



Fertilizers

Sector Study



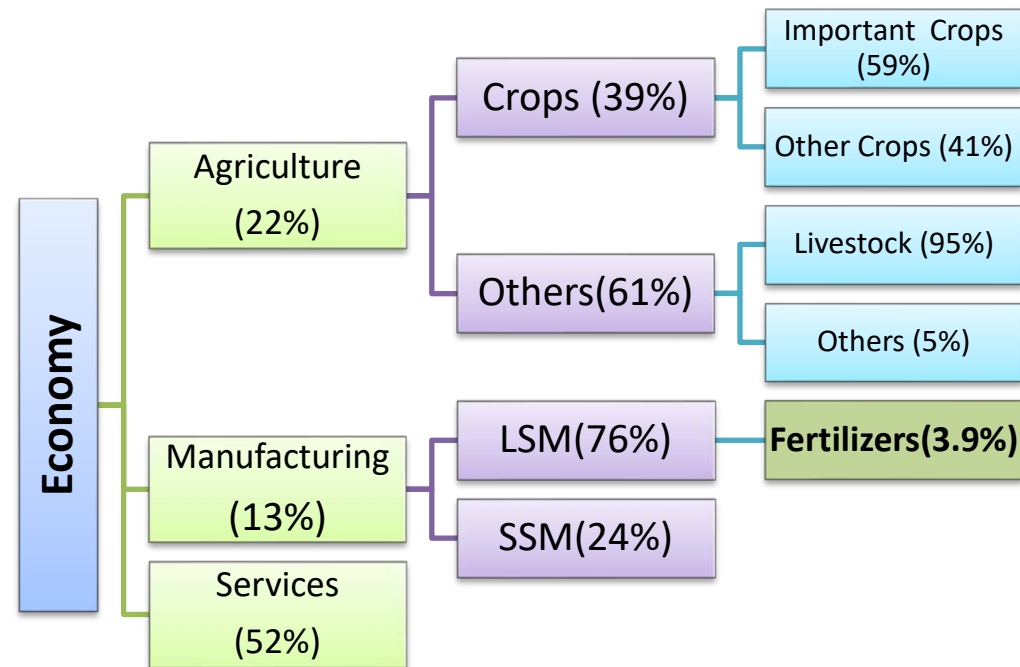
Table of Contents

Contents	Page No.	Contents	Page No.
Agriculture Overview	1	DAP Market Shares	17
Agriculture Important Crops & Floods Impact Overview	2	DAP NFDC Outlook	18
Production Process	3	Business Risk Overview	19
Usage by Crops Application	4	Business Risk GIDC & Gas Rates	20
Overview Industry	5	Business Risk Price and Cost structure	21
Supply & Demand	6	Business Risk Margins	22
Product wise Breakup	7	Working Capital Management	23
Urea Annual Dynamics	8	Financial Risk Borrowing Mix	24
Urea Price Dynamics	9	Rating Curve	25
Urea Market Shares	10	Porter Five Forces Model	26
Urea Outlook NFDC	12	SWOT Analysis	27
DAP Annual Dynamics	13	Outlook	28
DAP Price Dynamics Local	14	Bibliography	29
DAP Price Dynamics International	15		

Fertilizers

Agriculture Overview

- Pakistan’s economy is divided into three segments: Agriculture, Manufacturing/Industry and Services. The overall GDP (real) of the country recorded a growth of ~6.2% in FY22 (~6.5% in FY21). However in FY23, GDP growth is expected to slump below ~2%, owing to acute economic challenges.
- Agriculture is the largest sector of the economy in terms of labor employment. The Sector engages the largest workforce and provides raw material to a number of manufacturing/industrial sectors.
- Crops have a contribution of ~39% in the agricultural segment, out of which ~59% belongs to important crops (wheat, rice, maize, cotton and sugarcane) and ~41% belongs to other crops.
- The “Fertilizers” Sector is classified in the Large-Scale Manufacturing (LSM), although it is majorly driven by the agriculture, particularly crops, segment of the country.



Agriculture | Important Crops & Floods Impact

Production of Important Crops							
Crops	Units	FY18	FY19	FY20	FY21	FY22	FY23*
Cotton	000' bales	11,946	9,861	9,178	7,064	8,329	4,900
Growth	%	11.9%	-17.5%	-6.9%	-23.0%	17.9%	-41.2%
Sugarcane	000' MT	83,333	67,174	66,880	81,009	88,651	82,400
Growth	%	10.4%	-19.4%	-0.4%	21.1%	9.4%	-7.1%
Rice	000' MT	7,450	7,202	7,414	8,420	9,323	6,600
Growth	%	8.8%	-3.3%	2.9%	13.6%	10.7%	-29.2%
Maize	000' MT	5,902	6,826	7,236	8,465	10,635	9,240
Growth	%	-3.8%	15.7%	6.0%	17.0%	25.6%	-13.1%
Wheat	000' MT	25,076	24,349	24,946	27,293	26,394	28,400
Growth	%	-6.0%	-2.9%	2.5%	9.4%	-3.3%	7.6%

*FY23 is estimated for all crops except wheat for which the figure is targeted

- Important crops account for ~19.4% of the Value Addition in the Agriculture Sector and ~4.4% of the country's GDP. Based on the estimated flash floods impact of July'22, the output of all important crops is expected to decline in the upcoming FY23 crop season, except wheat, whose targeted production is estimated at ~28.4mln MT, an increase of ~7.6% from the outgoing year's crop.
- Fertilizers play a significant role in the growth and productiveness of crops. During FY22, destruction caused due to the flash floods may impact the fertilizer offtake in the ongoing crop season of the country.

Fertilizer Types by Nutrients

- Fertilizers are nutrients essential for the growth of plants and crops.
- There are three main types of fertilizer used by the agricultural sector. These include Nitrogenous fertilizers such as Urea and CAN, Phosphorous fertilizers such as DAP and Potassium fertilizers including NPK and NP.
- The most common type of fertilizers are nitrogenous fertilizers (mainly Urea) due to their vital properties and lower prices as compared to other types of fertilizer.

• It supports plants' rapid growth and encourages the healthy development of foliage and fruits (Urea, CAN)

Nitrogen



• It helps a plant convert other nutrients into usable building blocks with which to grow (DAP, SSP)

Phosphorous

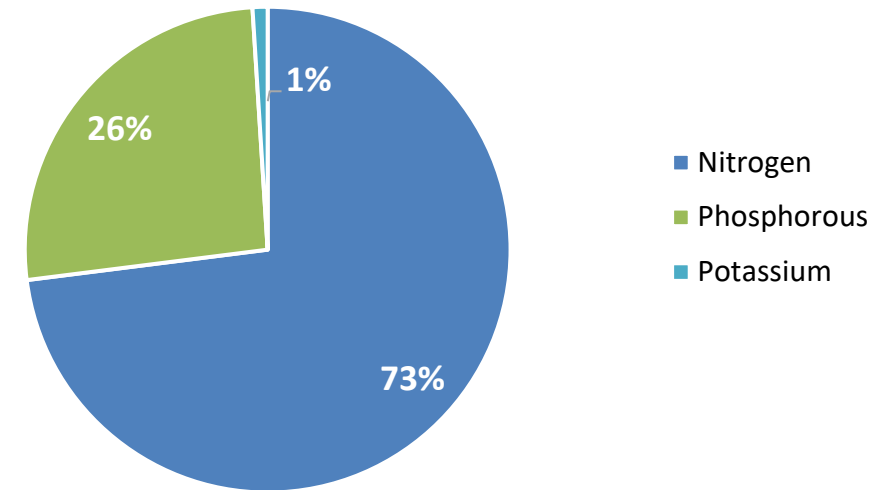


• Vital for proper growth and reproduction of plants (NPK, NP)

Potash



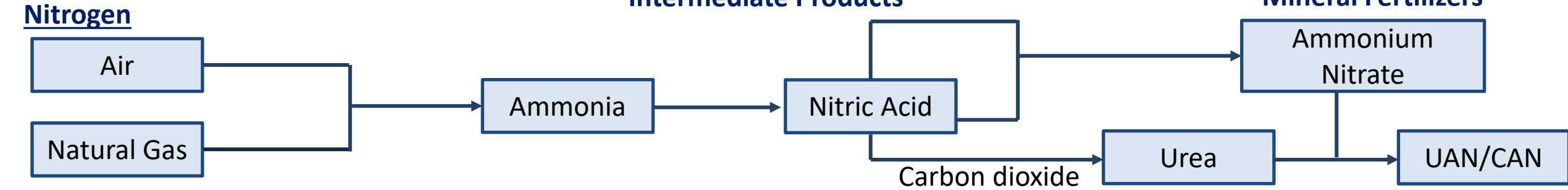
% Break-up – Nutrient Wise | Offtake



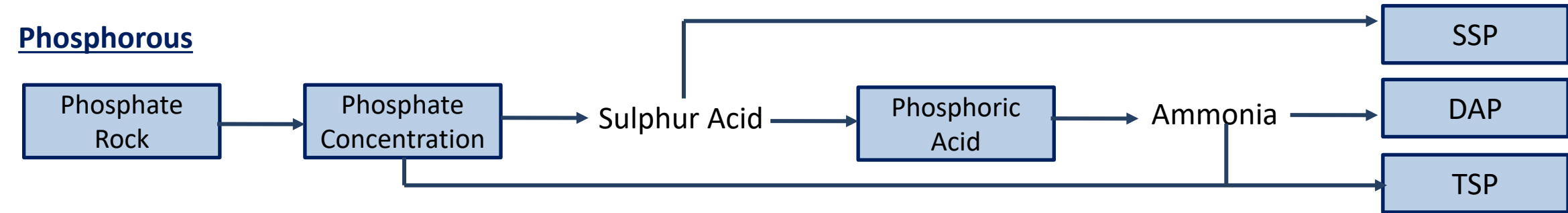
Fertilizers

Production Process

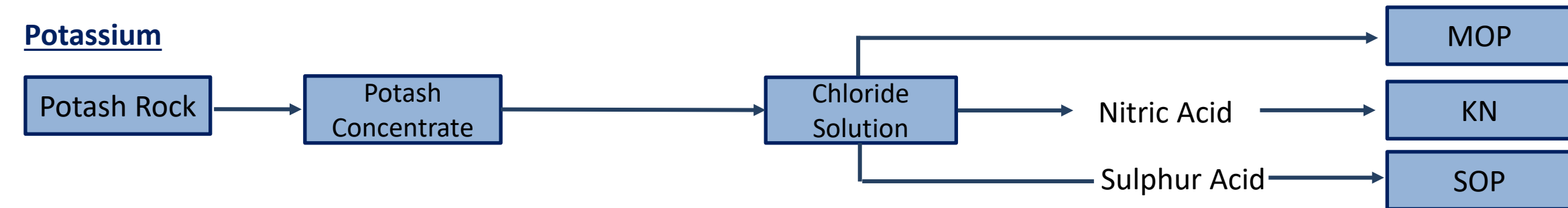
Raw Materials



Phosphorous



Potassium



Wheat

- All phosphorus and potassium and half of the nitrogen is broadcast and incorporated in the soil before sowing.
- Phosphorus can be applied at the first irrigation if this was not done at sowing.

Rice

- Application of zinc sulphate (35 percent Zn) at the rate of 12.5 kg/ha after 7-10 days of transplanting.
- Nitrogen fertilizers containing nitrogen in ammoniacal form (urea, ammonium sulphate) are more beneficial for rice.

Cotton

- All P_2O_5 , K_2O and 1/3 of the N should be applied at sowing by band placement.
- Then 1/3 of the N should be applied with the first irrigation and the remaining 1/3 of the N at the pre-flowering stage.

Sugarcane

- All phosphorus, potassium and 1/3 of the N should be applied at planting time in the furrows below the seed sets. Fertilizer contact with the seed sets has to be avoided.
- The remaining 2/3 of the N should be applied in two splits, i.e. 1/3 in April and 1/3 in May.

Fruit Crops

- Most of the recommendations for citrus fruits, deciduous fruits and mango are on a per plant basis. After planting the fruit tree, the application in the first year on average is 150 g N, 50 g P_2O_5 and 50 g K_2O , mixed with 10-15 kg of well decomposed FYM for every plant.

Overview | Industry

- Fertilizers are an essential contributor towards the agriculture sector of the country. The sector's economic significance is high as it plays a vital role in ensuring food security across the country.
- The sector is dominated by five (5) players which occupy almost ~95% of the market share. This makes the sector oligopolistic in nature. Out of these, four players are listed on the Pakistan Stock Exchange (PSX). These companies belong to the three Big Names of the Corporate Sector, Fauji, Engro and Fatima Group.
- The sector contributes ~3.9% to the Large-scale Manufacturing (LSM) sector and ~0.5% to the overall GDP of the country.
- Due to agriculture sector's immense economic significance, the government has set out relief and subsidy programs, which leads to higher demand for fertilizers.
- Crop outputs, credit disbursement of agricultural sector, government policies, weather conditions and soil health are a few of the main drivers of demand for the fertilizers sector.

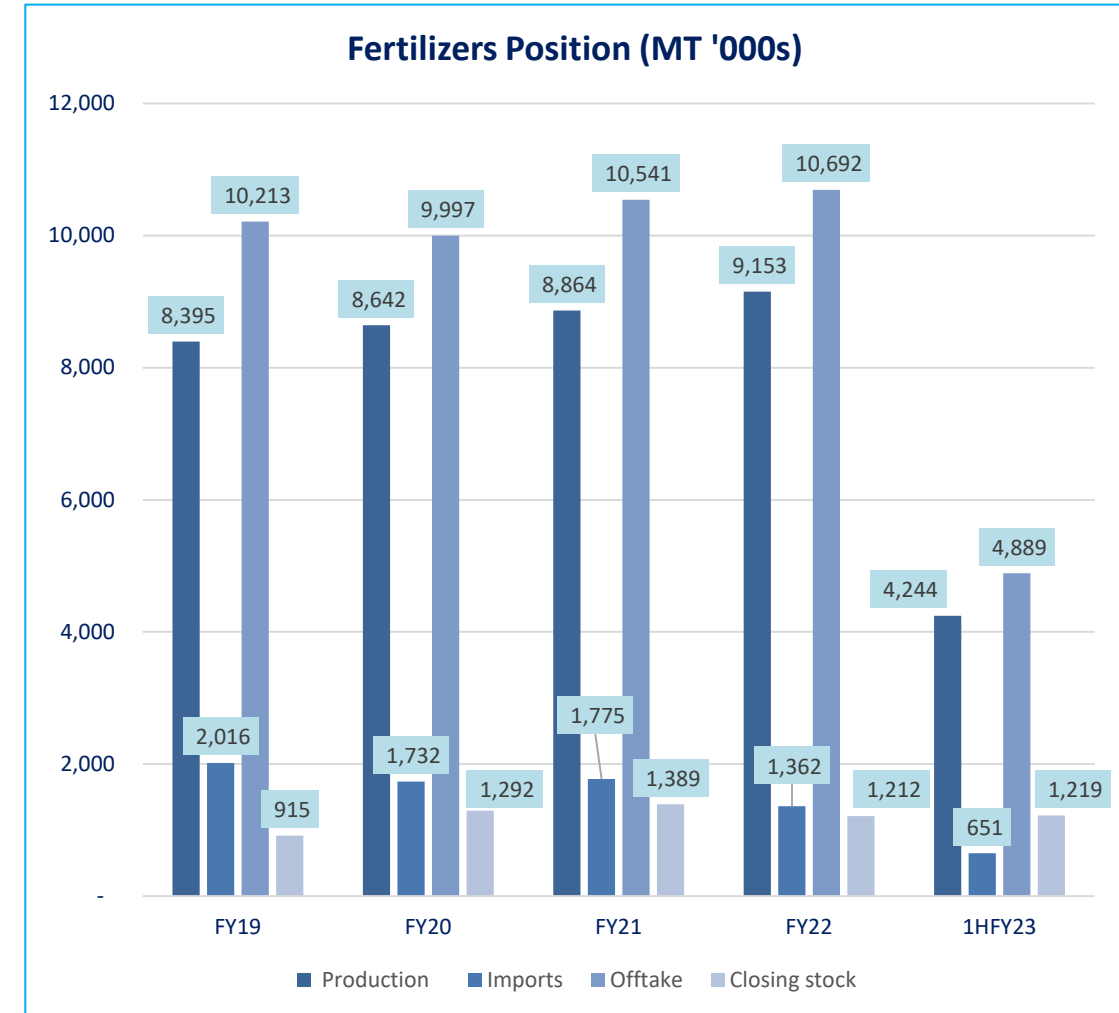
Industry Snapshot	CY21	CY22
Revenue (<i>in PKR bln</i>)*	314	343
Revenue Growth (%)	29%	9%
Contribution to GDP	0.6%	0.5%
Sector Players	5	5
Structure	Oligopoly	
Annual Fertilizer Production (<i>in mln MT</i>)*	8.7	9.1
Annual Fertilizer Offtake (<i>in mln MT</i>)*	10.1	9.1
Fertilizer Offtake Pattern		
Urea	62%	69%
DAP	18%	13%
Others	20%	18%
Regulator	Ministry of National Food Security	
Associations	FMPAC & NFDC	

*11-month data has been prorated to 12 months

Fertilizers

Supply & Demand

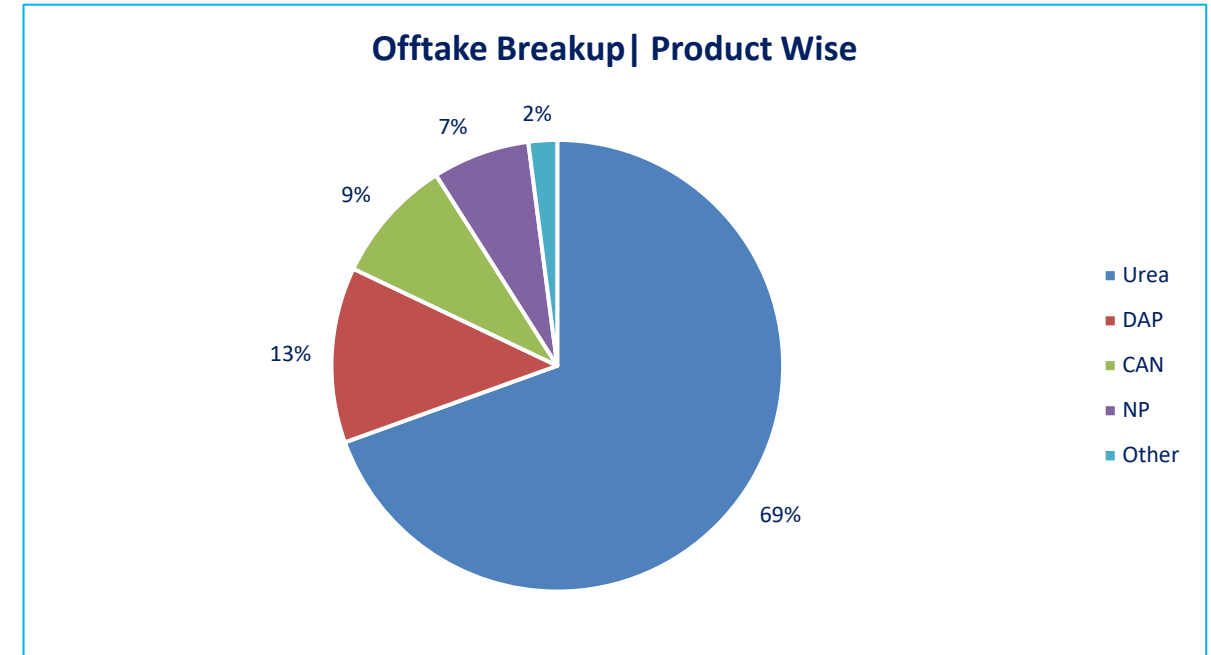
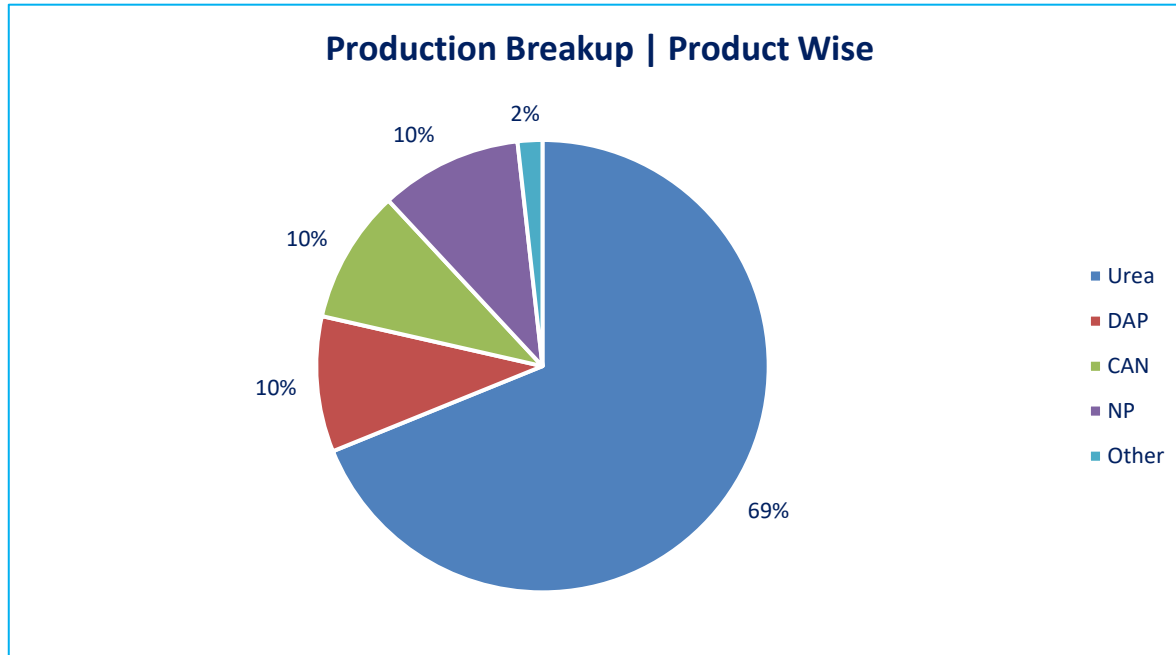
- Production:** Pakistan’s average fertilizer production for the past 4 years (FY19 to FY22) stood at ~8.8mln MT. In FY22, Pakistan’s annual fertilizer production clocked in around ~9.1mln MT (CY21: ~9.0mln MT), with a YoY growth of ~3%.
- Imports:** The country’s average fertilizer imports for the past 4 years (FY17 to FY22) stood at ~1.7mln MT. In FY22, Pakistan’s annual fertilizer imports were recorded at ~1.4mln MT (FY21: ~1.8mln MT), with a YoY decline of ~23%. The decrease in imports is attributable to range of factors which primarily stem for the fact that DAP is the most highly imported fertilizer product. As discussed later in this report, a reduction in DAP imports in the FY22 stemmed from an international price hike, local currency devaluations, and lower DAP offtake in FY22.
- Offtake:** Average fertilizer offtake for the past 4 years (FY17 to FY22) stood at ~10.4mln MT. In FY22, Pakistan’s annual fertilizer offtake was recorded at ~10.7mln MT (FY21: ~10.5mln MT), with a YoY increase of ~1%. Apart from urea offtake which increased YoY by ~7% in FY22, offtake levels for all other fertilizer products fell YoY (DAP offtake decline: ~14%). DAP offtake decline was due to the impact of the monsoon flashfloods and high international DAP prices. ~53% of DAP consumption requirement was met by imports in FY22.
- Inventory :** Average fertilizer Inventory levels (End-Dec), for the past 4 years (FY19 to FY22) stood at ~1.2mln MT. In FY22 (Dec-end), Pakistan’s annual fertilizer supply hovered around ~11.9mln MT (CY21 (Dec-end): ~11.9mln MT). As discussed in more detail in this report, the curtailment of RLNG supply from Jan-23 onwards may threaten the availability of urea for the ongoing Rabi season.



*For CY22, 11-month data has been prorated to 12 months

Fertilizers

Product wise Breakup



- Production:** Urea accounts for ~70-75% of the country's fertilizer production. Meanwhile, DAP contributes around 8 – 10 % of the country's fertilizer production since all sector players, except FFBL, are involved in the import of DAP. Other fertilizers such as CAN, NPK, NP, SSP collectively account for 15 – 20 % of the country's annual fertilizer production.
- Offtake:** Similarly on the offtake front, urea accounts for almost ~70% of the country's total fertilizer offtake followed by DAP (~13%). The remaining fertilizers contribute the rest.

Dynamics | Annual

Urea is the most widely used fertilizer in the country, belonging to the nitrogenous category, which accounts for 70-75% of the country's offtake on average.

- **Availability:** Average Urea availability for the past 4 years (FY19 to FY22) stood at ~6.7mln MT. In 1HFY23, Pakistan's annual urea availability was recorded around ~3.5mln MT (FY22: ~7.1mln MT)
- **Production:** Average Urea production for the past 4 years (FY19 to FY22) stood at ~6.2mln MT. In 1HFY23, Pakistan's annual urea production was recorded at ~3.0mln MT. Until Dec-22 Fatima Fertilizer's and Agritech's plants were operationalized on imported RLNG, however, the discontinuation of the supply in Jan-23 may result in a potential urea shortage and the government may need to consider importing urea if production levels are not sufficient to meet offtake.
- **Offtake:** Average Urea offtake for the past 4 years (FY19 to FY22) stood at ~6.2mln MT. In 1HFY23 Pakistan's annual fertilizer offtake was recorded around ~3.3mln MT.
- **Import:** In 1HFY23, Pakistan imported ~0.2mln MT of urea as local production was not sufficient to meet consumption owing to gas shortages as indigenous gas was curtailed to meet domestic consumption which has resulted rendered local sources incapable of meeting consumption requirements.
- **Closing Inventory:** As at End-Dec'22, closing inventory of urea was recorded at ~0.2mln MT. Relative to a historical closing stock level of ~0.4mln MT (FY19-FY22), the present inventory levels (1HFY23) are inadequate to meet the offtake levels for the ongoing Rabi season. This indicates that, moving forward, the government will need to either consider importing urea or resuming gas supply to offset the risk of a shortage of urea.

Urea Annual Position (in 000 MT)					
	FY19	FY20	FY21	FY22	1HFY23
Opening Inventory	168	240	515	550	386
Production	5,933	6,176	6,301	6,426	2,954
Imports	109	113	0	101	171
Availability	6,211	6,530	6,817	7,077	3,511
Less					
Offtake	5,970	6,014	6,267	6,691	3,275
Exports	0	0	0	0	0
Closing Inventory	240	515	550	386	236

Price Dynamics

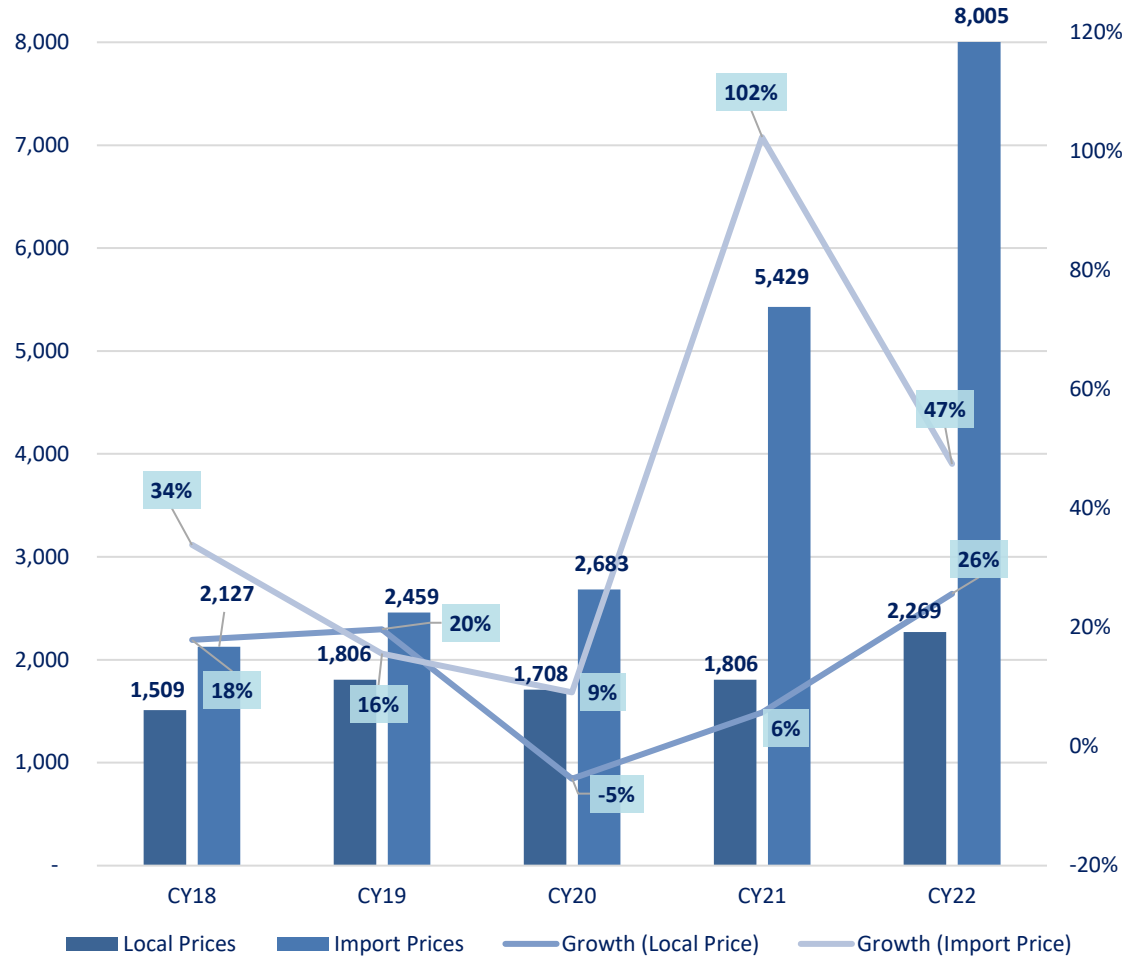
- **Local Prices:** Local urea prices are a function of three major components (i) Gas price (ii) GIDC impact and (iii) Sales Tax Allowance. While changes in gas prices are a full pass through element, the GIDC cost is partially passed through and partially absorbed by the fertilizer manufacturers. Similarly, a change in Input Tax allowance impacts the price of urea per bag.
- Local Urea prices operate at a discount to the international urea price. The delta between international and local urea price stood at ~253% in CY22 (CY21: ~201%).
- In CY22, the local urea price reached around PKR~2,269/bag (CY21: PKR~1,806/bag), with a YoY growth of ~26%. Meanwhile, the imported urea price clocked in around PKR~8,005/bag (CY21: PKR~5,429/bag), with a sharp YoY rise of ~47%. Rising input costs and energy costs contributed to the increase in domestic urea prices while import price increased i) due to global factors, as outlined below, and ii) the depreciation of the PKR against the USD in CY22 of ~27.4%.
- In CY22, the average international urea price reached to USD~700/MT (CY21: USD~487/MT), reflecting an increase of ~44%. International prices have risen owing to i) rising input cost and ii) sanctions & export restrictions. From CY23 onwards, fertilizer prices are expected to ease owing to lower demand and supply concerns.
- **i) Input costs:** rising natural gas prices in Europe led to production cuts in ammonia, a key input for nitrogen-based fertilizers. In addition, soaring coal prices – an important feedstock for ammonia production in the country forced factories to cut down urea production leading to an increase in urea prices. Higher prices of sulphur ammonia have driven up phosphate fertilizer prices.
- **ii) Export restrictions:** Fertilizer prices also rose due to the Russian Ukraine-War, which reflected disruptions in Black Sea trading routes, and suspension of the export of fertilizer by China, from June-22, to ensure domestic availability.



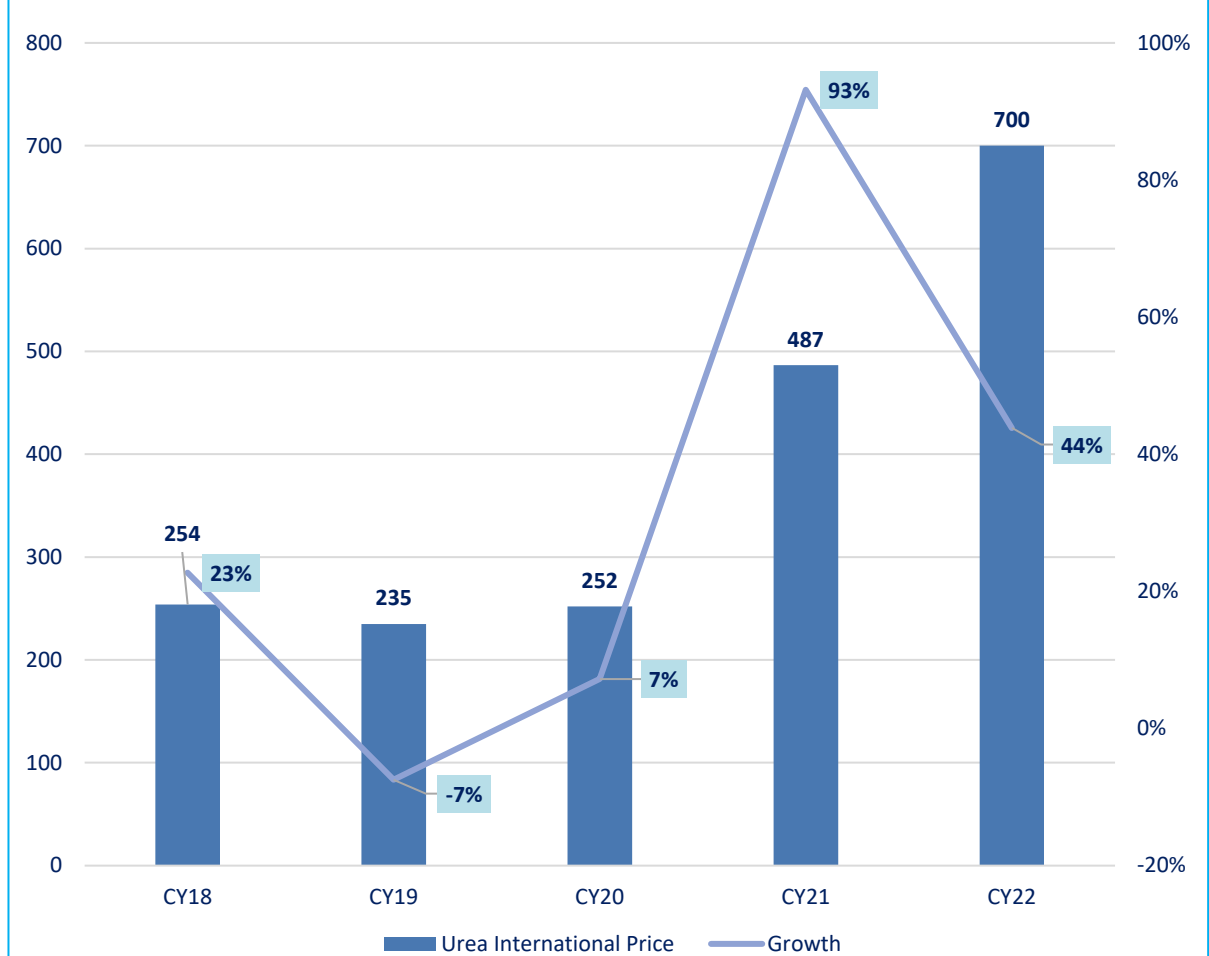
Fertilizers | Urea

Price Dynamics Continued

Urea | Local Vs Import Prices/50KG Bag

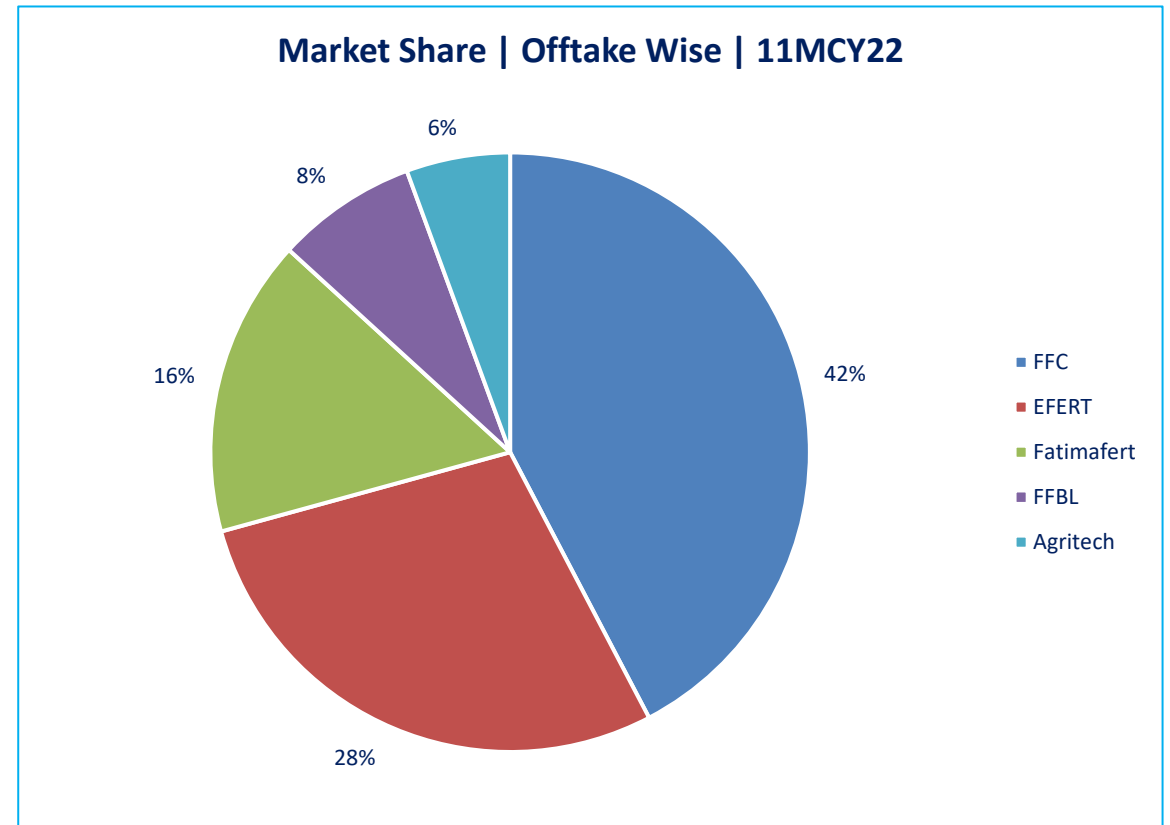
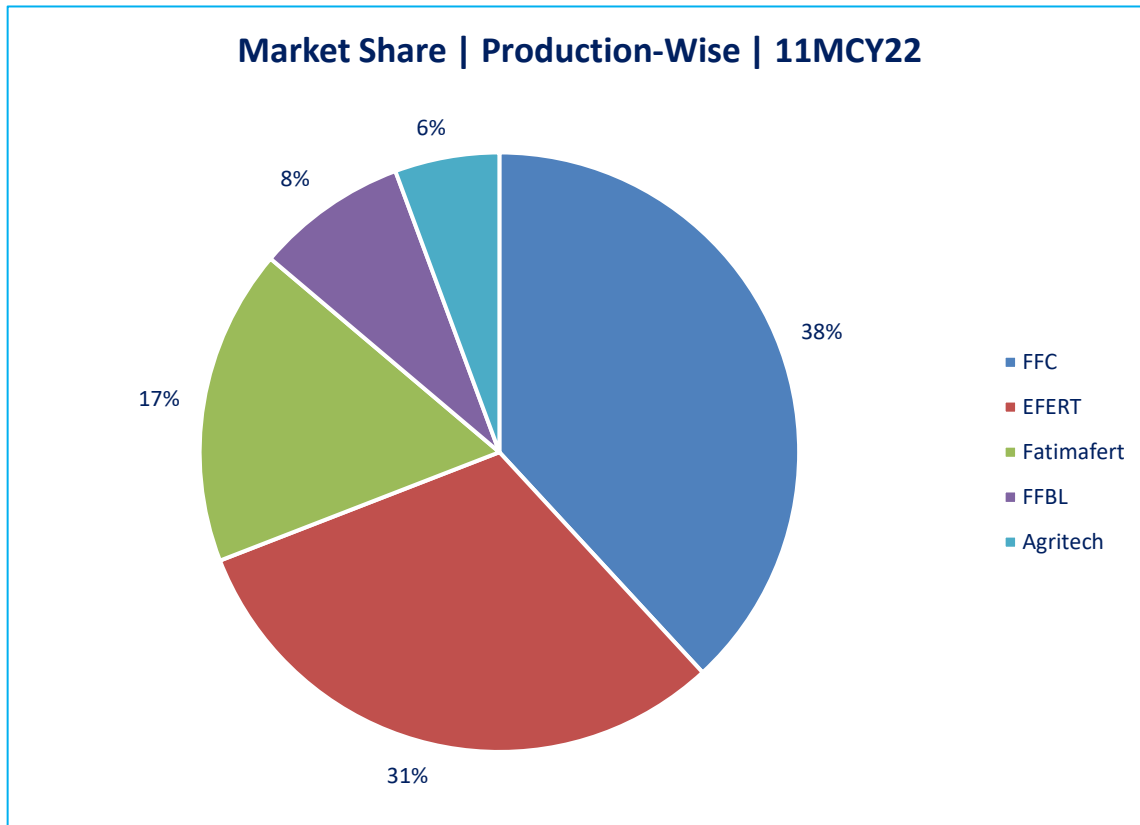


Urea | International Prices | USD/MT



*Estimated Averages based on 11MCY22 Data

Market shares



- FFC leads the market with a share of ~38% in terms of production of Urea. Following it is EFFERT and FFBL, sustaining the 2nd and 3rd position (in production and offtake of Urea respectively).
- FFC Leads the market with a share of ~42% in terms of offtake of Urea. Following it is EFERT and Fatima Fertilizers, sustaining the 2nd and 3rd position.

- The analysis below pertains to figures obtained from the NFDC report.
- Urea is almost equally used in both crop seasons of the country, i.e., Rabi (Oct-Mar) and Kharif (Apr-Sep).
- **Availability:** During the ongoing Rabi season (Oct'22-Mar'23), the availability of urea has fallen short to meet the country's demand. It is to be noted that almost every year, the shortfall in urea supply is met either through imports or supply of RLNG to Fatima and Agritech's plants, when capacity on system gas is not sufficient. In Nov-22, the Economic Coordination Committee (ECC) approved to continue providing RLNG at a subsidized rate to Fatima Fertilizer and Agritech Ltd from Oct'22 to Dec'22. However, effective January 3, 2023 the ECC has decided that RLNG supply to the two plants will be discontinued and will not be continued until further notice.
- Whether gas curtailment will hamper production activities and threaten closing inventory balances will become apparent as the ongoing Rabi season progresses.
- As discussed earlier in the report, Pakistan has imported ~0.2mln MT of urea owing to local production being incapable of meeting consumption requirements. In this light, the availability of urea will need to be checked for the ongoing Rabi season.

Urea Position (000 MT)	Kharif (Apr - Sep) 2021	Rabi (Oct - Mar) 2021-22	Kharif (Apr - Sep) 2022	*Rabi (Oct - Mar) 2022-23
Opening Inventory	298	116	199	294
Imports	0	100	103	296
Production	3,016	3,309	3,158	2,880
Availability	3,404	3,525	3,460	3,470
Offtake/ Demand	3,258	3,320	3,137	3,322
Write off/on	-30	-6	-29	14
Closing Inventory	116	199	294	163

*Data for Dec-22 and Jan-March-23 is based on NFDC estimates

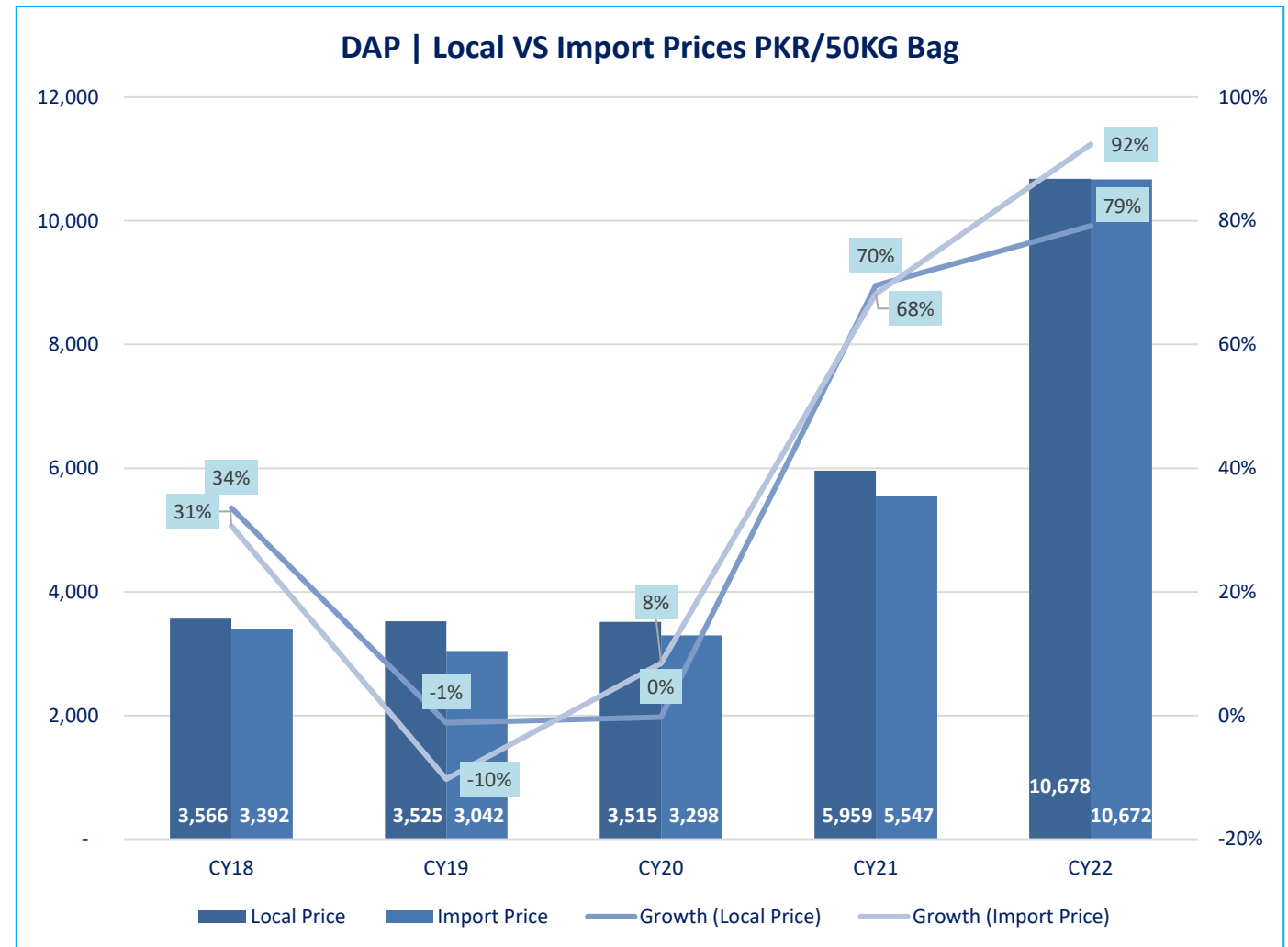
Dynamics | Annual

DAP belongs to the phosphorous category of nutrients and is the second most widely used fertilizer in the country following urea. DAP is majorly imported except for Fauji Fertilizer Bin Qasim Limited (FFBL) which is the only local producer of DAP.

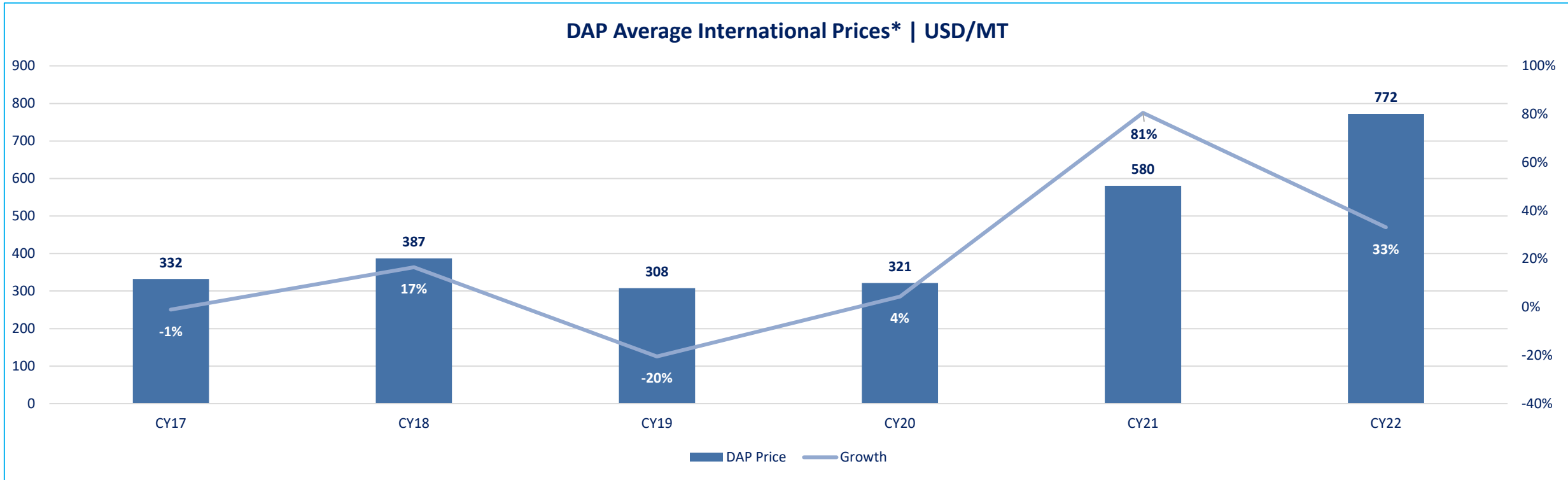
- **Availability:** Average DAP availability for the past 4 years (FY19 to FY22) stood at ~2.6mln MT. In 1HFY23, Pakistan’s DAP availability was recorded around ~1.3mln MT.
- **Production:** Average DAP production for the past 4 years (FY19 to FY22) stood at ~0.8mln MT. In 1HFY23, Pakistan’s annual fertilizer production stood at ~0.4mln MT. FFBL achieved its highest ever DAP production in a nine-month period (9MCY22), which reflects an increase of ~17% from the SPLY.
- **Imports:** Average DAP imports for the past 4 years (FY19 to FY22) stood at ~1.3mln MT. In 1HFY23, Pakistan’s annual DAP imports stood at ~0.4mln MT. ~53% of the national DAP requirements are met by imports. International DAP supply was limited due to export restrictions from China, which accounts for ~30% of world exports, causing a severe international price hike. Furthermore, devaluation of the PKR to USD reduced DAP imports from FY21 to FY22 by ~30%.
- **Offtake:** Average DAP offtake for the past 4 years (FY19 to FY22) stood at ~2.1mln MT. In 1HFY23, DAP offtake was recorded at ~0.6mln MT (FY22: ~1.9mln MT). There was a decrease in offtake which was due to a delay in the announcement of the Kissan Package by the Government of Pakistan; and high international prices which increased the DAP import price. Moving forward in CY23, international DAP prices have started declining as the worldwide demand pressures have eased.

DAP Annual Position (in 000 MT)					
	FY19	FY20	FY21	FY22	1HY23*
Opening Inventory	406	492	518	561	584
Production	783	737	789	897	441
Imports	1,504	1,273	1,420	989	350
Availability	2,692	2,502	2,728	2,446	1,375
Less					
Sales	2,200	1,984	2,167	1,863	636
Closing Inventory	492	518	561	584	740

- **Local Prices:** As DAP is majorly imported, changes in International prices exert a direct impact on the local prices.
- In CY22, average local DAP price was estimated around PKR~10,678/bag (CY21: PKR~5,959/bag), with a YoY growth of ~79%. Similarly, Import price of DAP, averaged around PKR~10,672/bag (CY21: PKR~5,547/bag), a YoY increase of ~92%.
- Phosphoric acid is a key input in the manufacture of DAP and is imported by the local industry. Domestic DAP prices have climbed upwards due to an increase in the international price of DAP and PKR devaluation against the USD.
- DAP is one of the most widely used fertilizers following urea. However, its inevitably higher prices result in its disproportionate application by farmers. Unlike urea, the locally produced DAP traditionally sells at a higher price than the imported DAP. This is majorly because of the high cost of raw material for DAP and exchange rate fluctuations. This historical difference has almost entirely been eliminated in CY22 wherein the delta between the imported and local price of DAP reduced to ~0.1% from ~7% in CY21. As discussed in the next slide, DAP prices have eased in the international market.

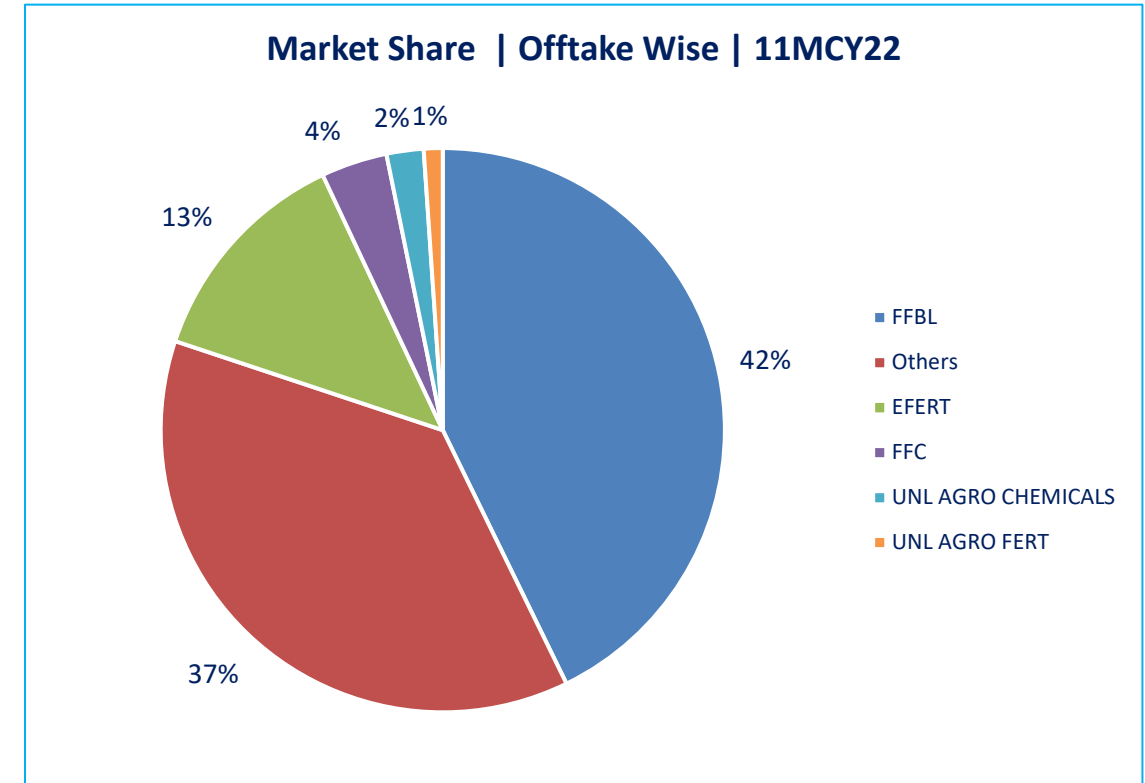
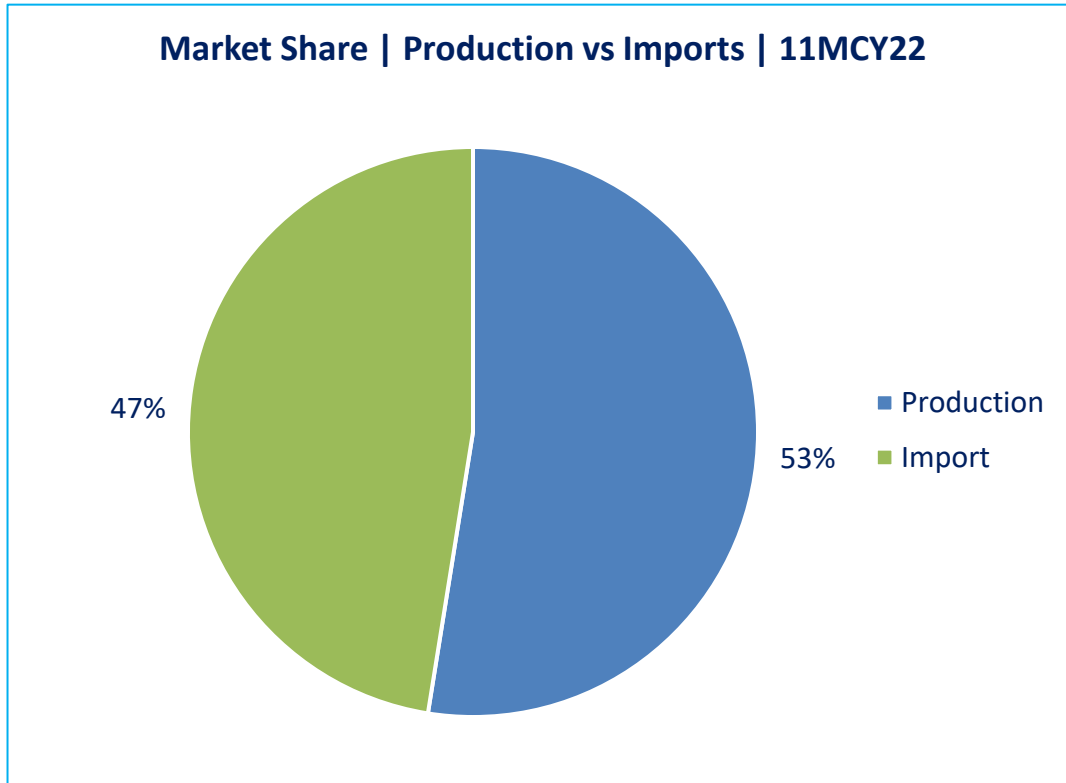


*Estimated Averages based on 11MCY22 Data



- International Prices:** In CY22, average International DAP price was estimated around USD~772/MT (CY21: USD~580/MT), recording an increase of ~33% YoY. As mentioned earlier in the report, export restrictions from China which commenced in 1HCY21 and were extended until the end of CY22 in an effort to maintain domestic availability, resulted in a ~50% YoY decline in exports from China during the 10MCY22 period. This resulted in a spike in DAP prices.
- In January-23 the international DAP price has eased to USD 631/MT as farmers cut back their fertilizer field applications owing to affordability and availability issues. However, prices continue to remain at historically elevated levels.

Market shares



- DAP is majorly imported except by Fauji Fertilizer Bin Qasim Limited (FFBL) which is the only local producer of DAP.
- In term of offtake, FFBL leads the market with a share of ~42%. Following it is EFERT and FFC sustaining the 2nd position (in terms of offtake of DAP).

The analysis below pertains to figures obtained from the NFDC report.

- **Availability:** The estimated DAP availability for (Oct'22-Mar'23) is ~1.1mln MT, which is sufficient to meet the demand for the on-going Rabi season.
- The closing inventory of DAP at the end of on-going Rabi season (Mar'23) is estimated around ~0.4mln MT, lower than the previous Rabi season. This is majorly on account of higher estimated offtake and lower estimated production.
- DAP Imports during the on-going season are estimated to be around ~0.3mln MT (Apr-Sep'22 : ~0.2mln MT), marking a ~58% increase from the previous Kharif season; a reason for this estimated change is lower estimated production and higher offtake which cannot be met by available domestic DAP supplies .
- **Offtake:** The offtake of DAP for the on-going Rabi season is expected to be around ~0.8mln MT leaving inventory levels of ~0.4mln MT. However, considering the exorbitant price of DAP, the offtake may reduce going forward as farmers reduce their consumption levels.

DAP Position ('000' MT)	Kharif (Apr - Sep) 2021	Rabi (Oct - Mar) 2021-22	Kharif (Apr - Sep) 2022	*Rabi (Oct - Mar) 2022-23
Opening Stock	55	352	275	459
Imports	733	394	185	292
Production	444	448	451	394
Total Availability	1,232	1,194	911	1,145
Offtake	889	927	490	738
Write off/on	9	8	38	0
Closing Inventory	352	275	459	407



Demand Supply Gap:

Despite achieving self-sufficiency in production capacity of urea, a shortage of indigenous gas creates a demand supply gap time and again which results in either the need to import urea at higher prices or use imported LNG to meet urea demand (Fatima & Agritech).



GIDC:

The fertilizer sector was subject to GIDC of PKR~300 per mmbtu for feed gas and PKR~150 per mmbtu for fuel gas prior to Jan'20. In CY20, the government reduced the GIDC rate from PKR~400/bag to PKR~5/bag which led to a reduction in urea prices. However, as per the Order of supreme court, manufacturers are now liable to settle the outstanding GIDC payable as at 31st July, 20 (Discussed in detail later)



Increased Input Costs – Gas Prices

The key input raw material for urea production is natural gas, which is used both as fuel and feed stock. Any increase in gas prices is fully passed on by the manufacturers.



Super Tax and Sales Tax Refund Resolution

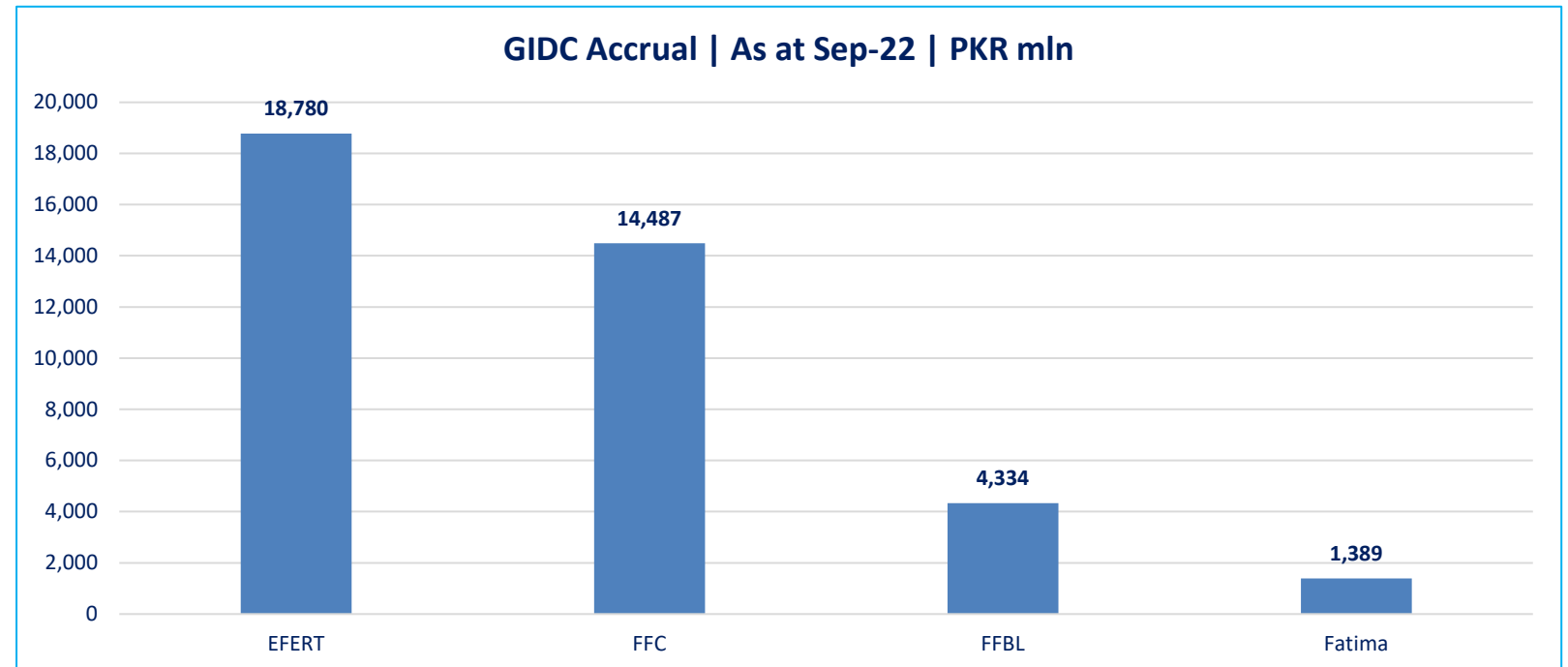
In the Finance Act 2022, 10% super tax was imposed for FY22 and 4% for the financial year FY23 and onwards. In addition, the government has exempted fertilizers from the levy of sales tax with effect from July 1, 2022. Consequently, output sales tax has been removed from pricing while input tax on gas and other purchase by manufacturers is no longer claimable and charged to cost. The latter exemption measure has been undertaken to address the issue of rising sales tax refunds.

Fertilizers

Business Risk | GIDC & Gas Rates

- Fertilizer Industry uses gas as both feed stock and fuel (for electricity generation, steam).
- Under Fertilizer Policy, 2001, Engro and Fatima fertilizer were granted gas on concessionary rates for feed stock for a period of twenty years., which ended in July 2021.
- Following the expiry of the concessionary gas sale agreement (on Jun-21 for Engro Fertilizers and Jul-20 for Fatima Fertilizer), the government has revised the gas sale price at PKR~302/mmbtu.

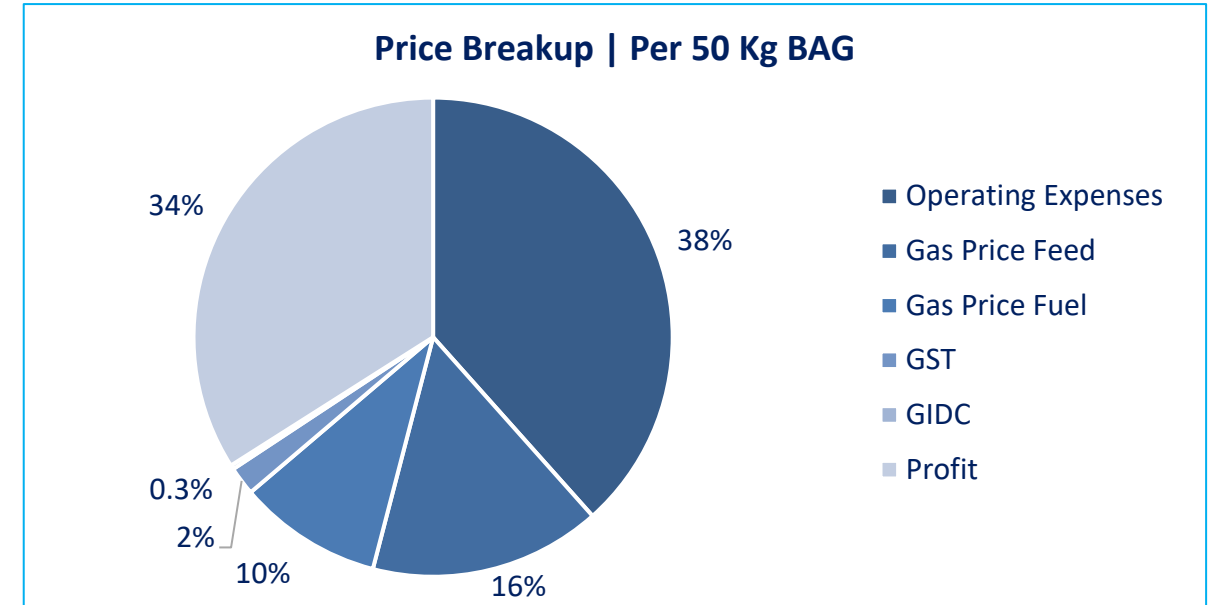
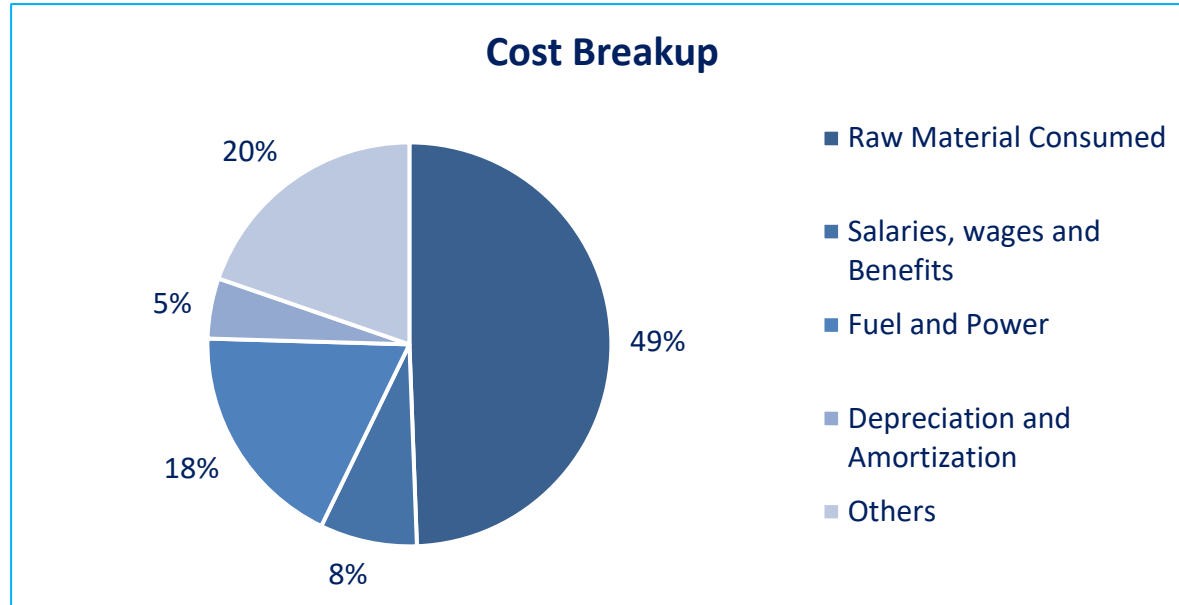
<i>(in mmbtu)</i>		FY23	FY22	FY23	FY22
Supply Network	Company	Feed stock		Fuel Stock	
SNGPL	Engro Fertilizers	PKR 302	PKR 302	PKR 1,023	PKR 1,023
Mari	Fatima Fertilizers Company Limited	PKR 302	PKR 302	PKR 1,023	PKR 1,023
Mari	Fauji Fertilizer Company Limited	PKR 302	PKR 300	PKR 1,023	PKR 986.65
SNGPL	Pak Arab Fertilizer	PKR 302	PKR 302	PKR 1,023	PKR 1,023
SSGC	Fauji Fertilizer Bin Qasim Company Limited	PKR 300	PKR 300	PKR 986.65	PKR 986.65



*Estimated

Fertilizers

Business Risk | Price and Cost Structure

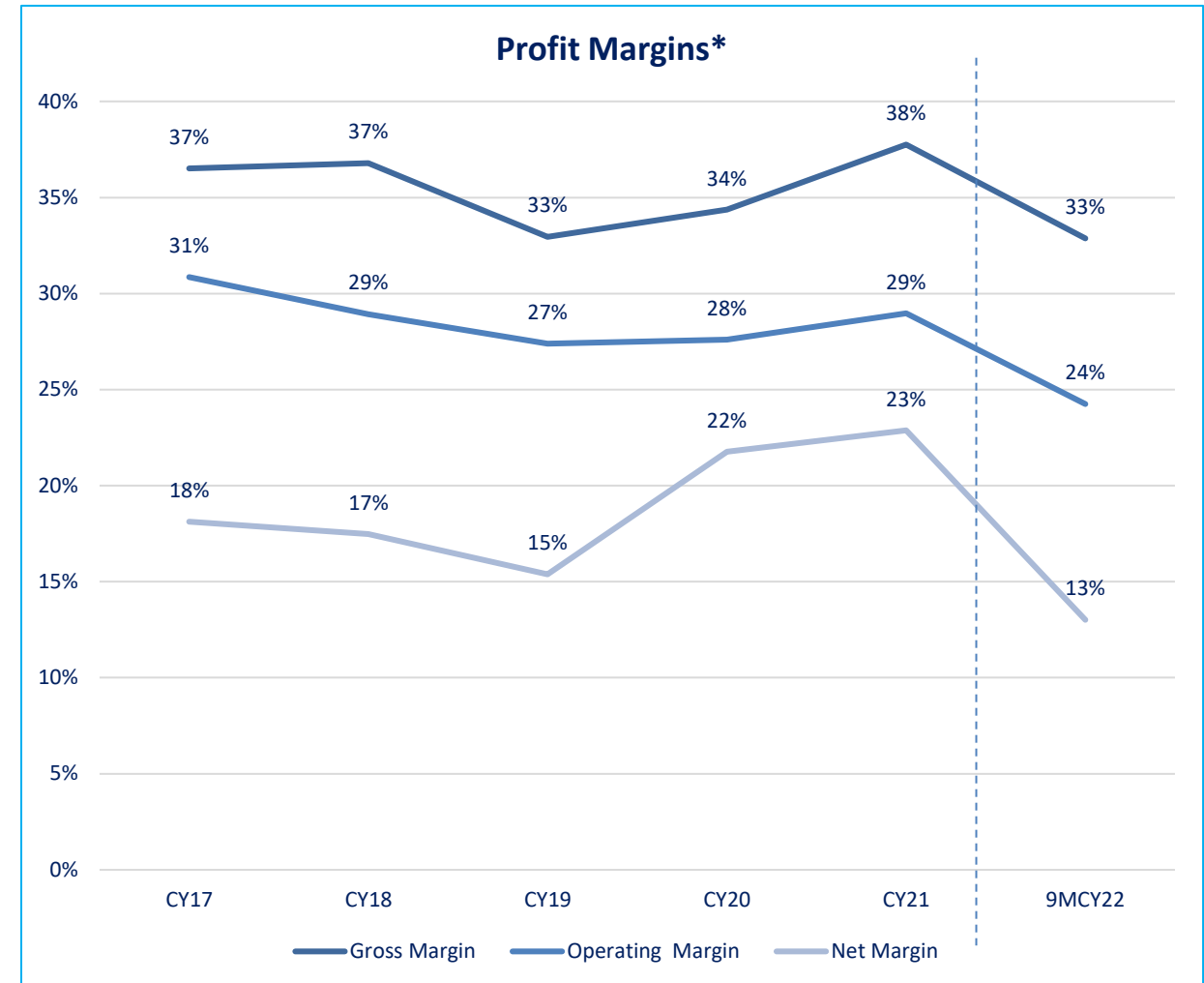


- **Cost Breakup:** The largest contributor to the industry’s direct cost is raw material (majorly natural gas) with a share of ~49%. Meanwhile, salaries and wages have a share of ~20% and fuel and power has a share of ~5% in total direct costs.
- The cost of urea manufacturing is a function of three major components (i) gas price (ii) GIDC and (iii) Taxes. While changes in gas prices are a full pass through element, the GIDC cost is partially passed through and partially absorbed by the fertilizer manufacturers. Similarly, a change in Input Tax allowance directly impacts the price of urea per bag.
- Pakistan’s natural gas reserves are depleting and this, at present, is the most significant business risk faced by the sector which relies heavily on the energy source to not only meet energy requirements but also as feedstock.

**Conversions Used for estimations of Cost Breakup of 50 KG bag of Urea

Business Risk | Margins

- While the sector’s five year average margins have demonstrated a rising trend with gross margins averaging above ~36% in the last five years (CY17-21), all three margins declined in the 9MCY22 period.
- During the 9MCY22, the sector’s gross margins declined to ~33% (CY21: ~38%) with an increase in the cost of imported raw materials due to i) global political and trade factors and ii) local currency devaluation. In addition, the cessation of 10-year concessional gas tariff rate agreements between the Government of Pakistan and i) EFERT and ii) Fatima Fertilizer increased feed stock rates for these two large-sized sector players.
- The average operating margins in the CY17 – CY21 period hovered around ~29%. In the 9MCY22 period, the operating margins declined to ~24% (CY21: ~29%), owing to higher administrative and general expenses and selling and marketing expenses which increased by ~43% and ~33%, respectively, on a pro-rated basis.
- The average 5-year historical net margins stood at ~19% (CY17-CY21). The sector’s bottom line took the most drastic impact declining to ~13% from a CY21 level of ~23%. A significant contributing factor is the imposition of a one-time 10% super tax in FY22 on selected sectors, including fertilizers. On a pro-rated basis, taxation expenses for the sector increased by ~178% between CY21 and CY22.
- On the contrary, one sector player reported net profit margin growth from CY21 and this was due to an increase in other income arising from conversion of investment gains denominated in foreign currency terms back to local currency, thereby benefiting from the devalued rupee.

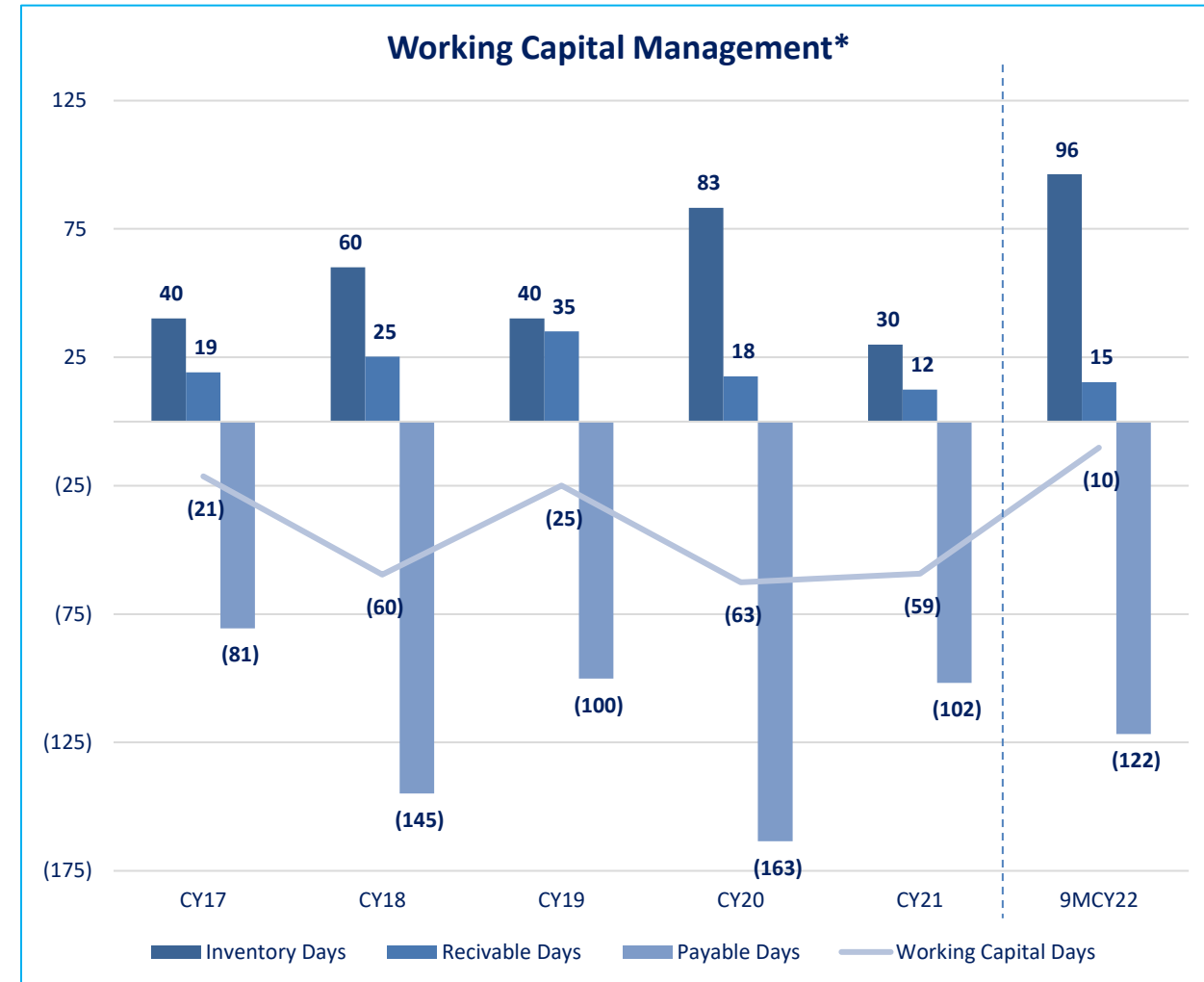


*Financials of four major players EFFERT, FFC, FFBL & FATIMA has been used

Fertilizers

Working Capital Management

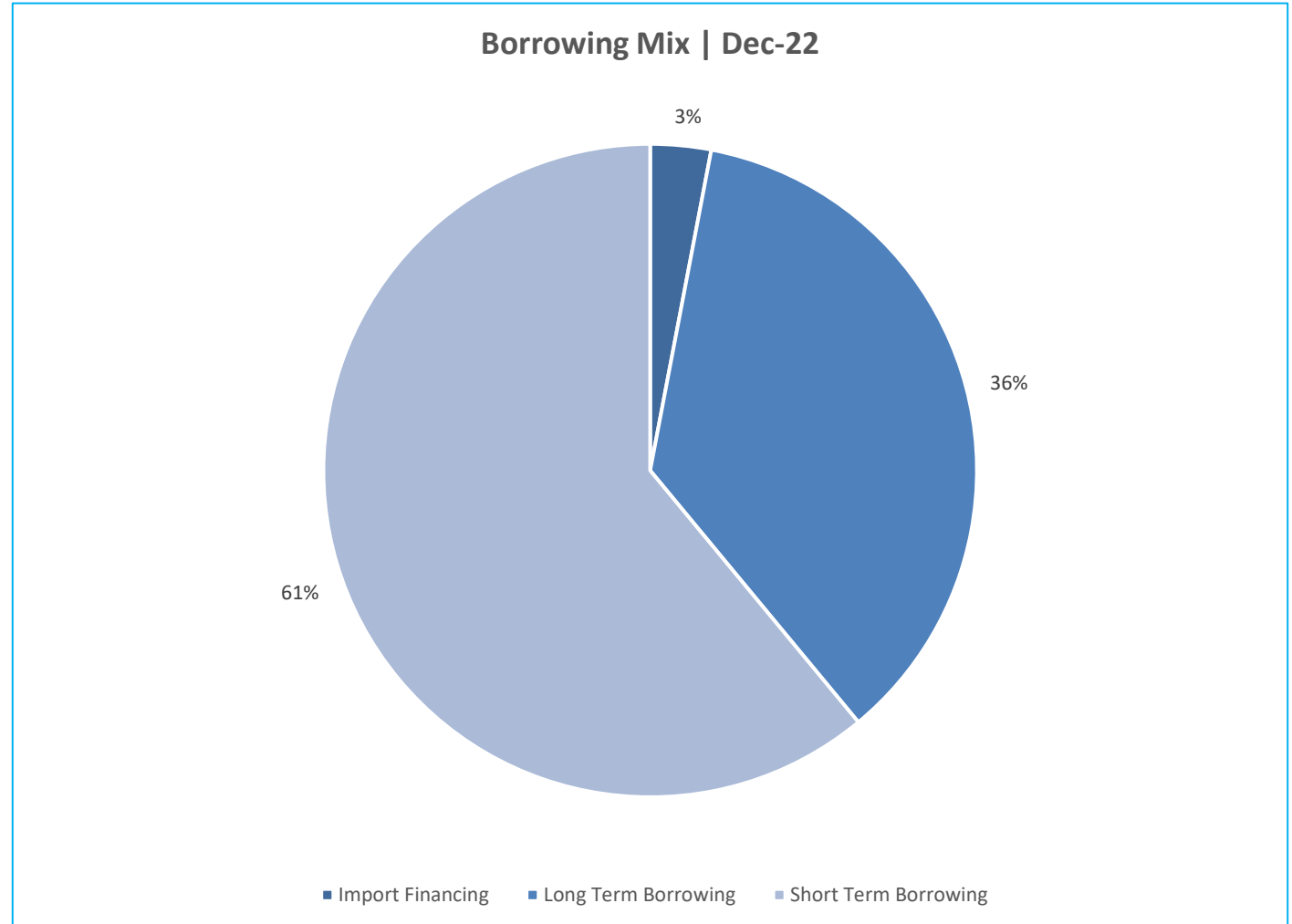
- The working capital requirements of the fertilizers sector are majorly financed through internal cashflows.
- The Sector's major raw material is natural gas, while sales on the other hand, are made through the middle-men dealer agents. Average receivable cycle from the dealers remains around ~22 days (CY17-CY21). Meanwhile, average payable days to the gas suppliers are around 118 (CY17-CY21). Manufacturers' inventory levels at End-Dec are generally reflective of the Rabi-season requirements and cover a period of almost two months ahead.
- The larger room available from suppliers to the fertilizer manufacturers as against a short cash conversion period from the dealers results in a negative working capital cycle for the sector. This also reflects that sufficient room exists for the manufacturers to manage their working capital flow.



*Financials of four major players EFFERT, FFC, FFBL & FATIMA has been used

Borrowing Mix

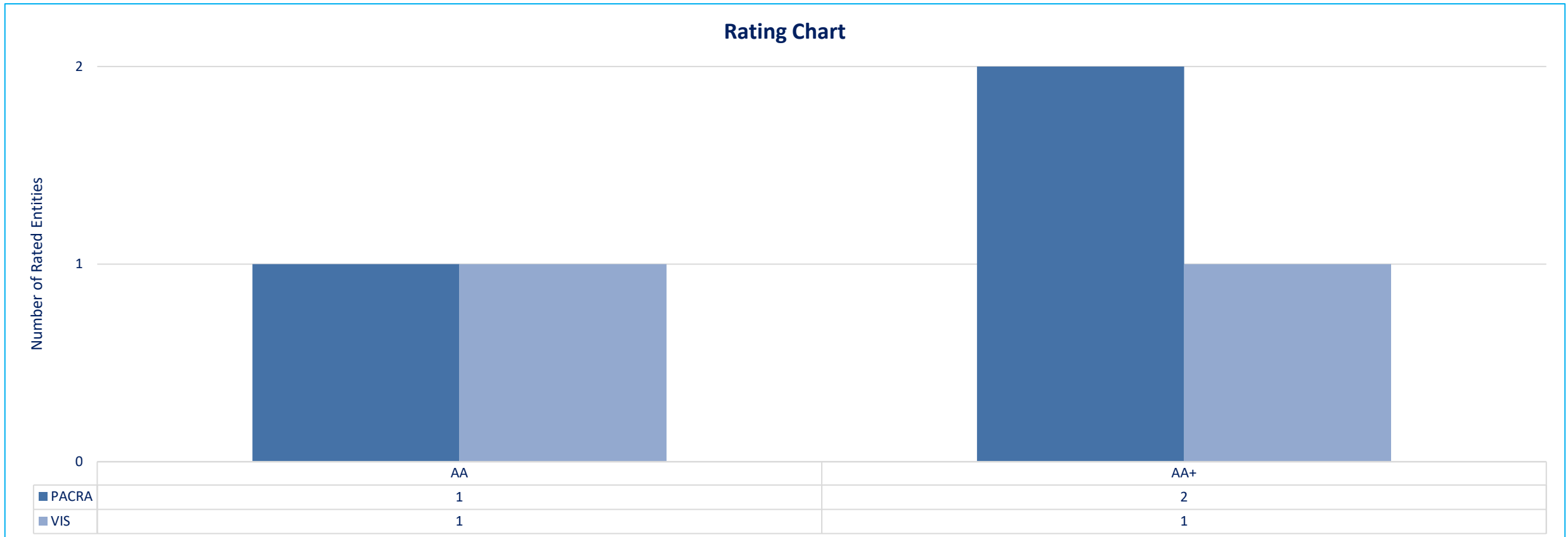
- The total borrowing for the sector as at End-Dec'22 stood at PKR~205,599mln as compared to PKR~159,175mln as at Dec'21, with a YoY increase of ~29%.
- The largest component of the debt mix is Short Term Borrowings (STBs) amounting to ~61% of the total borrowing, while the portion of Long Term Borrowings (LTBs) is ~36%.
- On the other hand, LTFF comprised ~3% of total sector borrowings as at End-Dec'22.
- The sector can be characterized as moderately leveraged – in the historical five year period (CY17-CY21), debt to equity ratio of the sector was around ~42%, and has remained relatively constant in CY22 at ~43% (CY21: ~35%).
- The average interest cover of the sector is recorded around ~12 times (CY17-CY21). In CY22, interest coverage fell to ~6 times (CY21: ~38 times).



Fertilizers

Rating Curve

- PACRA rates 3 clients in the fertilizer sector.
- Rating bandwidth of the sector ranges from AA to AA+.
- The total market capitalization of the fertilizers sector was PKR~318bln as at January 30, 2023.



Fertilizers

Porters 5 Forces Model

POTENTIAL NEW ENTRY



- Low threat to Entry
- High Capital cost of plant development
- Limited supply of major raw material
- Shortage of Natural Gas
- Strong dealer network

BUYERS



- Low power
- Prices mainly decided by large players

SUBSTITUTES

- No/Low threat of substitutes
- Crucial nutrient

SUPPLIERS



- Medium power
- Many raw materials imported
- Strategic partnership with local suppliers
- No control over gas supply

COMPETITIVE RIVALRY



- Low
- Top 5 players make ~95% of the sector
- Large player enjoys economies of scale

Fertilizers

SWOT Analysis

- Availability of land and raw material
- Low cost skilled and unskilled labor
- Capital intensive sector
- GOP subsidy support
- Demand Potential
- Strong dealership and distribution network
- Diversified portfolio (Urea, DAP, CAN)
- Producing more than 100% of the installed capacity.

- Uncertain government policies
- PKR devaluation leading to increased costs
- Import of Urea and other fertilizers
- Shortage of Gas, especially in winters
- Fuel price hike
- Challenging farm economies



- Reliance on depleting natural resources
- DAP- price elastic product
- Gas supply and international price dependency
- GIDC Challenge
- Dependency upon irrigation facilities and rainfall
- Lack of knowledge of farmers

- Growing population and food consumption
- Agriculture based economy
- Government support programs for farmers
- Alignment of gas pricing to fertilizer policy
- Pakistan GDP recovery and reduced finance costs
- leading to opportunities for investment
- Development of value chains
- Capacity of horizontal & vertical integration
- Reduced corporate tax rates

Outlook: Stable

- The fertilizer sector is an essential contributor towards the agriculture sector of Pakistan's economy, contributing ~3.9% to the large-scale manufacturing (LSM) sector and ~0.5% to the overall GDP.
- The fertilizer sector is uniquely positioned: sitting at the crossroads between the agriculture and energy sectors, any disruption in either of the latter two sectors has a materially detrimental impact on the former and on our national food supply levels. This is why natural gas supply disruption in Europe led to a 70% curtailment in ammonia production – a vital input to nitrogen fertilizers - in CY22. This coupled with trade sanctions, an ongoing Russian-Ukraine conflict, and Chinese export restrictions had pushed international DAP prices to historically high peaks in CY22. Consequently, a ~192% increase in imported DAP prices in CY22 (from PKR~5,547 in CY21 to PKR~10,672 in CY22 for a 50KG bag) has forced farmers to substitute this vital nutrient with others.
- Despite FFBL generating ~17% higher production in the 9MCY22 period compared to the SPLY, local offtake in the current Rabi season has not been adequate owing to higher local prices which increased by ~79% between CY21 and CY22, rendering the nutrient unaffordable for farmers.
- The production of urea, the most majorly produced nutrient in Pakistan (accounting for 70-75% of annual national fertilizer production), has been disrupted by the Government of Pakistan's (GoP) decision to sever the supply of RLNG to Fatima and Agritech plants from Jan-23, until further notice, in order to meet domestic consumption requirements.
- Standing in the middle of the FY23 Rabi season, the GoP will need to make an urgent decision which involves either importing urea or resuming supply of RLNG. However, either of the two decisions has unfavorable cost consequences as international urea prices, like DAP, are at an all-time high and grew by ~47% in CY22 from the SPLY to PKR~8,005/50KG bag (CY21: PKR 5,429/50KG bag). This will mean the country will need to import costly urea at a significantly depreciated PKR rate using forex reserves which are already in a depleted state. On the contrary, owing to depleted natural gas reserves, relatively costly RLNG is the only option to meet the sector's energy needs for urea production if the government chooses not to import urea. Moving forward, if a decision is not taken soon enough, Pakistan runs the risk of running short of urea supply which is presently in demand for the Rabi crops being sown.
- The 9MCY22 period has proven to be a difficult year for fertilizer manufacturers which have been forced to battle a wide range of issues beginning with high fuel and feed stock rates; to the imposition of a blanket 10% super tax on the fertilizer sector; and finally, an increase in imported raw material costs owing to currency devaluation and an increase in international fertilizer prices. However, despite the challenges the sector managed to produce double digit margins demonstrating the sector's resilience. In addition, the sector's working capital management efficiency further indicates financial strength.
- While DAP and urea prices have slowly started easing in Jan-23 to USD~631/MT and USD~444/MT, respectively, they continue to remain above historical average price levels. This coupled with international availability issues and domestic energy supply uncertainty will remain threats which need to be swiftly dealt with in the present Rabi season to avoid a shortage of locally agriculture produce.

Bibliography

- National Fertilizer Development Centre (NFDC)
- Pakistan Economic Survey
- State Bank of Pakistan
- Pakistan Bureau of Statistics
- Companies Financial Statements
- PACRA Internal Database
- World Bank

Research Team	Saniya Tauseef <i>Manager Research</i> saniya.tauseef@pacra.com	Nida Naguib <i>Senior Research Analyst</i> nida.naguib@pacra.com
Contact Number: +92 42 35869504		

DISCLAIMER

PACRA has used due care in preparation of this document. Our information has been obtained from sources we consider to be reliable but its accuracy or completeness is not guaranteed. The information in this document may be copied or otherwise reproduced, in whole or in part, provided the source is duly acknowledged. The presentation should not be relied upon as professional advice.