

# Floods 2022

## Inundated with Economic Woes

29-Aug-2022

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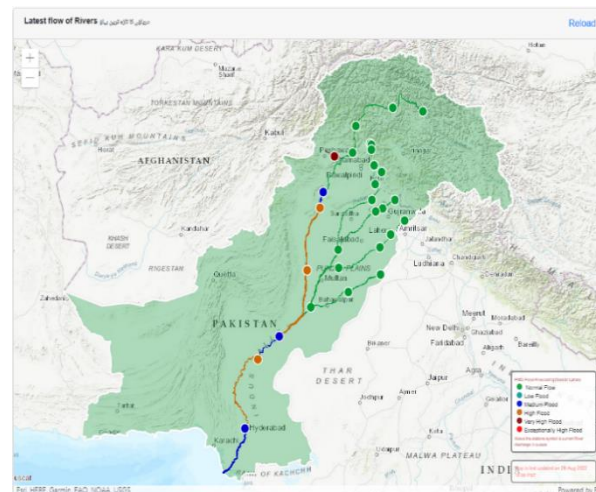
### Economic hit from the calamity

- Pakistan records the worst floods since 2010 with rainfall crossing 390mm this season, which is 3 times higher than the national 30-year average of 135mm.
- Impact of the calamity is expected to last 30-45 days while rehabilitation process would take much longer.
- Estimated impact of loss to the economy is around ~PKR 1.2trn (USD 5.3bn), which is around 1.48% of GDP.
- GDP growth to shrink to 2.49% in FY23 against earlier base case assumption of 2.97%. Rebound expected next year with GDP to settle at 4.4%.
- Current account deficit to grow by USD 1.98bn due to import of food commodities and shrunk exports of textile, rice and sugar given shortage in the country.
- Inflation to witness further pressure this quarter, settle at 19.7% in FY23.
- International donors have pledged North of USD 500mn to date in flood relief.
- KSE companies sales and profitability increased at a 3Y CAGR of 10.2% and 26.3% after 2010, respectively. KSE-100 index return post 2010 floods for 3M, 6M and 12M period was 3%, 22% and 28% respectively.
- Short term demand hit in cement, steel, automobile, OMCs, and fertilizer, however majority of these sector would benefit from rehabilitation process.

### A “National Emergency”

The government officially declared a “national emergency” this week as the ongoing rains have induced floods across Pakistan with an uncanny semblance to the flash-floods witnessed on the eve of the last decade (2010). At a time where the country’s fiscal prowess already remains compromised given the many economic headwinds, this is yet another litmus test of Pakistan’s resilience.

The road that leads us forward remains bumpy though. With the eight cycle of monsoon rains underway, the National Disaster Management Authority (NDMA) reported that Pakistan has received rains of over 167mm in Aug’22 alone, against historic average of just 48mm – a jump of 4x. While since the beginning of monsoon, Pakistan has recorded 390mm of rainfall, which is 3 times higher than the national 30-year average of 135mm. This has been a result of the renegading weather conditions globally, as the country usually only witnesses three to four cycles of monsoon rains. Therefore, it will not be presumptuous to assume that as a country we may find it challenging to deal with a disaster of such magnitude. Negative impact on human lives, agriculture crops, livestock, balance of payments position, inflation, as well as the country’s fiscal health remains undeniable.



### Exhibit: Deaths and Injured

	Deaths		Injured	
	2010	2022	2010	2022
Punjab	110	168	262	105
Sindh	411	349	1,235	1,030
KPK	1,156	242	1,198	307
Balochistan	54	242	104	108
GB	183	17	60	4
AJK	71	42	87	21
Islamabad	-	1	-	-
<b>Total</b>	<b>1,985</b>	<b>1,061</b>	<b>2,946</b>	<b>1,575</b>

Source (s): SUPARCO, NDMA, AHL Research

**Exhibit: Cumulative Flood Report 2022\***

Province / Region	Roads (km)	Bridges	Shops	Houses		Total	Livestock
				Partial Damage	Full Damage		
Punjab	121	12	100	29,730	16,590	46,320	202,593
Sindh	2,328	60	45	596,603	244,120	840,723	15,008
KPK	7	7	-	21,403	21,764	43,167	8,771
Balochistan	1,000	18	-	43,960	17,528	61,488	500,000
GB	2	60	8	257	458	715	-
AJK	-	-	17	185	273	458	772
Islamabad	-	-	-	-	-	-	-
<b>Total</b>	<b>3,458</b>	<b>157</b>	<b>170</b>	<b>692,138</b>	<b>300,733</b>	<b>992,871</b>	<b>727,144</b>

Source (s): NDMA, AHL Research, \*14-Jun-2022 to date

**15% of the population affected**

It has been reported that since mid-June, over 33mn people have been affected in light of the torrential rains, compared to 20mn people affected by the floods in 2010. Reported deaths have already crossed 1,000 whereas nearly 2,000 lives were lost in the last major floods of Pak history (2010). The province of Sindh has been the worst-hit (23 districts have been severely affected), with 349 deaths reported since monsoons began, followed by Baluchistan with 31 districts severely hit (242 deaths), KPK with 9 districts severely impacted (242 deaths) and Punjab with 3 notified severely affected districts (168 deaths). Although the displacement count is uncertain at the moment, many homes have been infiltrated with rain water rendering them uninhabitable. This is a humanitarian crisis that needs immediate attention.

**Exhibit: Flood Loss Comparison**

	Unit	2010	2022
House Destroyed	Thousands	557	301
House Damaged	Thousands	1,608	692
Area of Crop Impacted	Million Acres	5.2	2.0
Deaths	No.	1,985	1,061
Injured	No.	2,946	1,575
Livestock Lost	Thousands	1,256	727

Source (s): SUPARCO, Ministry of Water and Power, AHL Research

**Exhibit: Dams and Reservoirs levels**

Province / Region	Max Conversion levels and storage		Current Level <sup>^</sup>		Remaining	
	Feet	MAF*	Feet	MAF*	Feet	MAF*
Tarbela	1,550	5.827	1,550	5.827	-	-
Mangla	1,242	7.356	1,183	3.190	58.75	4.166
Chasma	649	0.278	642	-	7.00	0.278

Source (s): NDMA, AHL Research, <sup>^</sup>27-Aug-2022, \*million acre feet

### Loss to the economy expected at USD 5.3bn / PKR 1.2trn (1.48% of GDP)

Our initial assessment suggests that these floods will debilitate the Pak economy with losses estimated at USD 5.3bn / PKR 1.2trn (1.48% of the GDP). The primary hit will be on the loss to the housing sector which is estimated at a mammoth UD 3.0bn (0.83% of the GDP). This will be followed by the destruction of agricultural crops, whereby a material quantum of the cultivated area has been inundated, eroding output and yields this year; we project a cumulative impact of USD 1.8bn / PKR 394bn (0.50% of the GDP). Moreover, loss of transportation and communication (mainly road and bridges damaged) will set back the economy by USD 371mn / PKR 82bn (0.10% of the GDP). Whereas perished livestock will translate to a loss of USD 101mn / PKR 22bn (0.03% of the GDP).

#### Exhibit: Loss Assessment Summary

	Value (PKR mn)	Value (USD mn)	% of GDP
Housing	658,826	2,995	0.84%
Transport and Communication	81,720	371	0.10%
Agriculture	393,712	1,790	0.50%
Livestock	22,317	101	0.03%
<b>Total</b>	<b>1,156,575</b>	<b>5,257</b>	<b>1.48%</b>

Source (s): AHL Research

### Agriculture destruction to shrink Pak GDP growth by 48bps

Although official assessment remains uncertain, we believe 80,000 to 100,000 Sq kms in area has been affected in contrast to 150,000+ Sq kms of area being destroyed in 2010 as per the Space & Upper Atmosphere Research Commission of Pakistan (SUPARCO). 72 major cities/districts that have been swept away by the unprecedented rains.

Whereas a notable chunk of the crop area has also been declared calamity hit; nearly 3.4% of the total crop area has been damaged thus far i.e. 2 million acres out of the total cultivated area of 59.50mn acres vis-à-vis 5.2mn acres (8.8%) of the total crop area in 2010 which was 58.96mn acres. This is a key cause of concern as agriculture contributes close to 19% to the GDP of Pakistan, employing nearly 42% of the workforce.

#### Exhibit: Agriculture Sector Growth

	FY10	FY11	FY12	FY13	FY14
Important Crops	-3.7%	1.5%	7.9%	0.2%	7.2%
Other Crops	-7.2%	2.3%	-7.5%	5.6%	-5.7%
Cotton Ginning	7.3%	-8.5%	13.8%	-2.9%	-1.3%
Livestock	3.8%	3.4%	4.0%	3.4%	2.5%
Forestry	-0.1%	4.8%	1.8%	6.6%	1.9%
Fishing	1.4%	-15.2%	3.8%	0.7%	1.0%
<b>Agriculture Sector</b>	<b>0.2%</b>	<b>2.0%</b>	<b>3.6%</b>	<b>2.7%</b>	<b>2.5%</b>

Source (s): SBP, AHL Research

Pertinently, Pakistan has two cropping seasons: Kharif and Rabi. Sowing of the Kharif season commences in April / June and is harvested in October / December and its main crops include rice, sugarcane, cotton, maize, moong, mash, bajra and jowar. Whereas sowing of the Rabi season begins from October / December and is harvested somewhere in April / May. It comprises mainly of wheat, gram, lentil (masoor), tobacco, rapeseed, barley and mustard.

### Assessment of major crops destruction

With key crops that have been destroyed this year including sugar cane, cotton, and rice, we flag a key downside risk to the country's growth. To recall, we produced 88.6mn tons of sugar cane last year over 1,100k hectares of land. We have assumed 10% (8.8mn tons) of this has been destroyed in the latest floods.

In addition, our annual cotton crop arrived at 8.3mn bales last year. It is cultivated over 15% of the total devoted crop area (+2,500 hectares). Taking a cue from the 2010 floods whereby a similar district-wise destruction has been assumed, we believe 7% (0.745mn bales) of the cotton crop is expected to be ruined in FY23 compared to 10% in FY11 (larger area was cultivated then).

### Exhibit: Cotton Arrivals in Factories of Pakistan

(000 bales)	2022	2023E	YoY	(000 bales)	2022	2023E	YoY
Multan	72	80	11%	Hyderabad	151	123	-19.0%
Lodhran	88	115	31%	Tharparkar	79	83	5.1%
Khanewal	230	249	8%	Sanghar	1,319	1,124	-14.8%
Muzaffar Garh	116	73	-37%	Nawabshah	189	177	-5.9%
Dera Ghazi Khan	321	300	-7%	Naushero Feroz	308	264	-14.3%
Rajapur	97	43	-56%	Khairpur	346	335	-3.1%
Layyah	192	183	-4%	Ghotki	307	236	-23.2%
Vehari	103	97	-5%	SUKKUR	540	432	-20.0%
Sahiwal	160	164	3%	Dadu	54	54	-0.3%
Pakpattan	4	4	4%	Jamshoro	69	69	0.0%
Okara	-	-	nm	Bedeem	4	4	0.0%
Qasur	5	1	-80%	Balochistan	146	-	-100.0%
Toba Tek Singh	68	58	-15%	<b>Sindh Total</b>	<b>3,512</b>	<b>2,901</b>	<b>-17.1%</b>
Faisalabad	21	17	-19%				
Jhang	6	6	-12%	<b>Pakistan Total</b>	<b>7,410</b>	<b>6,665</b>	<b>-10.1%</b>
Mianwali	94	212	126%				
Bhakkar	17	20	19%				
Sargodha	-	-	nm				
Rahim Yar Khan	666	558	-16%				
Bahawalpur	523	521	0%				
Bahawalnagar	1,116	1,064	-5%				
<b>Punjab Total</b>	<b>3,898</b>	<b>3,764</b>	<b>-3%</b>				

Source (s): PCGA, AHL Research, Flood devastation district highlighted in red

Lastly, rice, which is the second main staple food after wheat, is cultivated over 3,000k hectares of land to give an estimated 8-9mn tons per annum. This year, around 30% (2.8mn tons) can be estimated as wiped out by the floods.

Therefore, cumulative value of loss of key crops and livestock will settle at USD 1.9bn / PKR 416mn.

#### Exhibit: Expected Loss of Crops and Livestock

	Unit	Quantity	Value (PKR mn)	Value (USD mn)	% of GDP
Cotton	000 bales	745	86,982	395	0.11%
Sugarcane	000 tons	4,433	27,703	126	0.04%
Rice	000 tons	2,790	279,026	1,268	0.36%
Livestock	000 No.	727	22,317	101	0.03%
<b>Total</b>			<b>416,029</b>	<b>1,891</b>	<b>0.53%</b>

Source (s): OCHA, PBS, MoF, AHL Research

#### Loss of livestock estimated at USD 101mn

Another segment susceptible to the floods, includes livestock, which has a 60% share in agriculture and contributes nearly 11.5% to Pakistan's GDP. After the recent floods, NDMA estimates that approximately 727,144 (0.7mn) livestock have perished in contrast to 1.3mn animals washed away in the 2010 floods. Not only will this deteriorate the livelihood of people in the country, it can potentially worsen food security amid shortage of meat and milk. We estimate our GDP to have an adverse impact of USD 101mn amid loss of livestock.

Therefore, we estimate loss in agriculture (crop and livestock) to erode growth in the segment to just 0.05% from 2.34% previously projected. As a result, a cumulative decline of 48bps (USD 1bn) in GDP may be forecast to 2.49% in FY23 from earlier GDP estimate of 2.97%.

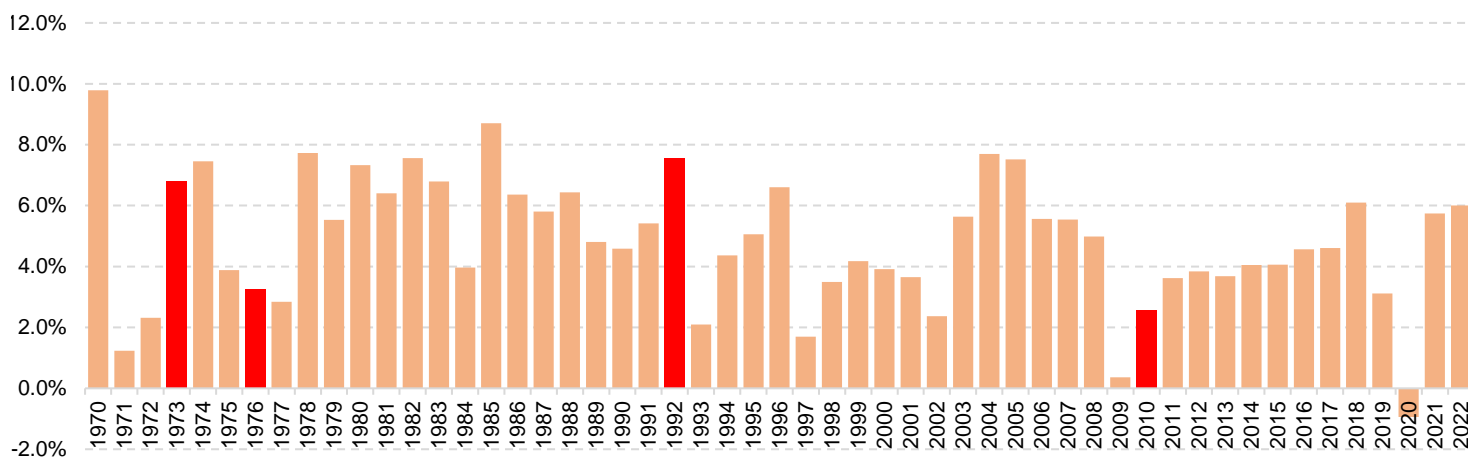
Albeit, the economy may bounce back next year whereby we foresee the GDP to settle at 4.4% in FY24. This will be aided by a rebound in the agriculture sector (mainly output of important crops shows a robust increase in the years following floods) and recovery in the overall economy.

#### Exhibit: Major Crop Production (Pre and Post-Flood)

000 tons	Wheat	Rice	Bajra	Jowar	Maize	Barley	Gram	Sugarcane	Cotton (000 bales)
Avg (FY06-10)	22,575	6,077	271	164	3,332	84	619	52,549	12,452
FY11	25,214	4,823	346	141	3,707	71	496	55,309	11,460
Avg (FY12-15)	24,876	6,460	302	131	4,742	65	420	63,583	12,654

Source (s): Pakistan Economic Survey 2022, AHL Research

Fig: Trend of GDP Growth (Major flood year highlighted in red)



Source (s): Pakistan Economic Survey, AHL Research

### Current account deficit to increase by USD 2.0bn

With a shortage of key crops, food security in the country would come under threat. Therefore, in order to combat the crisis, Pakistan will have to import these, creating pressure on our balance of payments position. As per USDA, sugar production was estimated at 7.2mn tons in FY23 against demand of 6.1mn tons, translating to a surplus of 1.1mn tons. Post floods, with a cut in our sugarcane output, we believe the country will incur an export loss of USD 272mn (443k tons of sugar at a prevailing cost of USD 614/ton). In comparison, an additional USD 390mn was spent on the import of sugar in FY11 (1mn ton vs 0.5mn ton in FY10) as production was much lower.

Moreover, out of the 9mn tons of rice production, only 4.5mn tons is consumed domestically and the remainder is exported. With rice exports being hit (1.4mn tons) we can assume a loss in export revenue of USD 718mn in FY23. In FY11, volumetric decline in rice exports was 12% / 0.5mn tons, translating to USD 28mn.

Finally, we gauge the impact of cotton on our trade balance. We will have to import cotton as it is a key raw material for our textile exports for USD 422mn (162,000 additional tons at USD 2,600/ton imported price – which is an eleven-year high at present). Moreover, we believe textile exports will decline by USD 800mn this year, taking the overall current account deficit to USD 1.98bn.

### Exhibit: Impact on trade balance due to damage of important crops

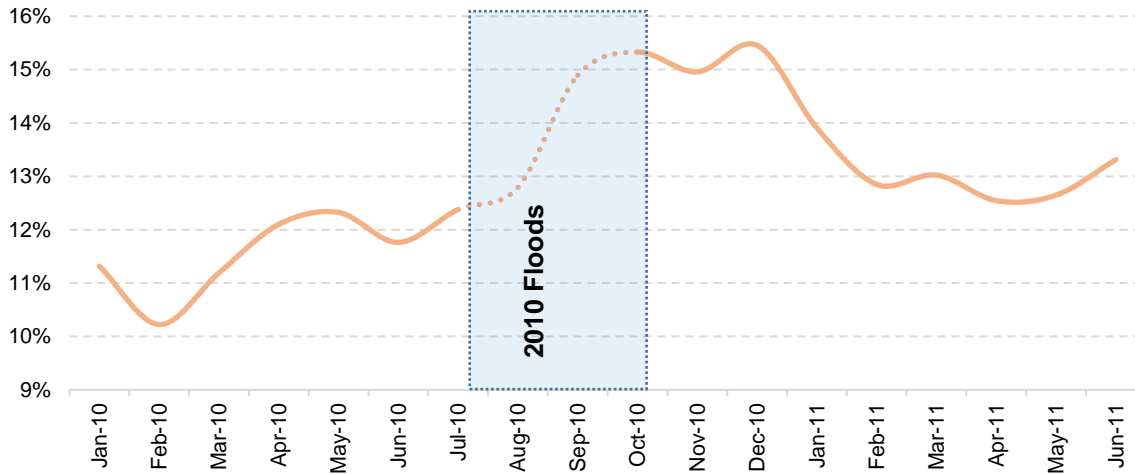
	Unit	Quantity	Price (\$)	Value (USD mn)
<b>Expected increase in Imports</b>				
Cotton	000 tons	162	2,600	422
DAP	000 tons	(250)	738	(238)
<b>Total Imports</b>				<b>184</b>
<b>Expected decline in Exports</b>				
Textile				800
Rice	000 tons	1,395	515	718
Sugar	000 tons	443	614	272
Meat	tons	257	4,424	1
<b>Total Exports</b>				<b>1,792</b>
<b>Total Impact on Balance of Trade</b>				<b>1,976</b>

Source (s): PBS, AHL Research

### CPI could touch 19.7% in FY23 post floods

As risks to crop and food security materialize, we believe inflation, which has already been the bane of our economy this year, may showcase further exacerbation. Meat, rice, vegetables and sugar have a cumulative weight of 20% in our national basket of CPI. Therefore, the shortage of these agri products will cause a spike in prices, which can take our annual average CPI reading for FY23 to 19.7% against our prevailing estimate of 18.6%.

Fig: Trend of CPI



Source (s): SBP, AHL Research

### Fiscal side - Rehabilitation estimated at PKR 741bn

On the fiscal front, the government will have to engage in mass rehabilitation and renovation efforts. With major infrastructure destroyed, people displaced and on the verge of starvation, immediate disbursements will have to be made for temporary rehabilitation and food distribution. We highlight that one of the biggest concerns in particular is the lack of connectivity of the Baluchistan province from the rest of the country, after the latest floods. As per NDMA's situation report, Jun'22 to date over 3,450 kilometers of road, nearly 157 bridges and an estimated 300,000 houses have been destroyed, while close to 700,000 homes have been damaged across the country.

Key communication links and infrastructure destruction (air, road and railway) may need to be fixed in some form immediately so as to send rescue teams to the region. While in the medium term, these problems will have to be addressed more aggressively across Pakistan a lack of transport infrastructure will render a potential delay in rehabilitation efforts and return to normalcy.

Last week though, in order to facilitate those that are suffering, the PM announced that the government has released PKR 5bn for relief already and the family of every deceased will be allocated financial assistance of PKR 1mn. While on an immediate basis, each flood victim family is to be given PKR 25,000 under the Benazir Income Support Program (PKR 80bn allocated for this purpose). This adds up to PKR 86bn in fiscal spending. It is likely that the country's fiscal deficit could witness some pressure this year amid social spending and rehabilitation, potential subsidy for agriculture sector and decline in tax collection amid economic slowdown.

Back in 2010, total damages across the board for agriculture, transportation, housing etc. were estimated at PKR 855bn whereas the government incurred PKR 578bn for reconstruction, as per the National Flood Reconstruction Plan 2010. Our initial estimates suggest that while total loss to the economy will arrive at PKR 1.2trn, reconstruction and rehabilitation costs would be PKR 741bn / USD 3.4bn this year, with majority of the cost incurred for housing, roads and communication.

**Exhibit: Loss Assessment**

	Unit	Quantity	Cost per unit	Total Cost	
				PKR mn	\$ mn
<b>Housing</b>					
Partial Damage Houses	No	692,138	300,000	207,641	944
Fully Damage Houses	No	300,733	1,500,000	451,100	2,050
Shops	No	170	500,000	85	0
<b>Total</b>				<b>658,826</b>	<b>2,995</b>
<b>Transport and Communication</b>					
Roads	Kms	3,458	20,000,000	69,160	314
Bridges	No	157	80,000,000	12,560	57
<b>Total</b>				<b>81,720</b>	<b>371</b>
<b>Agriculture</b>					
Cotton	000 bales	745	116,755	86,982	395
Sugarcane	000 tons	4,433	6,250	27,703	126
Rice	000 tons	2,790	100,000	279,026	1,268
<b>Total</b>				<b>393,712</b>	<b>1,790</b>
<b>Livestock</b>					
Animals	000 No.	727	30,691	22,317	101
<b>Grand Total</b>				<b>1,156,575</b>	<b>5,257</b>
<b>Reconstruction Cost*</b>				<b>740,546</b>	<b>3,366</b>

Source (s): NDMA, AHL Research, \*Ex Agri and Livestock

### International commitment of over USD 500mn to date

Albeit, we do find it important to mention that Pakistan has already begun requesting international bilateral and multilateral partners for help to come out of this momentous calamity. As we write, pledged flood relief thus far has added up to USD 500mn whereby the World Bank (WB) has agreed to provide Pakistan USD 370mn in lieu of flood relief operations, World Food Program has pledged USD 110mn for rescue and relief operations, Asian Development Bank (ADB) has approved aid of USD 20mn, UK Aid would donate USD 1.7mn, the European Union (EU) announced a relief of PKR 76mn for Pakistan, UAE has announced food supplies of 3,000 tons, Azerbaijan will provide assistance of USD 2mn, whereas China will arrange humanitarian assistance and its Red Cross Society will grant USD 300,000 in emergency cash disbursement.

A similar support was seen back in 2010, when the floods wrecked damage and our international allies and multilateral partners aided the domestic rescue mission. A total of USD 2.65bn was committed with major contribution from USA (USD 684mn), Japan (USD 301mn), UK (USD 224mn), EU (190mn), Saudi Arabia (USD 151mn), Central Emergency Response Fund – CERF (USD 42mn), Allocation of un-earmarked funds by UN agencies (USD 13mn), Red Cross / Red Crescent (USD 11mn), and ADB (USD 3mn).

### Exhibit: International Support (2010, \$ mn)

United States	684
Private (individuals & organisations)	355
Japan	301
United Kingdom	224
European Commission	190
Saudi Arabia	151
Australia	84
United Arab Emirates	78
Canada	77
Norway	57
Others	453
<b>Total</b>	<b>2,653</b>

Source (s): OCHA, AHL Research

### Exhibit: International commitments (2022)

	USD mn
World Bank (WB)	370
World Food Program	110
Asian Development Bank (ADB)	20
Azerbaijan	2
UK	2
EU	0.3
<b>Total</b>	<b>504</b>

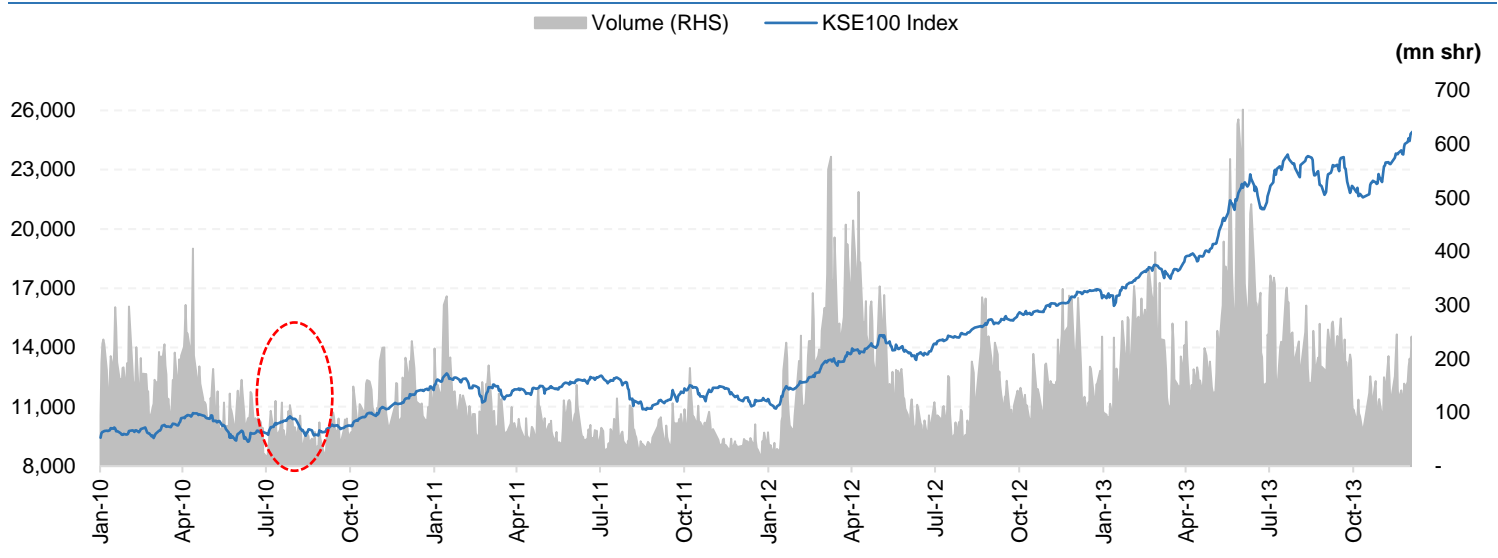
Source (s): Media, AHL Research

**Corporate profitability and the KSE-100 Index**

We expect a temporary setback in KSE-100 index companies in terms of offtake particularly for sectors such as cement, steel, fertilizer, automobile, and OMCs, whose sales may witness a dip this quarter. However, going forward with the rehabilitation process commencing along with massive reconstruction in flood related areas, majority of the sectors benefit from the augmented demand.

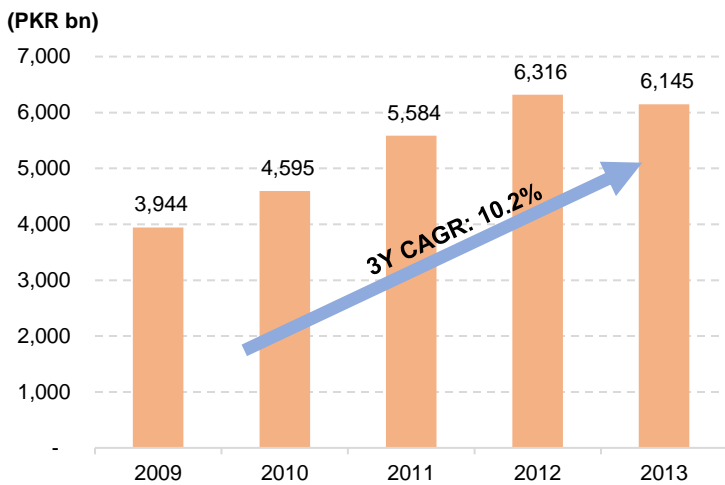
Analyzing the historical trend of 2010 floods, the sales and profitability of the PSX increased by 22% and 39% in FY11 and 13% and 12% in FY12. Empirical evidence also suggests that during 2010, market return was +3.0%, 21.8% and 28.3% 3M, 6M and 12M post floods, respectively.

**Fig: KSE100 and PSX Volume Trend**



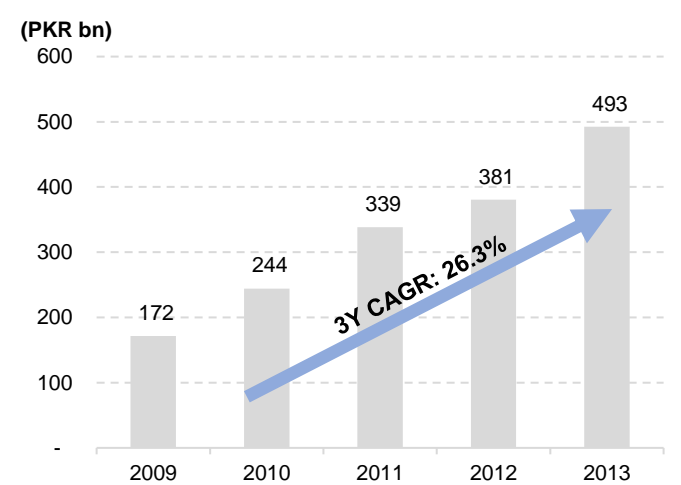
Source (s): PSX, AHL Research

**Fig: PSX Companies Sales trend**



Source (s): PSX, AHL Research

**Fig: PSX Companies Profitability trend**



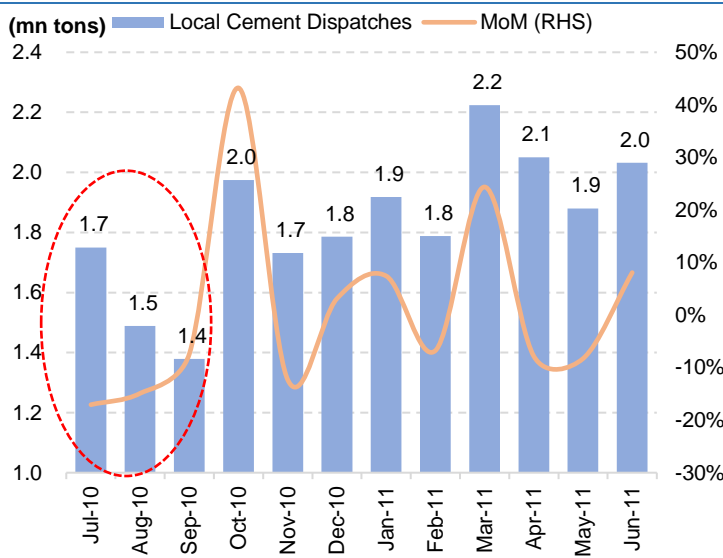
Source (s): PSX, AHL Research

**Cements and steel:** Heavy rains usually wreak havoc on offtake of cement and steel since transportation activity comes to a standstill. We already saw a massive decline of 62% MoM in cement offtake for Jul'22 on account of monsoon rains whereas we await LSM data to quantify steel production for the month, however, a 34% cut in imports (PBS data) of steel over last month could be used to predict a similar cut in local manufacturing data. If we look back at 2010, a similar trend was witnessed when the flash floods eroded demand (15% MoM and 7% MoM dip was observed in cement dispatches during Aug'10 and Sep'10, respectively which coincided with a 1% MoM and 4% MoM dip in local steel production during Aug'10 and Sep'10, respectively).

Albeit, forward data remains encouraging since immediate commencement of rehabilitation works alongside intrinsic demand allowed offtake in Oct'10 to jump up 43% MoM for cement and 4% MoM for steel (local + imports of flat and long steel). On an annual basis, although cement sales retreated by 7% YoY in FY11, demand managed to post a jump of 9% in FY12 and 5% YoY in FY13. Steel production (flat and long steel) on the other hand, dipped by 10% in FY11 and another 14% in FY12 (as production by PSM was dramatically cut that year), only to post a double digit growth of 16% in FY13 as other players ramped up production to meet demand.

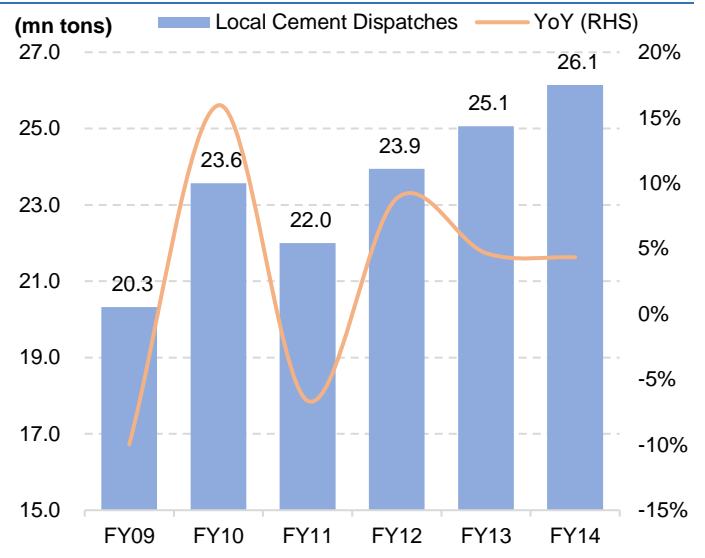
Given the aforementioned, the country is expected to post a decline in cement and steel offtake during FY22, while we believe recovery would soon kick-in and the following months / years would showcase a swift bounce back.

**Fig: Cement dispatches trend**



Source (s): APCMA, AHL Research

**Fig: Cement dispatches trend**

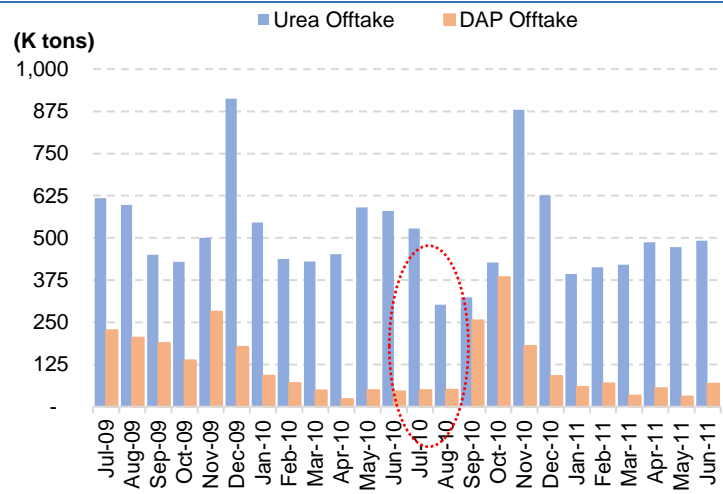


Source (s): APCMA, AHL Research

**Fertilizer:** Fertilizer sales are directly linked with the agriculture sector and therefore the loss in crop area post floods will translate to a dip in yields and farmer income. Subsequently, fertilizer offtake will also witness a cut. To recall, after the floods in 2010, Urea offtake posted a decline of 12% YoY in FY11 while recovering by 4% in the following year. On the flipside, DAP sales, which are primarily sold during the Jul-Dec half, posted a decline of 17% YoY in Jul-Dec'10, translating to an annual dip of 14% YoY. Whereas weak agri-income in the next year slashed DAP demand by another 19% YoY in FY12.

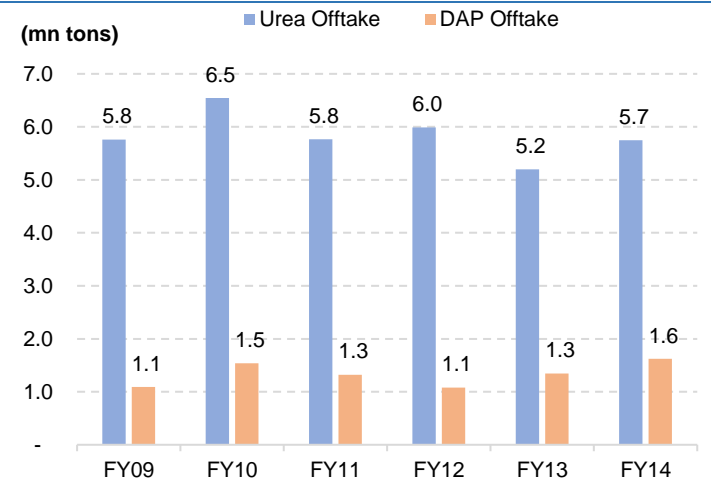
In lieu of the recent floods, we believe a similar trajectory will be witnessed over the next two years i.e. urea sales may bounce back next year but since DAP being expensive, its sales may take longer to recover. Therefore, we may save USD 238mn from lower DAP import (-0.3mn tons) in FY23.

**Fig: Fertilizer offtake trend**



Source (s): NFDC, AHL Research

**Fig: Fertilizer offtake trend**

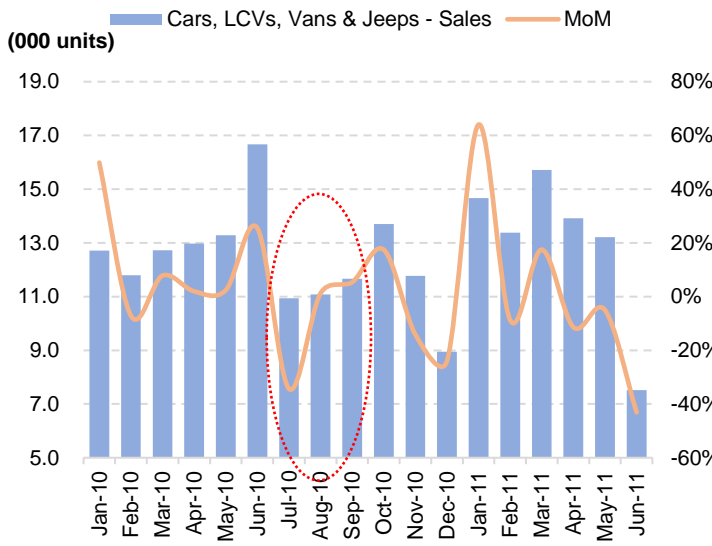


Source (s): NFDC, AHL Research

**Automobile:** We foresee the main hit of floods on demand of tractors and two wheelers in the automobile space since a massive dip in agriculture yields and agri-income will curb their demand. In 2010, sales of tractor and bikes witnessed a dip of 33% and 7% MoM during Aug'10. Meanwhile sales of cars went down by 32% in Jul'10 and remained stagnant at those levels in Aug'10. We also highlight that tractor sales went down by 3% YoY in FY11 and another 28% YoY in FY12 as farmer income takes several years to recuperate. Similarly sales of two wheelers also remained stagnant over the next two years (-1% YoY in FY12 and FY13) as incomes of lower middle class families, particularly rural incomes, took a hit. We believe a similar situation may be seen over the next two years with tractor sales depicting weakness.

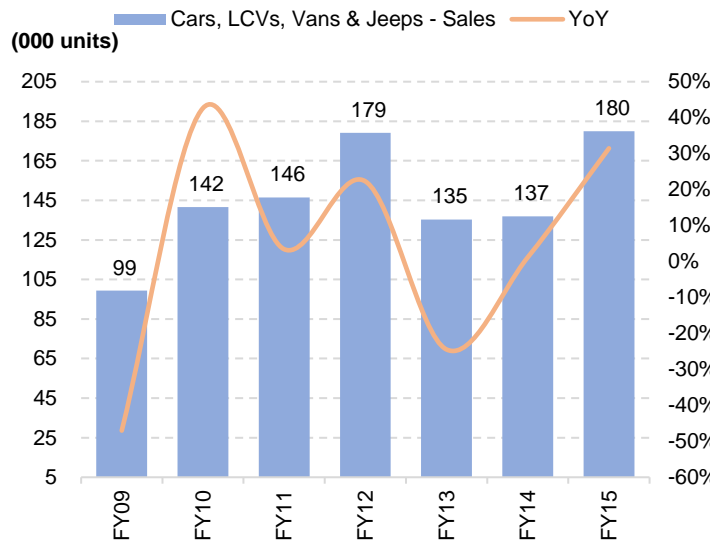
On the flip side, car sales remained largely unaffected during the last floods, growing by 3% in FY11 and 23% in FY12. However, the trend may be different this time around as a slowdown in car demand was already expected prior to the recent floods but may further exacerbate offtake in FY22 amid high interest rates and inflation.

**Fig: Auto Sales Trend**



Source (s): PAMA, AHL Research

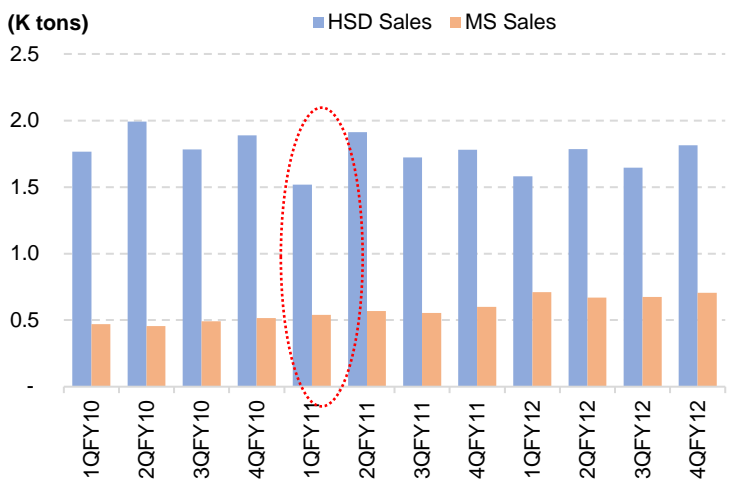
**Fig: Auto Sales Trend**



Source (s): PAMA, AHL Research

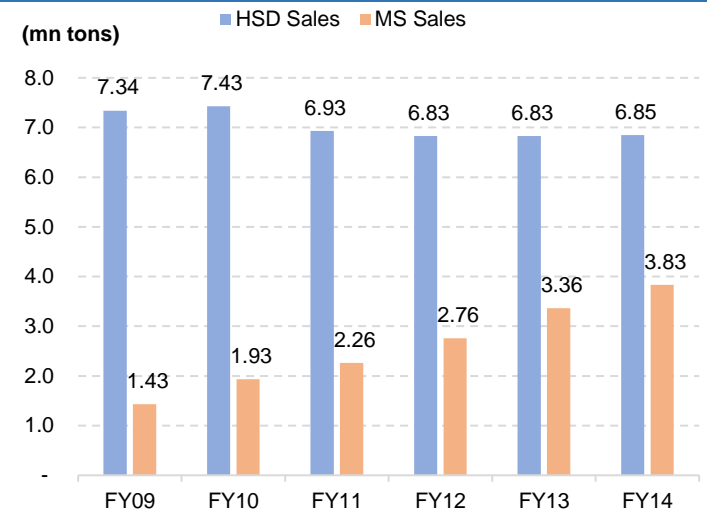
**Oil and Gas Marketing Companies:** Disruption in economic activity in lieu of floods results in an erosion of OMC demand. Back in 2010 when flash floods came, OMC offtake during the Jul-Sep'10 quarter went down by 15% QoQ / 8% YoY. Major decline was witnessed in sales of HSD (-20% QoQ) and FO (-16% QoQ). Albeit, sales recovered by 7% in the next quarter while coming down by 2% YoY during FY11. However, OMC sales continued to show weakness in FY12 as well (down by 5% YoY) amid slowdown in HSD and FO offtake by 2% and 8% YoY, respectively. This gives us reason to believe that offtake may be hurt this year as well (decline of 26% MoM in Jul'22 was displayed by overall petroleum products amid rains and Eid break).

**Fig: HSD and MS Sales Trend**



Source (s): OCAC, AHL Research

**Fig: HSD and MS Sales Trend**



Source (s): OCAC, AHL Research

**Commercial Banks:** The recent flood crisis will put pressure on banking institutions with impact expected to be felt directly as well as indirectly. The direct impact includes (but not limited to): (i) Likelihood of deposit attrition with increase in demand for cash, (ii) deterioration in the asset quality (mainly emanating from agriculture/microfinance) with high probability of loan repayments deferment, and (iii) higher demand for credit in order to finance rehabilitation of the economy. If we run parallel to what was experienced during 2010 flooding, the available data suggests that the natural calamity had relatively little overall effect on Pakistan's banking sector. The asset quality as well as profitability recovered in the quarter following the one affected by the flood as evident in table below. Moreover, the banking sector performance, as gauged by the profitability, remained higher in the following years as well.

**Exhibit:**

	Unit	2QCY10	3QCY10	4QCY10	CY10	CY11
Deposits	PKR mn	4,394,546	4,302,442	5,004,093	5,004,093	5,810,879
Advances	PKR mn	2,826,131	2,774,550	2,998,373	2,998,373	3,061,198
NPLs	PKR mn	397,472	417,722	447,922	447,922	486,089
Infection Ratio	%	14%	15%	15%	15%	16%
Coverage Ratio	%	73%	70%	69%	72%	98%
Profitability after Tax	PKR mn	19,418	19,311	21,034	82,477	116,130

Source (s): Company Financials, AHL Research

**Exhibit: Infection ratio (Sector-wise)**

	Dec-10	Dec-11	Change
Electronics	38.5%	50.3%	1,179
Agribusiness	6.6%	11.7%	513
Cement	18.5%	23.2%	468
Textile	24.3%	28.5%	422
Chemical & Pharmaceuticals	7.9%	9.4%	146
Others	12.5%	13.8%	134
Production/Transmission of Energy	3.8%	4.0%	25
Insurance	0.1%	0.2%	11
Individuals	16.1%	15.9%	(17)
Shoes & Leather garments	12.5%	10.1%	(240)
Automobile/Transportation	23.0%	20.3%	(269)
Sugar	19.4%	14.6%	(480)
Financial	19.0%	11.9%	(709)
<b>Total</b>	<b>14.7%</b>	<b>16.2%</b>	<b>146</b>

Source (s): SBP, AHL Research

**Analyst Certification:** The research analyst(s) is (are) principally responsible for preparation of this report. The views expressed in this research report accurately reflect the personal views of the analyst(s) about the subject security (ies) or sector (or economy), and no part of the compensation of the research analyst(s) was, is, or will be directly or indirectly related to the specific recommendations and views expressed by research analyst(s) in this report. In addition, we currently do not have any interest (financial or otherwise) in the subject security (ies). Furthermore, compensation of the Analyst(s) is not determined nor based on any other service(s) that AHL is offering. Analyst(s) are not subject to the supervision or control of any employee of AHL's non-research departments, and no personal engaged in providing non-research services have any influence or control over the compensatory evaluation of the Analyst(s).

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Arif Habib Limited (AHL) uses three rating categories, depending upon return form current market price, with Target period as Dec 2022 for Target Price. In addition, return excludes all type of taxes. For more details, kindly refer the following table;

Rating	Description
BUY	Upside* of subject security(ies) is more than +10% from last closing of market price(s)
HOLD	Upside* of subject security(ies) is between -10% and +10% from last closing of market price(s)
SELL	Upside* of subject security(ies) is less than -10% from last closing of market price(s)

### Equity Valuation Methodology

AHL Research uses the following valuation technique(s) to arrive at the period end target prices;

- **Discounted Cash Flow (DCF)**
- **Dividend Discount Model (DDM)**
- **Sum of the Parts (SoTP)**
- **Justified Price to Book (JPTB)**
- **Reserved Base Valuation (RBV)**

### Risks

The following risks may potentially impact our valuations of subject security (ies);

- **Market risk**
- **Interest Rate Risk**
- **Exchange Rate (Currency) Risk**

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### Disclosure required under Research Analyst Regulations, 2015:

In order to avoid any conflict of interest, we hereby disclosed that;

Arif Habib Limited (AHL) has shareholding in OGDC, PPL, NBP, FABL, DGKC, MLCF, FCCL, PSO, NCL, UNITY and SNGP.