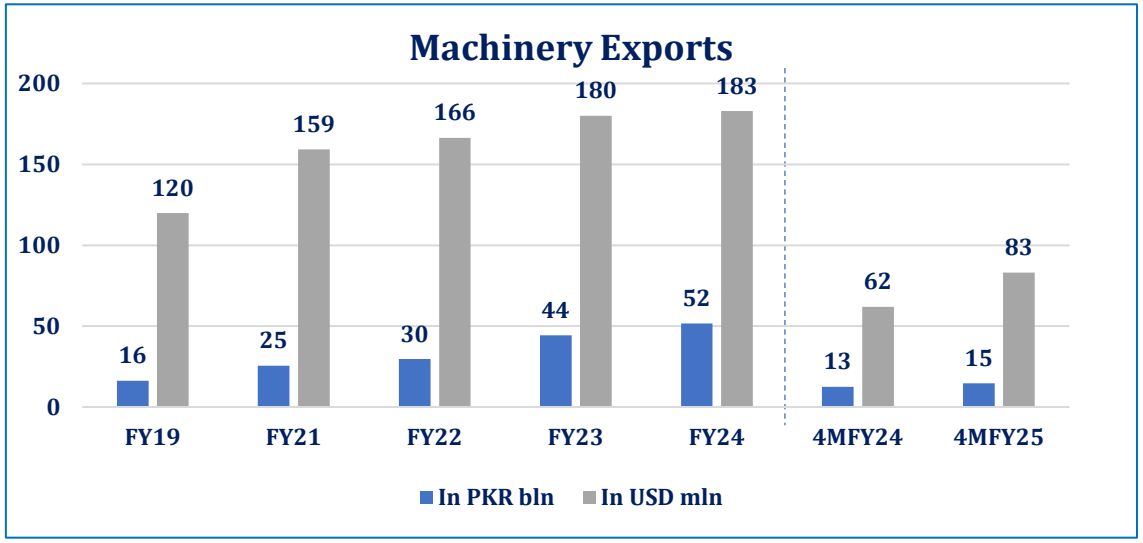
Source: PBS

Machinery

Local | Imports and Exports

- Due to the absence of a significant local machinery manufacturing industry, most of Pakistan's industrial sectors rely on imported machinery.
- During FY24, machinery imports accounted for ~15.5% of the country's total import bill (SPLY: ~10.5%). These increased by ~46.4% YoY and stood at USD~8,501mln. The increase could potentially be linked to the import restrictions placed by the State Bank of Pakistan (SBP) in the prior year, and the lifting of this ban resulted in higher imports in FY24. During 4MFY25, the imports have increased as import value was recorded at USD~2,708mln, an increase of ~ 15.3%.
- In comparison with the large size of imports, Pakistan's machinery exports remain minimal. During FY24, exports stood at PKR~52bln, an increase of ~18.2% from PKR~44bln in FY23. The exports in 4MFY25 registered a rise of ~33.9% YoY, forming a minimal part of the total exports at only ~0.8%.
- The export of machinery increased by ~1.7% YoY and stood at USD~183mln during FY24. During 4MFY25, the export value was recorded at USD~83mln, compared to USD~62mln in SPLY.
- Exports of machinery pertain to Electrical Machinery (~27.8%), Specialized Machinery (~26.7%) and the rest is Other Machinery (includes but is not limited to mechanical appliances, agriculture machinery, tobacco machinery, rubber and plastic machinery, dairy machinery among others)





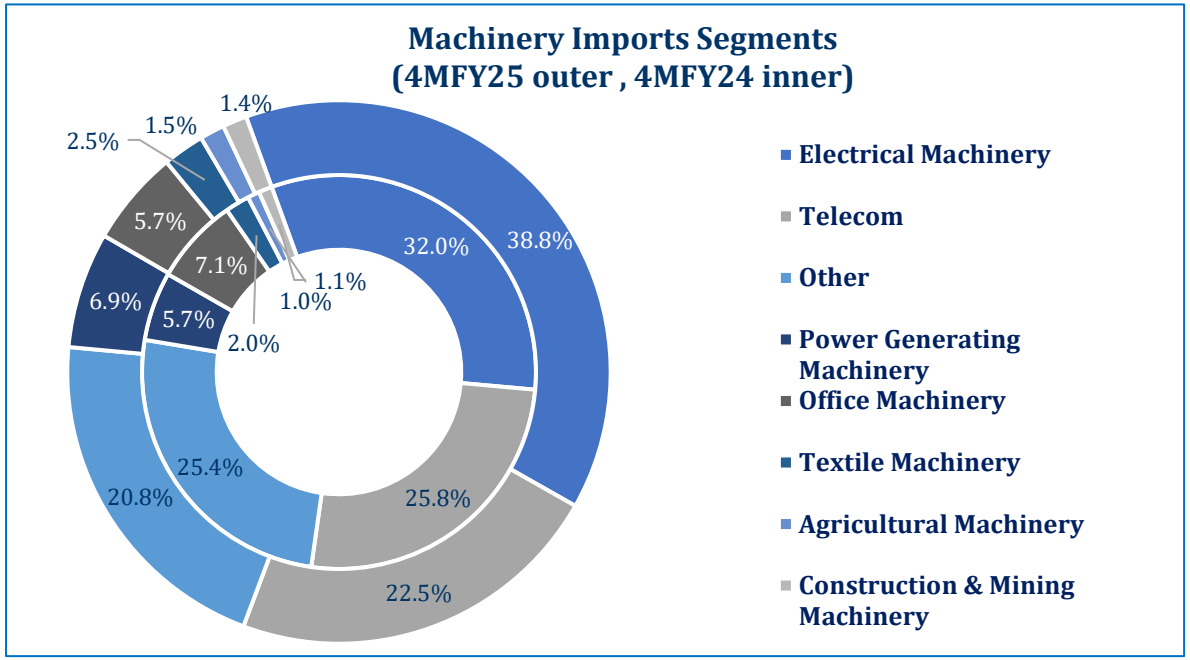
Note: *HS code: 8413, 8414, 8417, 8432, 8433, 8501, 8502*

Source: PBS

Machinery

Local | Segment-wise Imports

- In FY23, electrical machinery, and telecom comprised ~38.5%and ~27.8% respectively of the total machinery group imports (SPLY: ~28.7% and ~16.5%). Other machinery (including but not limited to mechanical appliances, agriculture machinery, tobacco machinery, rubber and plastic machinery, and dairy machinery among others) was another major importing group, forming ~19.4% (SPLY: ~32.5%) of the total machinery import.
- In 4MFY25, the largest import segment was electrical machinery which accounted for ~38.8% of the total machinery imports and stood at USD~1,050mln. The second largest individual import segment is telecom (~22.5%), with the third largest overall import segment being Other machinery (~20.8%) which included but was not limited to machinery for sorting, cleaning, shoe making, rubber/plastic, food, and drink, air conditioners and electric heating systems. In terms of import origins, China leads the way in being one of the top destinations for machinery imports followed by Italy and Germany with shares of ~37.8%,~17.5%, and ~11.9% of the total machinery imports, respectively.



Segment-wise Imports (USD mln)	FY23	FY24	4MFY24	4MFY25
Electrical Machinery	1,667	3,275	752	1,050
Telecom	957	2,367	607	610
Other	1,889	1,647	596	562
Office Machinery	340	459	167	154
Power Generating Machinery	500	418	133	187
Textile Machinery	329	149	47	67
Construction & Mining Machinery	85	94	26	39
Agricultural Machinery	41	91	23	40
Machinery Group	**5,808**	**8,501**	**2,350**	**2,708**

Source: PBS, SBP

Machinery

Local | Types of Machinery

The focus of this study will be limited to Pumps, Valves, and Industrial Engineering/Power Generation equipment.

Pumps

- A Pump is a device that moves fluids by mechanical action from one place to another. A pump is a hydraulic device that lifts fluids from low to high levels and moves fluids from low to high-pressure areas. It transfers fluid by converting the fluid's mechanical energy into pressure energy (hydraulic energy). It is, essentially, the earliest form of machine, dating back to ancient Egypt.
- Centrifugal pumps are the most commonly used pumps. These pumps are mostly used for pumping water, solvents, organics, oils, acids, bases, and any 'thin' liquids in both industrial, agricultural, and domestic applications.

Valves

- Valves are mechanical devices that control the flow and pressure within a system or process. Valves are essential components of a piping system that transfer liquids, gases, vapors, slurries, etc.
- Different types of valves include gate, globe, plug, ball, butterfly, check, diaphragm, pinch, pressure relief, control valves, etc. Each of these types has several models with different features and functional capabilities.

Source: Economic Survey, Planning Commission, Market Estimates

Machinery

Local | Types of Machinery

Generator Sets

- A Generator set or a "genset" is a portable energy-producing equipment that consists of an engine and an alternator/electric generator. Generators are frequently utilized in developing nations and other non-grid-connected locations where power outages are common. An engine turns a fuel's chemical energy into mechanical energy. The mechanical energy is converted to electrical energy by spinning the alternator rotor. An alternator is composed of two major components: a rotor and a stator. Through the phenomena of electromagnetic induction, spinning the alternator rotor through the magnetic field between the rotor and stator generates a voltage on the alternator stator. When the stator voltage is coupled to a load, electrical current flows and the generator generates electricity.

Solar Panels

- Solar technologies use photovoltaic (PV) panels or mirrors to concentrate solar radiation to convert sunlight into electrical energy. This energy can be converted into electricity or stored in batteries or thermal storage.

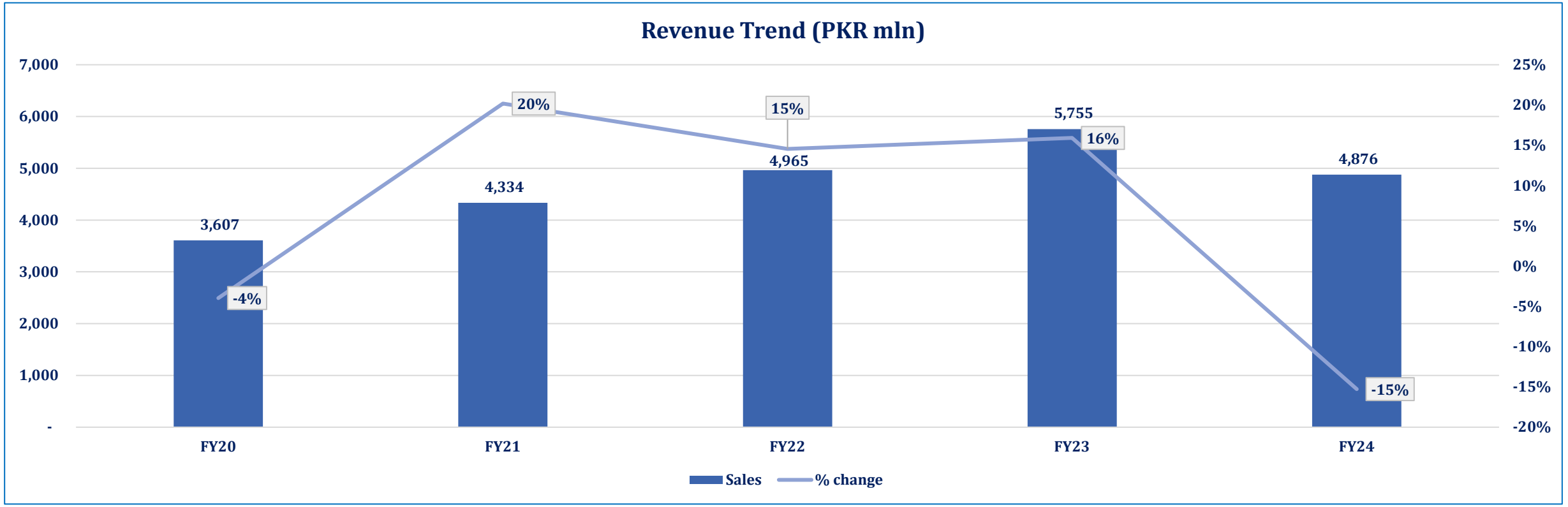
Source: Economic Survey, Planning Commission, Market Estimates

Pumps & Valves

Machinery

Pumps & Valves | Revenue Trend

- The segment derives its demand largely from government projects such as those involving water pumping and thermal power, among others. However, the private sector is also being catered to, while the focus on the segment's exports is also increasing.
- The segment's revenue clocked in at PKR~4.88bln during FY24, marking a decrease of ~15.3% from PKR~5.76bln in FY23. This breaks the trend of YoY increasing revenue since FY20. The drop in revenue was driven by lower exports for the segment, while the local sales remained constant in FY24. The drop-off in exports can be attributed to low demand in destination countries due to lower growth rates.

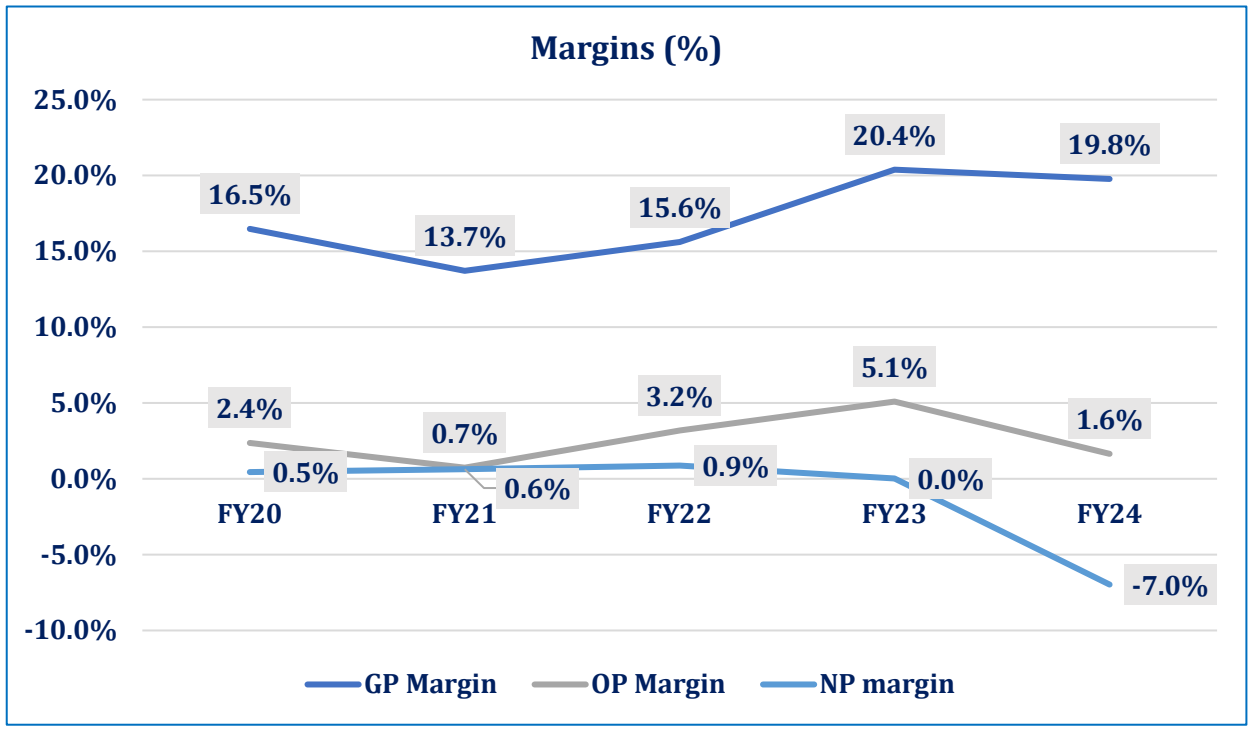


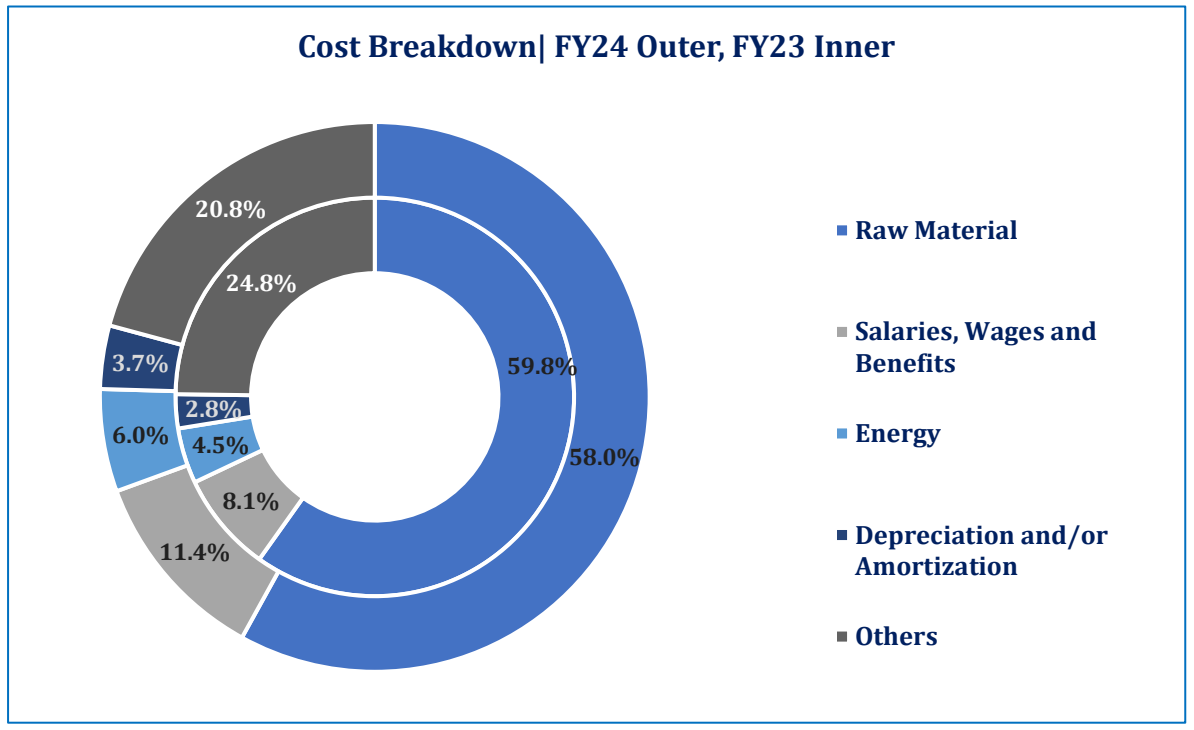
Note: Data is reflective of ~1 listed/ rated player, where FY24 numbers are prorated based on the latest available quarterly accounts. Source: Economic Survey, Planning Commission, Market Estimates

Machinery

Business Risk | Margins and Cost Structure

- Over the last five years (FY20-FY24), the segment's average gross margins have stood at ~17.2%. Gross margins decreased to ~19.8% in FY24 from ~20.4% in FY23, a marginal decrease likely attributable to an increase in the cost of sales due to inflationary pressure, especially under the heads of salaries, wages, benefits, and energy.
- Meanwhile, average operating margins also decreased from ~5.1% to ~1.6% in FY24, likely due to higher expenses for administration, selling, and distribution, as the economy experienced considerable inflationary pressures. Meanwhile, net margins also suffered immensely as they were registered in the negative territory at ~-7.0%, reflecting the impact of high finance costs on the sector.
- The largest component within this segment's direct costs comprises raw materials, which contributed ~58.0% in FY24. These raw materials largely consist of various types of metals such as iron, steel, and copper depending upon the product specifications and requirements.





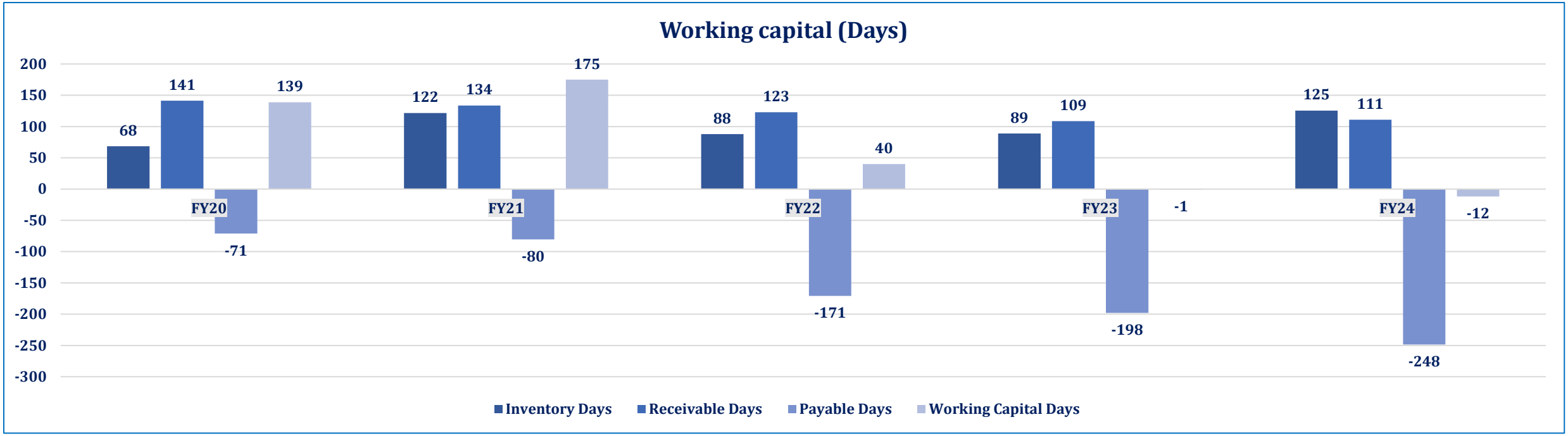
Note: *Margins and cost break up are reflective of ~1 listed/rated player belonging to Pumps and Valves segment.*

Source: PSX, PACRA Database

Machinery

Financial Risk | Working Capital Days

- Over the last five years (FY20-24), the segment's net working capital cycle has averaged ~68 days. There is heavy reliance on short-term borrowing to fulfill the segment's working capital needs.
- The segment's receivable days are relatively high and they increased marginally to ~111 days in FY24 from ~109 days in FY23. A significant portion of sales are made to government departments and projects from which receipts can be delayed.
- Payable days also registered a sharp increase of ~50 days during FY24, recording at ~248 days. This is due to a liquidity crunch which came on the back of lower sales revenue. Going forward, due to the shift in its business strategy towards the private sector, the segment anticipates quick cash recoveries, allowing it to be less reliant on working capital lines.



Note: *Data is reflective of ~1 listed/rated player belonging to Pumps and Valves segment.*

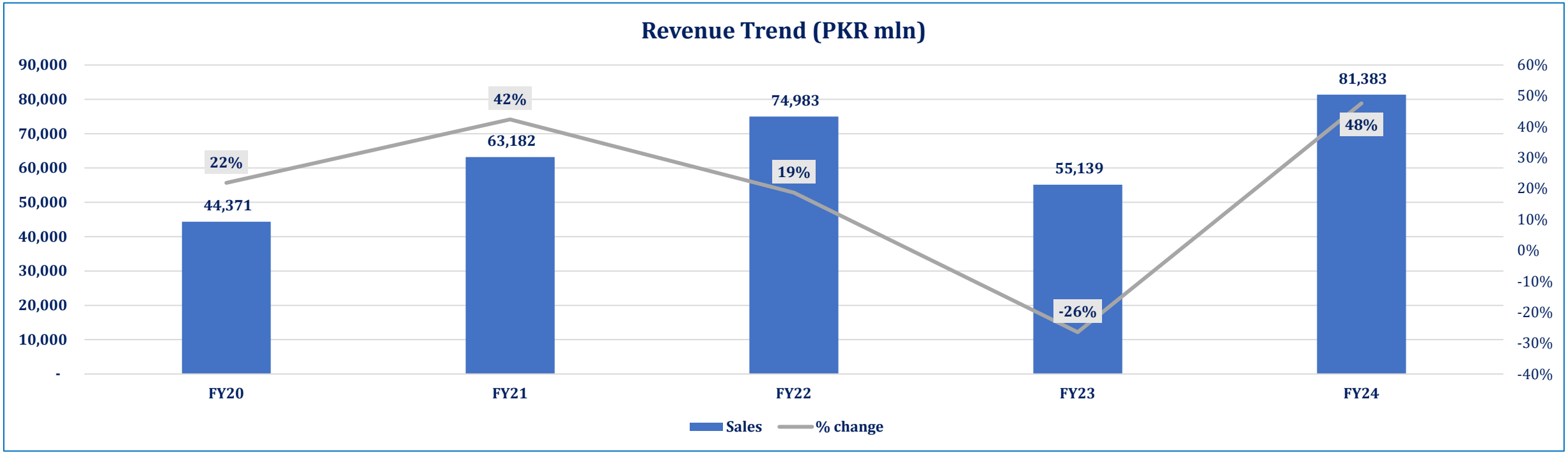
Source: PSX, PACRA Database

Power Generation

Machinery

Power Generation | Revenue Trend

- The estimated revenue of the local energy machinery segment clocked in at PKR~81.3bln during FY24, an increase of ~47.6% from PKR~55.1bln in FY23. The revenue growth can likely be associated with the reopening of LCs allowing the companies to import raw materials to produce higher quantities as the closure of LCs in FY23 saw the sector suffer.
- The Engineering and Technology services segment is a very niche sector that caters to a specific target market, including infrastructure development projects such as highways, exploration, and production sites, private sector projects such as solar and wind power generation, different industrial sectors, and providing equipment to large-scale projects such as hypermarkets, banks and hospitals among others. The segment is primarily reliant on equipment and replacement parts imports. As a result, the segment players are exposed to cyclicality, import limitations and taxes, and foreign exchange risk.



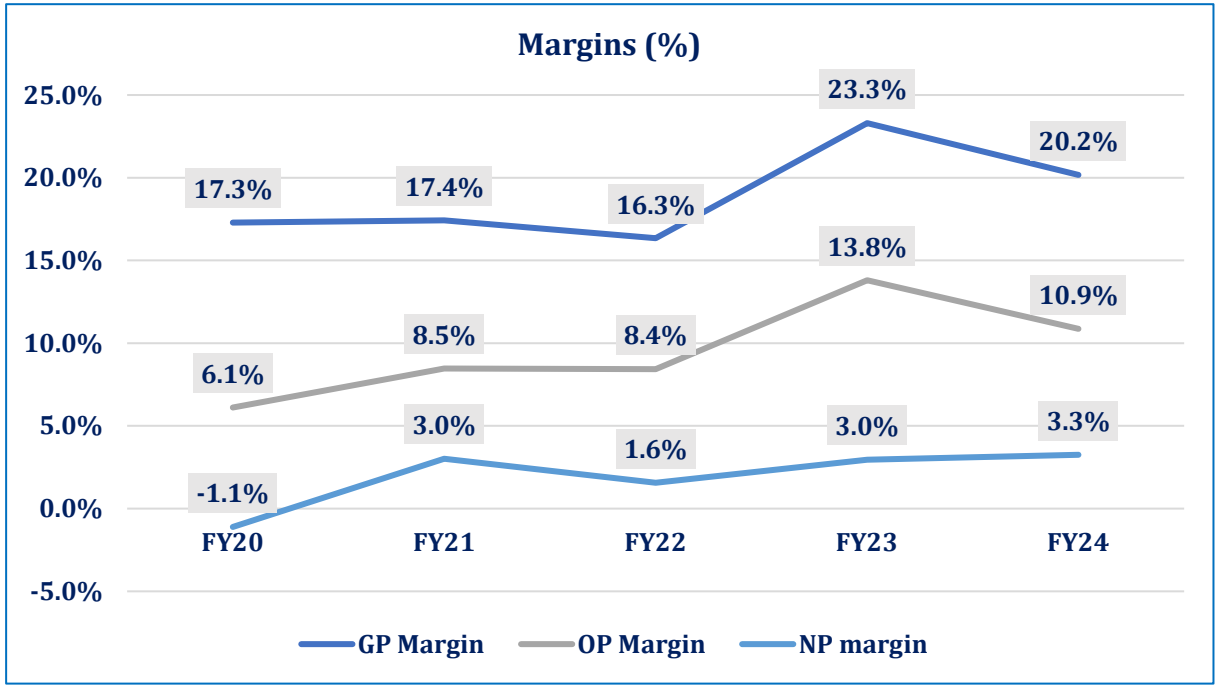
*FY24 numbers are prorated based on latest available quarterly accounts.

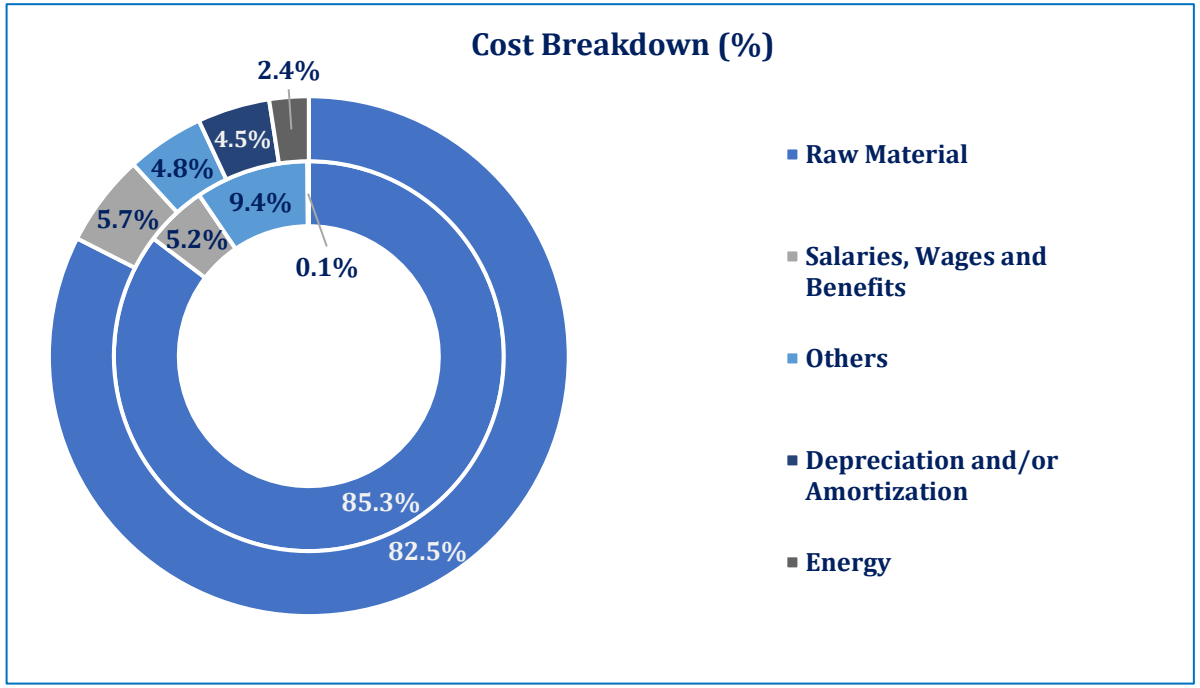
Source: PSX, PACRA Database

Machinery

Business Risk | Margins & Cost Structure

- Over the last five years (FY20-24), the segment's average gross margins have stood at ~18.9% while average net margins stood at ~1.9%. Margins stayed range-bound during FY19 - FY22, however, a slight change was observed during FY23 and FY24.
- Average gross margins decreased to ~20.2% in FY24 from ~23.3% in FY23. Meanwhile, the average operating margin also decreased from ~13.8% to ~10.9% in FY24, whereas average net margins slightly increased from ~3.0% in FY23 to ~3.3% in FY24.
- The largest component within the segment's direct costs comprises raw materials, which contributed ~82.5% to the total cost of production. The segment is primarily reliant on equipment and spare parts imports. As a result, all involved players are exposed to cyclicality, restrictions on imports and taxes, and foreign exchange risk.





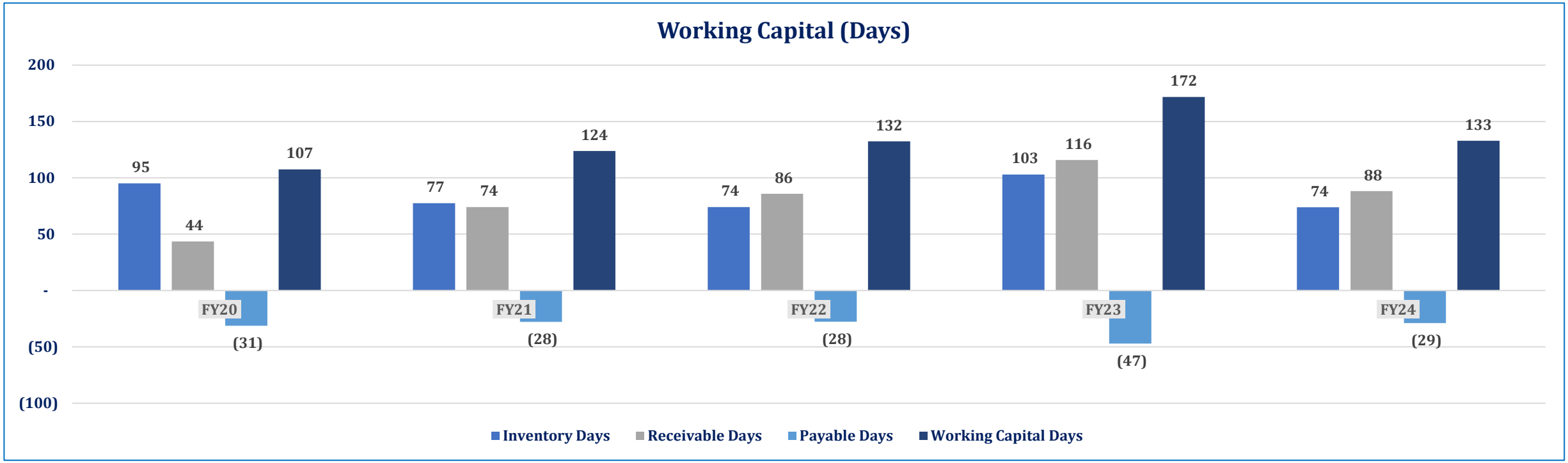
Note: *Margins are reflective of ~2 listed/rated players belonging to power generation segment.*

Source: PSX, PACRA Database

Machinery

Financial Risk | Working Capital Management

- Over the last five years (FY20-24), the segment's working capital cycle averaged ~134 days. During FY24, Working capital days reduced to ~133 days (SPLY: ~172 days), largely on account of reduced inventory and lower receivables days. These respectively recorded at ~74 days (SPLY: ~103 days) and ~88 days (SPLY: ~116 days). This shows quicker sales and more efficient realization of receivables by the overall sector.
- On the other hand, average payable days also dipped to ~29 days (SPLY: ~47 days), reflecting quicker payments by the sector to its suppliers.
- FY23 was a challenging year for the segment due to high inflationary pressure and political uncertainty. Moreover, the restrictions imposed by SBP made it even more difficult for the segment to carry out its operations smoothly. This resulted in a bad year where receivables and inventory days rose due to lack of sales, on account of lower purchasing power and demand. This in turn increased the net working capital days to ~172.



Note: *Data is reflective of ~2 listed/rated players belonging to power generation segment.*

Source: PSX, PACRA Database

Machinery

Financial Risk | Borrowing Mix

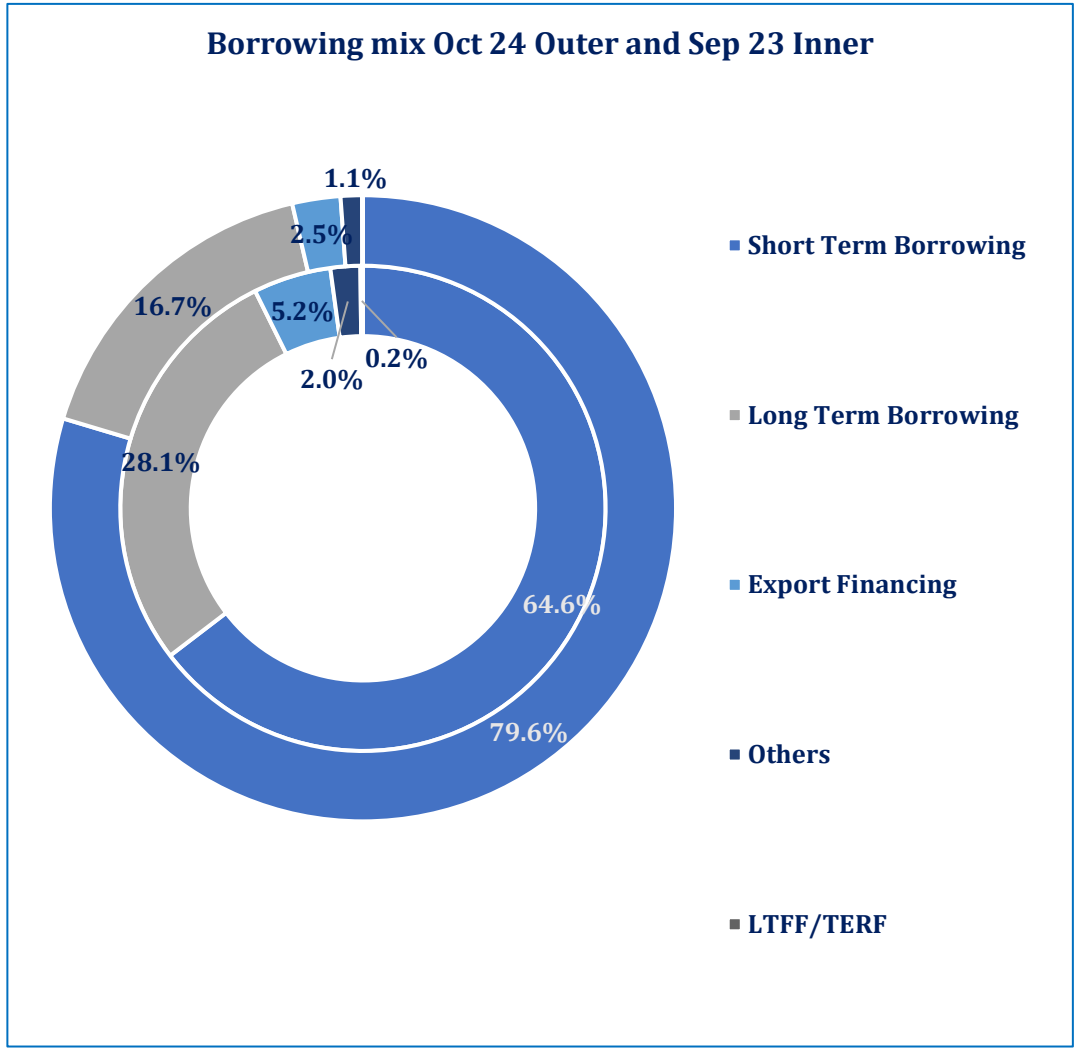
- Total borrowings of the Machinery sector, as of Oct'24, stood at PKR~28,068mln as compared to PKR~18,939mln during Sep'23, an increase of ~98.7% during the period.

- The largest share is taken up by short-term borrowings at normal rates which account for ~79.6% and stood at PKR~22,352mln in Oct'24 which was previously PKR~ 9,126mln in Sep 23.

- In addition, long-term borrowing at normal rates in Oct'24 contributed ~16.7% to the total borrowing mix and stood at PKR~4,696mln (PKR~2,155mln in Sep'23).

- Concerning discounted borrowing, the Export Finance Scheme (EFS) clocked in at PKR~698.4mln (Sep'23: PKR~731mln), while the Long-Term Financing Facility (LTFF)/ Temporary Economic Refinance Facility (TERF) stood at PKR~13mln and was PKR~24mln, respectively, in Sep'23.

- The average leveraging for the power-generating machinery stood at ~28.2% (lowly leveraged) during FY24 increasing from ~26.7% in FY23. Meanwhile, the average leveraging for pumps and vales stood at ~33.7% during FY24, a decrease from ~38.2% in FY23.



Note: *Data is reflective of SBP's classification "Manufacture of Machinery and Equipment".*

Source: PSX, PACRA Database

Machinery

Duty Structure

PCT Code	Description	Additional Duty	Custom duty	Regulatory Duty	Total
Pumps & Valves					
8413.1100	Pumps for dispensing fuel and lubricants	2%	11%	0%	**13%**
8413.1910	Pumps for dispensing chemicals	2%	0%	0%	**2%**
8413.2000	Hand pumps	4%	16%	0%	**20%**
8413.6011, 19, 90	For Motor Cars and Vehicles	2-7%	3-35%	0%	**5-42%**
8413.7011, 19	Submersible pumps having 5 to 10 inches diameters, Other submersible pumps	2%	3-11%	0%	**2-16%**
8413.9150	Plunger and other pumps parts for the vehicles of chapter 87	7%	35%	0%	**42%**
8413.9190	Parts of Other Pumps	6%	20%	0%	**26%**
Power Generating Equipment					
8501.1000, 2000	Electric Motors and Generators	2%	0%	0%	**2%**
8502.1130	Electric Generating Sets Exceeding 20 KVA but not exceeding 50 KVA	6%	20%	10%	**36%**
8502.2010	Electric Generating Sets Of an output not exceeding 5 kVA	2%	11%	0%	**13%**
8502.3100	Wind-powered	2%	0%	0%	**2%**
8503.0010, 20, 90	Parts of Machine (Electric Motors/ Generators/ Generator Sets)	2-4%	11%-16%	0%	**13-20%**

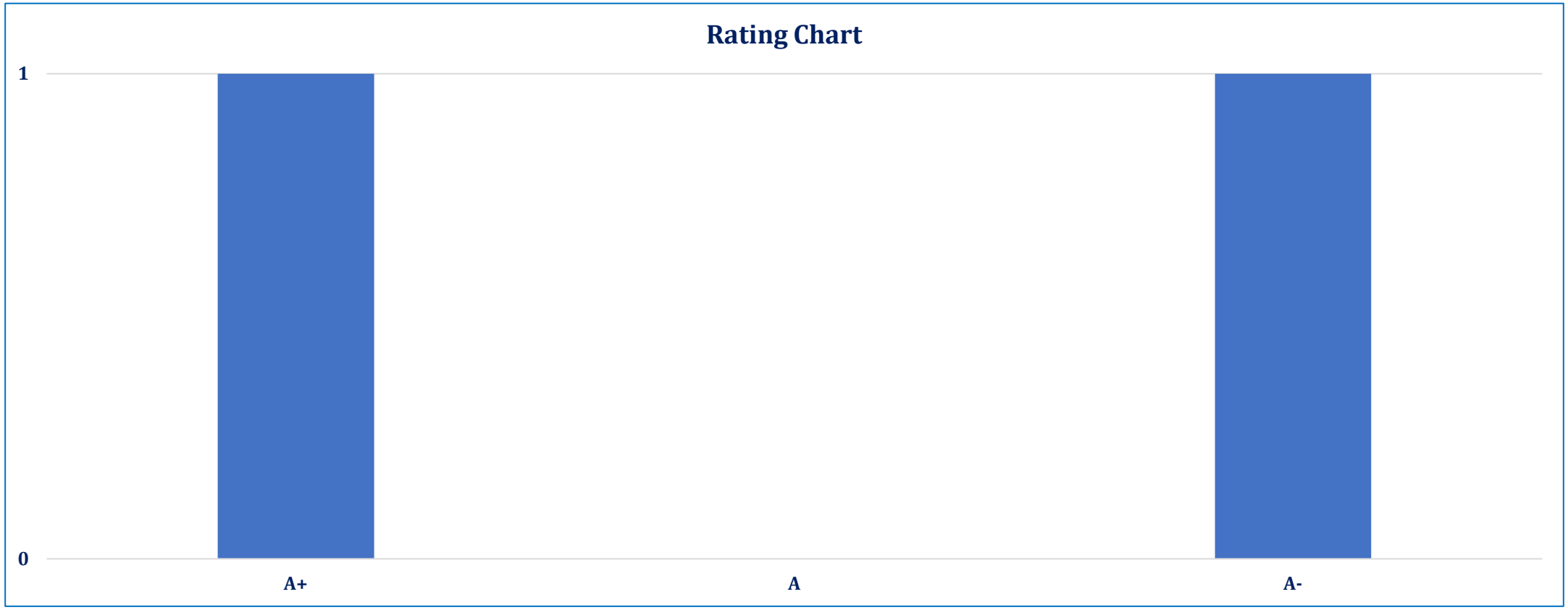
Note: *Data is latest available (FY25).*

Source: FBR

Machinery

Rating Curve

- PACRA rates 2 players in the machinery sector. The clients have a long-term rating range of A+ to A-, with a mean rating of A.



Machinery

SWOT

- Certain segments benefit from demand emanating from government departments and projects
- Reduced sales tax and customs duty rates for various sectors to encourage investment

- Lack of advanced technology
- Reliance on imports
- Little to no focus on research and development
- Government clients often have delays in payments
- Obsolescence of machinery

- Disruptions in supply chain
- Significant competition from imports
- Increased mark up rates of the discounted borrowings in the form of LTFF/EFS

- Increase in budgeted PSDP is likely to increase demand
- SEZs/STZs provide incentives for new investments.
- Growing acceptance of local machinery for exports in developing countries.

Machinery

Outlook: Stable

- According to the IMF's estimated figures, Pakistan's economy is expected to grow by ~3.2% in FY25 (FY24: ~2.5%). This would increase the demand for machinery's production, imports and exports could potentially see an increase in FY25 as can be seen by the trend in 4MFY25.

- During 4MFY25, imports were recorded at USD~2,708mln, an increase of ~15.3%. If this trend continues, the total imports can clock in above USD~10,000mln for the year, the first time since FY22.

- Exports rose by ~33.9% YoY in 4MFY25 to clock in at USD~83mln. This momentum would take the total exports for FY25 above USD~200mln, which would be the first time for the country to surpass this benchmark. This is a positive sign for the country as machinery exports are picking up, yet this is very small compared to the sector's size and imports.

- However, despite higher exports, lower production shows low demand for the local machinery in the domestic market. Current production stands at ~11,822 units for 3MFY25, which would propel the country to produce only ~50,000 units or less during the whole year. However, the reduction of interest rate to ~13.0%, and further expectation of decline could lead the producers to borrow more. A long-awaited upgrade of production processes could also take place during this time. This, alongside the winter harvesting season, could propel the demand for local agriculture machinery, providing the producers an incentive to produce more. Reduction in electricity tariffs to PKR~26.1/unit could also increase industrial activity, causing a surge in demand for local industrial machinery.

- The revenues increased for the power generation segment during FY24 by ~47.6% and the trend is expected to continue in FY25 on the back of increased demand from the public and private sectors. However, the Pumps and Valves segment saw a decline in revenue of ~15.3% to PKR~4,876mln. This was due to decreased purchasing power amid high inflationary pressure during FY24. However, as the latest numbers from PBS show, inflation dropping to ~4.9% YoY, for November'24, the sales of Pumps and Valves could pick up in FY25.

- With companies shifting focus to producing more sustainable and eco-friendly machines, the demand would pick up for local produce in the domestic markets. However, competition would also be stiff for international players and imported machinery would still fulfill the major portion of demand.

Source: PBS, SBP

Machinery

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