SECTOR STUDY . JANUARY 2025

Together. Creating Value.

Batteries

Research Team

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Batteries

Batteries

Introduction

- A battery is a device that stores chemical energy and converts it into electrical energy. The chemical reactions in a battery involve the flow of electrons from one electrode to another.
- Every battery (or cell) has a cathode or positive plate, and an anode, or negative plate. These electrodes must be separated by and are often immersed in an electrolyte that permits the passage of ions between the electrodes. The electrode materials and the electrolyte are chosen and arranged so that sufficient electromotive force (measured in volts) and electric current (measured in amperes) can be developed between the terminals of a battery to operate lights, machines, or other devices.
- Batteries are divided into two general groups (i) Primary batteries and (ii) Secondary/Storage batteries. Primary batteries are designed to be used until the voltage is too low to operate a given device and are discarded. Secondary batteries have numerous special design features, as well as particular materials for the electrodes that permit them to be reconstituted (recharged). After partial or complete discharge, they can be recharged by applying direct current (DC) voltage.

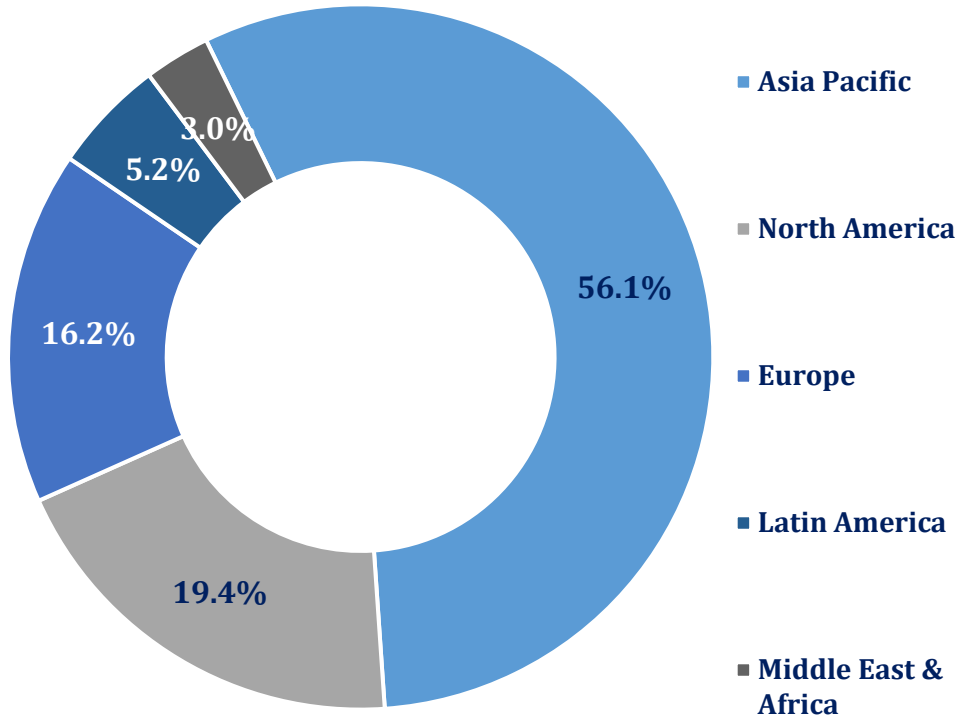
Source: Britannica, Australia Academy of Science

Batteries

Global | Overview

- During CY24, the global batteries sector was valued at USD~146.2bln (CY23: USD~125.4bln), a YoY increase of ~16.5%.
- In terms of regions, the Asia Pacific batteries sector reached to USD~82.3bln in CY24 (CY23: USD~70.4bln), a YoY increase of ~16.9%. Asia Pacific region contributed ~56.1% to the global batteries market share during CY24.
- In terms of industries, the automotive industry accounted for the majority share of the batteries sector during CY24. The anticipated rise in the demand for lithium-ion batteries in the end-use segment for passenger cars is expected to be supported by rising awareness about the benefits offered by electric vehicles operating in regions like Asia Pacific, Europe, and North America.
- The global batteries sector is expected to reach to USD~680.9bln by CY34. The growth rate of the market is expected to increase over the forecast period, owing to increased demand for Electric Vehicles (EVs). The rapid growth of the EV market represents an important driver for expanding the global batteries sector. EVs are vehicles that run on electric motors, meaning they use batteries to store and supply energy for propulsion.

Region Wise Batteries Market Share | CY24



Source: Precedence

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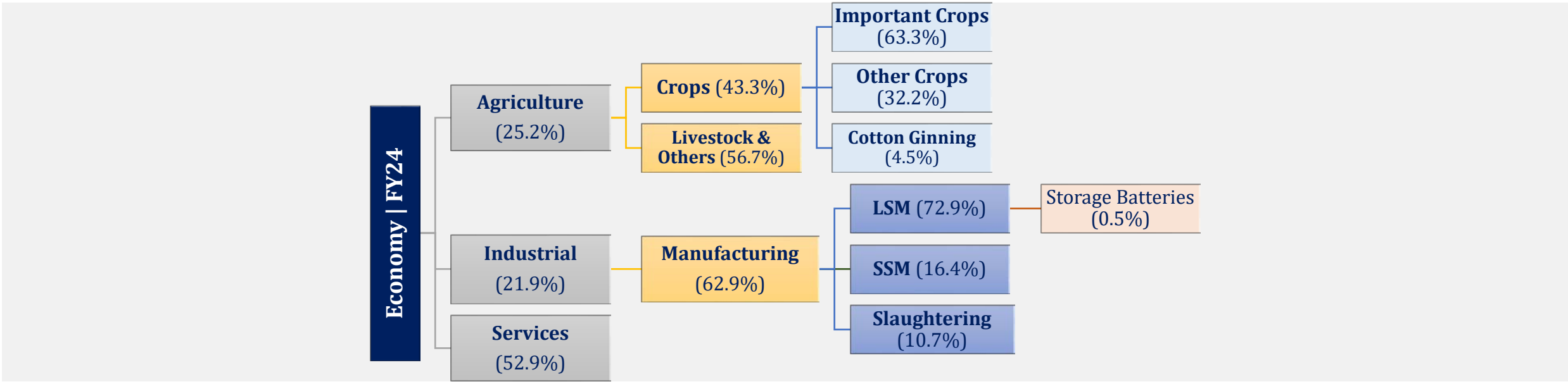
Local | Overview

- In FY24, Pakistan's GDP (nominal) stood at PKR~105.7trn (FY23: PKR~83.9trn), increasing, in real terms, by ~2.4% YoY (FY23: ~-0.21% decline). Industrial activities in FY24 held ~21.9% share in the GDP while manufacturing activities made up ~62.9% of the value addition in the Industrial sector. In 4QFY24, Pakistan's GDP (nominal) stood at PKR~25.1trn (4QFY23: PKR~21.1trn), rising in real terms by ~3.1% YoY (3QFY24: ~2.4% YoY). The real GDP growth rate (~0.9%) during 1QFY25 signals an improvement in the economic activity as compared to SPLY as Pakistan's GDP (nominal) clocked in at PKR ~26.2trn during the same period.
- The Large-Scale Manufacturing (LSM) in Pakistan is essential for economic growth considering its linkages with other sectors, as it represented ~72.9% of the manufacturing activities in FY24. Overall, the LSM fell by ~10.3% YoY in FY23 (FY22: ~11.7%), however, it inched up ~0.9% YoY in FY24. While during 4MFY25, the LSM performance declined by ~0.6% YoY. The primary contributors to the negative -0.6% growth included declines in cement (-0.7%), iron and steel (-0.6%), electrical equipment (-0.7%), machinery (-0.3%), and furniture (-2.4%), on a YoY basis. The "Storage Batteries" sector is classified as a Large-Scale Manufacturing (LSM) component within the industrial sector. In 4MFY25, its weight was recorded at ~0.5%.



Source: PBS, PES

Batteries

Local | Snapshot

- The total number of batteries produced during FY24 was down by ~13.3% YoY to ~8.7mln units as compared to ~10.0mln units produced in FY23. The production of batteries was down during FY24 due to low demand on the back of economic slowdown. However, during 3MFY25, with macroeconomic indicators normalizing, the demand for batteries has picked up pace resulting in batteries production increasing to ~2.4mln units (SPLY: ~2.3mln units), a YoY increase of ~3.1%.
- The sector's exports decreased by ~14.3% YoY to USD~29.9mln in FY24 (FY23: USD~34.9mln) , while in 3MFY25, the batteries exports increased to USD~11.1mln (3MFY24: USD~10.1mln).
- The imports of batteries were up ~76.1% YoY in FY24 to USD~126.2mln (SPLY: USD~71.7mln) as import restrictions were lifted by SBP in Jun'23. Meanwhile, during 3MFY25, the imports clocked in at USD~51.4mln (3MFY24: USD~50.7mln), a YoY increase of ~1.4%.
- The domestic batteries sector comprises organized and unorganized segments, with the former category having ~4 major players. Meanwhile, a large number of smaller players operate in the unorganized segment.

Particulars	Unit	FY23	FY24	3MFY24	3MFY25
Production*	**mln Nos.**	10	8.7	2.3	2.4
Production YoY Change	**%**	-0.40%	-13.30%	-4.20%	3.10%
Export Value	**USD mln**	34.9	29.9	10.1	11.1
Import Value	**USD mln**	71.7	126.2	50.7	51.4
Market Structure			Oligopoly		
Listed Players			~3		

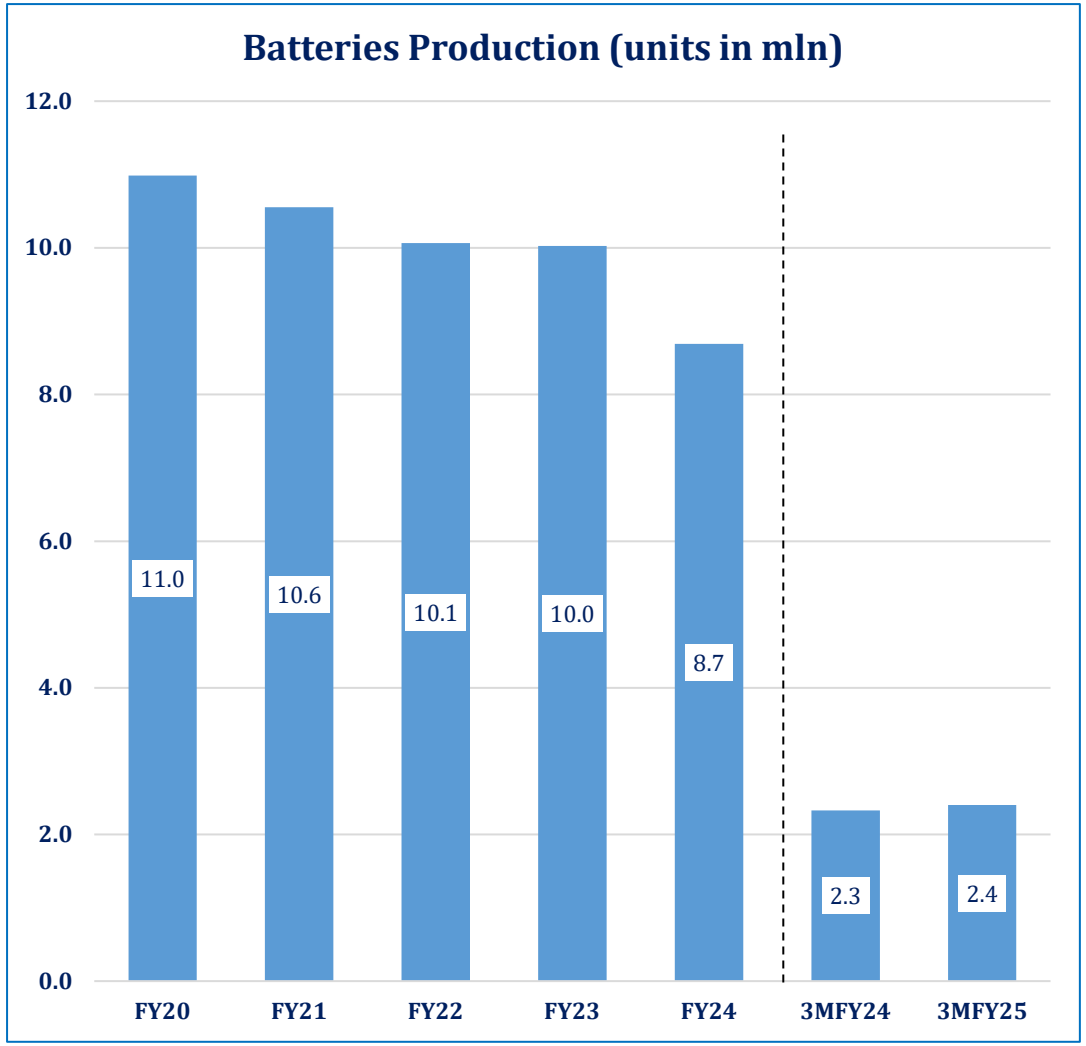
*Notes: *Production is estimated based on ~1 PACRA-rated/listed Sector player.*
Export & Import values pertain to the storage batteries HS Code 8507

Source: PBS, SBP

Batteries

Local | Production

- During FY24, batteries production was down by ~13.0% YoY, clocking in at ~8.7mln batteries owing to the lower demand from the automobile sector, which is one of the major consumers of batteries.
- Following FY24, ~2.4mln batteries were produced during 3MFY25 as compared to ~2.3mln batteries during SPLY, a YoY increase of ~4.3%. During 3MFY25, the demand from the automobile sector rebounded on the back of improvements in macroeconomic indicators as automobile production increased by ~25.3% YoY during 3MFY25.
- Apart from the automobiles segment and associated replacement market, the increasing demand for backup power solutions and a rise in solar power installations are likely to be the major demand drivers for the batteries sector. Demand for heavy and medium-sized batteries for UPS (including solar UPS) can be associated with power shortages in the country, which occur more frequently during the summer season.
- The initiation of Electric Vehicle assembling projects such as the locally assembled Hybrid Electric Vehicle (HEV) as well as Battery Electric Vehicles (BEVs) is also expected to boost the demand for low-maintenance hybrid batteries in the coming years. HUBCO, one of the prominent business groups, has entered into lithium mining for local manufacturing of lithium batteries, HUBCO, a renowned business group, is currently in the process of evaluating lithium exploration potential, with completion expected in 12 to 18 months.



Notes: The production is estimated based on 1 PACRA-rated/listed Sector player.

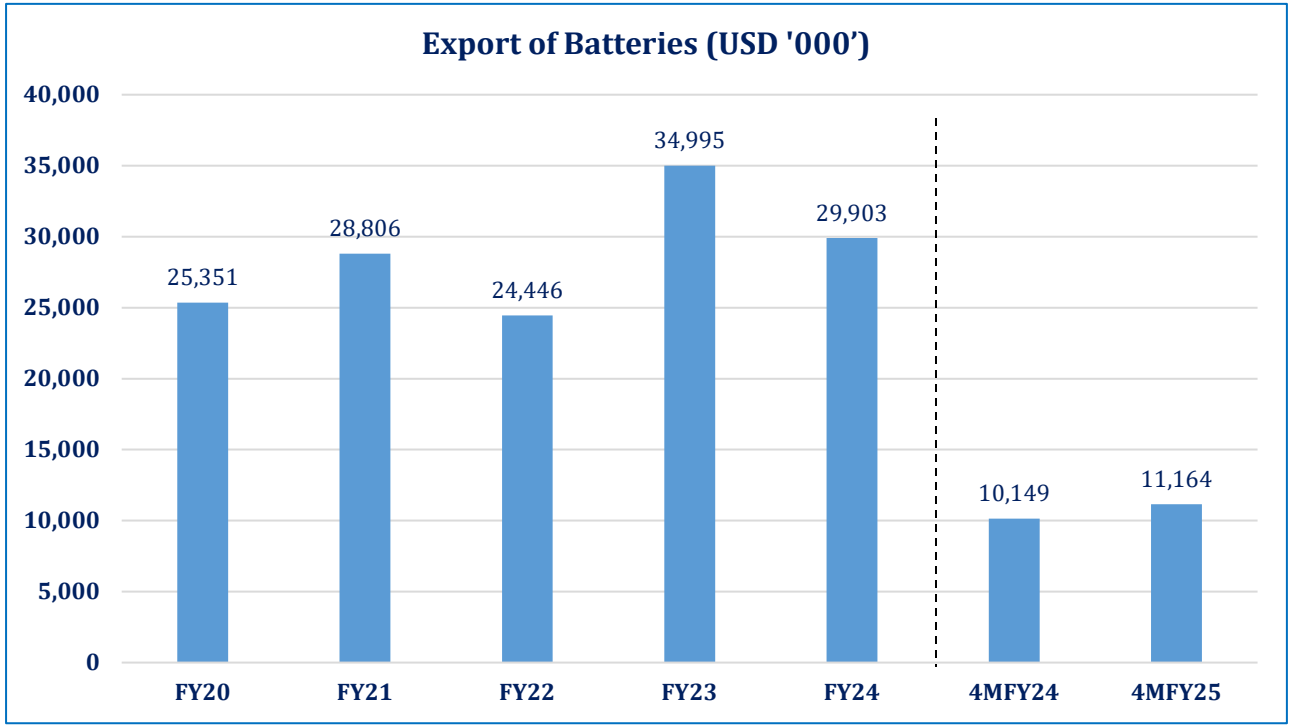
Source: PBS

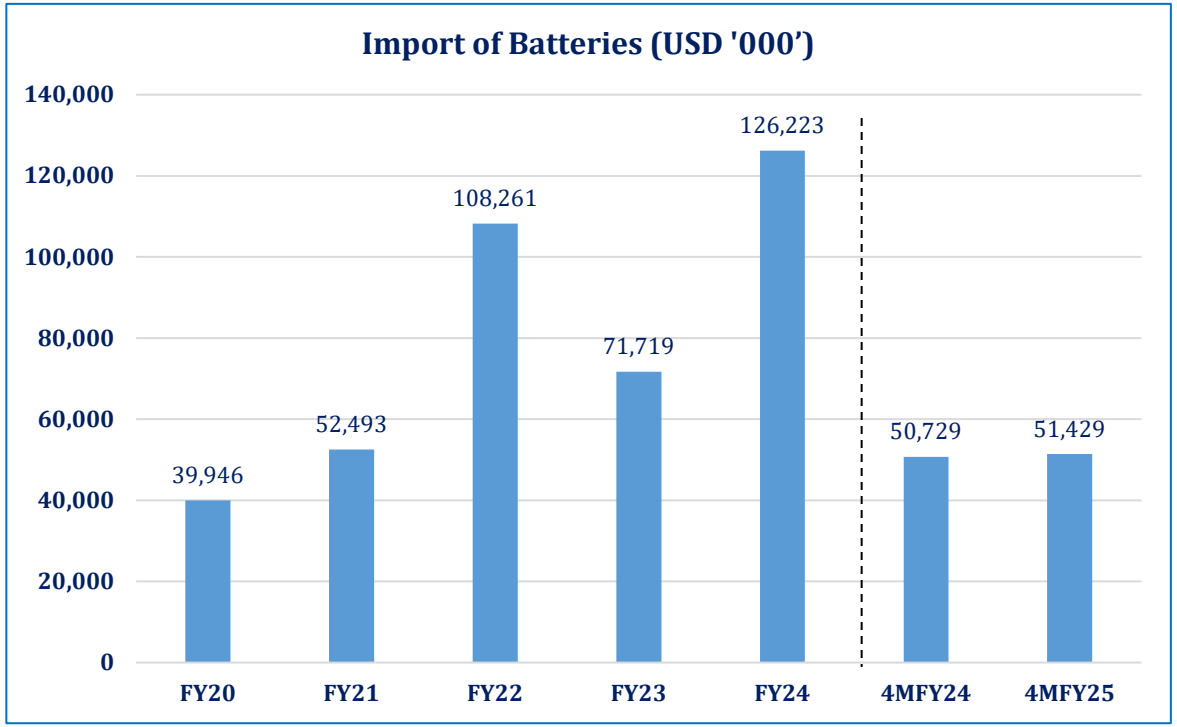
Batteries

Local | Trade

- During FY24, the batteries exports clocked in at USD~29.9mln (FY23: USD~34.9mln), a YoY decline of ~14.3% due to a volumetric decrease in exports. Meanwhile, the imports of batteries increased to USD~126.2mln during FY24 (FY23: USD ~71.7mln) a YoY increase of ~76.0%, due to import restrictions lifted by SBP in June'23.

- During 4MFY25, exports of batteries clocked in at USD~11.1mln (SPLY: USD~10.1mln), whereas imports stood at USD~51.4mln in 4MFY25 (4MFY24: USD~50.7mln).





Notes: Export & Import data pertains to storage batteries HS Code 8507

Source: SBP

Batteries

Local | Raw Materials

Lead: Lead is employed in lead storage batteries due to its superior reliability. These batteries are not only cost-effective but also highly convenient in terms of installation. Additionally, they serve as a sustainable energy source, contributing to eco-friendly practices. Lead-acid batteries can store a significant amount of energy relative to their size and weight and are also highly recyclable. These cater to a wide range of applications, including automotives, aviation, marine, medical, nuclear, motive power, standby, uninterruptible power supplies (UPS), energy storage, load leveling, renewable energy, security, emergency lighting, electric and hybrid electric vehicles, among others. However, lead batteries require water replacement and their lifespan is shorter than lithium lead batteries.

Lithium: Lithium, if used in batteries, makes them last ~10x longer than the lead acid batteries. Whilst storing significant amount of energy relative to their size and weight, they usually require low maintenance. Lithium makes batteries hold charge for a longer period when not in use. Lithium batteries are rechargeable, allowing them to be used repeatedly. These also provide a higher voltage compared to other rechargeable batteries. This can be advantageous in certain applications, such as electric vehicles, where higher voltage contributes to increased power efficiency.

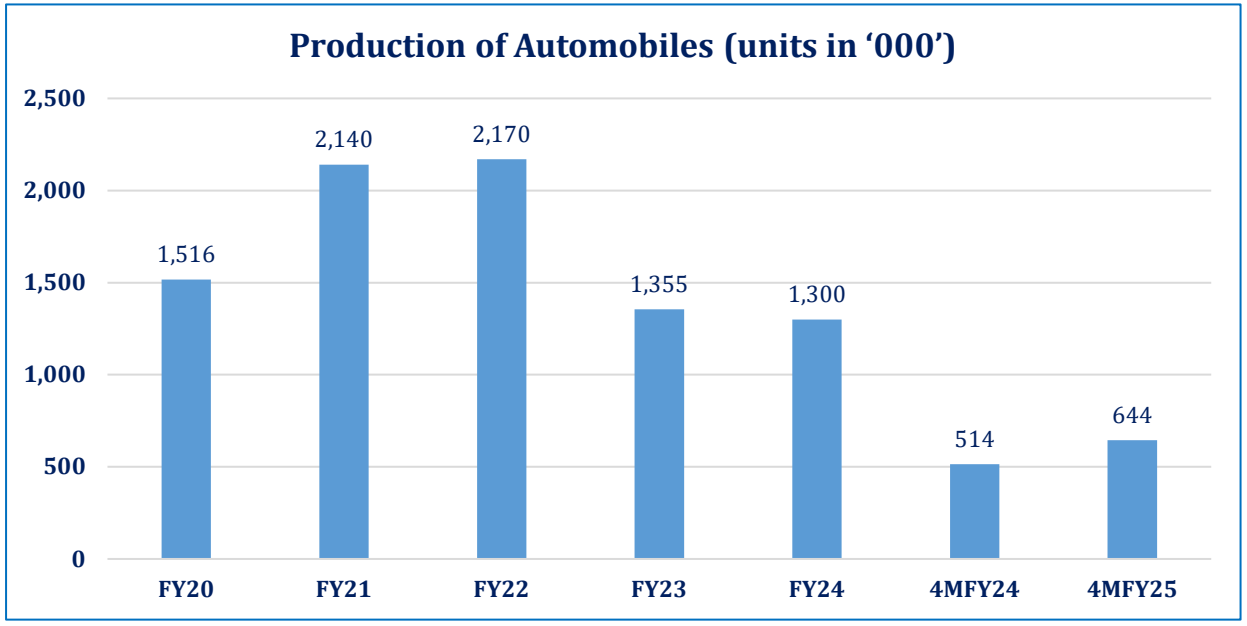
Source: PBS

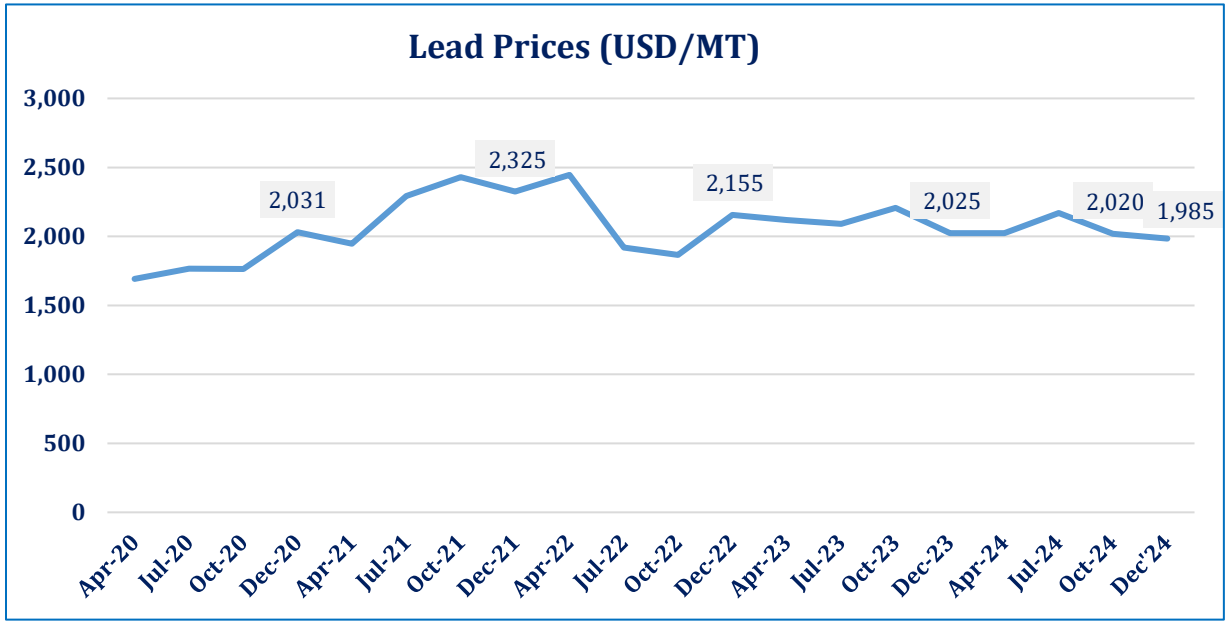
Batteries

Local | Business Risk

- The production of automobiles declined marginally by ~4.1% YoY in FY24 to clock in at ~1.3mln units (FY23: ~1.4mln units). Although import restrictions were withdrawn in Jun'23, the production of automobiles declined further in FY24 due to high interest rates, rising inflation and currency depreciation. While during 4MFY25 with interest rate easing to ~15.0% (Jun'24: ~22%) and stable currency, the demand for automobiles has rebounded, depicting an increase of ~25.3% YoY.

- Lead is one of the main raw materials used in the production of batteries. During FY24, average lead prices dropped by ~2.9% YoY, averaging at USD~2,050/MT as global supply of lead increased amid weak demand in advanced economies, including China. Pakistan imports its lead majorly from the Middle East including ~58.2% of the lead imports from the UAE, ~14.2% from Saudia Arabia, and ~5.6% from Oman, respectively. The sector relies heavily on raw material as it comprised~81.4% of its direct costs in FY24. High dependence on imported raw material exposes the sector to changes in international lead prices and exchange rate fluctuations.





Source: PAMA, Business Insider, LME

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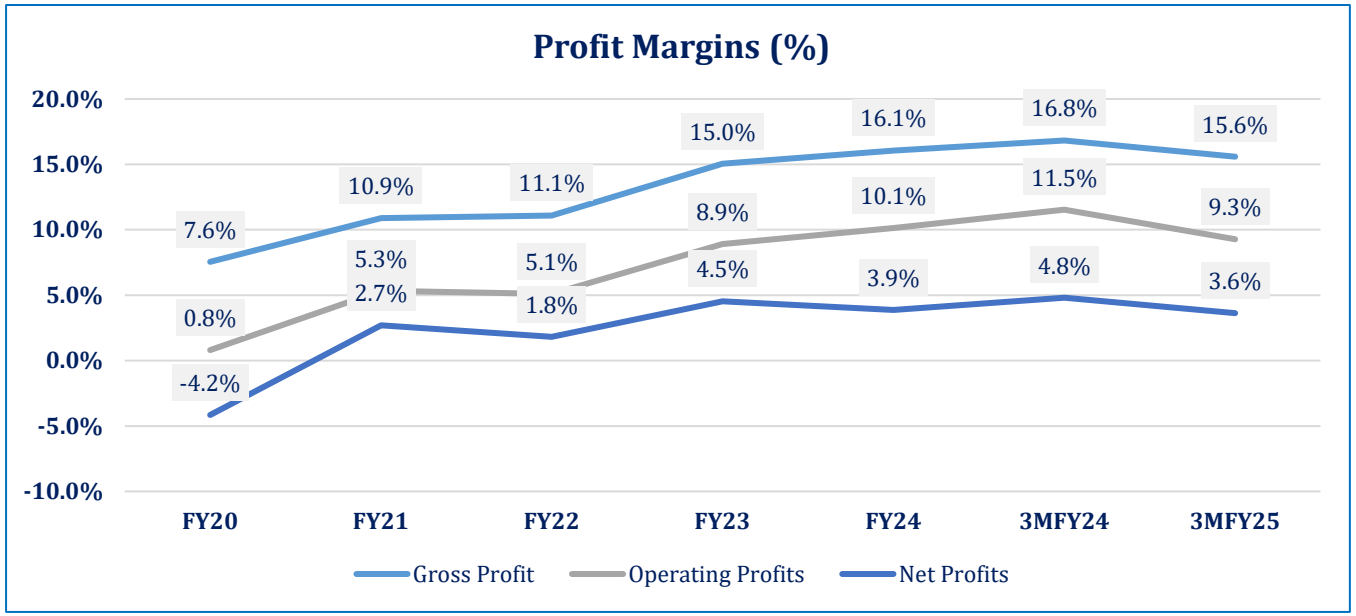
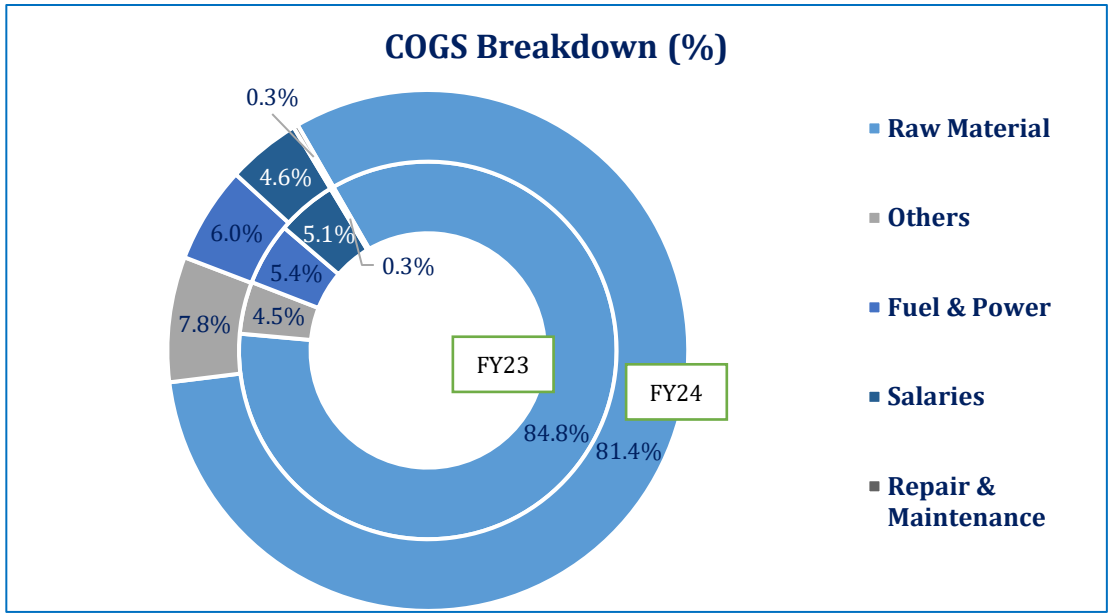
Business Risk | Margins

- During FY24, the sector's gross revenue increased by ~2.9% YoY (FY23: ~65.6% YoY), resulting in gross profits to increase by ~9.9% YoY in FY24 (FY23: ~124.7%). Therefore, average gross margins increased to ~16.1% during FY24 (FY23: ~14.9%). Meanwhile, during 3MFY25 gross margins dropped to ~15.6% on the back of ~6.9% higher cost of sales.
- Moreover, operating profit increased by ~16.9% YoY in FY24 (FY23: ~190.5%), while the net profit registered a ~12.1% YoY decline resulting in average net margins declining to ~3.9% in FY24. During the year, finance the sector's costs rose by ~55.6%, while other income was up ~31.8% YoY due to higher return on investments as the policy rate was increased by SBP to ~22.0% during Jun'23-Apr'24, which started to decline in Jun'24 and was further reduced to ~13.0% in Dec'24. During 3MFY25, the operating profits declined by ~15.2% YoY while net profits declined by ~20.5% YoY resulting in net profits decrease to ~3.6%.
- The largest component within the sector's direct costs is raw material which contributed ~81.4% to the total direct costs in FY24. The main raw material for batteries consists of materials such as lead.





Note: Data is reflective of ~2 PACRA rated/Listed sector players, while margins are revenue weighted.

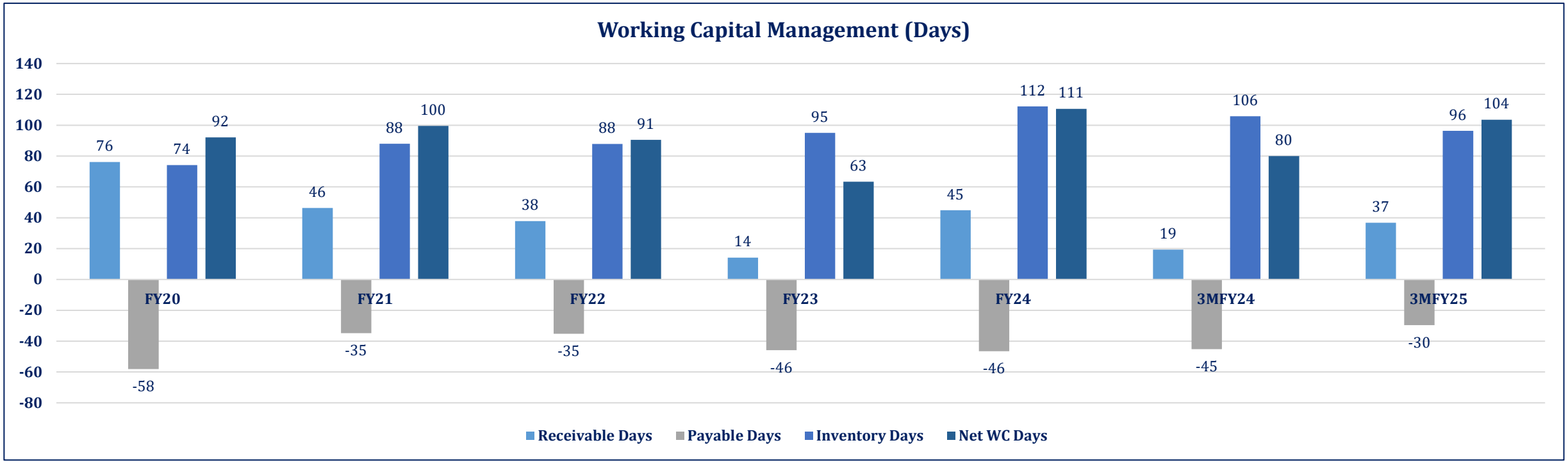
Source: Company Financials

Batteries

Financial Risk | Working Capital Management

- The segment's working capital cycle is largely a function of its inventory and trade receivables and is financed through a combination of short-term borrowings and internal capital. In FY24, the average working capital days of the sector increased to ~111 days (FY23: ~63 days). Meanwhile, during 3MFY25 average working capital days increased to ~104 days.

- Average inventory days Increased to ~112 days (FY23: ~95 days) whereas average receivable days increased to ~45 days (FY23: ~14 days). Meanwhile, average payable days remained the same at ~46 days. During 3MFY25, average inventory days decreased to ~96 days whereas average receivable days increased to 37 days.



Note: Data is reflective of ~2 PACRA rated/Listed sector players, while margins are revenue weighted.

Source: Company Financials

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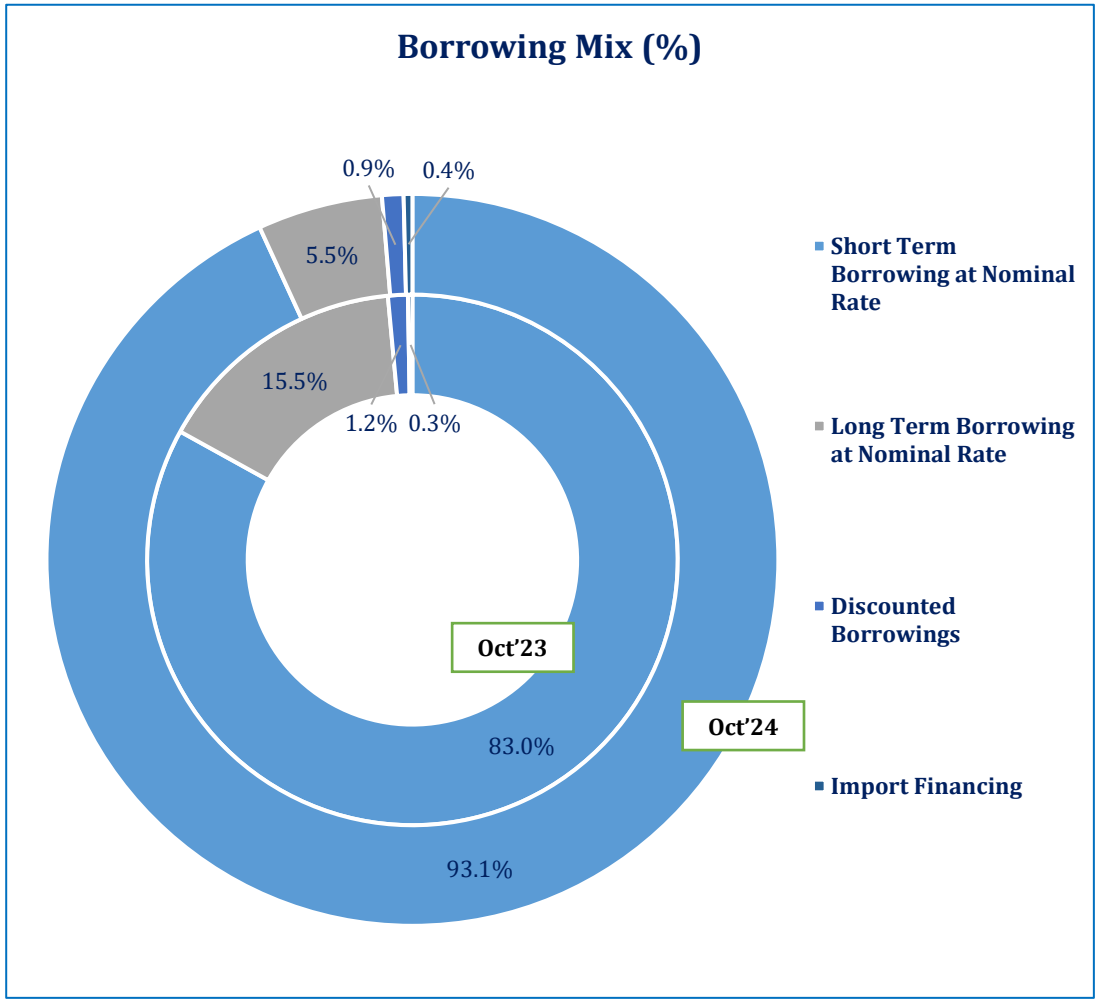
Financial Risk | Borrowing Mix

- As of end-Oct'24, the sector's overall borrowings stood at PKR~12.9bln, up ~18.9% YoY (End-Oct'23: PKR~10.9bln).
- Short-term borrowings (STBs) at normal rate stood at PKR~12.1bln, up ~33.4% YoY, and held the largest share in the sector's borrowing mix at ~93.1% (SPLY: ~83.0%).
- Long-term borrowings (LTBs) at normal rate stood at PKR~0.7bln, down ~57.5% YoY and held a share of ~5.5% in overall borrowings (End-Oct'23: ~15.5%).
- Discounted borrowing (LTFF & EFS) stood at a mere PKR~0.1bln (End-Oct'23: PKR~0.2bln), down ~6.6% YoY and held a share of ~0.9% in the overall borrowing mix.
- Meanwhile, import financing also stood minimal at PKR~0.5mln (End-Oct'23: PKR~0.3mln), up ~69.5% YoY as of End-Oct'24, and held ~0.4% share in the total borrowing mix during the period.



Notes: Borrowing Mix pertains SBP's classification of "Manufacture of Batteries and Accumulators"

Source: SBP

Batteries

Regulatory Duty

PCT Code	Description	Custom Duty		Additional Custom Duty		Total	
		FY24	FY25	FY24	FY25	FY24	FY25
2607.000	Lead Ores and Concentrates	0%	0%	2%	2%	**2%**	**2%**
7801.1000	Unwrought Lead (including refined lead)	0%	0%	2%	2%	**2%**	**2%**
7802.0000	Lead waste and scrap	0%	0%	2%	2%	**2%**	**2%**
7804.1100	Lead plates, sheets, strip, foil, powders and flakes	16%	16%	4%	4%	**20%**	**20%**
7806.0090	Other articles of lead	20%	20%	6%	6%	**26%**	**26%**
8506.5000	Primary Batteries - Lithium	3%	3%	2%	2%	**5%**	**5%**
8507.1010	Batteries/ Electric Accumulators, made from lead-acid, for use in vehicles	35%	35%	11%	7%	**46%**	**42%**
8549.1900	Waste and scrap of cells, batteries and electric accumulators	0%	0%	2%	2%	**2%**	**5%**

Source: FBR

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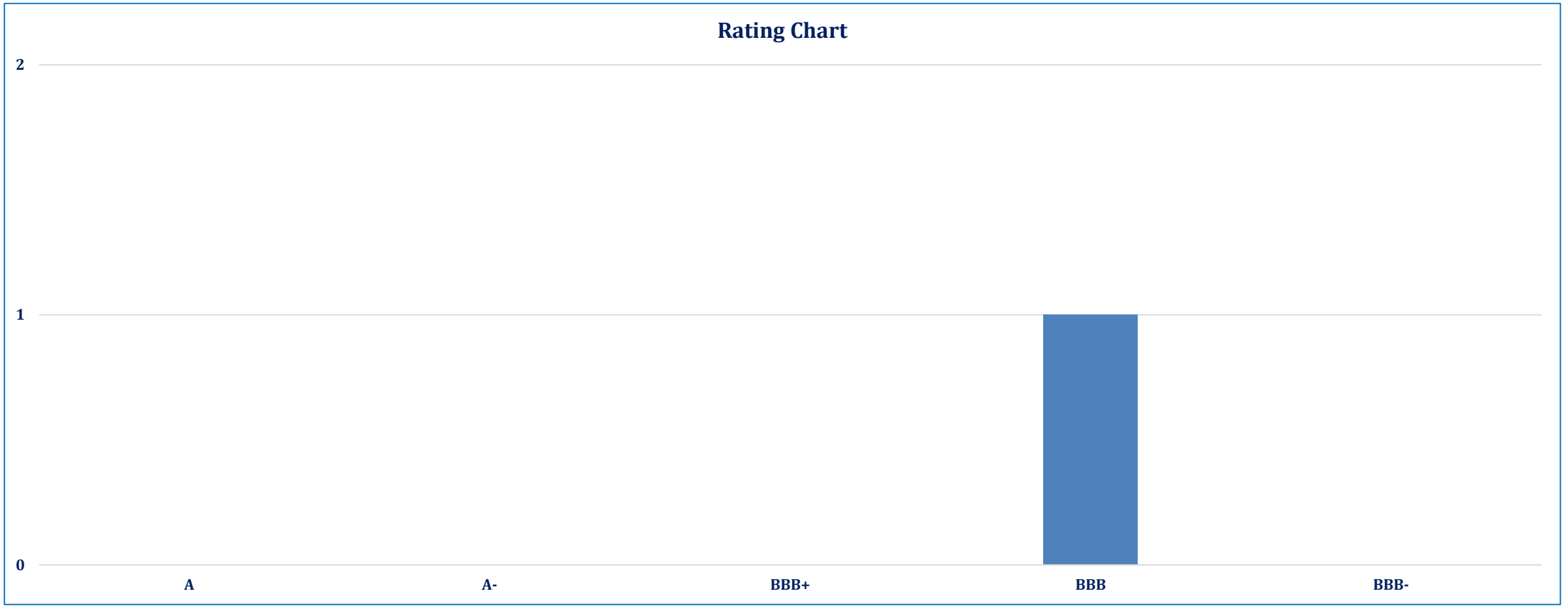
Rating Curve

PACRA rates 1 player in the batteries sector with a long-term rating of BBB.



Source: PACRA Database

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SWOT Analysis

- A few large players occupying a significant market share.
- High-quality products with ample surplus capacity available, thus providing room for growth.

- Presence of unorganized segment which provides substitutes at low prices.
- Limited suppliers of lead.
- Volatile raw material prices.

- Significant level of competition and threat of new entrants.
- Reducing sales volume of cars that majorly drive demand for the sector.
- Non-compliance with environmental laws may cause closure of business.
- Influx of low quality batteries through Afghan Transit Trade.

- Increasing demand for alternative energy sources solar connections which require batteries.
- Shortfall in power supply which creates demand for UPS that use batteries.
- MF (maintenance free) batteries for motor vehicles and motor cycles.
- Tubular batteries.
- Hybrid Batteries for vehicles.

Batteries

Outlook: Stable

- In FY24, Pakistan's GDP (nominal) stood at PKR~105.4trn (FY23: PKR~101.1trn), increasing, in real terms, by ~2.4% YoY (FY23: ~-0.21% decline). Industrial activities in FY24 held ~21.9% share in the GDP while manufacturing activities made up ~62.9% of the value addition. In 4QFY24, Pakistan's GDP (nominal) stood at PKR~25.1trn (4QFY23: PKR~21.1trn), rising in real terms by ~3.1% YoY (3QFY24: ~2.4% YoY). The real GDP growth rate (~0.9%) for 1QFY25 signals an improvement in economic activity as compared to SPLY as Pakistan's GDP (nominal) clocked in at PKR~26.2trn.

- Major demand drivers for the batteries sector include the automobile segment and associated replacement market, as well as backup power solutions (owing to power shortages in the country) and a rise in solar power installations. Furthermore, the initiation of electric vehicle assembling projects such as the locally assembled Electric Vehicle (EV) and Hybrid Electric Vehicle (HEV) is expected to boost the demand for low-maintenance lithium batteries in the coming years. Also, local players are planning to manufacture lithium batteries, which will reduce the dependency on imported lithium batteries and will provide affordable lithium batteries in the coming years.

- During 3MFY25 ~2.4mln batteries were produced as compared to ~2.3mln batteries during the SPLY, a YoY increase of ~4.3%.on the back of improved demand from the automobile sector as macroeconomic indicators started to depict positive signs. The policy rate drop to ~13.0% in Dec'24 and a stable exchange rate will result in demand of batteries to increase during FY25, on the back of ~25.3% YoY increase in production of cars during 3MFY25.

- Lead is one of the main raw materials in the production of batteries. During FY24, average lead prices dropped by ~2.9% YoY, averaging at USD~2,050/MT as global supply of lead increased amid weak demand in advanced economies, including China. Pakistan imports a large portion of lead from the Middle East therefore, with the exchange rate stabilizing during FY25 and a reduction in the global price of lead due to excess supply during FY25 local battery sectors are in favorable conditions and its margins are expected to grow during FY25 on the back of reduction in cost .

- Going forward, the batteries sector is expected to continue on the path of recovery, as macroeconomic indicators, particularly interest rates and exchange rates, reflect a favorable outlook, and the demand for the automobile sector is also finding some breather during 3MFY25. Also, with the automotive sector investing in electric vehicles, the demand for local batteries is expected to improve in the coming years.

Batteries

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