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Commodity price monitor

December-22

Prepared for ACMA

*Strictly private
and confidential*

December 2022



pwc

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Commodity trend dashboard

Commodity trend dashboard Quarter-on-Quarter changes (1/2)-Rolling view

Calendar Year 2022: Q vs. Q update

Commodity	Region	Q-o-Q Up		Q-o-Q Down
Iron & Steel				
Iron Ore	International			-36.48% ▼
	Domestic low grade			
	Domestic high grade			
Pig Iron	International			-5.47% ▼
	Domestic	7.92%	▲	
Stainless steel	Domestic	7.86%	▲	
	Domestic	7.42%	▲	
Wire rod	International			-5.02% ▼
	Domestic	4.89%	▲	
Steel Billets	International			0.00% ▼
	Domestic	1.66%	▲	
Hot-rolled coils	International			-9.32% ▼
	Domestic	1.54%	▲	
Cold-rolled coils	International			-10.15% ▼
	Domestic	1.07%	▲	
Steel Scrap	Domestic	1.37%	▲	
EN8	Domestic	3.91%	▲	
20MnCr5	Domestic	3.86%	▲	
Ferro-alloys				
Ferro titanium	International	N/A		
Ferro chrome	International	3.11%	▲	
	Domestic			-1.46% ▼
Ferro molybdenum	International	N/A		
Ferro vanadium	International	N/A		
Ferro silicon	International	17.37%	▲	
	Domestic	73.20%	▲	

ND: Not disclosed by the source

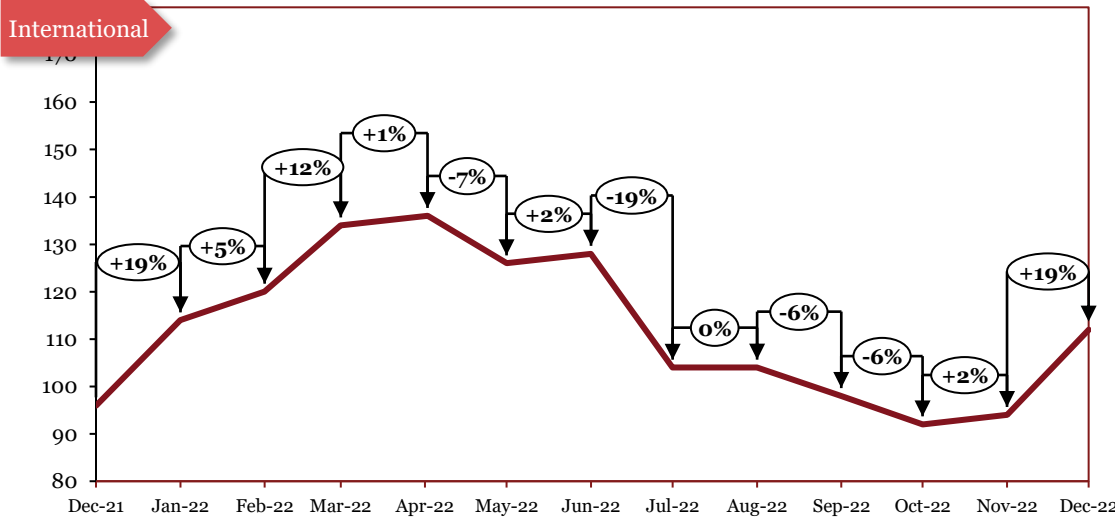
Commodity trend dashboard Quarter-on-Quarter changes (2/2)- Rolling view

Calendar Year 2022: Q vs. Q update

Commodity	Region	Q-o-Q Up		Q-o-Q Down
Base Metals				
Aluminum	International	4.39%	▲	
	Domestic	5.27%	▲	
Copper	International	3.47%	▲	
	Domestic	2.67%	▲	
Zinc	International	18.42%	▲	
	Domestic	13.03%	▲	
Lead	International			-0.46% ▼
	Domestic	3.49%	▲	
Nickel	International	3.60%	▲	
	Domestic	6.11%	▲	
Tin	International	11.80%	▲	
	Domestic	N/A		
Magnesium	International	N/A		
Precious Metals				
Platinum	International			-2.29% ▼
Palladium	International			-20.76% ▼
Rhodium	International			-18.83% ▼
Polymers				
Low density polyethylene (LDPE)	International	5.83%	▲	
	Domestic	13.89%	▲	
Polypropylene (PP)	International	8.44%	▲	
	Domestic	8.41%	▲	
Acrylonitrile Butadiene Styrene (ABS)	International	2.18%	▲	
	Domestic	3.44%	▲	
Polystyrene (PS)	International			0.00% ▼
	Domestic	1.16%	▲	
Rubber	Domestic	1.90%	▲	
Currency Exchange				
Dollar	International	1.30%	▲	
Pound	International			-2.01% ▼
Euro	International			-2.14% ▼
Yen	International			-1.49% ▼

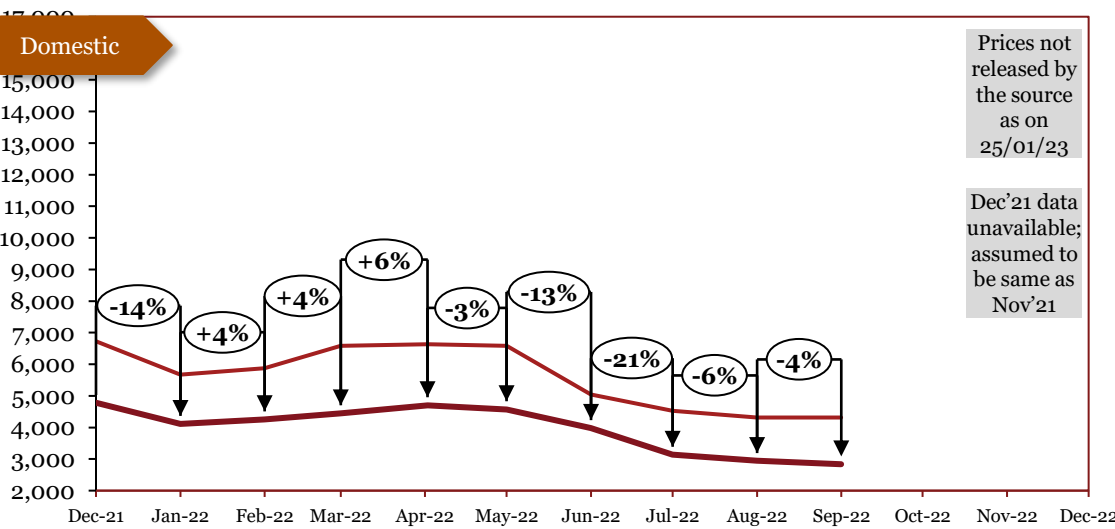
Iron & Steel

Iron Ore



Source: Crisil

Period	*Int'l	*Dom	
	\$/tonne	Rs/tonne	
		65% & below	65% & above
Dec-21	96	4779	6721
Jan-22	114	4113	5667
Feb-22	120	4259	5874
Mar-22	134	4447	6579
Apr-22	136	4696	6632
May-22	126	4571	6583
Jun-22	128	3981	5046
Jul-22	104	3139	4524
Aug-22	104	2943	4317
Sep-22	98	2835	4314
Oct-22	92		
Nov-22	94		
Dec-22	112		



Prices not released by the source as on 25/01/23

Dec'21 data unavailable; assumed to be same as Nov'21

Source: Crisil

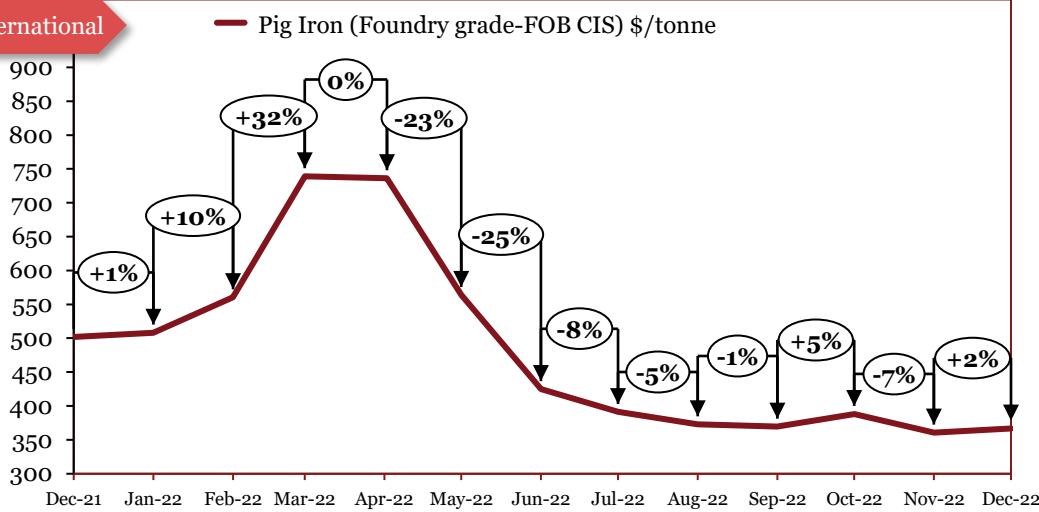
*The actual prices may vary depending on city, player, grade etc.

Outlook

In April, prices rose slightly as a rise in demand was offset by a fall in prices – amidst rising Covid cases in China – towards the end of the month. In May, international prices declined due to prolonged covid-19 restrictions in China which led to weaker spot demand. In June, International prices rose slightly due to sentiment in future markets and demand from top steel producers in China. In July, international prices fell sharply due to weaker demand for steel from the construction sector in China. In August, international prices remained stable. Domestic prices decreased due to a fall in demand in China, caused by COVID-19 restrictions and a slowdown in the property sector. In September, international prices fell due to fresh covid-19 restrictions, typhoons, and property sector troubles in China squeezing demand for ferrous metals. In October, international prices dropped as a result of lower consumption levels, particularly in China due to the nation's housing market woes along with Covid restrictions. In November, international prices remained relatively stable. In December, international prices rose sharply as a result of a surge in demand from steel plants following the expectation of an easing in China's strict pandemic restrictions.

Pig Iron

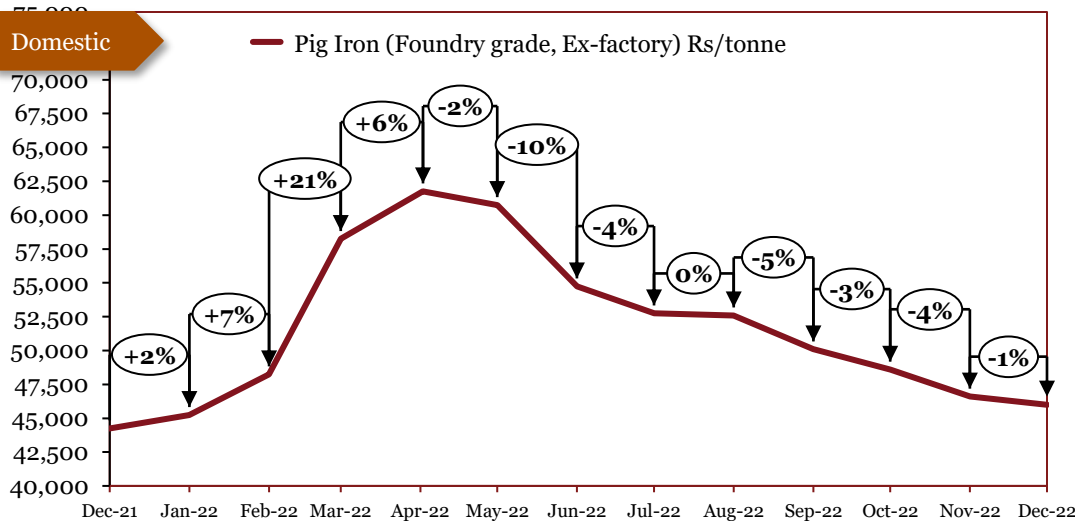
International



Source: Crisil

Monthly Average Prices		
Period	*Int'l	*Dom
	\$/tonne	Rs/tonne
Dec-21	502	44250
Jan-22	508	45250
Feb-22	561	48250
Mar-22	739	58250
Apr-22	736	61750
May-22	564	60750
Jun-22	425	54750
Jul-22	391	52750
Aug-22	373	52600
Sep-22	370	50100
Oct-22	388	48600
Nov-22	360	46600
Dec-22	367	46000

Domestic



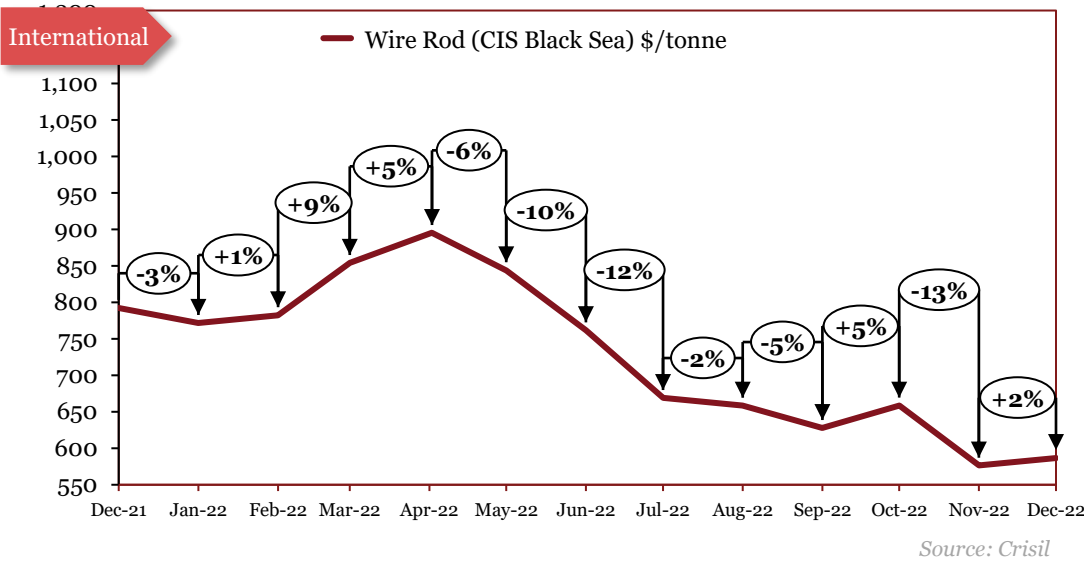
Source: Crisil

*The actual prices may vary depending on city, player, grade etc.

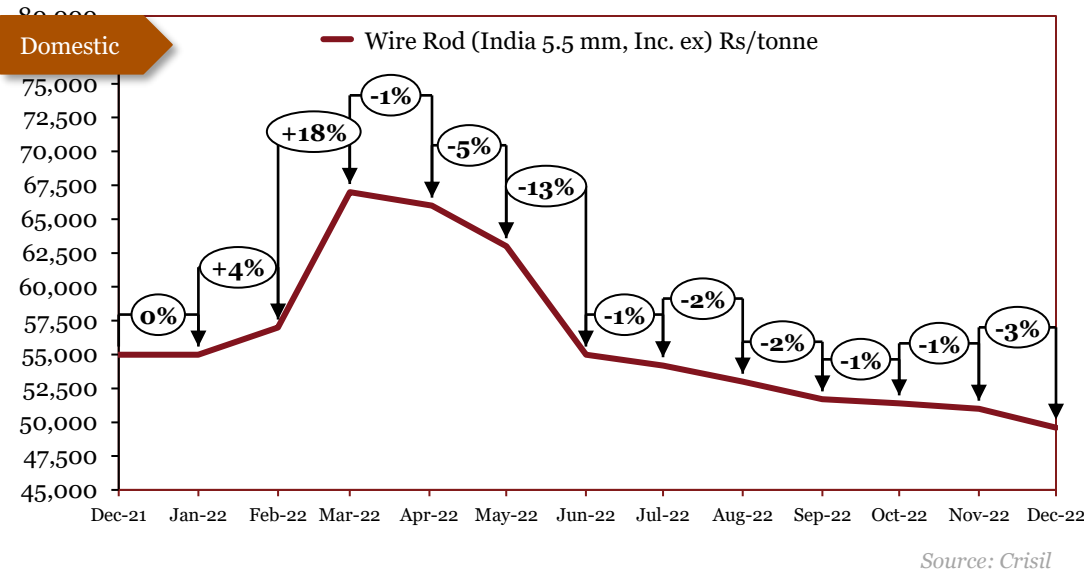
Outlook

In June, international prices hit a 12-month low due to sentiment of oversupply of steel in China and weak demand. Domestic prices fell as a result of decline in exports and weak market sentiment post export duty. In July, international prices fell down owing to weak demand and supply of steel. Domestic prices fell due to decline in domestic demand and sustained effect of imposition of higher export duties. In August, domestic prices remained stable. International prices fell as a result of a sustained decrease in coking coal prices. In September, domestic prices fell due to the 15% export duty causing inventory build-up in the domestic market. International prices decreased due to recession fears and expectations of lower demand. In October, domestic prices fell due to lower auction volumes at steel plants as a result of subdued domestic demand - due to the festive season - coupled with an inventory pile-up at steel mills. International prices rose due to a rise in coking coal prices. In November, international and domestic prices declined sharply due to a fall in coking coal prices, along with a slowdown in end-user demand caused by recessionary fears and geo-political unrest. In December, international prices rose slightly in tandem with iron ore prices. Domestic prices remained marginally stable.

Wire Rod



Monthly Average Prices		
Period	^*Int'l (\$/tonne)	*Dom (Rs/tonne)
Dec-21	792	54994
Jan-22	772	54994
Feb-22	782	56994
Mar-22	854	66994
Apr-22	895	65994
May-22	844	62994
Jun-22	761	54994
Jul-22	669	54194
Aug-22	659	52994
Sep-22	628	51694
Oct-22	659	51394
Nov-22	576	50994
Dec-22	587	49594

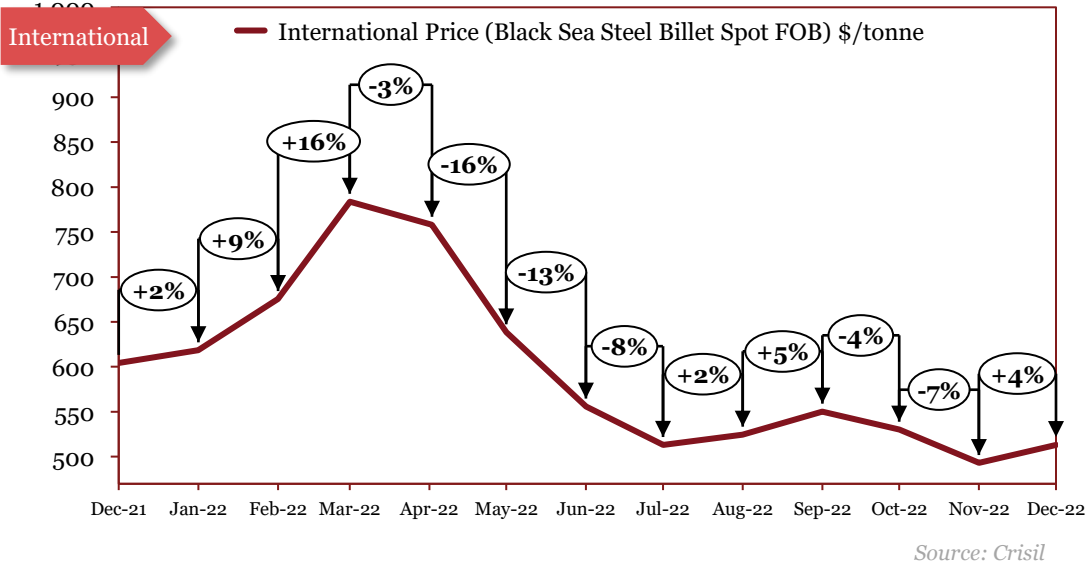


*The actual prices may vary depending on city, player, grade etc.

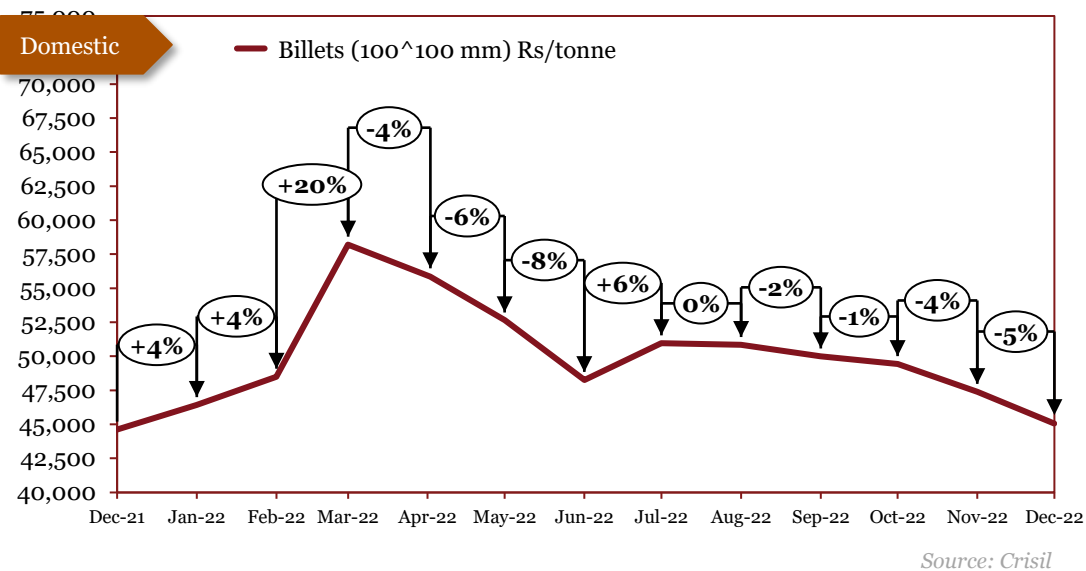
Outlook

In July, international prices fell on account of weaker demand in major countries. Domestic prices declined slightly due to a lack of buying enquiries from end use industries. In August, domestic prices fell slightly owing to a reduction in offer prices by steel producers and a fall in bids at SAIL auctions. International prices fell as a result of a fall in demand, due to lower consumption levels. In September, prices fell due to market uncertainty amid soaring energy prices, coupled with highly volatile prices of semi-finished steel in key markets. In October, domestic prices fell due to subdued domestic demand and inventory pile-up at steel mills due to scheduled maintenance breaks. International prices increased in tandem with stainless steel prices. In November, international prices fell sharply due to a fall in downstream demand, a slowdown in China's economy (major consumer of finished steel products), as well as high inventory levels at mills. Domestic prices remained relatively stable. In December, international prices rose due to a surge in demand from the construction sector of China. Domestic prices decreased due to a decline in coking coal prices.

Steel Billets



Monthly Average Prices		
Period	^*Int'l (\$/tonne)	*Dom (Rs/tonne)
Dec-21	604	44600
Jan-22	618	46425
Feb-22	675	48500
Mar-22	784	58200
Apr-22	758	55860
May-22	638	52650
Jun-22	556	48250
Jul-22	513	50960
Aug-22	524	50833
Sep-22	550	50000
Oct-22	530	49425
Nov-22	493	47375
Dec-22	513	45067



*The actual prices may vary depending on city, player, grade etc.

Outlook

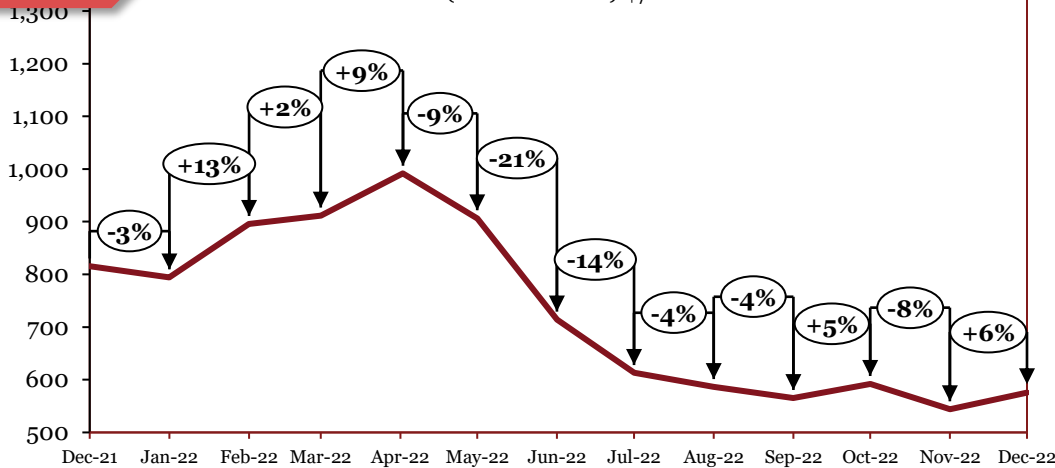
In June, international prices fell due to limited trade and lower price offerings from Russia. Domestic prices also fell due to low demand from key import nations. In July, international prices fell to their lowest level in 12 months on account of weaker demand for finished steel. Domestic prices rose sharply due to a rise in input costs. In August, international prices rose due to an increase in energy costs. Domestic prices remained stable. In September, international prices slightly increased in tandem with steel prices. Domestic prices plummeted due to sluggish finished steel sales ahead of the festive season and hampered construction activities amid a monsoon that has taken time to recede. In October, international and domestic prices fell due to a sharp downturn in Chinese demand, due to concerns over the housing market and COVID-19 restrictions. In November, domestic prices fell due to lower bids, weak spot trading, and large inventory volumes at mills. International prices fell due to weak demand from the real estate and construction sectors, particularly in China. In December, international prices increased due to a rise in demand from the Chinese construction sector and post easing in restrictions. Domestic prices fell sharply due to the imposition of export duty by the government of India, aided by rising stock levels.

^International prices changed due to change in the grade

Hot-Rolled (HR) Coils

International

— HR Coils (FOB Black Sea) \$/tonne



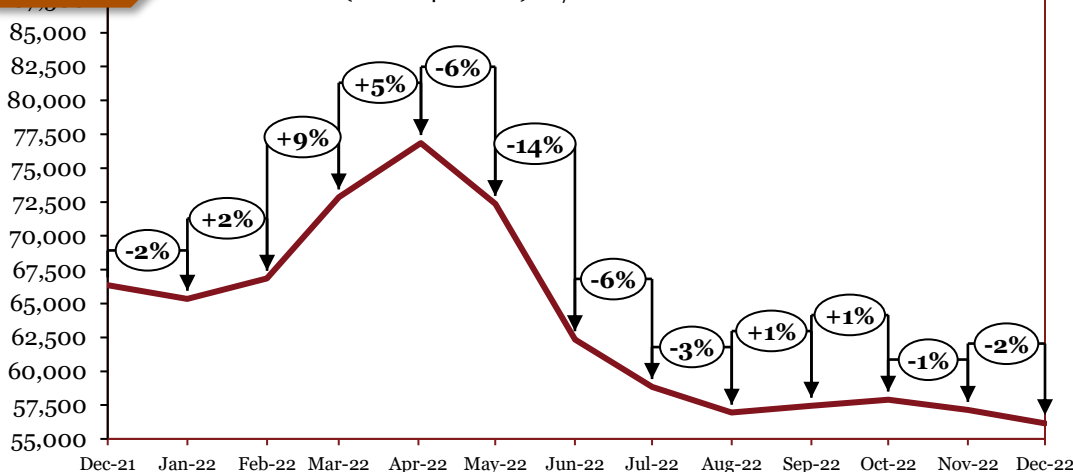
Source: Crisil

Monthly Average Prices

Period	*Int'l	^*Dom
	(\$/tonne)	(Rs/tonne)
Dec-21	815	66350
Jan-22	794	65350
Feb-22	895	66850
Mar-22	911	72850
Apr-22	991	76850
May-22	906	72350
Jun-22	714	62350
Jul-22	613	58850
Aug-22	586	56950
Sep-22	565	57450
Oct-22	592	57900
Nov-22	544	57150
Dec-22	576	56150

Domestic

— HR Coils (India 14G-2mm) Rs/tonne



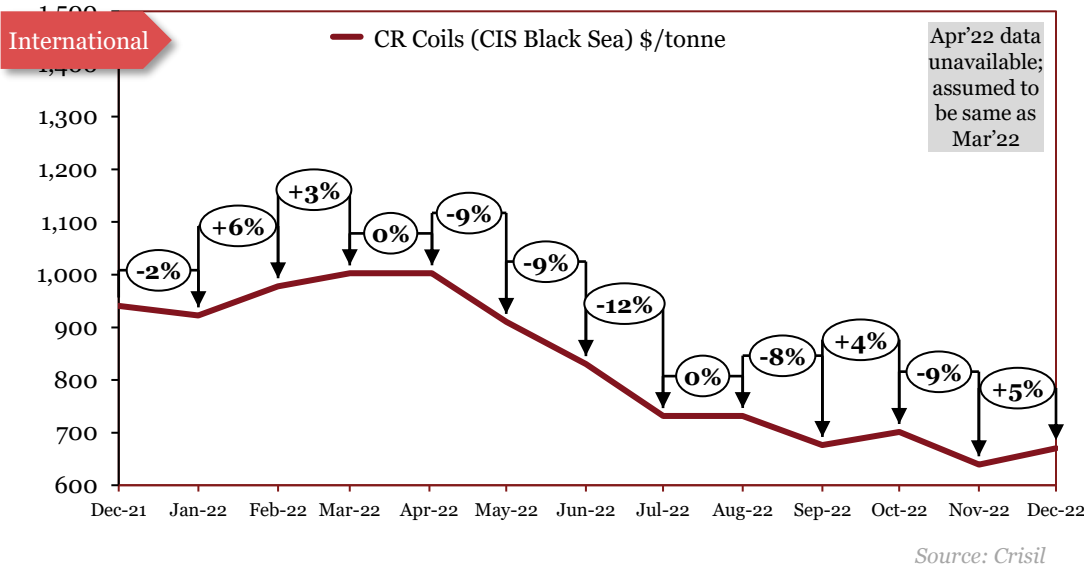
Source: Crisil

*The actual prices may vary depending on city, player, grade etc.

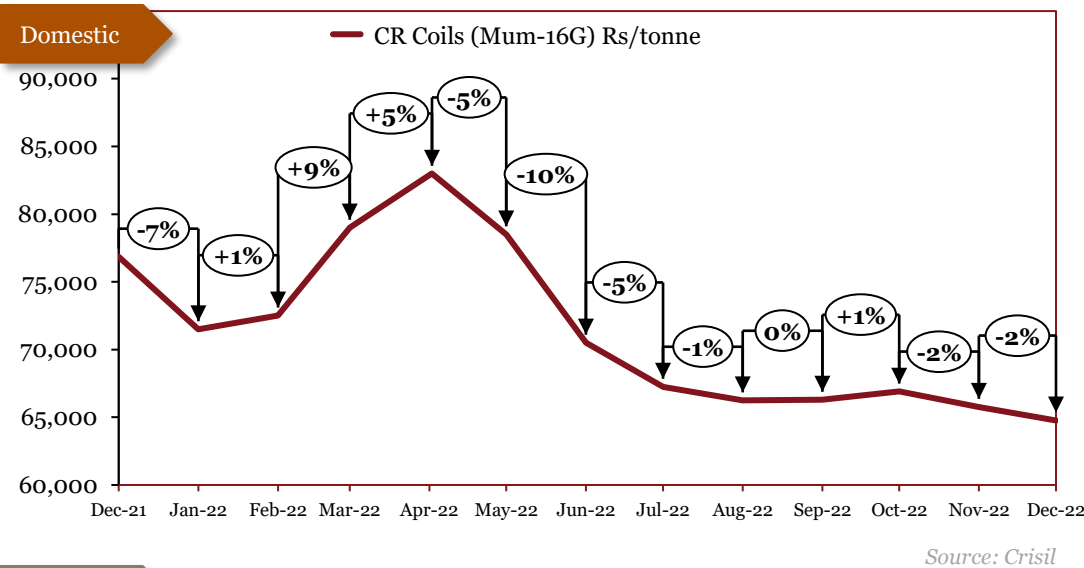
Outlook

In May, prices fell due to sluggish demand from the Asian market. In June, international prices fell sharply due to the oversupply of HRC in European countries. Domestic prices fell as a result of export duty. In July, both international and domestic prices fell to their lowest level in 12 months due to poor demand in domestic and foreign markets. In August, prices fell owing to weekly price cuts by steel mills, as a result of subdued domestic demand and exports. In September, domestic prices rose because of an increase in the price of key raw materials (steel). International prices fell due to lower end-user demand in the face of economic uncertainty. In October, international prices increased after hitting a year-low in September due to a rise in raw material prices. Domestic prices remained relatively stable. In November, international prices declined due to lower raw material and input costs, along with a fall in downstream demand. Domestic prices remained relatively stable. In December, international prices increased sharply on the back of a rebound in the domestic Chinese market. Domestic prices decreased as Indian mills were forced to cut prices due to higher available stocks and a weakening commodity cycle.

Cold-Rolled (CR) Coils



Monthly Average Prices		
Period	*Int'l (\$/tonne)	^*Dom (Rs/tonne)
Dec-21	941	76850
Jan-22	923	71500
Feb-22	978	72500
Mar-22	1002	79000
Apr-22	1002	83000
May-22	910	78500
Jun-22	830	70500
Jul-22	732	67250
Aug-22	732	66250
Sep-22	677	66300
Oct-22	701	66900
Nov-22	640	65750
Dec-22	670	64750

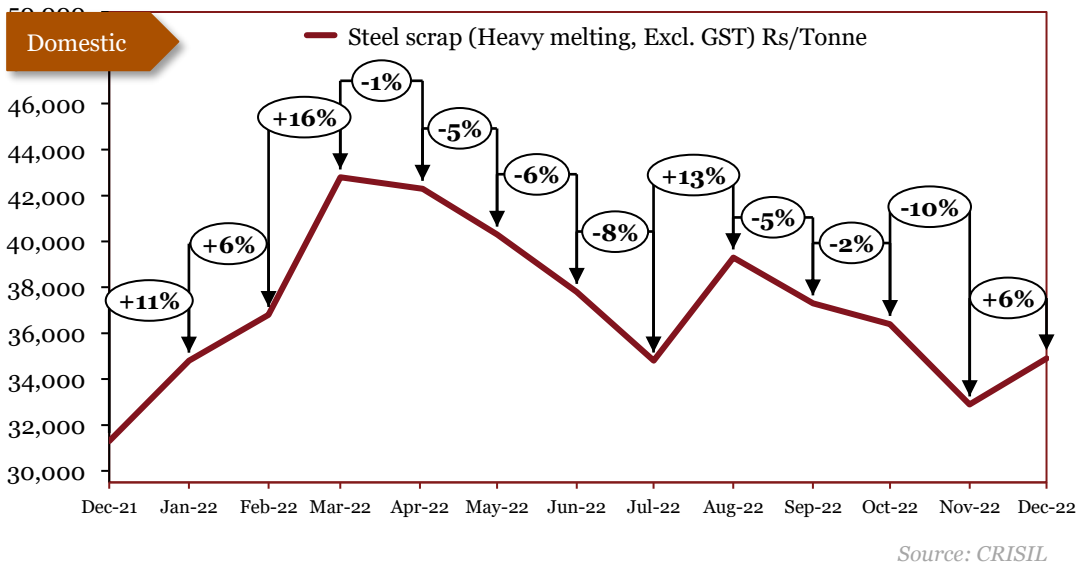


*The actual prices may vary depending on city, player, grade etc.

Outlook

In April, domestic prices rose in tandem with HRC prices. In May, both international and domestic prices fell in tandem with HRC prices. In June, international prices fell on back with lack of bookings. Domestic prices fell in tandem with HRC prices. In July, both international and domestic prices fell sharply due to weaker demand from China, coupled with inflationary pressures in Europe. In August, domestic prices fell slightly due to a fall in raw material (coking coal) prices. International prices remained stable. In September, domestic prices increased slightly due to a rise in raw material (coking coal) prices. International prices decreased due to lower buying activity as a result of economic uncertainty. In October, both international and domestic prices increased due to an increase in prices by steelmakers in accordance with higher coking coal prices. In November, prices declined in tandem with steel and HRC prices. In December, international prices increased as China ditched its “zero COVID” policy and adopted new economic stimulus measures, including new investments on infrastructure. Domestic prices decreased as steelmakers were forced to cut prices as a result of higher available stocks caused by weakening export markets.

Steel Scrap (Heavy Melting)



Monthly Average Prices	
Period	*Dom (Rs/Tonne)
Dec-21	31300
Jan-22	34800
Feb-22	36800
Mar-22	42800
Apr-22	42300
May-22	40300
Jun-22	37800
Jul-22	34800
Aug-22	39300
Sep-22	37300
Oct-22	36400
Nov-22	32900
Dec-22	34900

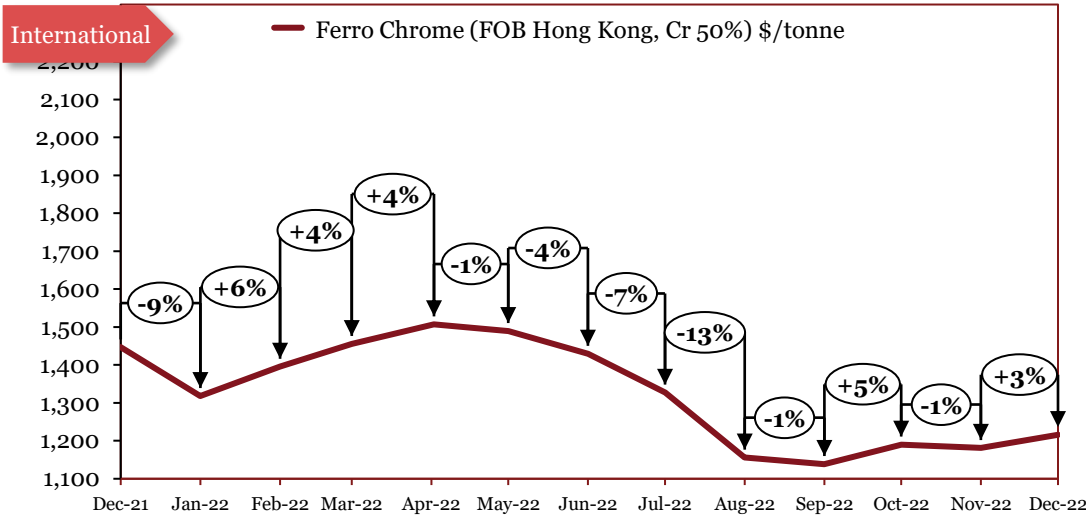
*The actual prices may vary depending on city, player, grade etc.

Outlook

In January and February, prices rose drastically due to a combination of factors; a strong surge in demand amid normalization post COVID, and global logistics problems due to geo-political turmoil. In March, prices rose in tandem with steel prices. In April, prices fell slightly due to weaker demand from domestic steel mills and weaker prices into Turkey, which is a key buyer. In May, domestic prices fell due to weaker demand for finished steel. In June, domestic prices fell due to low ingots sales. In July, prices fell amid an oversupply crisis, weakening of demand, and seasonal monsoon pressures. In August, prices increased on the back of a rise in demand from the automotive industry, owing to the onset of the festive season. In September, prices saw a downward trend due to considerable imports of cheaper bulk scrap from the US. In October, prices declined slightly due to reduced buying at steel scrap auctions, as a result of lower domestic consumption levels. In November, prices fell sharply due to the pile-up of finished inventory with steel mills post-export duty imposition, coupled with weak end-user demand and the resultant lower capacity utilization. In December, prices increased due to low availability during the winter period, as adverse weather conditions slowed down the collection and processing of scrap.

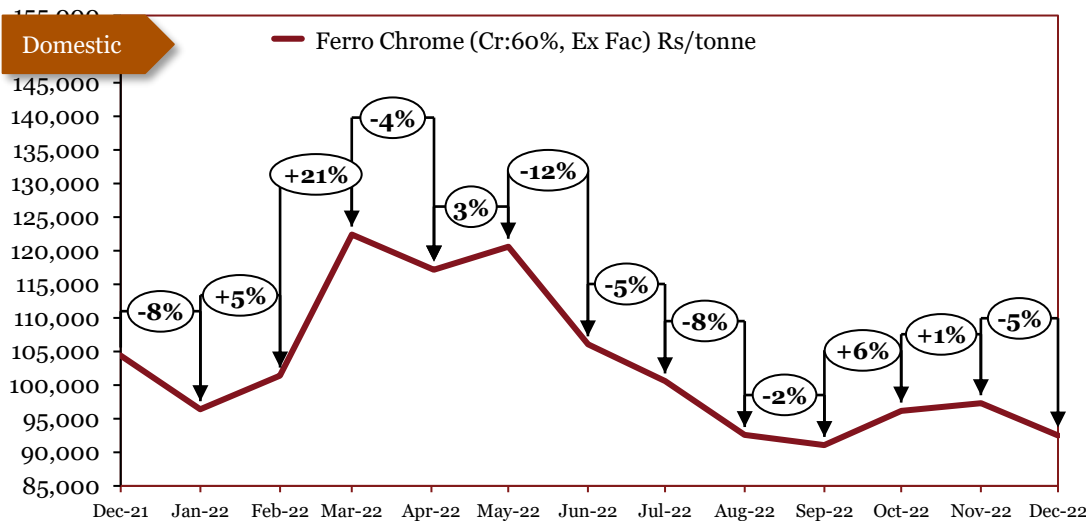
Ferro-alloys

Ferro chrome



Source: Crisil

Monthly Average Prices		
Period	*Int'l	*Dom
	(\$/tonne)	(Rs/tonne)
Dec-21	1447	104400
Jan-22	1318	96400
Feb-22	1395	101400
Mar-22	1455	122400
Apr-22	1507	117200
May-22	1489	120600
Jun-22	1430	106100
Jul-22	1327	100600
Aug-22	1156	92600
Sep-22	1138	91100
Oct-22	1190	96200
Nov-22	1181	97300
Dec-22	1216	92500



Source: Crisil

*The actual prices may vary depending on city, player, grade etc.

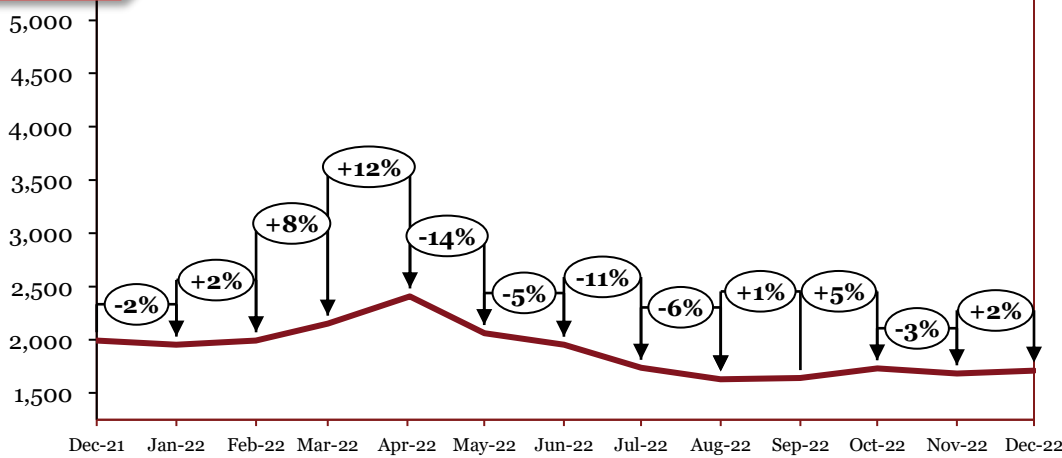
Outlook

In May, domestic prices rose slightly due to an increase in coal prices, as well as supply disruptions from South Africa. International prices remained relatively stable. In June, both international and domestic prices fell due to extremely sluggish demand. In July, domestic prices fell owing to a lack of demand from stainless steel makers and decrease in export orders. International prices fell due to a weakening of demand caused by ongoing inflationary pressures. In August, prices continued to trend downwards amid low liquidity levels and bearish market sentiments. In September, prices fell due to a fall in the price of raw materials (Iron). In October, domestic prices increased sharply owing to higher chrome ore prices, caused by a bullish response at OMC's chrome ore auction. International prices rose due to a shortage in supply, owing to reduced production at Chinese smelters as a result of Covid-19 restrictions. In November, international prices remained relatively stable. Domestic prices rose slightly as the NMDC hiked iron ore prices, which is a key raw material. In December, international prices increased in tandem with iron ore prices. Domestic prices decreased due to a decrease in the price of coking coal.

Ferro silicon

International

— Ferro silicon (Si 75%, FOB China)\$/tonne



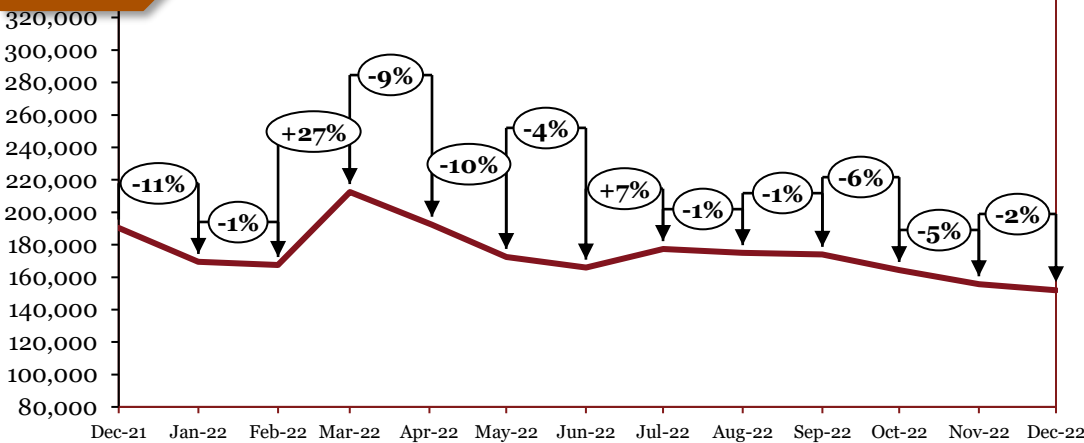
Source: Crisil

Monthly Average Prices

Period	*Int'l	*Dom
	(\$/tonne)	(Rs/tonne)
Dec-21	1994	190450
Jan-22	1953	169450
Feb-22	1994	167450
Mar-22	2153	212450
Apr-22	2408	192450
May-22	2063	172450
Jun-22	1953	165950
Jul-22	1739	177450
Aug-22	1628	174950
Sep-22	1642	173950
Oct-22	1732	164350
Nov-22	1684	155650
Dec-22	1711	151850

Domestic

— Ferro silicon (Si 70%, India Ex-Fac) Rs/tonne



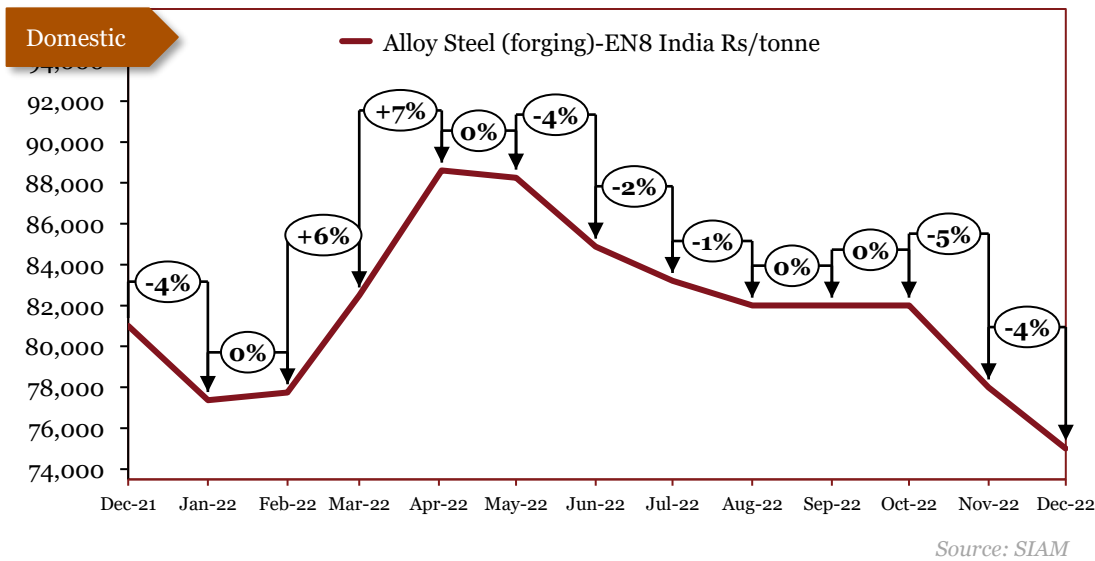
Source: Crisil

*The actual prices may vary depending on city, player, grade etc.

Outlook

In June, international and domestic prices fell due to oversupply significant products during Russia-Ukraine invasion which now remains unused in warehouses. In July, international prices fell due to a fall in demand caused by reduction in steel consumption, and the ongoing energy crisis. Domestic prices rose on account of higher input costs. In August, international prices fell due to a lack of consumer demand, driven strongly by falling futures prices and a lower number of bids/inquiries. Domestic prices remained relatively stable. In September, domestic prices declined due to tight liquidity which forced smelters to lower their prices, as well as low inquiries from importing countries. International prices increased because of an increase in the price Silicon, a key raw material. In October, domestic prices fell as a result of a sharp decline in domestic demand. International prices increased on account of production cuts in China due to Covid-19 restrictions. In November, both international and domestic prices decreased due to limited end-user demand and lower trading volumes, as well as high inventory levels caused by various ferro manganese producers shifting to ferro silicon. In December, international prices increased due to higher input costs. Domestic prices decreased in tandem with coking coal prices.

EN8 Alloy Steel (Forging)



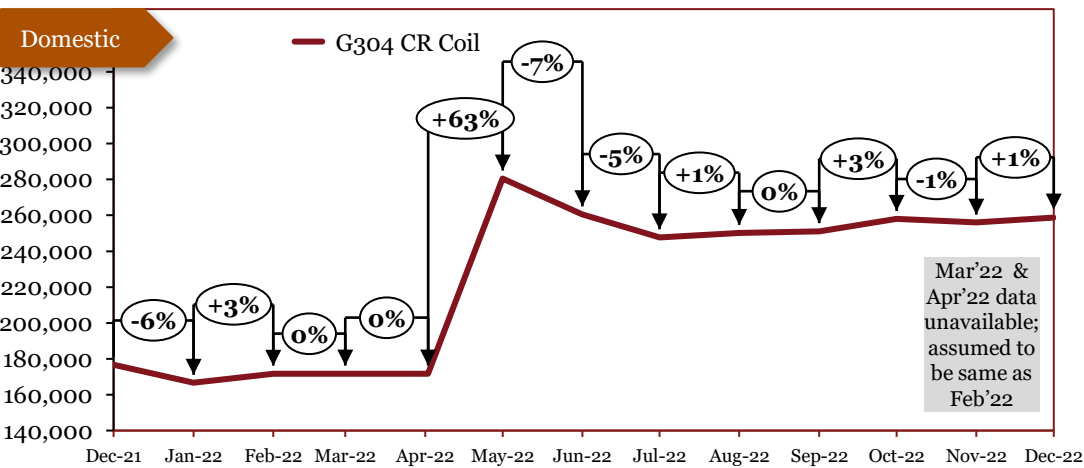
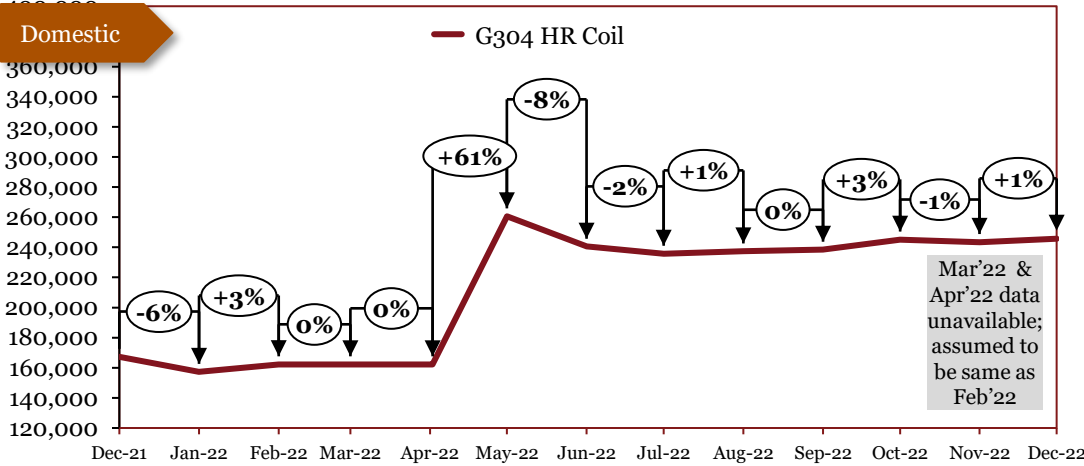
Monthly Average Prices	
Period	*Dom (Rs/tonne)
Dec-21	81000
Jan-22	77375
Feb-22	77750
Mar-22	82500
Apr-22	88600
May-22	88250
Jun-22	84875
Jul-22	83200
Aug-22	82000
Sep-22	82000
Oct-22	82000
Nov-22	78000
Dec-22	75000

**The actual prices may vary depending on city, player, grade etc.*

Outlook

In August, prices remained unaffected. In September, prices slightly dipped on account of a softening in demand. In October, prices rose in accordance with rising steel prices. In November, prices rose due to supply constraints. In December, prices fell in accordance with steel prices, amid rising inventories at steel mills and a softening of demand. In January, prices fell in conjugation with stainless steel prices. In February, prices remained stable. In March, prices increase in tandem with steel prices. In April, prices continued to rise amid supply disruptions caused by the situations in South Africa and Ukraine. In May, domestic prices remained stable. In June, decline in prices is due to plunge in exports and stagnant demand. In July, domestic prices fell slightly due to lower demand on account of a lack of export orders. In August, prices fell slightly owing to price cuts by steel mills, along with a fall in demand from the automotive industry. In September, prices remained stable. In October, prices remained stable. In November, prices fell due to concerns over an impending global recession and geo-political unrest, leading to a decline in demand and a downturn in the metal cycle. In December, prices fell due to the higher availability of stocks caused by a slowdown in export markets and global recessionary pressures.

Stainless Steel



Monthly Domestic Average Prices		
Period	*G304 HR (Rs/tonne)	*G304 CR (Rs/tonne)
Dec-21	167200	176750
Jan-22	157200	166750
Feb-22	162200	171750
Mar-22	162200	171750
Apr-22	162200	171750
May-22	260500	280500
Jun-22	240500	260600
Jul-22	235750	247750
Aug-22	237375	250250
Sep-22	238500	251000
Oct-22	245000	258000
Nov-22	243400	256000
Dec-22	245750	258750

Source: SIAM

*The actual prices may vary depending on city, player, grade etc.

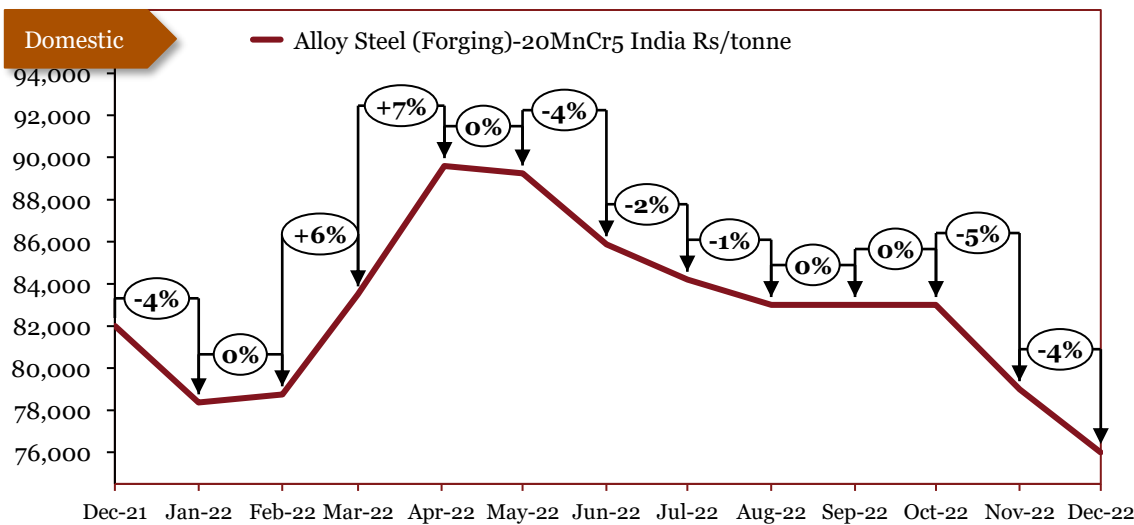
Outlook

In November prices fell owing to a weakening of demand, as the Chinese real estate sector remained depressed in the light of the government's policy stance on rebalancing and environmental protection. In December, prices fell slightly further on account of concerns over the Omicron variant. In January, prices continued to decrease amid oversupply and weak demand. In February, prices rose marginally due to missing volumes from Russia and Ukraine, coupled with rising production costs. In March and April, prices were assumed to be stable owing to unavailability of data. In June, prices fell on back of imposition of export duty and crash in domestic steel prices. In July, weaker demand from construction and automobile industries led to decrease in prices. In August, prices increased slightly as a result of an increase in end-consumer demand, due to the onset of the festive season. In September, prices remained relatively stable. In October, prices increased amid a sharp rise in domestic demand due to the onset of the festive season. In November, prices remained relatively stable. In December, prices rose in tandem with rising input costs - particularly nickel - caused by the Ukraine-Russian conflict and the resultant trade embargoes

20MnCr5 Alloy Steel (Forging)

Monthly Average Prices

Period	*Dom (Rs/tonne)
Dec-21	82000
Jan-22	78375
Feb-22	78750
Mar-22	83500
Apr-22	89600
May-22	89250
Jun-22	85875
Jul-22	84200
Aug-22	83000
Sep-22	83000
Oct-22	83000
Nov-22	79000
Dec-22	76000



Source: SIAM

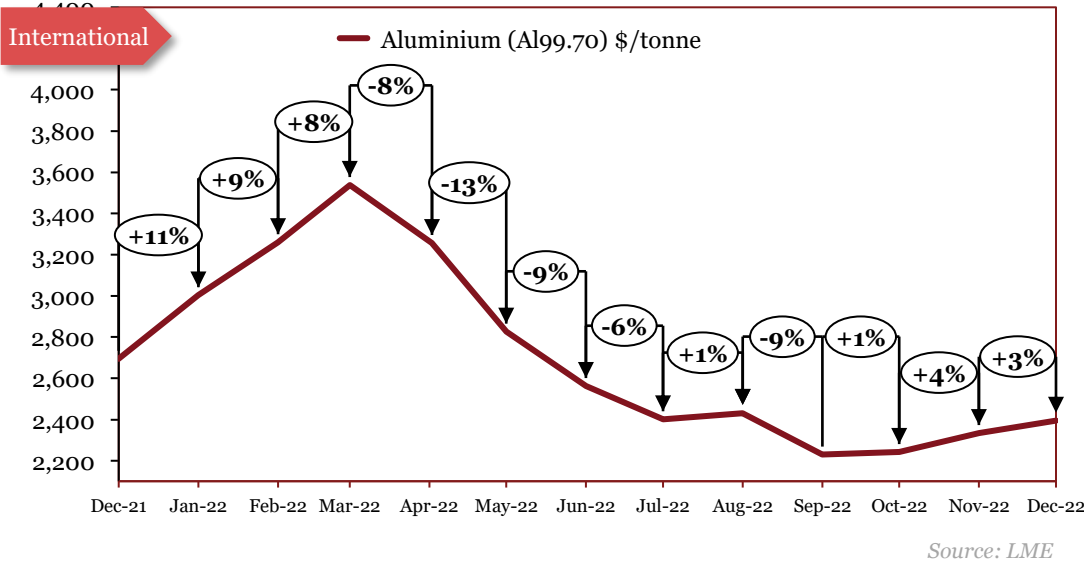
*The actual prices may vary depending on city, player, grade etc.

Outlook

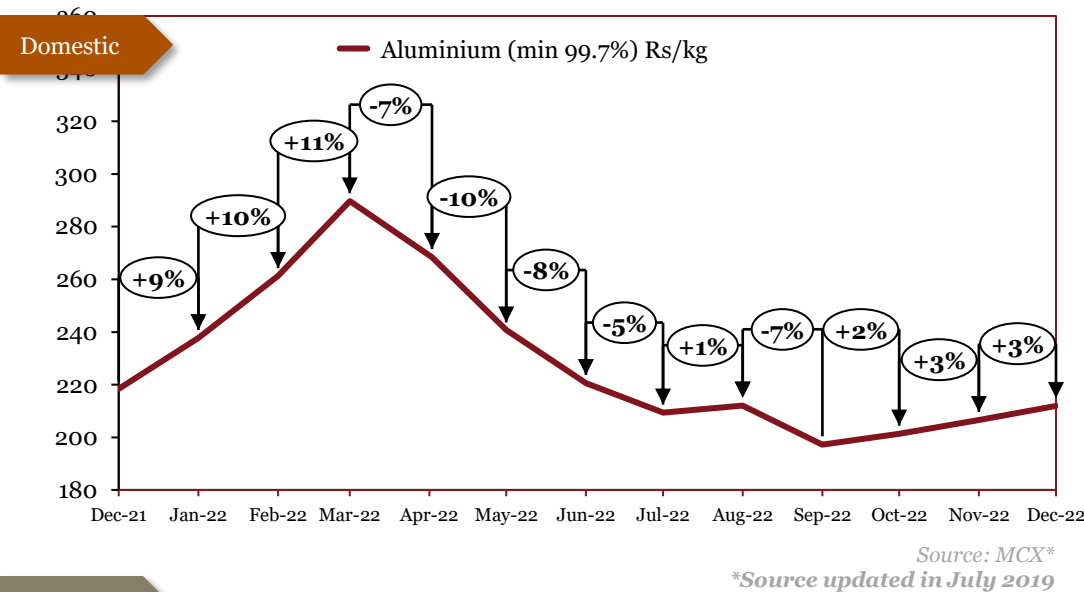
In June, prices stayed stable in line with other steel alloys. In July, prices fell due to an increase in production. In August, prices remained stable. In September, prices slightly dipped due to a softening of demand. In October, prices rose amid a worsening of the power supply crisis. In November, prices rose amid speculations of steel production cuts in China. In December, prices fell in accordance with steel prices and a weakening of demand. In January, prices dropped in accordance with stainless steel prices. In February, prices remained stable. In March, prices rose in tandem with steel prices. In April, prices rose on account of supply disruptions caused by severe flooding in South Africa and the war in Ukraine. In May, prices remained stable. In June, prices fell in tandem with other steel alloys. In July, prices fell on account of a lack of buying enquiries from buyers and decrease in exports. In August, prices fell owing slightly to a sustained fall in demand from the automotive industry. In September, prices remained relatively stable. In October, prices remained stable. In November, prices fell due to subdued overseas demand - particularly in China which is a major consumer of stainless steel - and concerns over a global recession. In December, prices declined due to a slowdown in export markets amid global recessionary pressures.

Base Metals

Aluminium



Monthly Average Prices		
Period	*Int'l	*Dom
	(\$/tonne)	(Rs/kg)
Dec-21	2695	218
Jan-22	3003	238
Feb-22	3260	261
Mar-22	3537	290
Apr-22	3256	268
May-22	2826	241
Jun-22	2563	221
Jul-22	2401	209
Aug-22	2431	212
Sep-22	2230	197
Oct-22	2243	201
Nov-22	2335	207
Dec-22	2394	212

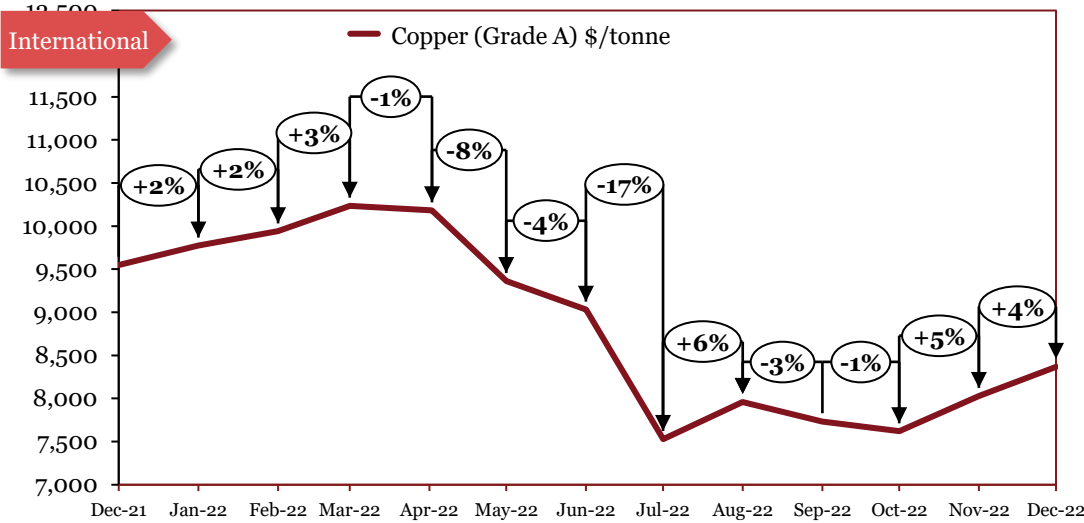


*The actual prices may vary depending on city, player, grade etc.

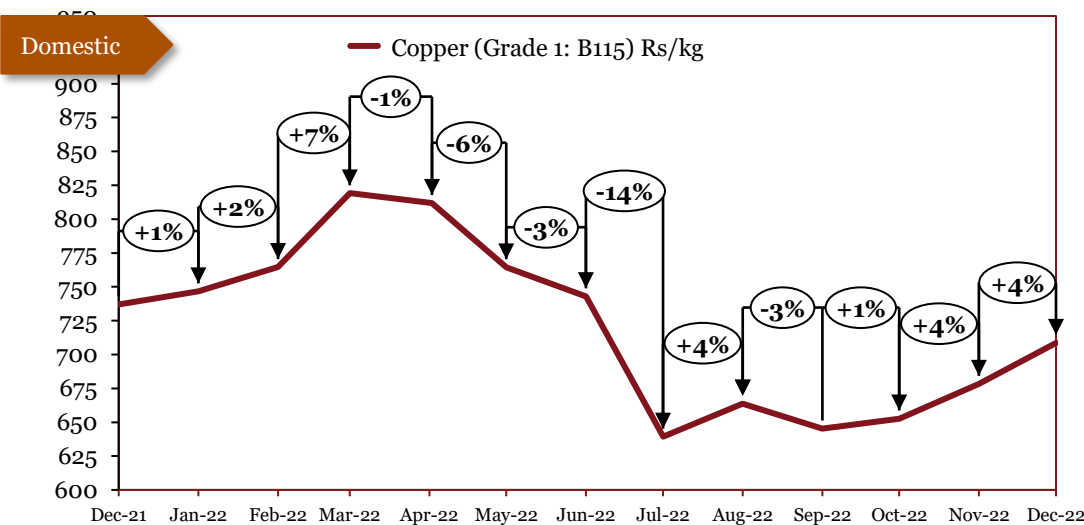
Outlook

In April, prices fell as various smelters in China ramped up their production, thus leading to a rise in supply. In May, both international and domestic prices fell sharply due to weaker demand along with higher material availability. In June, international prices continued to soar due to bearish sentiments and uncertain conditions from buyers. Domestic prices fell due to lower demand from major industries. In July, international prices fell due to weaker demand, caused by weaker premiums and recession concerns. In August, both domestic and international prices increased slightly owing to a growth in industrial demand in China, coupled with production cuts in European Aluminium smelters. In September, both international and domestic prices fell due to weak demand amid slow global economic growth and the US dollar reaching a two-decade-high. In October, domestic prices rose on account of lower supply levels, caused by production cuts in Chinese aluminium smelters. International prices remained relatively stable. In November, prices increased due to lower producer margins caused by soaring energy costs. In December, prices grew because of a rise in demand of low-carbon Aluminium caused by the importance placed on climate-friendly supply, along with higher demand for light metal from the automotive industry.

Copper



Source: LME



Source: MCX

Monthly Average Prices		
Period	*Int'l	*Dom
	(\$/tonne)	(Rs/kg)
Dec-21	9549	737
Jan-22	9775	747
Feb-22	9940	765
Mar-22	10237	819
Apr-22	10182	812
May-22	9362	764
Jun-22	9032	743
Jul-22	7529	639
Aug-22	7960	664
Sep-22	7734	645
Oct-22	7620	653
Nov-22	8029	678
Dec-22	8367	709

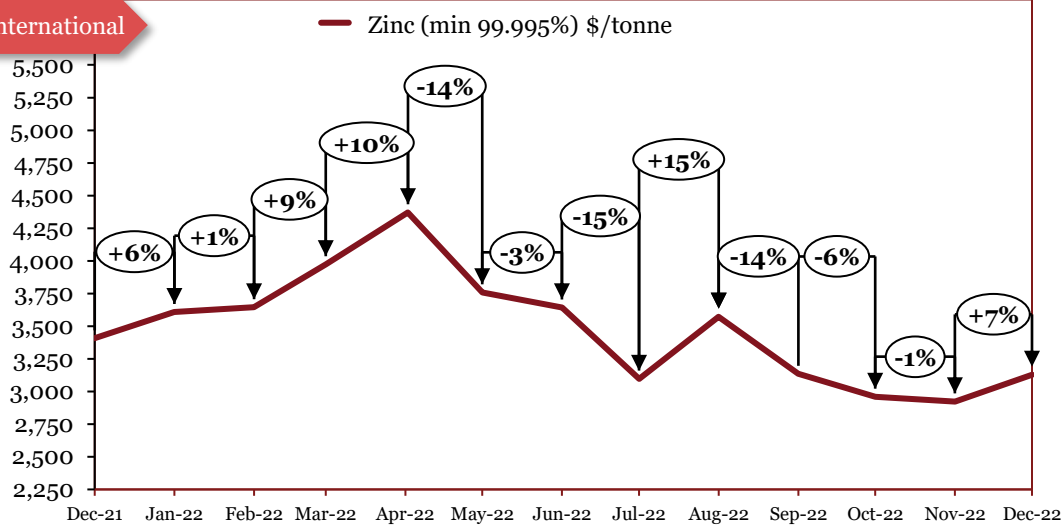
*The actual prices may vary depending on city, player, grade etc.

Outlook

In May, both international and domestic prices fell as a result of a fall in demand due to prolonged Covid-19 restrictions in China, which is one of the top consumers of Copper. In June, domestic and international prices fell due to poor demand as countries raised interest rates to curb inflation. In July, both international and domestic prices fell to their lowest level in 12 months on account of concerns of recession in Europe and U.S, leading to monetary tightening. In August, prices increased as US inflation data was weaker than expected, reducing concerns over aggressive interest rate hikes and easing fears of a recession. In September, prices fell due to a major usage hit from China where a troubled property sector has decreased demand for steel including zinc-coated galvanized steel and European smelters struggling to cope with soaring power prices. In October, domestic prices rose slightly on account of a rise in demand due to the onset of the festive season. International prices remained relatively stable. In November, prices increased due to low inventory levels and a seasonal rise in demand. In December, both international and domestic prices rose due to support projects being planned in the world's largest consumer of copper, coupled with an increase in demand from China due to an easing of restrictions.

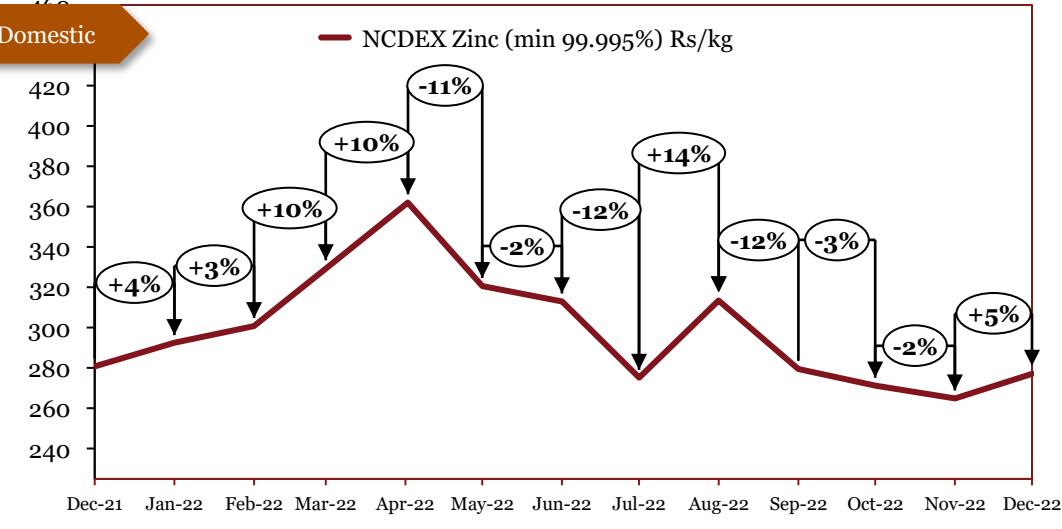
Zinc

International



Source: LME

Domestic



Source: MCX*

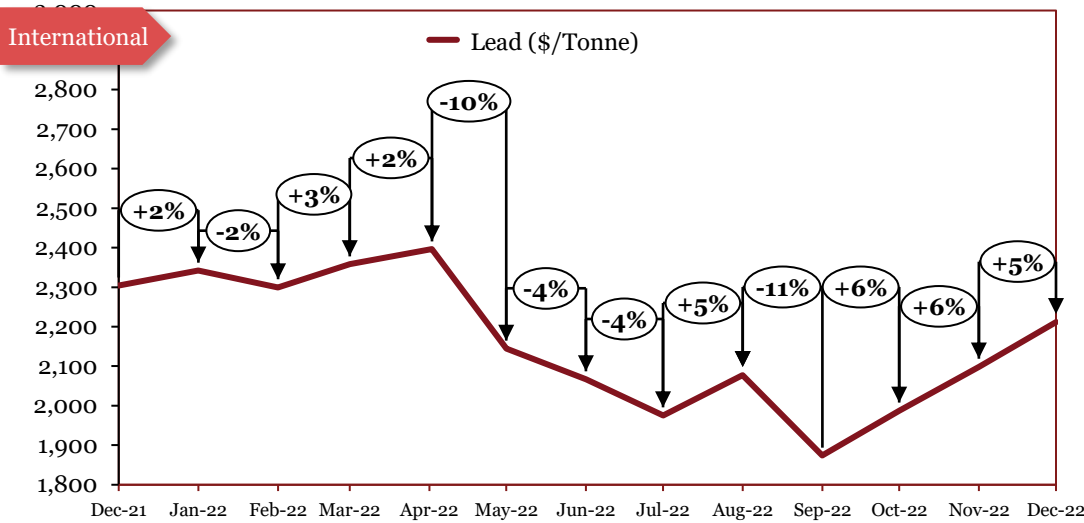
Monthly Average Prices		
Period	*Int'l (\$/tonne)	*Dom (Rs/kg)
Dec-21	3407	281
Jan-22	3609	292
Feb-22	3644	301
Mar-22	3974	329
Apr-22	4370	362
May-22	3759	321
Jun-22	3643	313
Jul-22	3097	275
Aug-22	3572	314
Sep-22	3136	280
Oct-22	2959	271
Nov-22	2923	265
Dec-22	3128	277

*The actual prices may vary depending on city, player, grade etc.

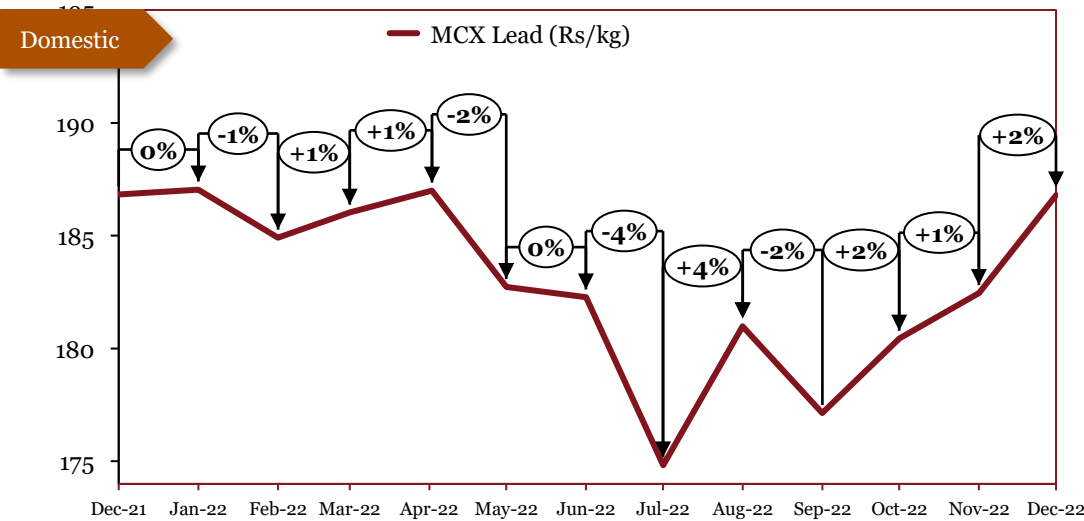
Outlook

In April, both international and domestic prices rose sharply due to rising interest rates, inflation and energy costs. In May, both international and domestic prices fell due to muted demand from consumer industries. In June, prices fell slightly due to slow demand, crackdown of supply chain by governments to fight inflation. In July, prices continued to fall due to oversupply and a weakening in demand. In August, prices rose sharply due to closure of Dutch mills on the back of the global energy crisis, along with production cuts in Chinese Zinc smelters. In September, prices fell due to a major usage hit from China where a troubled property sector has decreased demand for steel including zinc-coated galvanized steel and European smelters struggling to cope with soaring power prices. In October, both international prices declined due to lower demand in China, caused by lower economic activity. Domestic prices fell due to a fall in exports to China. In November, prices marginally declined due to a slowdown in demand caused by a sustained slump in China's economic activity, along with a rebound in the dollar. In December, both international and domestic prices increased on the back of tight supply amid reduced production in Europe due to higher energy costs, and higher demand due to easing of lockdown and quarantine measures in China.

Lead



Source: LME



Source: MCX

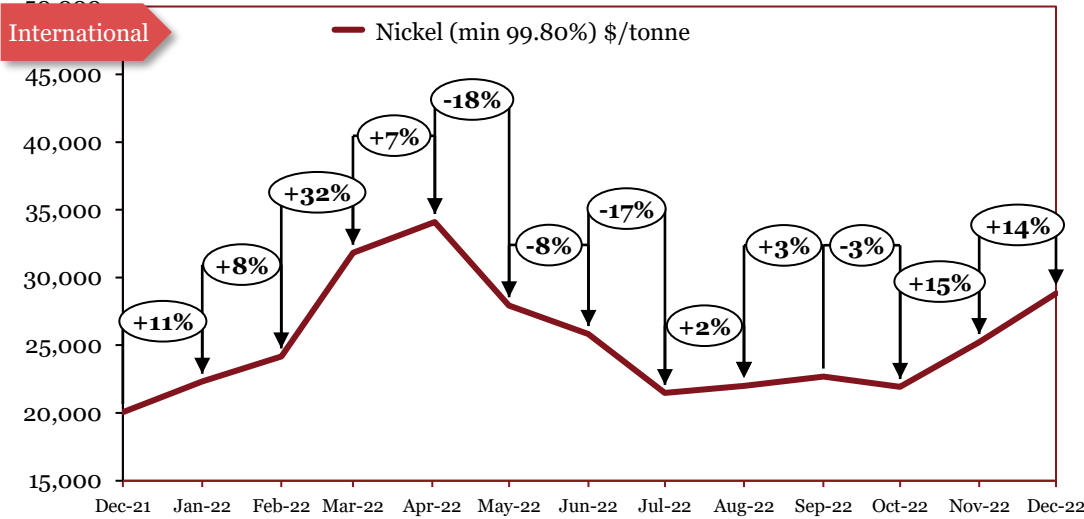
Monthly Average Prices		
Period	*Int'l (\$/tonne)	*Dom (Rs/kg)
Dec-21	2304	187
Jan-22	2342	187
Feb-22	2299	185
Mar-22	2358	186
Apr-22	2396	187
May-22	2144	183
Jun-22	2067	182
Jul-22	1976	175
Aug-22	2077	181
Sep-22	1874	177
Oct-22	1987	180
Nov-22	2099	182
Dec-22	2212	187

*The actual prices may vary depending on city, player, grade etc.

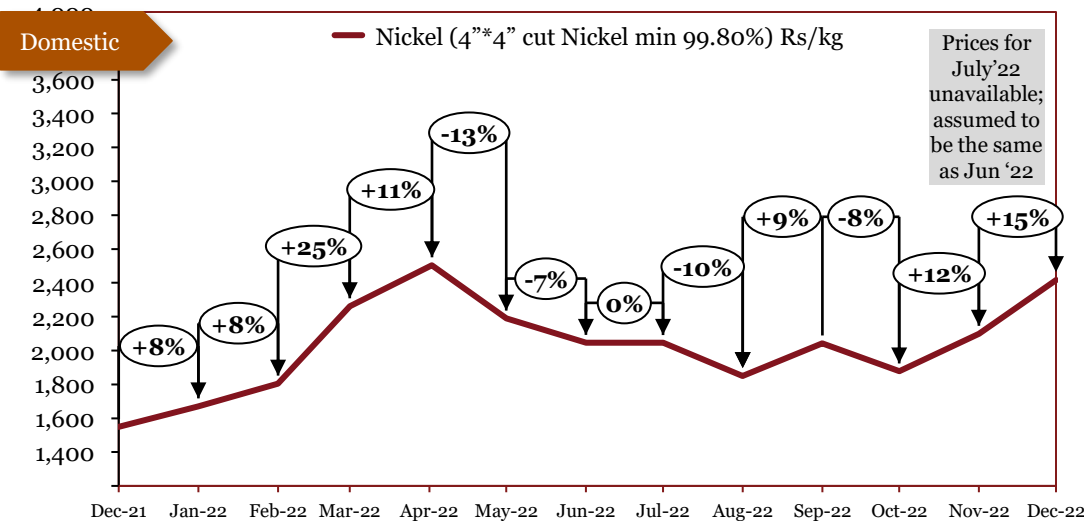
Outlook

In April, prices remained relatively stable. In May, international prices hit a 12-month low due to weak global demand, increased supply and a general slowdown in demand within the automobile sector. In June, domestic prices remained stable. International prices going further low due to actions taken to confront inflation. In July, both international and domestic prices fell to their lowest levels in 12 months as a result of oversupply and inflation concerns. In August, prices increased due to an increase in demand for lead-acid batteries. In September, both domestic and international prices plummeted because of lower demand caused by a slowdown in global economic growth. In October, prices increased due to a fall in inventory levels of lead ingots - widely used to produce various lead-based products. In November, international prices rose sharply in anticipation of fund buying after Lead got included in the Bloomberg Commodity Index (BCOM). Domestic prices remained relatively stable. In December, international prices rose due to tight supply caused by lower production in mines worldwide, and a higher rate of automotive battery replacements caused by harsh weather conditions. Domestic prices remained relatively stable.

Nickel



Source: LME



Source: MCX*

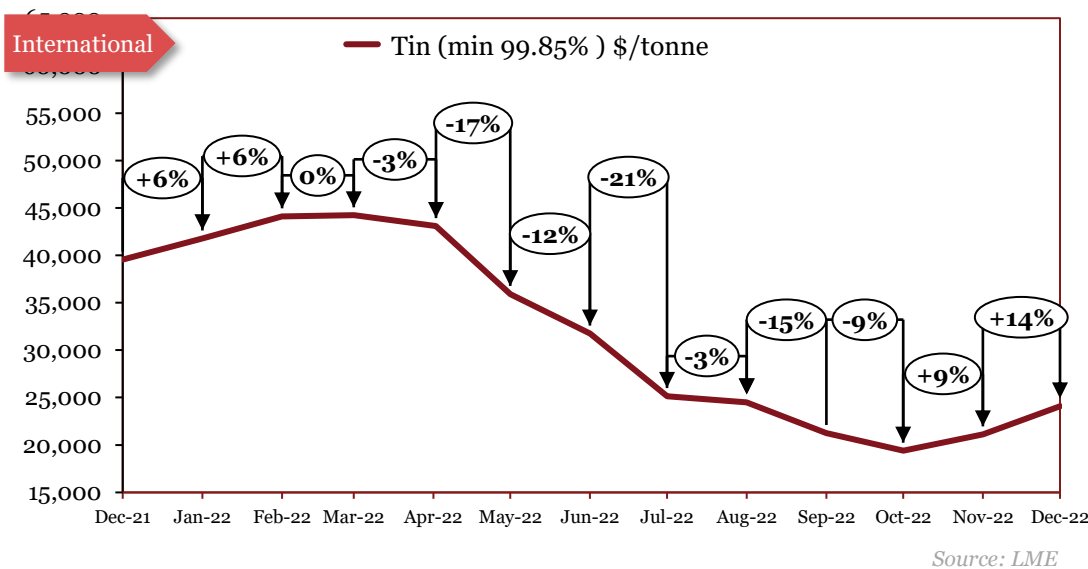
Monthly Average Prices		
Period	*Int'l (\$/tonne)	*Dom (Rs/kg)
Dec-21	20065	1549
Jan-22	22319	1671
Feb-22	24173	1804
Mar-22	31840	2261
Apr-22	34098	2504
May-22	27939	2189
Jun-22	25825	2046
Jul-22	21471	2046
Aug-22	21988	1850
Sep-22	22673	2043
Oct-22	21925	1877
Nov-22	25246	2100
Dec-22	28838	2418

*The actual prices may vary depending on city, player, grade etc.

Outlook

In May, both international and domestic prices fell drastically due to higher supply of intermediate products (such as mixed hydroxide precipitate), thus leading to lower production cost. In June, international and domestic prices fell on back of economic concerns stemming from rising inflation, interest rates and energy costs. In July, international prices fell sharply due to lower industrial demand. In August, international prices rose on the back of increased demand from the EV-battery industry. Domestic prices fell as a result of lower input costs. In September, both domestic and international prices rose sharply due to a surge in buying from Russia and Nornickel, which account for 15-20% production of battery-grade Nickel in the world. In October, prices decreased as a result of lower end-user demand in China due to stronger Covid-19 restrictions caused by an increase in the number of cases. In November, both domestic and international prices increased sharply due to a surge in demand in the global EV market, and speculation of possible supply disruptions from Russian Class 1 producer Norilsk Nickel (Nornickel). In December, prices rose due to tight supply coupled with higher downstream demand, especially for cathodes of electric vehicle batteries in China.

Tin



Monthly Average Prices	
Period	*Int'l (\$/tonne)
Dec-21	39551
Jan-22	41790
Feb-22	44104
Mar-22	44221
Apr-22	43100
May-22	35913
Jun-22	31750
Jul-22	25147
Aug-22	24495
Sep-22	21244
Oct-22	19391
Nov-22	21114
Dec-22	24075

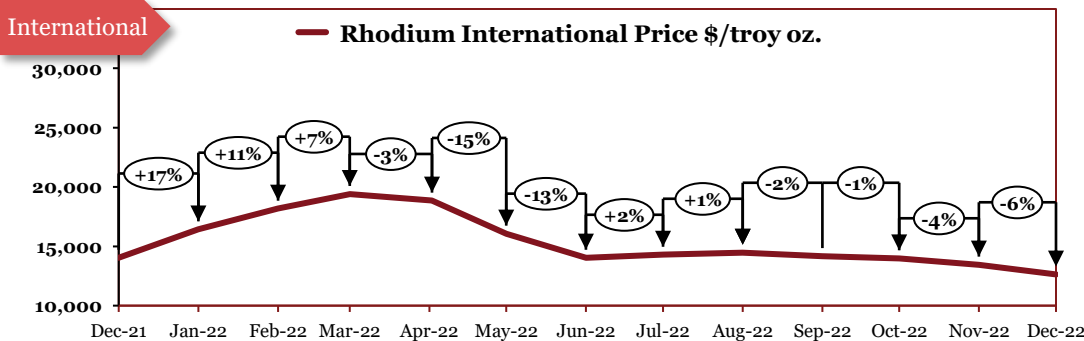
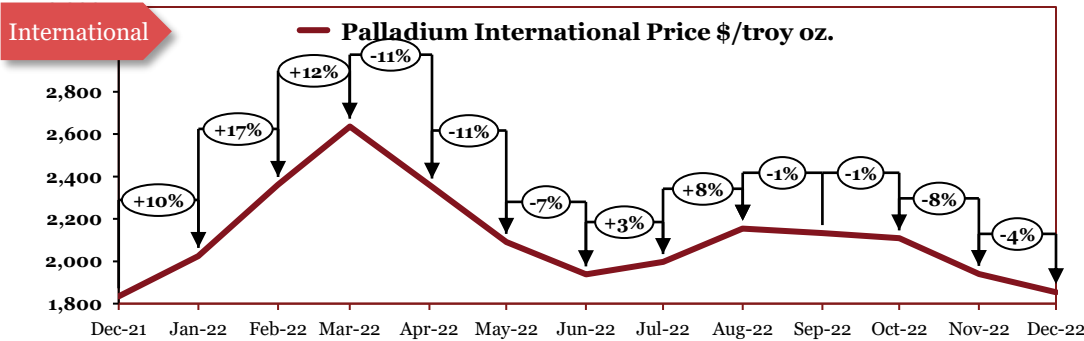
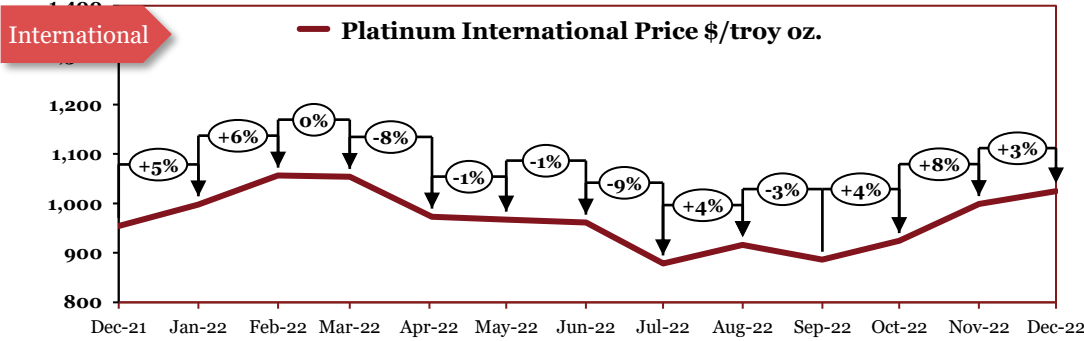
*The actual prices may vary depending on city, player, grade etc.

Outlook

In March, prices remained stable. In April, prices fell amid a slowdown in demand caused by the Covid lockdowns in China. In May, international prices fell due to lower physical premium prices across the globe and subdued market sentiment. In June, international prices continued to fall due to supply chain concerns and weak market sentiment in China and London. In July, prices hit their lowest level in 12 months on account of weaker demand for finished products. In August, prices continued to decrease as a result of a sharp increase in supply levels, primarily due to increased production of Chinese smelters. In September, prices fell sharply due to lower consumption in China caused by the US policy which cut China off from semiconductor chips made anywhere in the world with US tools leading to lower demand for tin which is used in soldering applications of the chips. In October, prices continued to decline sharply as a result of lower demand in China amid rising coronavirus cases and expanding restrictions. In November, prices rose sharply on account of a looming surge in demand for solar panels and batteries, both lead-acid and lithium-ion due to the green energy transition. In December, prices increased due to a surge in demand for industrial metals caused largely by the easing of restrictions in China.

Precious Metals

Precious Metals



Source: Johnson Matthey

Monthly Average Prices (\$/Oz)			
Period	Pt	Pd	Rh
Dec-21	954	1834	14031
Jan-22	998	2025	16422
Feb-22	1056	2360	18183
Mar-22	1054	2636	19402
Apr-22	973	2352	18857
May-22	967	2091	16064
Jun-22	961	1939	14046
Jul-22	879	1996	14300
Aug-22	916	2154	14456
Sep-22	886	2134	14181
Oct-22	924	2108	13987
Nov-22	999	1940	13450
Dec-22	1025	1854	12626

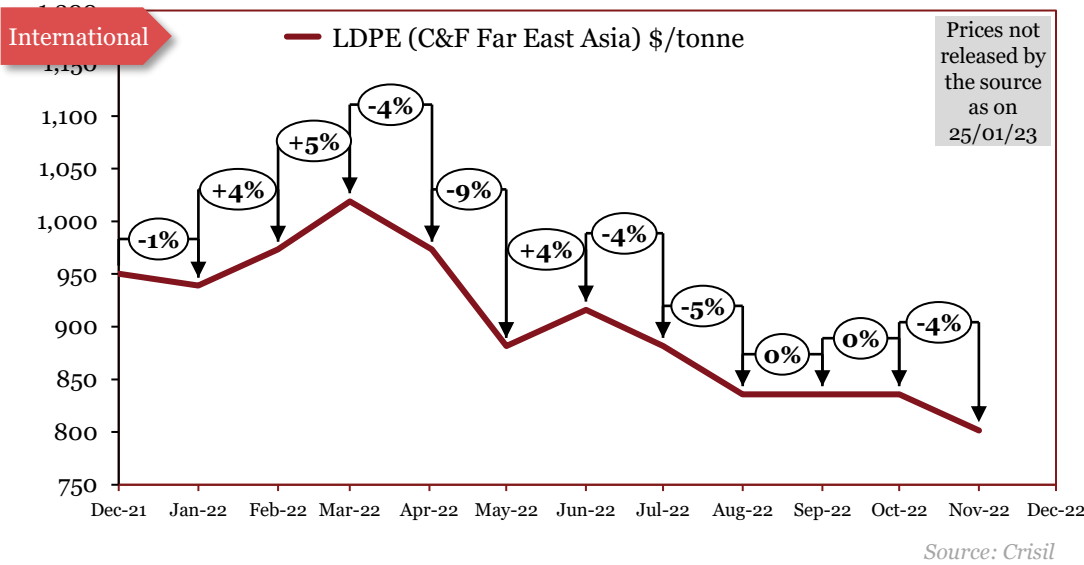
*The actual prices may vary depending on city, player, grade etc.

Outlook

In August, Platinum prices rose as a result of a rise in demand from the jewelry and industrial sectors amid the onset of the festive season. Palladium and Rhodium prices increased owing to greater demand from the automotive industry. In September, prices of all precious metals fell due to a strengthening dollar, impending global inflation, and rising interest rates which caused a sharp fall in demand. In October, platinum prices rose due to a massive upswing in Chinese fuel cell electric vehicle (FCEV) production, wherein platinum is the catalyst. Palladium prices decreased slightly amid rising interest rates, slowing economic growth, and a shift in preferences from palladium to platinum. Rhodium prices remained relatively stable. In November, Platinum prices increased as a result of growing automotive demand for increased substitution and higher loadings, coupled with committed industrial capacity additions. Palladium and Rhodium prices fell due to weak demand caused by the fears of recession, surging inflation, and rising interest rates. In December, Platinum prices rose due to a surge in demand for auto catalysts. Palladium and Rhodium prices declined due to the aggressive tightening of monetary policies in response to elevated inflation rates.

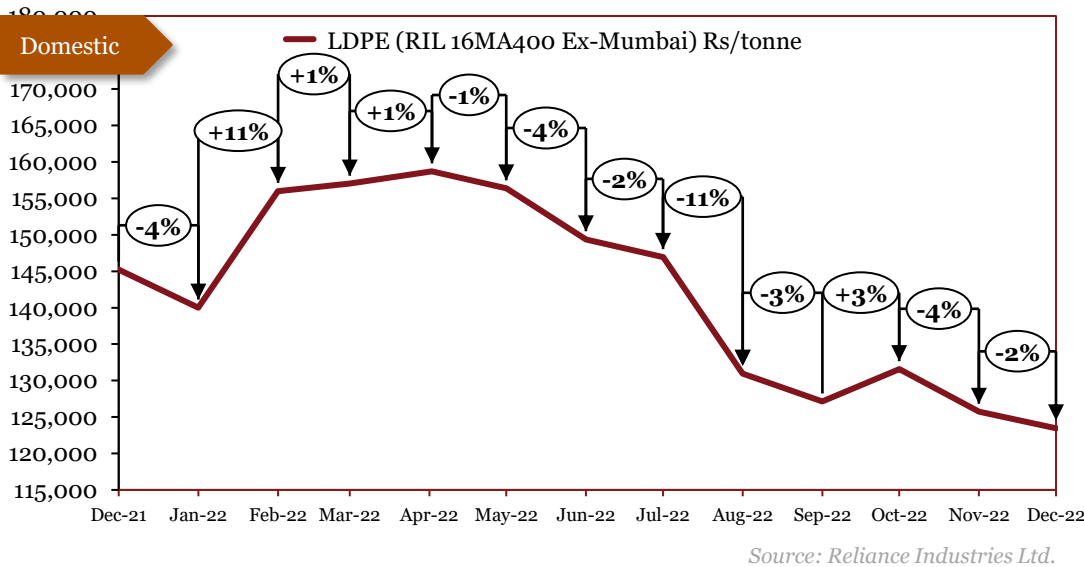
Polymers & Rubber

Low density polyethylene (LDPE)



Monthly Average Prices

Period	*Int'l (\$/tonne)	*Dom (Rs/tonne)
Dec-21	950	145236
Jan-22	939	139986
Feb-22	973	155986
Mar-22	1019	157028
Apr-22	973	158692
May-22	882	156359
Jun-22	916	149359
Jul-22	882	146934
Aug-22	836	130941
Sep-22	836	127153
Oct-22	836	131591
Nov-22	802	125758
Dec-22	802	123439

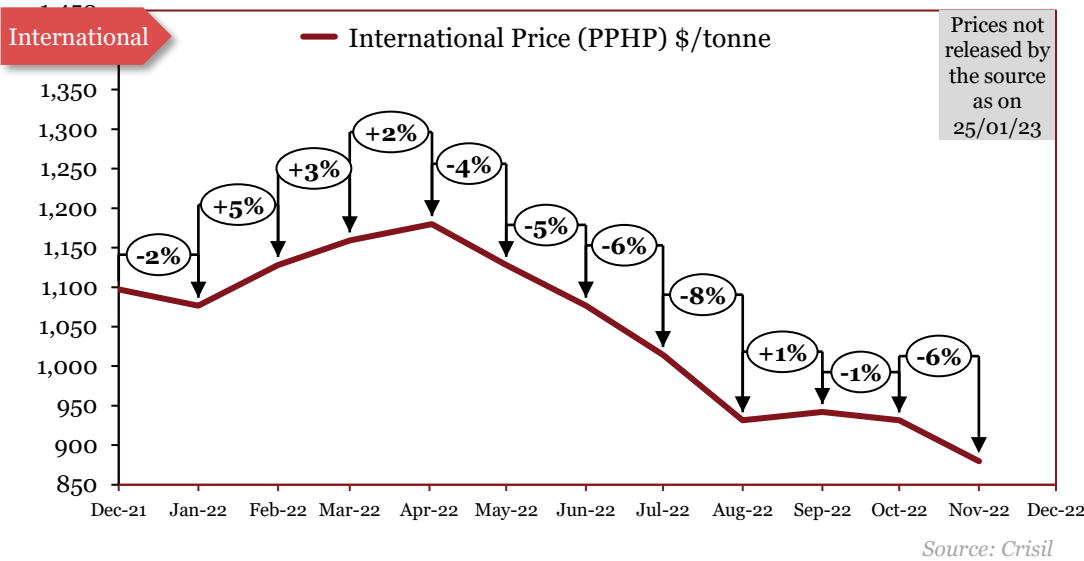


*The actual prices may vary depending on city, player, grade etc.

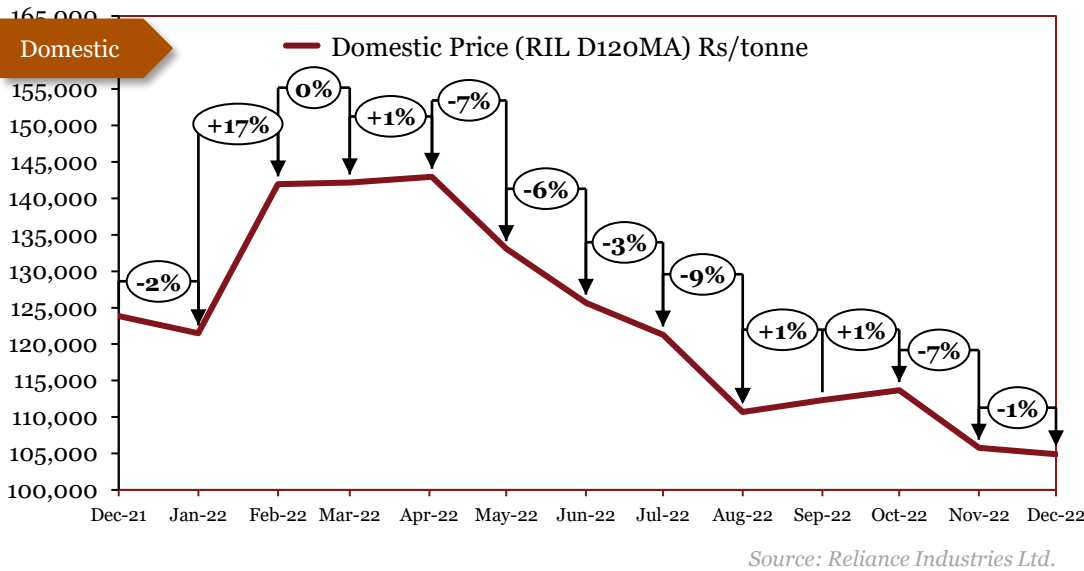
Outlook

In April, domestic prices remained relatively stable. In May, international prices decreased due to sluggish demand, higher availability of raw materials, and a downtrend in the futures market. In June, domestic prices fell slightly on account of a decline in crude oil prices and lower consumer demand. In July, domestic prices fell slightly due to a reduction in crude oil prices and lower demand on account of the off-season. In August, prices fell sharply in tandem with crude oil prices. In September, the domestic price fell due to low feedstock ethylene costs. International prices remained unaffected. In October, domestic prices increased despite a price dip in ethylene due to a spike in oil prices. International prices remained stable. In November, domestic and international prices fell due to persistent dull demand, surplus inventories and lower import offers from overseas suppliers. In December, domestic prices fell in tandem with crude oil prices.

Polypropylene (PP)



Monthly Average Prices		
Period	*Int'l (\$/tonne)	*Dom (Rs/tonne)
Dec-21	1097	123845
Jan-22	1076	121485
Feb-22	1128	141919
Mar-22	1159	142179
Apr-22	1180	142968
May-22	1128	142968
Jun-22	1076	125668
Jul-22	1014	121279
Aug-22	932	110698
Sep-22	942	112298
Oct-22	932	113702
Nov-22	880	105802
Dec-22		104896

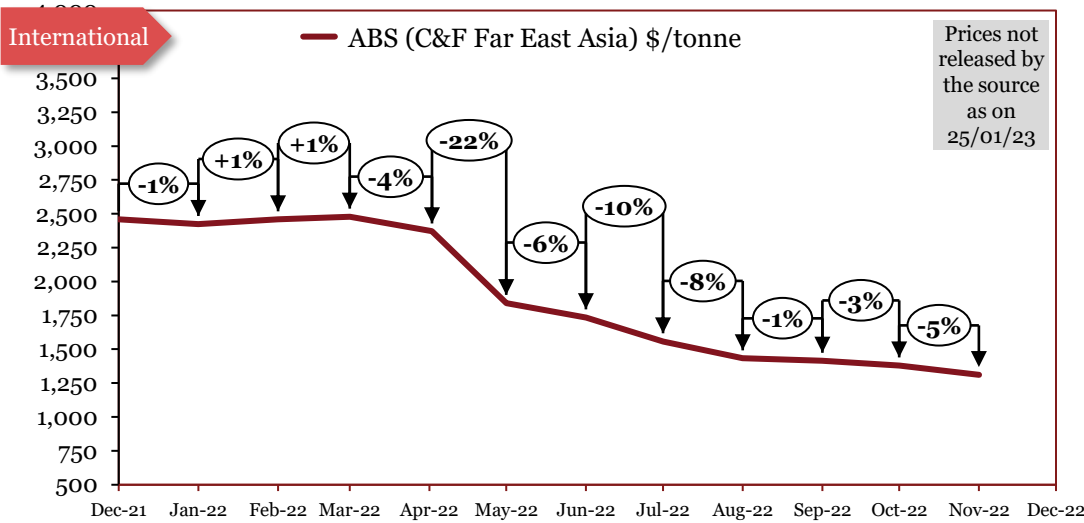


*The actual prices may vary depending on city, player, grade etc.

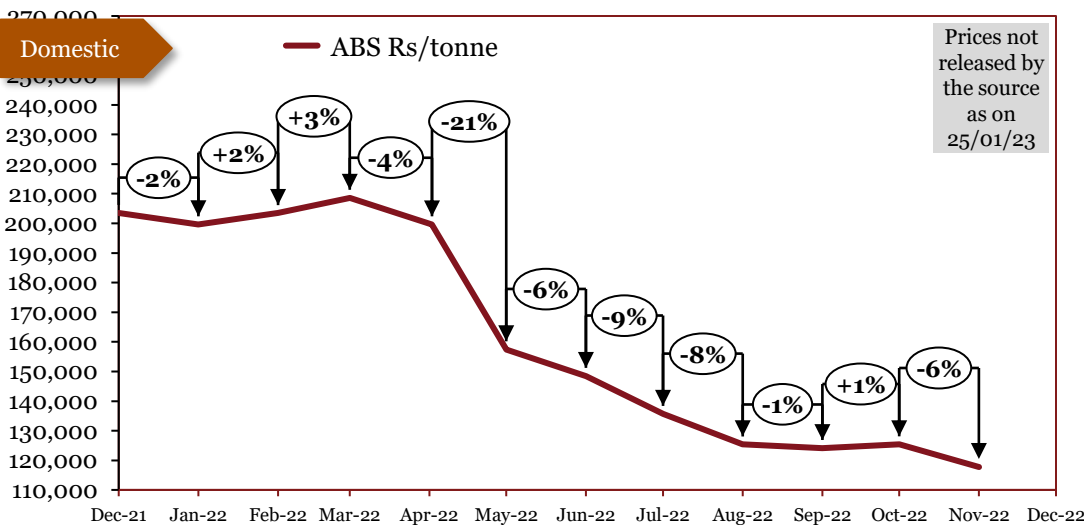
Outlook

In June, domestic prices fell due to lower demand and excess in the availability of products. In July, domestic prices fell due to lower crude oil prices and an oversupply in the Chinese market. In August, domestic prices fell due to lower upstream energy costs, lower import offers, a rise in inventory levels, and muted buying sentiment. In September, prices slightly increased due to higher energy prices adding to the cost pressure in the market. In October, domestic prices rose in response to stronger upstream propylene and active buying interest across several key markets, coupled with a rise in oil prices. In October, international prices decreased on the back of a low rate of consumption from the construction sector, and a pile-up of inventories with suppliers. In November, domestic and international prices fell due to a decrease in crude oil prices. In December, domestic prices decreased due to an increase in supply as a result of lower exports, coupled with a slump in demand caused by fears of a recession.

Acrylonitrile Butadiene Styrene (ABS)



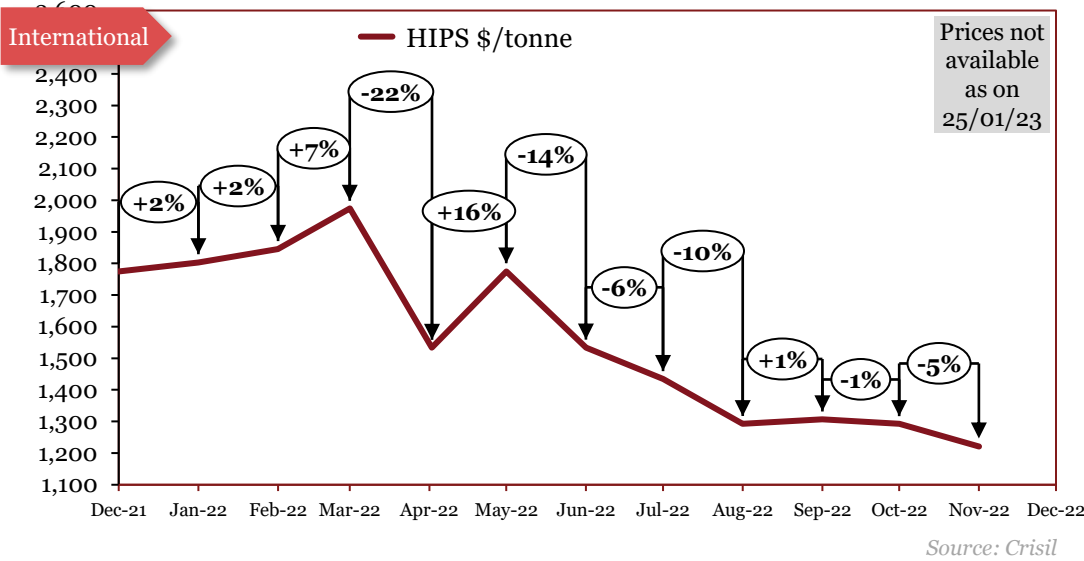
Monthly Average Prices		
Period	*Int'l (\$/tonne)	*Dom (Rs/tonne)
Dec-21	2460	203520
Jan-22	2425	199680
Feb-22	2460	203520
Mar-22	2478	208640
Apr-22	2372	199680
May-22	1841	157440
Jun-22	1735	148480
Jul-22	1558	135680
Aug-22	1434	125440
Sep-22	1416	124160
Oct-22	1381	125440
Nov-22	1310	117760
Dec-22		



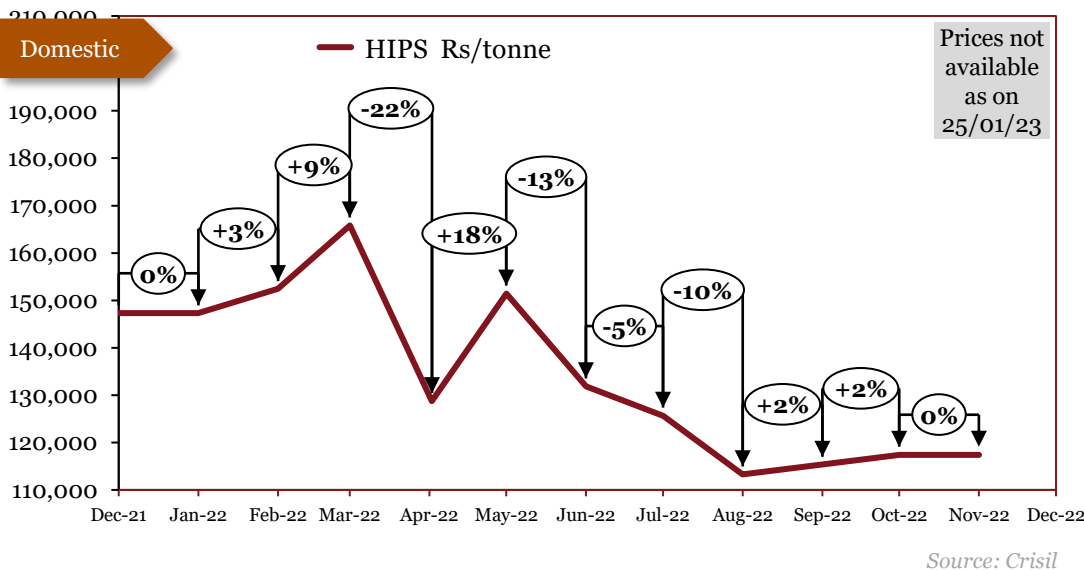
Outlook

In March, prices continued to rise due to a steep increase in crude oil prices. In April, prices decrease in tandem with crude oil prices. In May, both international and domestic fell sharply due to weakened demand across global markets and prolonged Covid-19 restrictions in China. In June, both international and domestic prices fell to their lowest levels in 18 months due to lower crude oil prices, the ban on single-use plastics in many countries and excess supply. In July, prices fell due to the reduction in crude oil prices, as a result of geo-political tensions. In August, domestic prices fell because of cheap import options available from China and South Korea. International prices fell due to a fall in Styrene prices, which is a key feedstock ingredient in ABS production. In September, prices declined owing to a sustained fall in Styrene prices - a key raw material in the production of ABS. In October, domestic prices rose in tandem with crude oil and coal prices. In October and November, international prices fell due to price drops in the three feedstocks, i.e., Acrylonitrile, Butadiene, and Styrene

High Impact Polystyrene (HIPS)



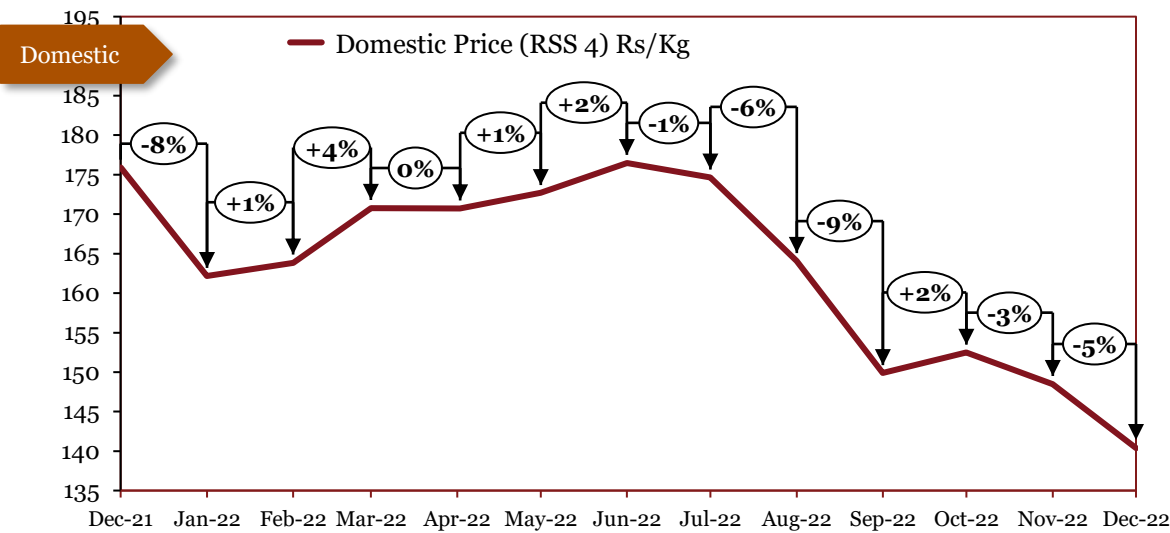
Monthly Average Prices		
Period	*Int'l (\$/tonne)	*Dom (Rs/tonne)
Dec-21	1775	147290
Jan-22	1803	147290
Feb-22	1846	152440
Mar-22	1974	165830
Apr-22	1534	128750
May-22	1775	151410
Jun-22	1534	131840
Jul-22	1434	125660
Aug-22	1292	113300
Sep-22	1306	115360
Oct-22	1292	117420
Nov-22	1221	117420
Dec-22		



Outlook

In February, prices rose slightly due to an increase in crude oil prices. In March, prices continued to rise steeply along with crude oil prices. In April, prices decrease along with decrease in crude oil prices. In June, both international and domestic prices fell sharply due to a decrease in crude oil prices, ban on single-use plastics in various countries and excess supply. In July, prices decreased due to sluggish demand in end-user markets, such as the automotive and home appliance sectors. In August, domestic prices fell because of a decline in the demand of plastics for packaging and insulation applications. International prices fell due to diminishing prices of crude oil in the international market. In September, prices increased slightly due to higher energy costs. In October, international prices fell due to low end-consumer demand caused by rising concerns over an economic slowdown and a slowdown in the construction sector. Domestic prices rose on account of the high input cost of coal and crude oil. In November, International prices fell in tandem with crude oil prices. Domestic prices remained stable.

Rubber



Source: Rubber Board

Monthly Average Prices	
Period	*Dom (Rs/kg)
Dec-21	176
Jan-22	162
Feb-22	164
Mar-22	171
Apr-22	171
May-22	173
Jun-22	176
Jul-22	175
Aug-22	164
Sep-22	150
Oct-22	152
Nov-22	149
Dec-22	140

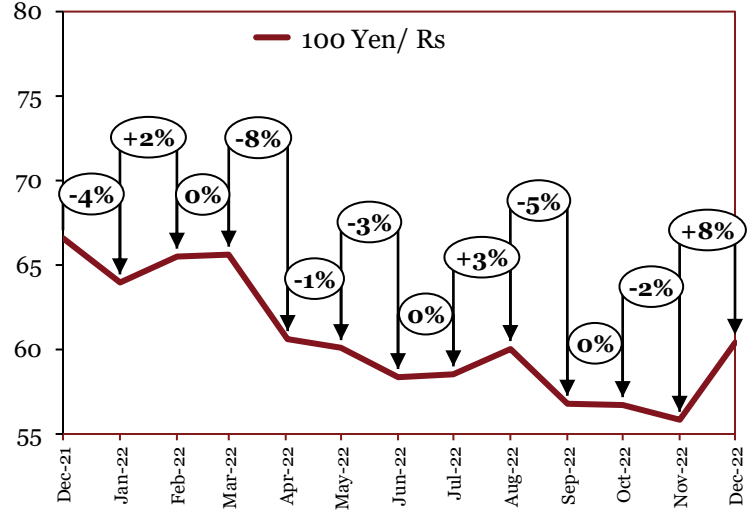
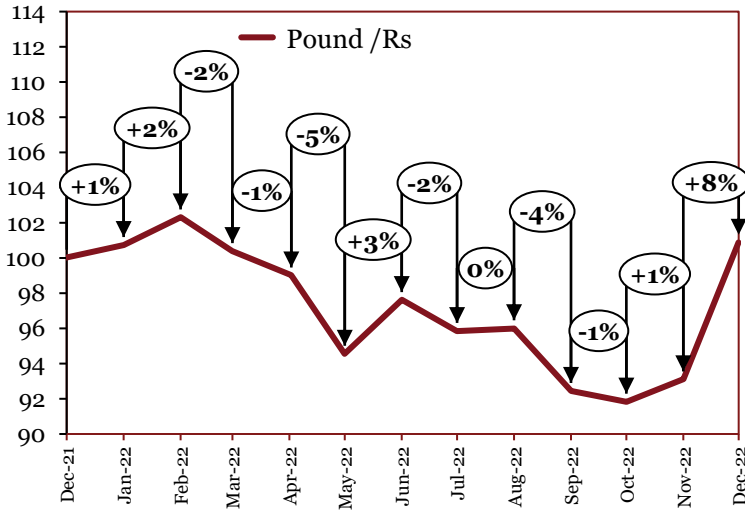
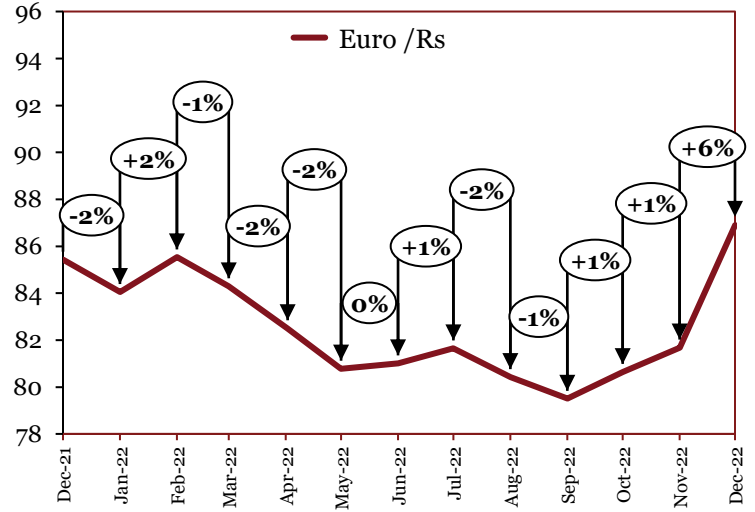
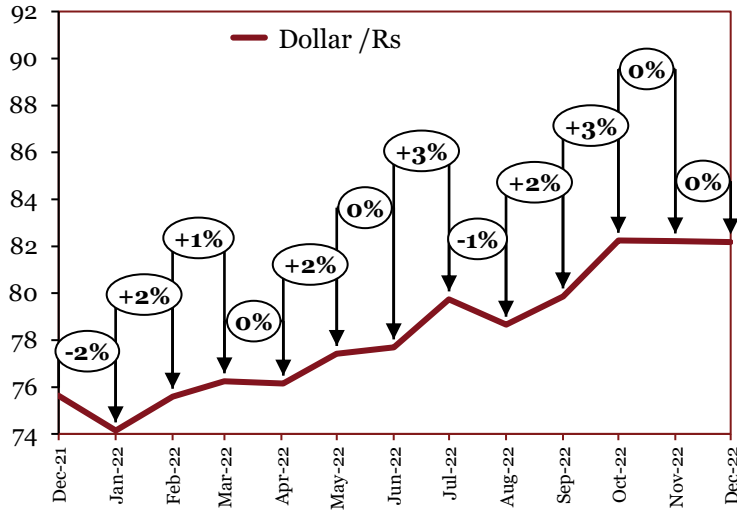
*The actual prices may vary depending on city, player, grade etc.

Outlook

In January, prices fell sharply due to lower demand for rubber in the manufacturing of tires. In February, prices remained stable. In March, prices rose due to sluggish production, import hurdles and rising crude oil prices. In April, prices remained stable. In May, prices increased slightly in tandem with crude oil prices. In June, prices rose slightly due to higher input costs. In July, prices decreased slightly due to lower demand on account of the monsoon season. In August, prices decreased sharply as a result of erratic rainfall, subdued industrial demand, and a bearish outlook in international markets. In September, prices continued to fall as a result of lower crude oil prices and increased production leading to excess supply. In October, prices increased due to a rise in domestic demand; in tandem with crude oil prices. In November, prices declined due to lower demand from tire-makers and other domestic bulk buyers, particularly in Kerala's key markets. In December, prices declined on the back of poor demand from the tyre market, along with the onset of the peak tapping season.

Appendices

Forex Movement



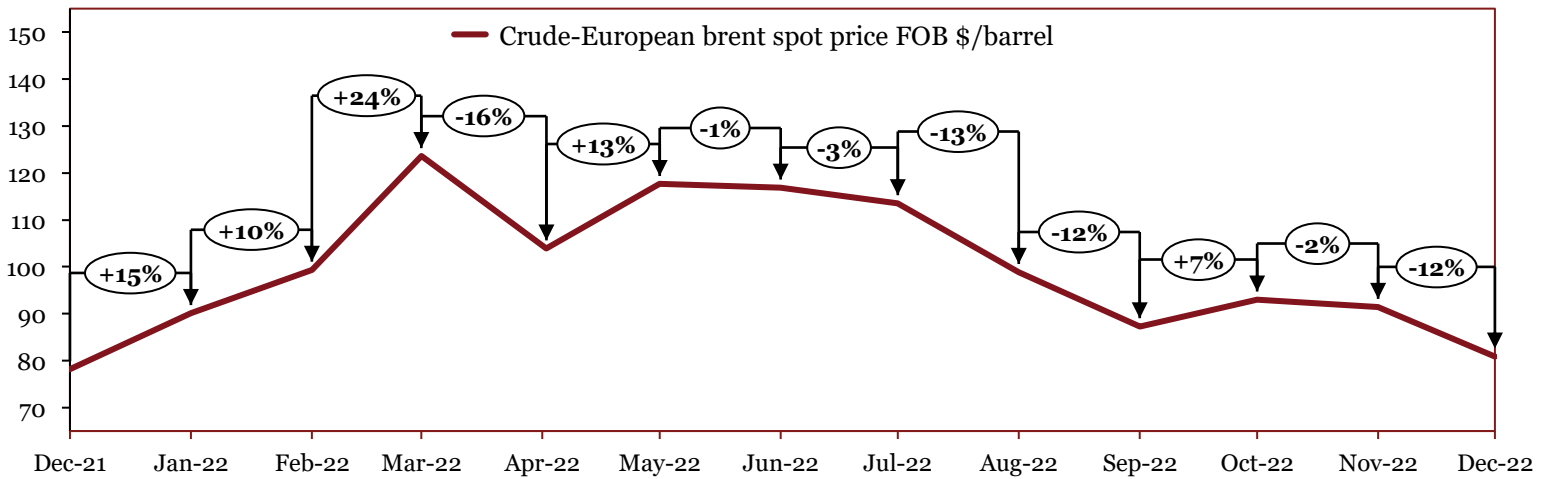
Source: SIAM

Monthly Average Prices (Rs)

	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
\$	76	74	76	76	76	77	78	80	79	80	82	82	82
£	100	101	102	100	99	95	98	96	96	92	92	93	101
€	85	84	86	84	83	81	81	82	80	80	81	82	87
¥	67	64	66	66	61	60	58	59	60	57	57	56	60

Crude Oil

Source: SIAM



Monthly Average Prices (\$/barrel)

	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
	78	90	99	124	104	118	117	114	99	87	93	91	81

Commodity Specifications

Commodity	International	Domestic
Iron Ore	IOECI635 Index (CIF China) - (Fe63.5%) CIF China	Crisil - Grade 1: 58% to below 60% Fe Fines - Grade 2: 60% to below 62% Fe Fines - Grade 3: 62% to below 65% Fe Fines - Grade 4: 65% and above Fe Fines
Pig Iron	Crisil -Foundry grade FOB CIS	Crisil -Foundry grade ex-factory, India
Stainless steel	NA	PwC Research -G 304 CR Coil -G 304 HR Coil
Wire rod	Crisil -CIS Black Sea (US \$/Tonne)	Crisil - Wire rods: 5.5 mm (Prices are inclusive of excise duty by exclusive of VAT/Sales tax)
Steel Billets	Crisil -FOB CIS Black Sea <i>Previously: Bloomberg Black Sea Steel Billet Spot FOB</i>	Crisil - 100^100 mm (Avg. prices collated from 2-3 locations)
Hot-rolled coils	Crisil -FOB Black Sea	Crisil - 14G 2mm (Avg. prices collated from 2-3 locations)
Cold-rolled coils	Crisil -(CIS) FOB Black Sea	Crisil - Mumbai 16G (Avg. prices collated from 2-3 locations)
Steel Scrap	NA	Crisil - Heavy melting (excl. GST)
EN 8	NA	PwC Research -EN8 Alloy forging
20MnCr5	NA	PwC Research -Alloy forging
Ferro chrome	Crisil : FOB Hong Kong Cr 50%	Crisil: Ex-factory Cr 60%
Ferro silicon	Crisil - FOB China Si 75%	Crisil - Ex-factory Si 70%

Commodity Specifications

Commodity	International	Domestic
Aluminium	<p>LME</p> <p>-Primary aluminium with impurities no greater than the chemical composition of one of the registered designations:</p> <ul style="list-style-type: none"> •P1020A in the North American and International Registration Record entitled “International Designations and Chemical Composition Limits for Unalloyed Aluminium” (revised March 2007) •Al99.70 in the GB/T 1196-2008 Standard entitled “Unalloyed aluminium ingots for remelting” 	<p>NCDEX, MCX (July’19 onwards)</p> <p>-Primary aluminium 99.7% purity (minimum) form: ingots, T-bars,</p>
Copper	<p>LME</p> <p>-Grade A copper must conform to the chemical composition of one of the following standards:</p> <ul style="list-style-type: none"> •BS EN 1978:1998 - Cu-CATH-1 •GB/T 467-2010 - Cu-CATH-1 •ASTM B115-10 - cathode Grade 1 	<p>MCX</p> <p>- Grade 1 electrolytic copper as per B115 specification</p>
Zinc	<p>LME</p> <p>-Special high-grade zinc of 99.995% purity (minimum) must conform to the chemical composition of one of the following standards:</p> <ul style="list-style-type: none"> •BS EN 1179:2003 - 99.995% grade •ISO 752:2004 - ZN-1 grade •ASTM B6-12 - LME grade •GB/T 470-2008 - Zn99.995 grade 	<p>NCDEX, MCX (July’19 onwards)</p> <p>- Zinc of 99.995% minimum purity. Zinc must conform with the 99.995% graded chemical composition of BS EN 1179:1996 Standard</p> <p>entitled “Zinc and Zinc alloys primary Zinc”</p> <p>Form: ingots</p>
Lead	<p>LME</p> <ul style="list-style-type: none"> - Lead of 99.97% purity (minimum) conforming to BS EN 12659:1999 - GB/T 469/2005 	<p>MCX</p> <ul style="list-style-type: none"> - Lead ingots with minimum purity of 99.97%

Commodity Specifications

Commodity	International	Domestic
Nickel	LME - Nickel of 99.80% purity (minimum) conforming to B39-79 (2013) - GB/T 6516-2010	NCDEX, MCX (July'19 onwards) - 4"*4" approved pure cut Nickel of 99.80% purity (minimum)
Tin	LME - Tin of 99.85% purity (minimum) conforming to BS EN 610:1996	Bloomberg - Tin (min 99.85%) \$/tonne
Platinum	Metal in sponge form with minimum purities of 99.95% for platinum and palladium, and 99.9% for rhodium	
Palladium		
Rhodium		
Low density polyethylene (LDPE)	International price (C&F FEA) \$/tonne	RIL-16MA400 grade
Polypropylene (PP)	International Price (PPHP) \$/tonne	RIL-D120MA grade
Acrylonitrile Butadiene Styrene (ABS)	International price (C&F FEA) \$/tonne	Landed Cost Rs/tonne
High Impact Polystyrene (HIPS)	International price \$/tonne	Landed Cost Rs/tonne
Rubber Prices	NA	NCDEX/Rubber board - RSS 4 (Ribbed Smoked Sheet 4) ex-warehouse Kochi exclusive of all taxes
Forex Movement	RBI reference rates	
Crude	European Brent spot price FOB \$/barrel – Energy Information Administration (EIA)	



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