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Commodity price monitor

December -20

Prepared for ACMA

*Strictly private
and confidential*

January 2021



pwc

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Commodity trend dashboard

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

Calendar Year 19-20: Q vs. Q update

Commodity	Region	Q-o-Q Up	Q-o-Q Down
Iron & Steel			
Iron Ore	International	12% ▲	
	Domestic low grade		
	Domestic high grade		
Pig Iron	International	19% ▲	
	Domestic	8% ▲	
Stainless steel	Domestic	6% ▲	
	Domestic	6% ▲	
Wire rod	International	12% ▲	
	Domestic	11% ▲	
Steel Billets	International	18% ▲	
	Domestic	6% ▲	
Hot-rolled coils	International	23% ▲	
	Domestic	17% ▲	
Cold-rolled coils	International	21% ▲	
	Domestic	17% ▲	
Steel Scrap	Domestic	13% ▲	
	EN8	9% ▲	
20MnCr5	Domestic	9% ▲	
Ferro-alloys			
Ferro titanium	International	N/A	
Ferro chrome	International	3% ▲	
	Domestic	1% ▲	
Ferro molybdenum	International	N/A	
Ferro vanadium	International	N/A	
Ferro silicon	International	11% ▲	
	Domestic	2% ▲	

ND: Not disclosed by the source

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

Calendar Year 19-20: Q vs. Q update

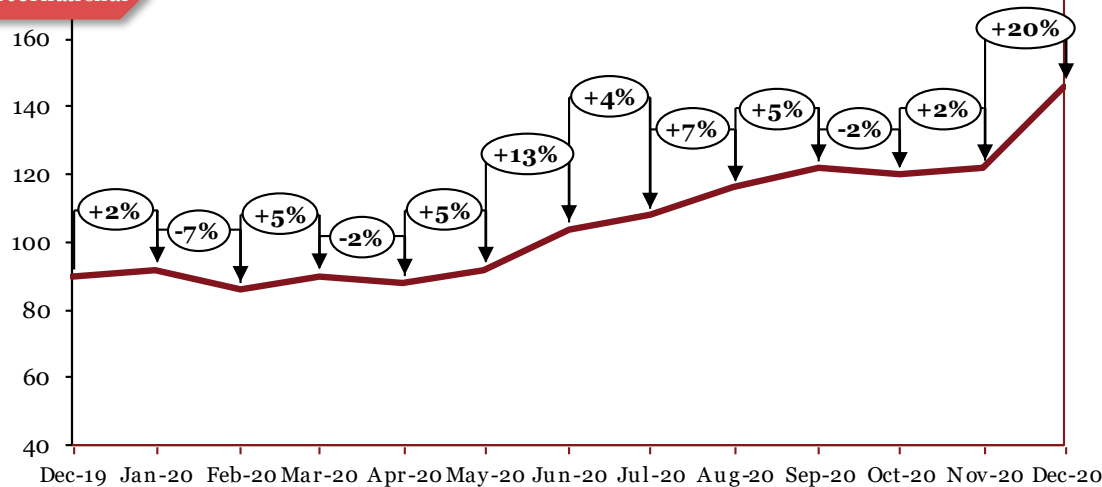
Commodity	Region	Q-o-Q Up	Q-o-Q Down
Base Metals			
Aluminum	International	12.4%	▲
	Domestic	10%	▲
Copper	International	10%	▲
	Domestic	9%	▲
Zinc	International	12%	▲
	Domestic	13%	▲
Lead	International	1%	▲
	Domestic	3%	▲
Nickel	International	12%	▲
	Domestic	14%	▲
Tin	International	6.4%	▲
	Domestic	N/A	
Magnesium	International	N/A	
Precious Metals			
Platinum	International	4%	▲
Palladium	International	15%	▲
Rhodium	International	36%	▲
Polymers			
Low density polyethylene (LDPE)	International	5%	▲
	Domestic	19%	▲
Polypropylene (PP)	International	10%	▲
	Domestic	14%	▲
Rubber	Domestic	16%	▲
Currency Exchange			
Dollar	International		-1% ▼
Pound	International	1%	▲
Euro	International	2%	▲
Yen	International	0%	▲

Iron & Steel

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Iron Ore

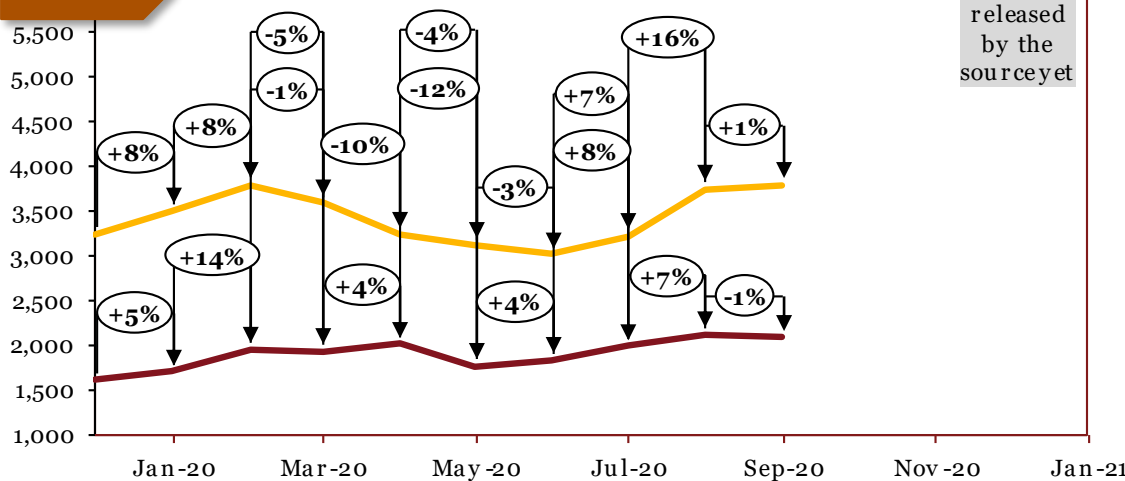
International



Source: Crisil

Period	*Int'l	*Dom	
	\$/tonne	Rs/tonne	
		65% & below	65% & above
Dec-19	90	1619	3235
Jan-20	92	1704	3499
Feb-20	86	1950	3792
Mar-20	90	1934	3588
Apr-20	88	2010	3243
May-20	92	1768	3111
Jun-20	104	1834	3014
Jul-20	108	1988	3223
Aug-20	116	2120	3750
Sep-20	122	2090	3797
Oct-20	120		
Nov-20	122		
Dec-20	146		

Domestic



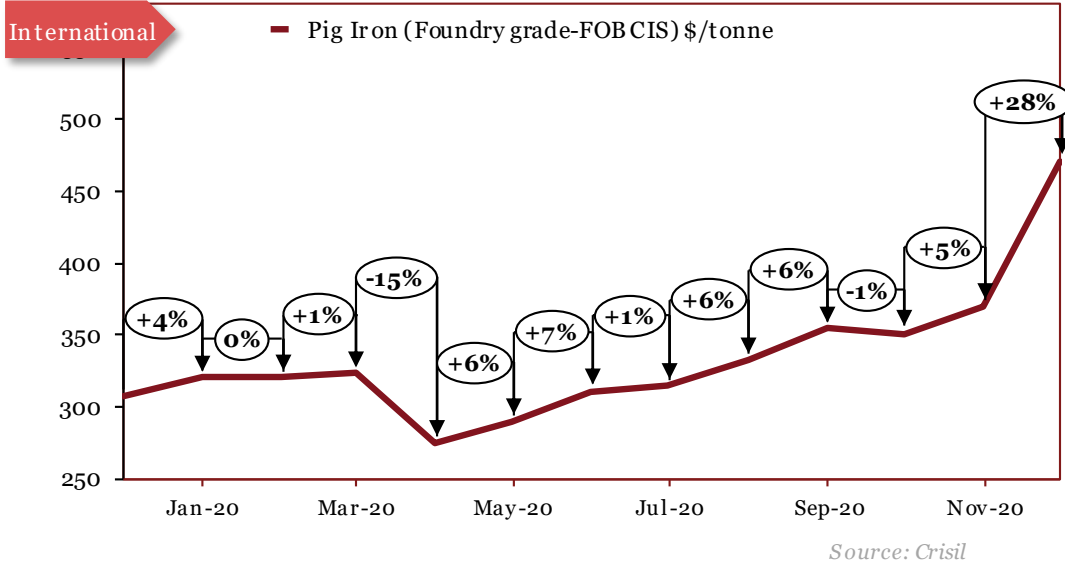
Source: Crisil

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

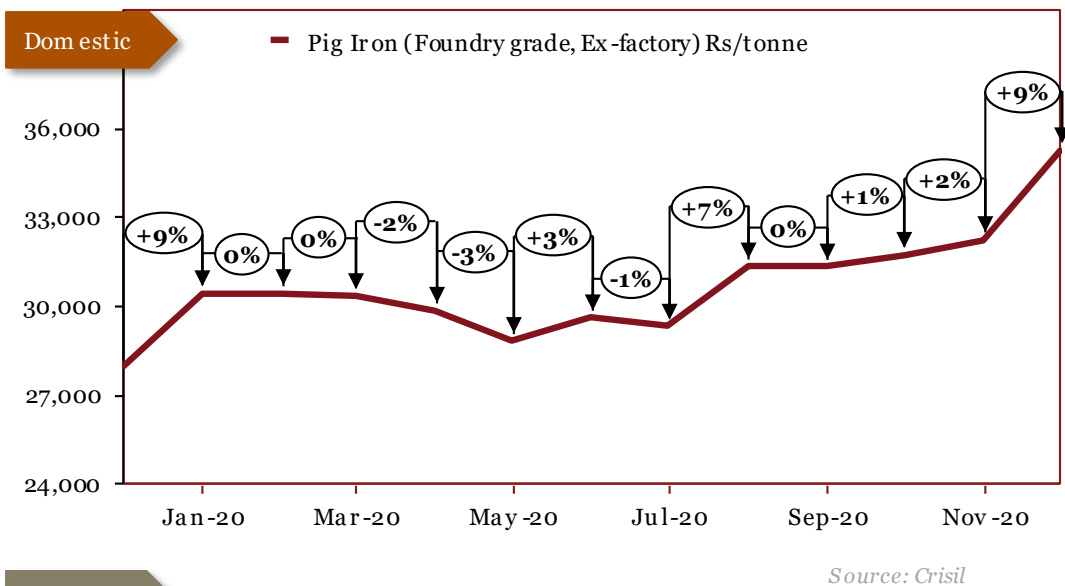
Outlook

In February, international prices declined thanks to the coronavirus epidemic in China hurting local demand. In March, international prices rose as Chinese factories resumed production in parts of the country unaffected by the COVID-19 pandemic. In April, international prices declined slightly amid the COVID-19 pandemic, but were supported by low production in Brazil and Australia, alongside steady Chinese demand. In May, prices rose as production was disrupted in Brazil and the Vale as the spread of COVID-19 positive cases caused disruptions. Chinese demand continued to boost the segment. In June and July, international prices showed strong recovery due to pent-up demand and supply concerns as economies returned to regular volume levels. In August, international prices rose as Chinese infrastructure spending was aided by a government stimulus, along with supply concerns from Brazil. In September, international prices continued their uptick on account of high demand from China. In October, international prices declined due to lower Chinese imports, along with greater supply from Brazil and South Africa. In November, international prices rose on account of a shortage of available supply in the market. In December, prices rose aggressively on the backs of trade disputes between China and Australia.

Pig Iron



Monthly Average Prices		
Period	*Int'l	*Dom
	\$/tonne	Rs/tonne
Dec-19	308	27950
Jan-20	320	30450
Feb-20	320	30450
Mar-20	323	30350
Apr-20	274	29850
May-20	290	28850
Jun-20	311	29650
Jul-20	314	29350
Aug-20	333	31350
Sep-20	354	31350
Oct-20	351	31750
Nov-20	370	32250
Dec-20	471	35250

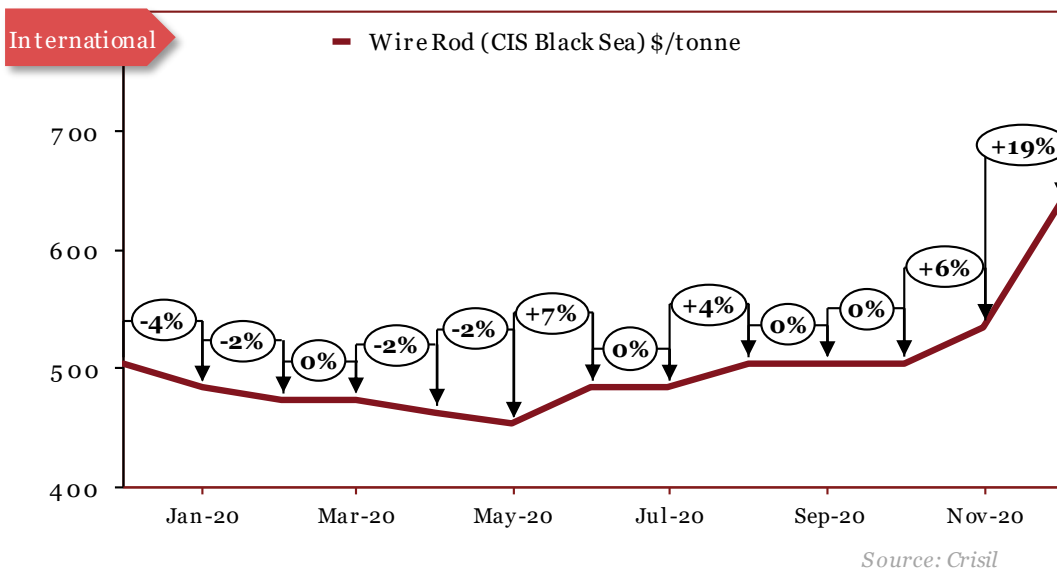


*The actual prices may vary depending on city, player, grade etc.

Outlook

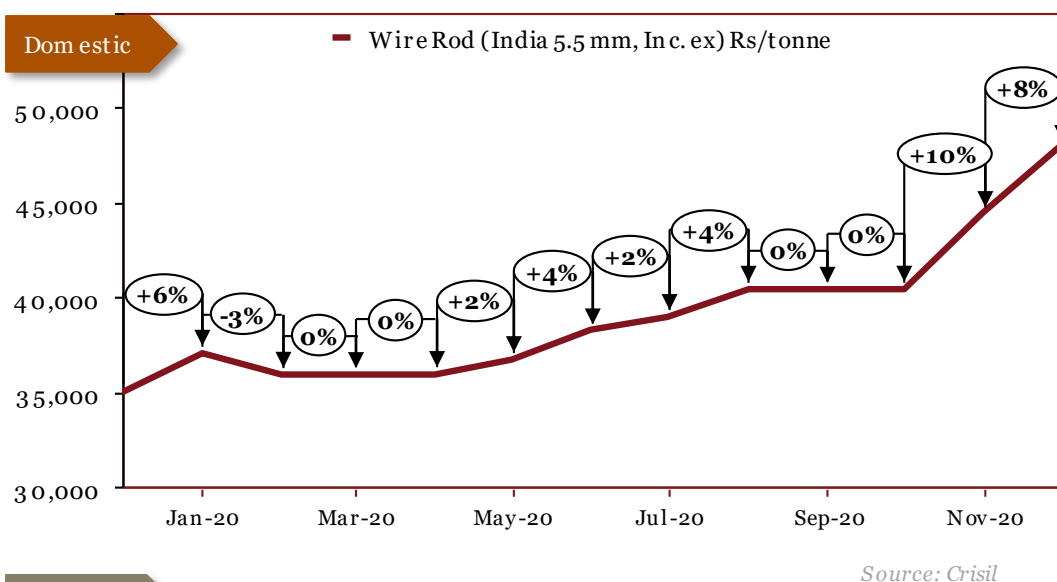
In April, international prices fell as lockdown measures caused global industrial demand to fall precipitously. Domestic prices declined on less demand from foundries, partly as a result of the auto industry being shut down. In May, international prices rose as Chinese demand continued to improve, while domestic prices slid further. In June and July, international as well as domestic prices rose due to higher Iron Ore prices. In August, international and domestic prices rose on greater demand from industries, as well as continuing shortage of Iron Ore. In September, international prices rose on account of high Chinese demand, while domestic prices remained stable. In October, international prices declined marginally, while domestic prices rose right before the festive season. In November, international as well as domestic prices rose on account of the trend for greater demand for steel. In November, international prices rose due to supply constraints and greater steel demand, while domestic prices rose steeply as part of the trend for higher raw material prices. In December, pig iron prices rose aggressively globally, following from a trend of higher prices for iron and steel commodities due to higher Chinese buying. Domestic prices rose in tandem.

Wire Rod



Monthly Average Prices

Period	^*Int'l (\$/tonne)	*Dom (Rs/tonne)
Dec-19	504	35094
Jan-20	484	37094
Feb-20	473	35994
Mar-20	473	35994
Apr-20	463	35994
May-20	453	36794
Jun-20	484	38294
Jul-20	484	38994
Aug-20	504	40494
Sep-20	504	40494
Oct-20	504	40494
Nov-20	535	44494
Dec-20	638	47994



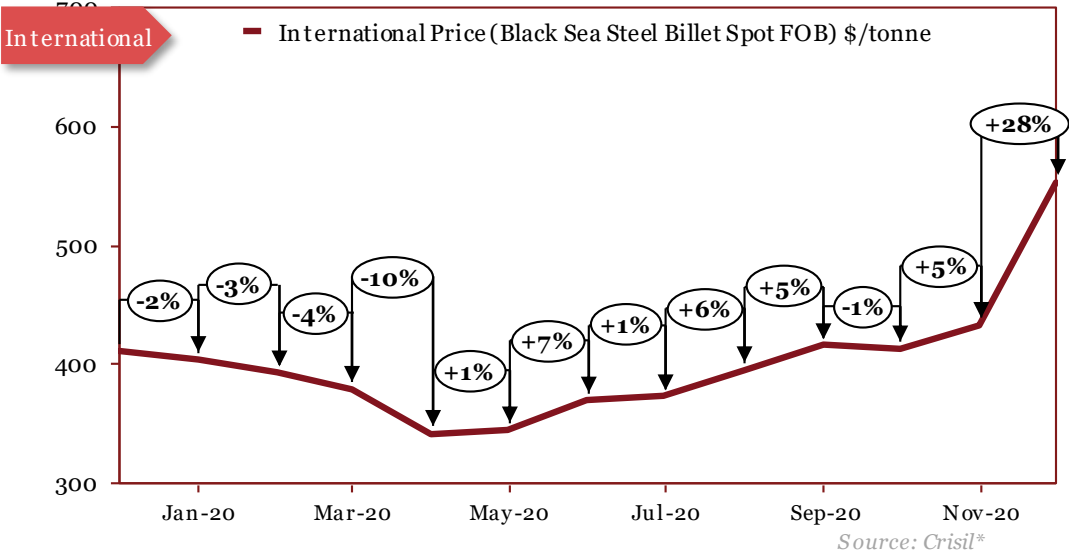
*The actual prices may vary depending on city, player, grade etc.

Outlook

In December, international prices fell due to lower rebar prices and weak demand while domestic prices remained constant due to stable market conditions. In January, international prices fell on an oversupply of steel in the market, while domestic prices rose after the government imposed country-specific duties on specific markets. In February, international prices declined as the coronavirus lockdown decimated Chinese demand. Domestically, prices fell on reduced demand. In March, prices remained unchanged. In April, international prices declined owing to lower demand from factories. Domestically prices remain unchanged. In May, international prices fell slightly, domestic prices picked up on the resumption of industrial activity. In June, prices rose internationally as well as domestically, owing to higher demand from producers. In July, prices stabilized globally while rising slightly domestically. In August, international as well as domestic prices rose on the backs of growing demand, shortage of inventory. In September, international and domestic prices remained stable. In October, international and domestic prices remained stable. In November, international as well as domestic prices rose due to the higher cost of iron ore. In December, a boom in Chinese construction drove higher international and domestic prices.

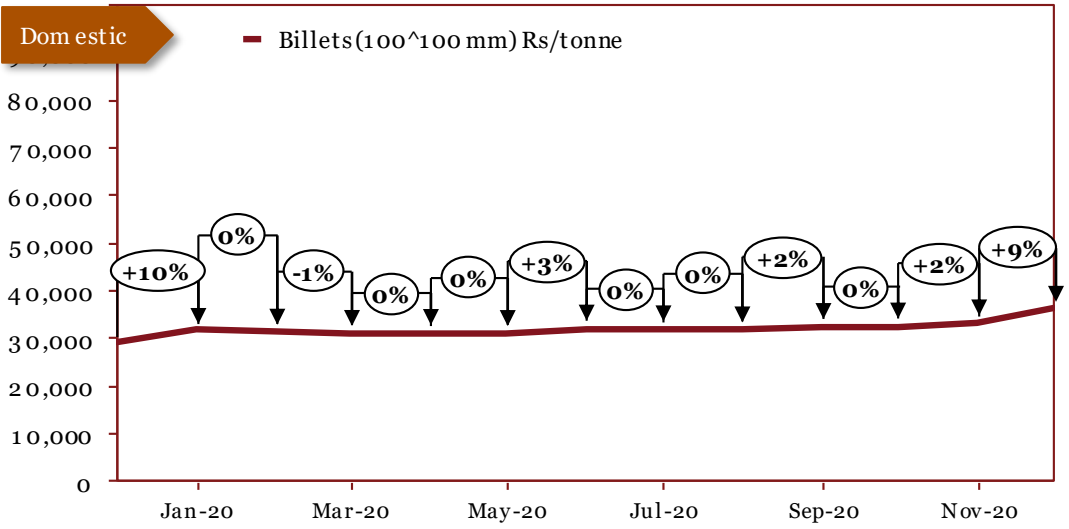
^Prices have been retrospectively revised by the source due to change in base year

Steel Billets



Source: Bloomberg from July 2019 to January 2020

Monthly Average Prices		
Period	^*Int'l (\$/tonne)	*Dom (Rs/tonne)
Dec-19	411	29033
Jan-20	404	31800
Feb-20	393	31650
Mar-20	379	31200
Apr-20	342	31200
May-20	345	31200
Jun-20	371	32100
Jul-20	373	32000
Aug-20	396	31950
Sep-20	416	32500
Oct-20	413	32567
Nov-20	433	33150
Dec-20	553	36233



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

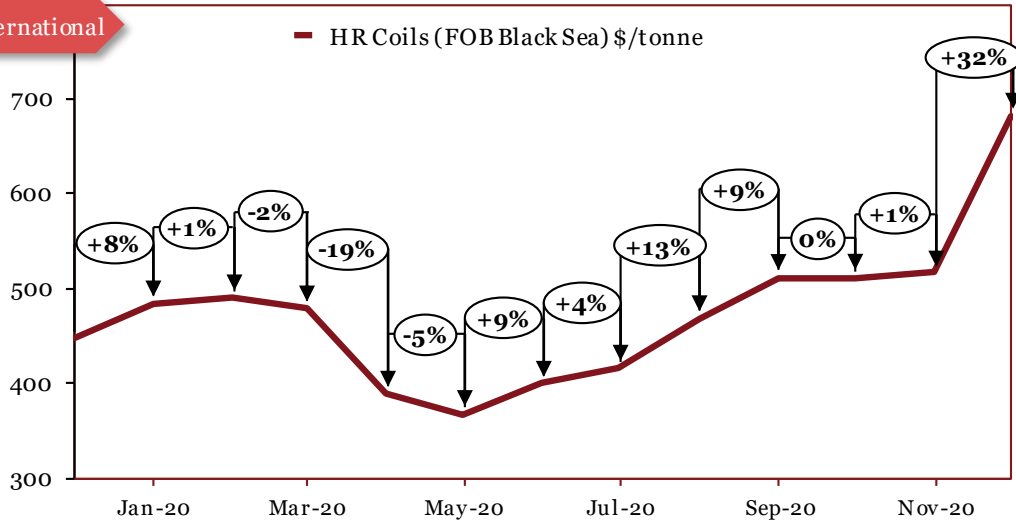
Outlook

In January, international prices fell marginally while domestic prices rose on the back of renewed investment in infrastructure and growth in the automobile industry. In February, domestic prices remained consistent due to stable market conditions. In February, domestic prices remained stable. In March, domestic prices declined owing to a weaker rupee and the impact of the COVID-19 pandemic. In April, international prices fell on account of declining demand and on account of lockdown measures, while remaining stable domestically. In May, international prices remained stable following the large decline in April, while domestic prices were unchanged. In June, international as well as domestic prices rose due to higher input costs as well as a rise in demand. In July, international prices rose slightly whilst domestic prices remained constant. In August, international billet prices rose on greater demand and a shortage of scrap. In September, international prices rose, while domestic prices rose on account of higher DRI rates. In October, international prices declined while domestic prices remained stable. In November, international prices rose on higher ore prices, as well as reduced supply. Domestic prices followed suit. In December, international as well as domestic prices rose due to the higher price of scrap.

^International prices changed due to change in the grade

Hot-Rolled (HR) Coils

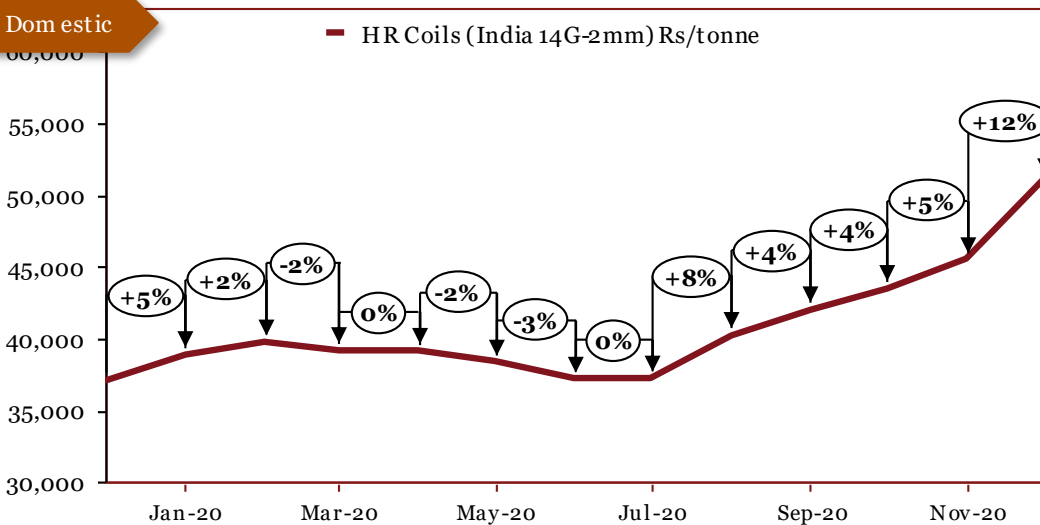
International



Source: Crisil

Monthly Average Prices		
Period	*Int'l (\$/tonne)	^*Dom (Rs/tonne)
Dec-19	448	37150
Jan-20	485	38900
Feb-20	490	39800
Mar-20	480	39200
Apr-20	389	39200
May-20	368	38450
Jun-20	400	37250
Jul-20	416	37250
Aug-20	469	40250
Sep-20	512	42050
Oct-20	512	43550
Nov-20	517	45550
Dec-20	682	51050

Domestic



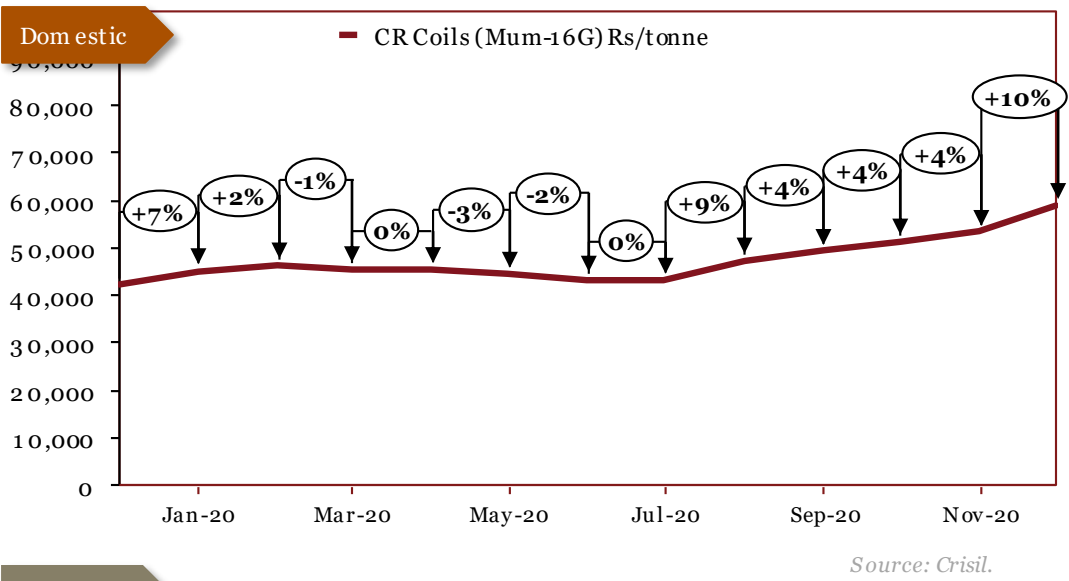
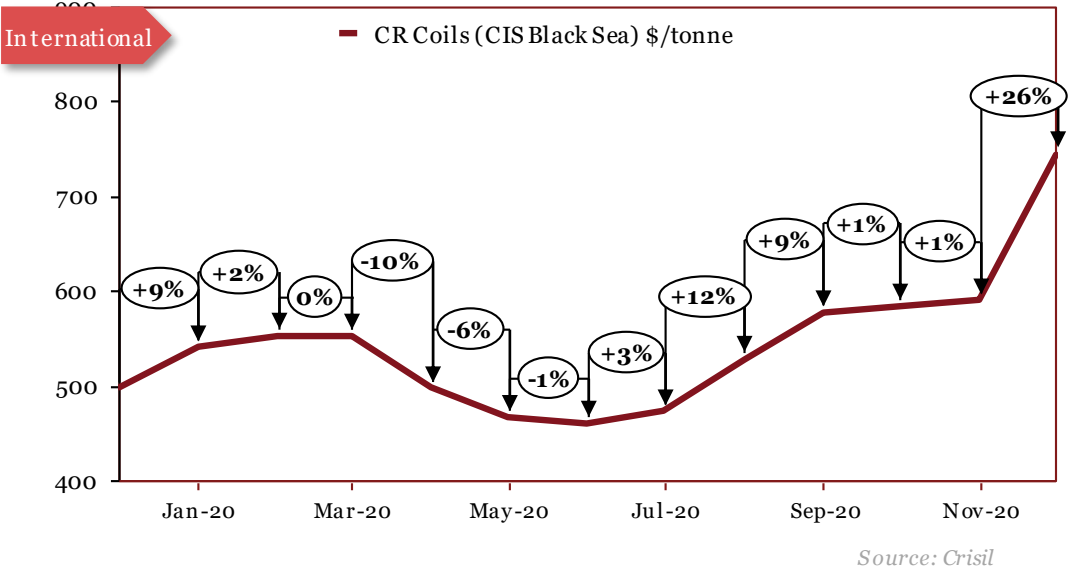
Source: Crisil

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

Outlook

In April, prices declined as the COVID lockdown shut industries around the world, while domestic prices stayed stable. In May, international prices declined considerably while domestic prices continued to correct downwards, as producers faced up to a weak economy, limited industrial demand, with most major projects remaining on hold. In June, international prices rose due to higher demand and higher input costs, whereas domestic prices fell on weak local demand. In July, international prices continued to rise, while domestic prices remained constant. In August, international and domestic prices rose as stronger demand, primarily from China, returned production to pre-COVID levels. In September, international and domestic prices rose on higher iron ore prices. In October, international prices remained stable due to the new lockdowns in Europe, while domestic prices rose on higher demand and from industry before the festive season. In November, prices of HR coils rose internationally on the backs of reduced supply, while domestic growth was enabled by improvement in construction, higher ore prices and reduced availability. In December, international prices alongside domestic prices rose on the back of higher cost for steel raw materials.

Cold-Rolled (CR) Coils



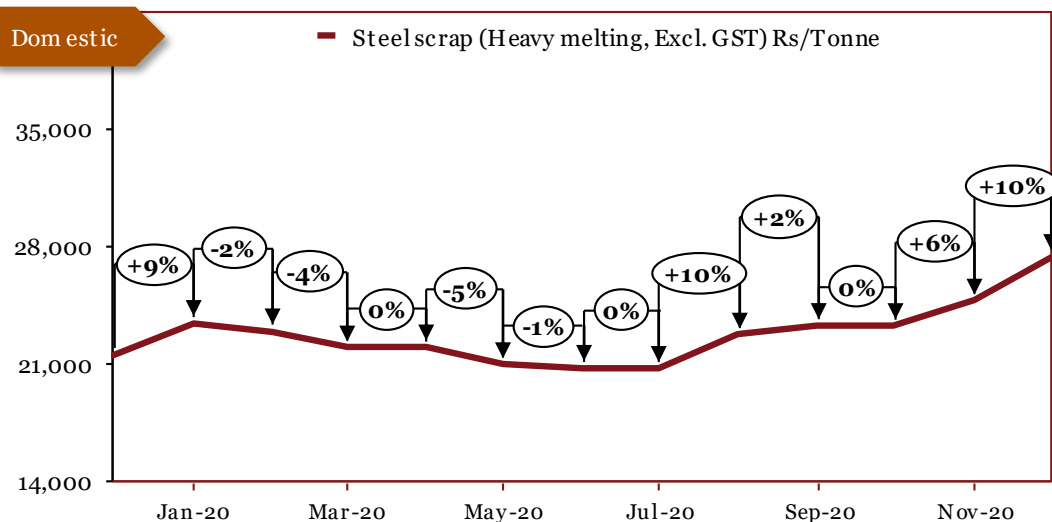
Monthly Average Prices		
Period	*Int'l (\$/tonne)	^*Dom (Rs/tonne)
Dec-19	498	42150
Jan-20	541	45150
Feb-20	554	46150
Mar-20	554	45550
Apr-20	498	45550
May-20	467	44350
Jun-20	461	43350
Jul-20	474	43350
Aug-20	529	47350
Sep-20	578	49350
Oct-20	584	51350
Nov-20	590	53350
Dec-20	744	58850

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

Outlook

In December, international prices rose mirroring HR Coil prices, while domestic prices rose on the backs of international rate increases. In January, both international and domestic prices rose in conjunction with hot-rolled coil prices. In February, international and domestic prices rose in accordance with HR Coil prices. In March, international price growth was halted and prices remained unchanged due to uncertainty around the COVID-19 pandemic, Domestic prices fell concurrently with HR Coil prices. In April, international prices declined on account of COVID-induced shutdowns. In May, prices declined in line with HR Coil prices. In June, international prices declined slightly on weak demand, while domestic prices declined, mirroring the decline in HR coil prices. In July, prices rose internationally on stronger demand, while domestic prices remained constant. In August, prices rose in tandem with HR coil prices. In September, international and domestic prices rose in line with HR Coil prices. In October, international prices rose on continued strong Chinese demand, while domestic prices rose in accordance with HR Coil prices. In November, international and domestic prices rose in tandem with HR coil prices. In December, international and domestic prices rose in tandem with HR Coil prices.

Steel Scrap (Heavy Melting)



Source: CRISIL

Monthly Average Prices	
Period	*Dom (Rs/Tonne)
Dec-19	21550
Jan-20	23450
Feb-20	23000
Mar-20	22000
Apr-20	22000
May-20	21000
Jun-20	20800
Jul-20	20800
Aug-20	22800
Sep-20	23300
Oct-20	23300
Nov-20	24800
Dec-20	27400

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

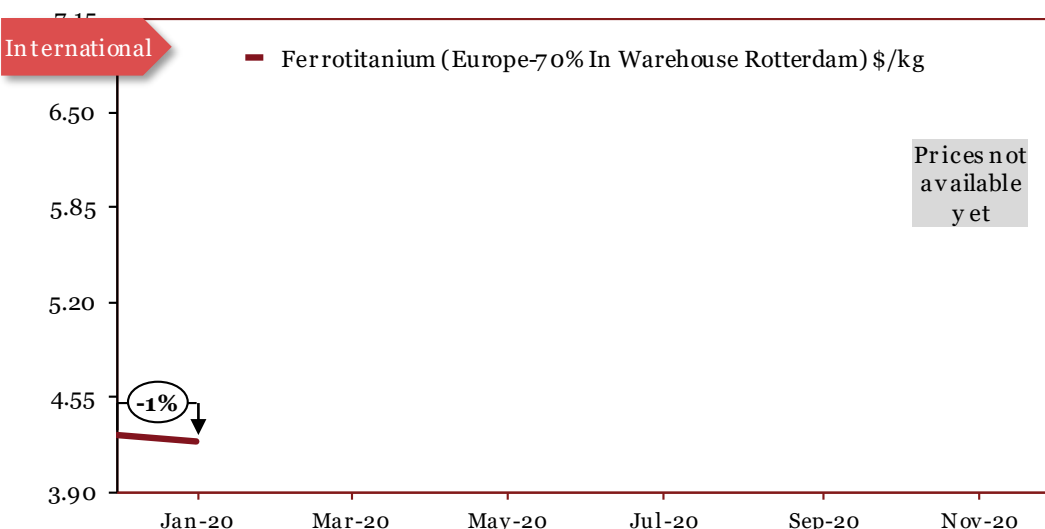
Outlook

In October, the prices returned to decreasing, due to weak demand and uncertainty around the trade war. In November, prices rose on account of increased public spending. In December, prices rose owing to stronger steel demand in the market. In January, domestic prices rose strongly owing to higher demand for steel, buoyed by the performance of the infrastructure and automotive sectors. In February, prices corrected as sentiments were weakened by the spread of the coronavirus. In March, prices declined as the national lockdown shut all factory production across the country. In April, domestic prices remained constant. In May, domestic prices declined as traders reduced orders due to logistical concerns during the lockdown. In June, domestic prices declined on the back of continued weak demand and oversupply in the market, while in July, prices remained constant. In August, domestic prices rose as Indian manufacturers had to contend with global price rise. In September, prices continued to rise on the backs of strong Chinese demand. In October, prices remained stable. In November prices rose on account of higher demand for steel. In December, scrap prices rose internationally and domestically on limited supply and greater demand from developing economies.

<i>Ferro-alloys</i>	Ferro-alloys	16
8	Ferro titanium	17
9	Ferro chrome	18
10	Ferro molybdenum	19
11	Ferro vanadium	20
12	Ferro silicon	21
13	EN8 Alloy Steel (Forging)	22
14	Stainless Steel	23
15	20MnCr5 Alloy Steel (Forging)	24

Ferro titanium

Monthly Average Prices	
Period	^*Int'l (\$/kg)
Dec-19	4.28
Jan-20	4.25
Feb-20	
Mar-20	
Apr-20	
May-20	
Jun-20	
Jul-20	
Aug-20	
Sep-20	
Oct-20	
Nov-20	
Dec-20	



Grade specifications changed from Metal Bulletin to Asian Metals
 Source: Bloomberg

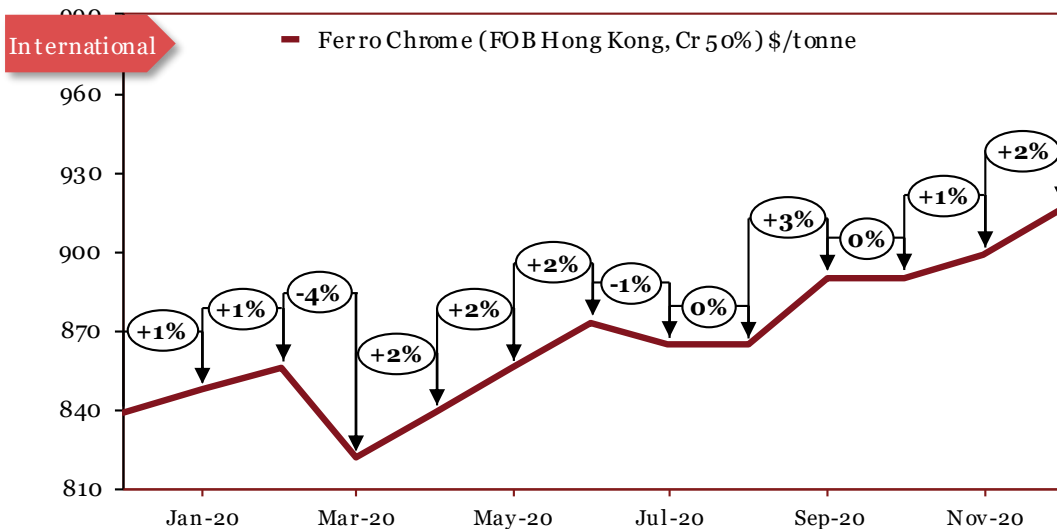
*The actual prices may vary depending on city, player, grade etc.

Outlook

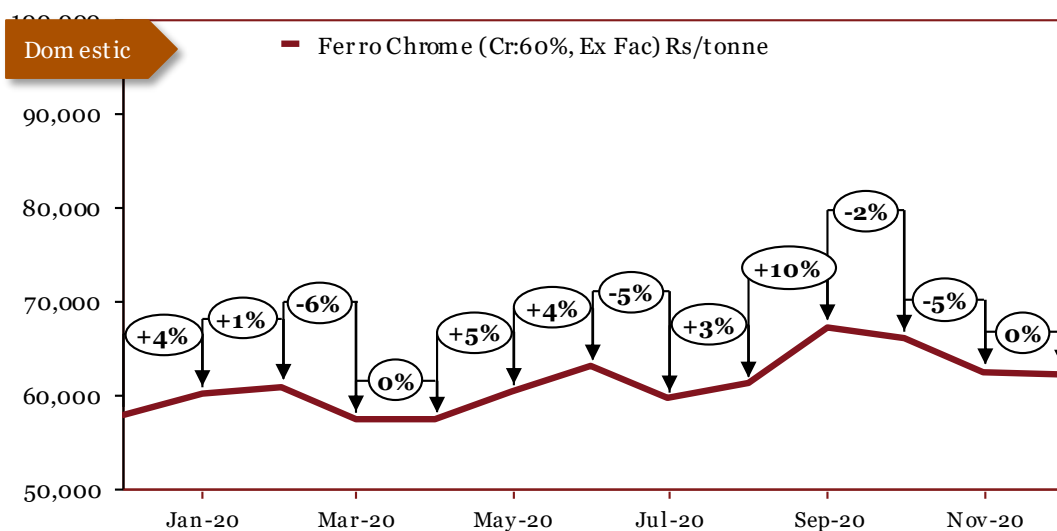
In October 2018, high-volume sales to Europe from Russia dragged down prices. From November 2018, ferrotitanium prices have witnessed consistently declining trend owing to unfavourable market conditions which has continued till February 2019. In March, ferrotitanium prices increased owing to increased demand and potentially reduced supply from one major supplier. In April, increasing trend in prices continued. In May, supply worries from a major producer in UK forced prices to continue an upward trend. In June, prices trended marginally downward due to fears of weakening demand from the European steel market. In July, poor demand from major markets such as Europe pushed prices down significantly. In August, the price rose thanks to growing demand. In September, international prices fell owing to weak demand in the European steel market following a weak summer. In October, international prices fell due to weak European demand. In November, international prices kept falling due to unfavourable market conditions. In December, prices remained fairly steady, with a slight decline. In January, the downward trend in prices continued on muted demand.

^International prices changed due to change in grades at the source

Ferro chrome



Source: Crisil



Source: Crisil

Monthly Average Prices		
Period	*Int'l (\$/tonne)	*Dom (Rs/tonne)
Dec-19	839	58000
Jan-20	847	60200
Feb-20	856	61000
Mar-20	822	57500
Apr-20	839	57500
May-20	856	60500
Jun-20	873	63100
Jul-20	865	59700
Aug-20	865	61300
Sep-20	890	67300
Oct-20	890	66100
Nov-20	899	62600
Dec-20	916	62400

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

Outlook

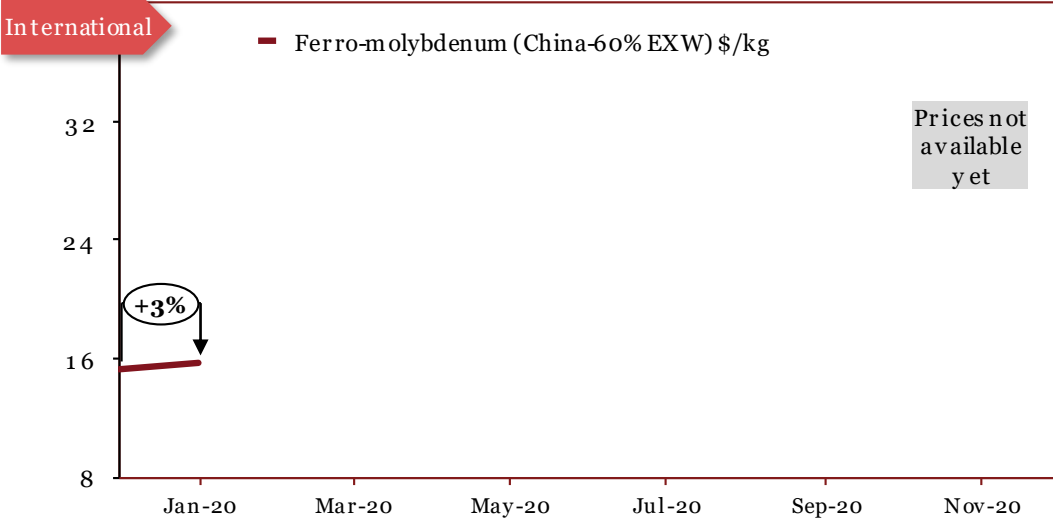
In March, international as well as domestic prices were hurt by bearishness in the stainless steel market caused by the COVID-19 crisis and its containment measures. In April, international prices rose as Chinese factories reopened, while South African mines were shut, reducing supply. Domestic prices remained stable. In May, prices rose globally as South African mines continued to face logistical challenges from lockdown measures, while Chinese demand continued to be strong. In June, international prices rose due to greater demand from China, while domestic prices rose in tandem. In July, international prices declined slightly, while domestic prices fell on weaker demand. In August, international prices stayed stable, while domestic prices rose on shortage of supply. In September, international and domestic prices rose substantially due to a chrome ore shortage in India, which depressed volumes but helped raise prices. In October, international prices remained stable, while domestic prices fell due to weaker export and excess inventory. In November, international prices remained fairly stable on strong demand, while domestic prices continued to correct, as producers held excess supply in expectation of higher demand. In December, international prices rose on tighter spot supplies and higher input costs while domestic prices remained stable.

Ferro molybdenum

Monthly Average Prices

Period	*^Int'l (\$/kg)
Dec-19	15
Jan-20	16
Feb-20	
Mar-20	
Apr-20	
May-20	
Jun-20	
Jul-20	
Aug-20	
Sep-20	
Oct-20	
Nov-20	
Dec-20	

International



Grade specifications changed from Metal Bulletin to Asian Metals
 Source: Bloomberg

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

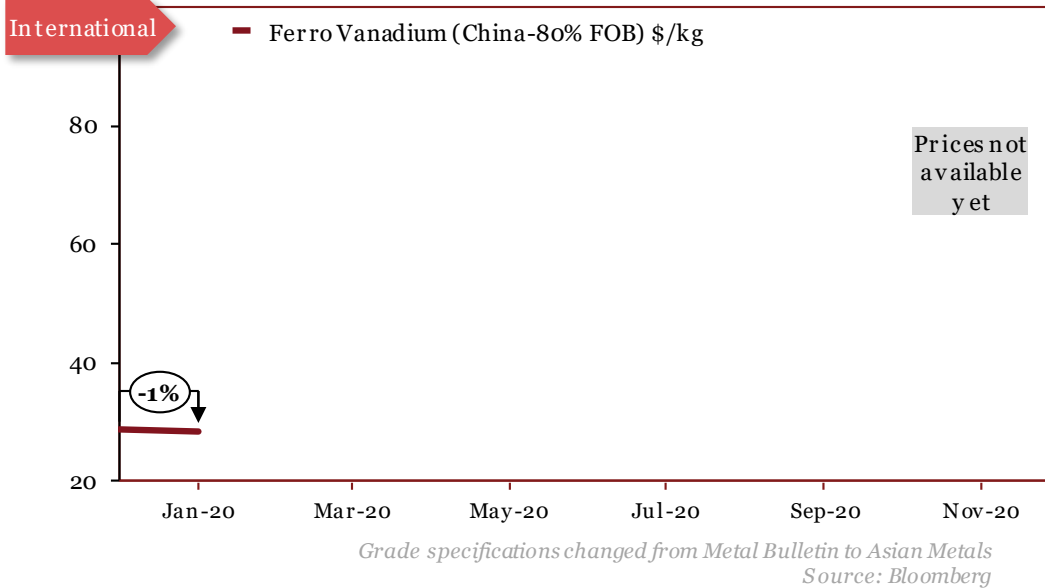
Outlook

In September, prices remained stable. Prices increased in October 2018. Prices witnessed declining trend since November 2018, following the price movements in other ferro-alloys. In February 2019, declining trend was reversed. In March, prices increased owing to demand growth. In April, increasing trend in prices continued. In May, stable market conditions resulted in stable prices. In June, prices decreased due to easing demand from major steel producers such as China. In July, prices increased due to limited availability of raw materials such as molybdenum concentrate. Strong sentiment spilt into the Molybdenum market, with a rise in raw material price raising prices overall. In August, international prices rallied after a shortage of supply in China led to a growth in the Chinese domestic market. In September, international prices fell on the back of rigid demand in the market. In October, prices continued to fall through the quarter due to weak metal demand and weak demand in the ferro-alloys market. In November, prices continued to fall as producers sold their stocks at discounts and demand was affected by weak demand for stainless steel. In December, molybdenum prices slowly began to stabilise after months of decline. In January, prices rose on the backs of strong industrial demand from automotive and other industries.

^International prices changed due to change in grades at the source

Ferro vanadium

Monthly Average Prices	
Period	*Int'l (\$/kg)
Dec-19	29
Jan-20	29
Feb-20	
Mar-20	
Apr-20	
May-20	
Jun-20	
Jul-20	
Aug-20	
Sep-20	
Oct-20	
Nov-20	
Dec-20	

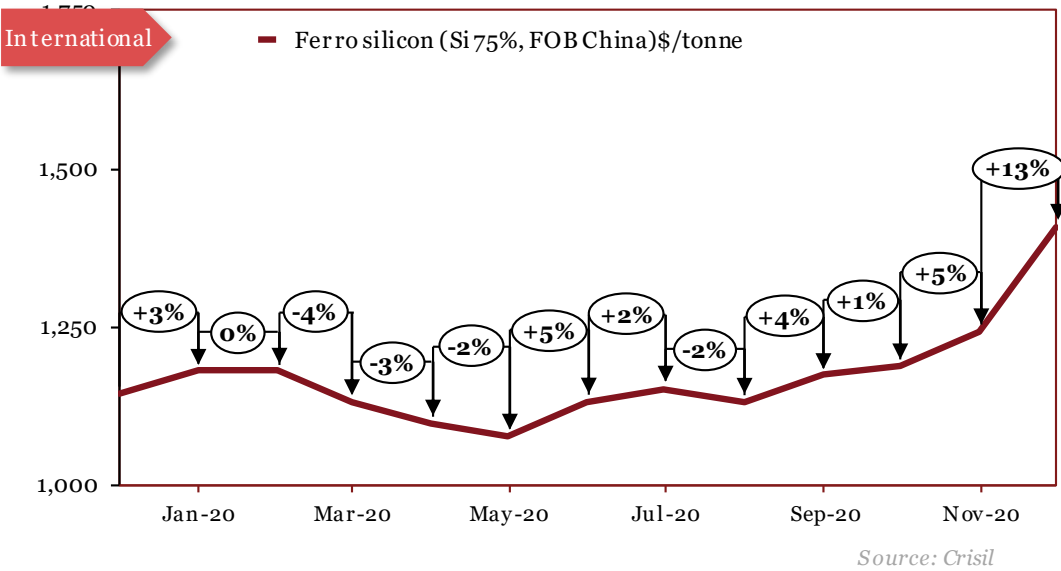


*The actual prices may vary depending on city, player, grade etc.

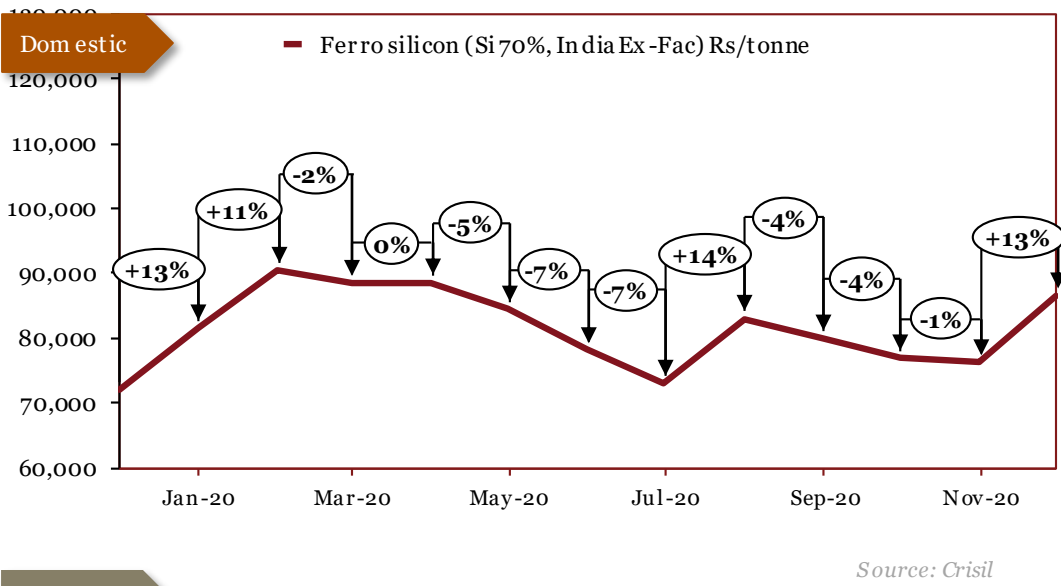
Outlook

Prices remained unchanged in February 2019 due to stable market conditions. In March, prices remained unchanged due to stable market conditions. In April, prices increased due to strong demand from Chinese market, which in turn can be partly attributed to increase in demand arising from the implementation of new rebar manufacturing standards in China. In May, prices continued to decline due to sluggish demand from the European automotive sector. In June, prices continued to fall sharply due to weak summer demand in China & Europe. In July, Ferro Vanadium prices decreased marginally due to almost stable market conditions compared to June. In August, there was an increase in price boosted by improving demand. In September, prices internationally fell on account of a strong Chinese market dissuading foreign importers, with a large gap between Chinese and European prices. In October, prices continued to decrease as European producers worked to offload excess inventory in a time of weak demand. In November, international prices fell due to a sudden increase in Chinese production. In December, prices continued to fall due to vanadium being substituted with niobium, alongside slow enforcement of new rebar regulations in China. In January prices fell minimally on stable market conditions.

Ferro silicon



Monthly Average Prices		
Period	*Int'l (\$/tonne)	*Dom (Rs/tonne)
Dec-19	1145	72,100
Jan-20	1180	81600
Feb-20	1180	90600
Mar-20	1132	88600
Apr-20	1097	88600
May-20	1076	84600
Jun-20	1132	78300
Jul-20	1152	73050
Aug-20	1132	83050
Sep-20	1173	80050
Oct-20	1187	77050
Nov-20	1242	76450
Dec-20	1408	86450

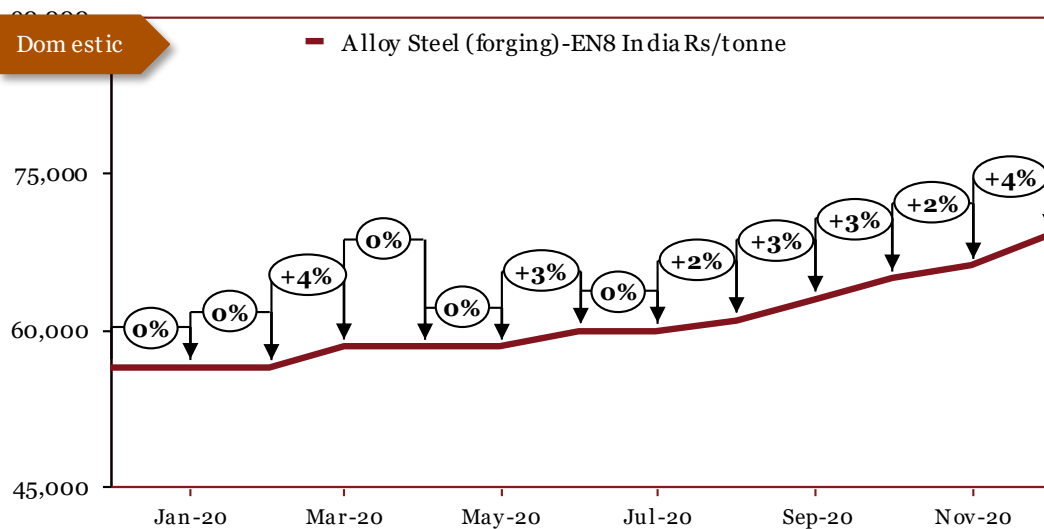


*The actual prices may vary depending on city, player, grade etc.

Outlook

In February, international prices remained stable while domestic prices continued to rise aggressively due to continued raw material shortage in Bhutan. In March, international prices fell as trading activity declined on the back of the COVID-19 crisis, Domestic demand was similarly hurt by lockdown measures. Domestic prices have been hurt by the lack of in-person trading caused by the COVID-19 lockdown. In April, international prices fell on account of the decline in industrial activity. Domestic prices remained stable. In May, prices declined as demand from steelmakers remained weak, while domestic producers began to cut capacity on poor economic environment. In June and July, international prices picked up as industries reopened across Europe and China, particularly in the solar energy space. In June and July, domestic prices declined on weak demand. In August, prices declined internationally, while domestic prices rose on higher demand. In September, international prices rose due to supply concerns in China's Inner Mongolia region. Domestically, prices dipped after a heavy jump in August. In October, international prices rose globally on tight supply, whilst declining domestically on weakened demand. In November, international prices rose on stronger demand, while domestic prices fell on excess supply in the market.

EN8 Alloy Steel (Forging)



Source: PwC Research

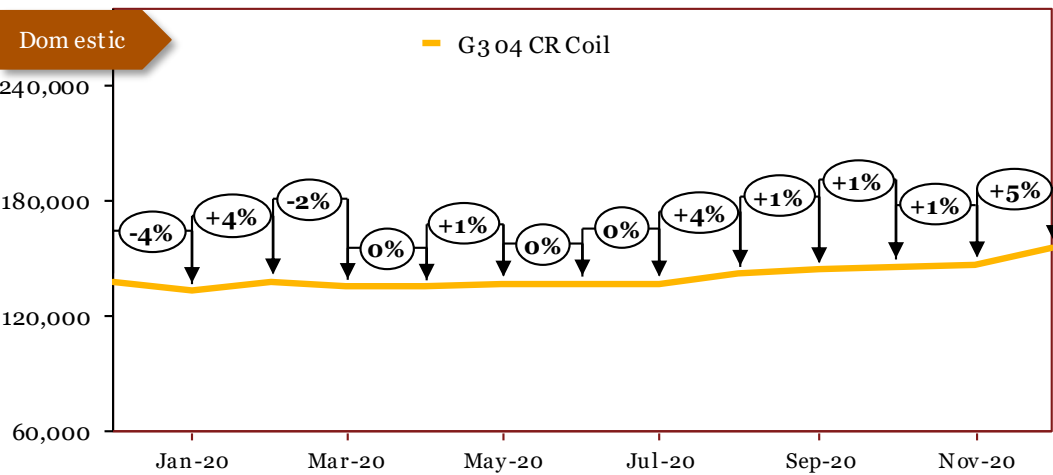
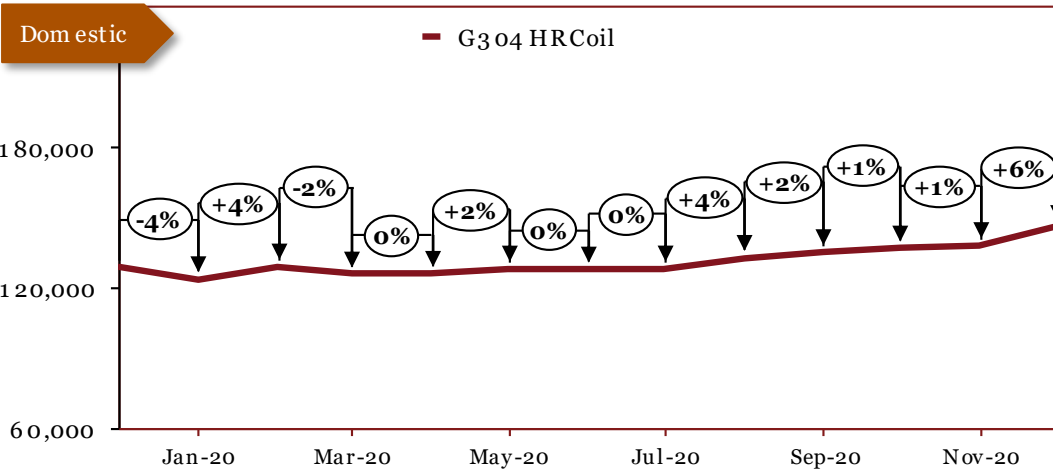
Monthly Average Prices	
Period	*Dom (Rs/tonne)
Dec-19	56500
Jan-20	56500
Feb-20	56500
Mar-20	58500
Apr-20	58500
May-20	58500
Jun-20	60000
Jul-20	60000
Aug-20	61000
Sep-20	63000
Oct-20	65000
Nov-20	66250
Dec-20	69000

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

Outlook

In June, prices remain unchanged once again, stemming from stable market conditions. In July, prices declined marginally due to a lower growth forecast in India. In August, global prices fell due to the fall in the price of Nickel. In September, domestic prices remained unchanged due to stable market conditions. In October, the prices remained constant. In November prices declined due to a difficult demand environment caused by the struggles of the automotive and manufacturing sectors. In December, prices remained constant on stable market conditions. In January,, prices remained unchanged thanks to stable market conditions. In February prices remained stable. In March, domestic prices rose thanks to higher demand and improved industrial activity prior to the national lockdown. In April, prices remained stable. Prices remained stable in May. In June, prices rose as industries reopened across the country. In July, prices were unchanged. In August, prices rose domestically as part of the trend to higher steel prices. In September, prices rose further as steel prices rose on a tight supply. In October, prices continued to rise due to increased steel demand from industry. In November, prices continued to rise, on account of higher steel demand. In December, prices rose on stronger demand and a global trend of higher steel prices.

Stainless Steel



Monthly Domestic Average Prices		
Period	*G304 HR (Rs/tonne)	*G304 CR (Rs/tonne)
Dec-19	128700	138250
Jan-20	123700	133250
Feb-20	128700	138250
Mar-20	125700	135250
Apr-20	125700	135250
May-20	127700	137250
Jun-20	127700	137250
Jul-20	127700	137250
Aug-20	132700	142250
Sep-20	134700	144250
Oct-20	136700	146250
Nov-20	137700	147250
Dec-20	145700	155250

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

Source: PwC Research

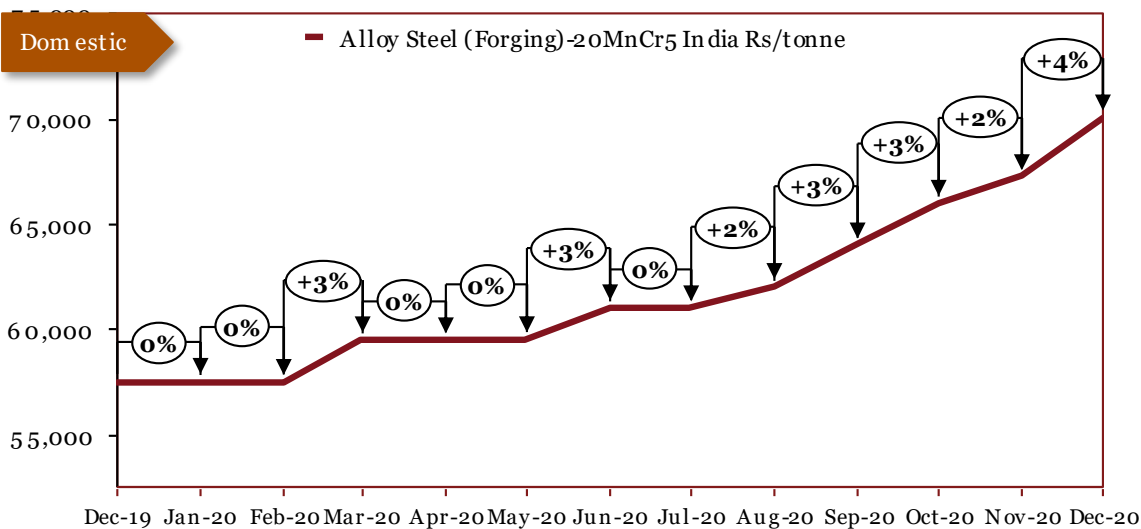
Outlook

In September, international prices rose owing to skyrocketing Nickel prices. This increase was mirrored by domestic prices. In October, prices remained stable domestically and internationally. In November, domestic as well as international prices continued to remain unchanged. In December, international and domestic prices remained unchanged on stable market conditions. In January, prices fell due to an excess of supply over demand in the market. In February, international as well as domestic prices corrected to their long term December levels. In March, domestic prices fell as the COVID-19 pandemic rocked industrial activity all around the world. In April, international and domestic prices remained stable. In May, prices rose marginally despite a weak demand environment both in India and globally. In June and July, prices remained stable and unchanged. In August, international and domestic prices rose due to higher demand, partly in China, and lower scrap availability. In September, HR Coil prices rose on the back of continued momentum in steel prices. In October, domestic prices rose on account of higher industrial demand. In November, domestic prices rose on increased demand for steel as a result of new government stimulus announcements. In December, prices rose due to higher raw material prices.

20MnCr5 Alloy Steel (Forging)

Monthly Average Prices

Period	*Dom (Rs/tonne)
Dec-19	57500
Jan-20	57500
Feb-20	57500
Mar-20	59500
Apr-20	59500
May-20	59500
Jun-20	61000
Jul-20	61000
Aug-20	62000
Sep-20	64000
Oct-20	66000
Nov-20	67250
Dec-20	70000



Source: PwC Research

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

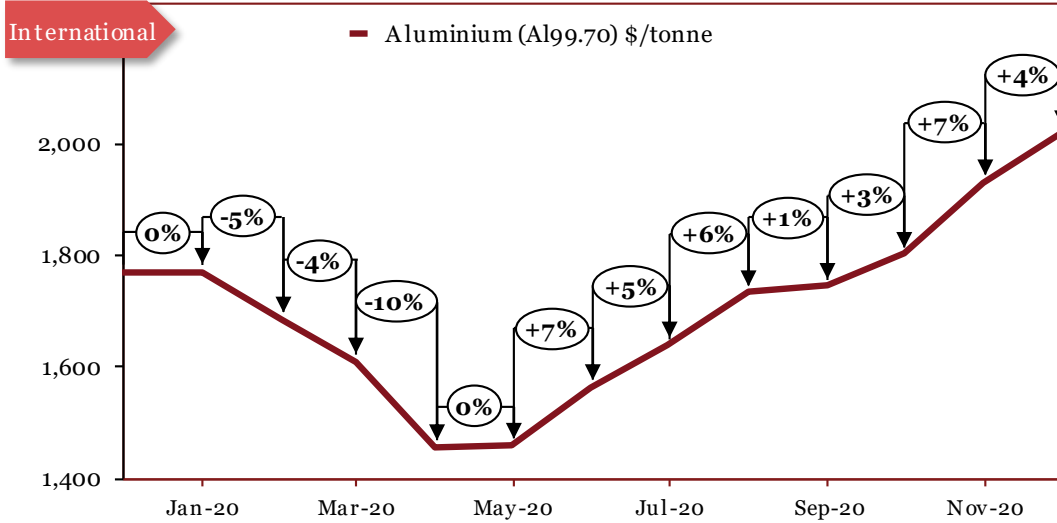
Outlook

In May, market conditions continued to remain unchanged resulting in stable prices. In June, prices continued to hold stable. In July, prices declined marginally due to a lower growth forecast in India. In August, prices continued to fall, owing to weakening demand and oversupply of inventory. In September, domestic prices managed to stay constant as the auto slowdown was followed by a large decrease in production. In October, prices remained stable. In November, prices fell due to weak demand, partly down to the Auto slowdown. In December, prices remained unchanged. In January, prices remained unchanged thanks to stable market conditions. In February prices remained stable. In March, prices rose on stronger industrial activity and demand prior to the COVID-19 lockdown. In April, prices remained stable. In May, prices remained stable. In June, prices rose on account of the gradual unlocking of the economy. In July, prices remained stable. In August, prices rose on stronger demand. In September, prices rose as steel prices continued to trend upwards. In October, price movement continued upwards as industrial demand from segments such as automotive continued to rise. In November, prices rose, following the trend of rising steel prices. In December, prices rose on increased demand and tight supply.

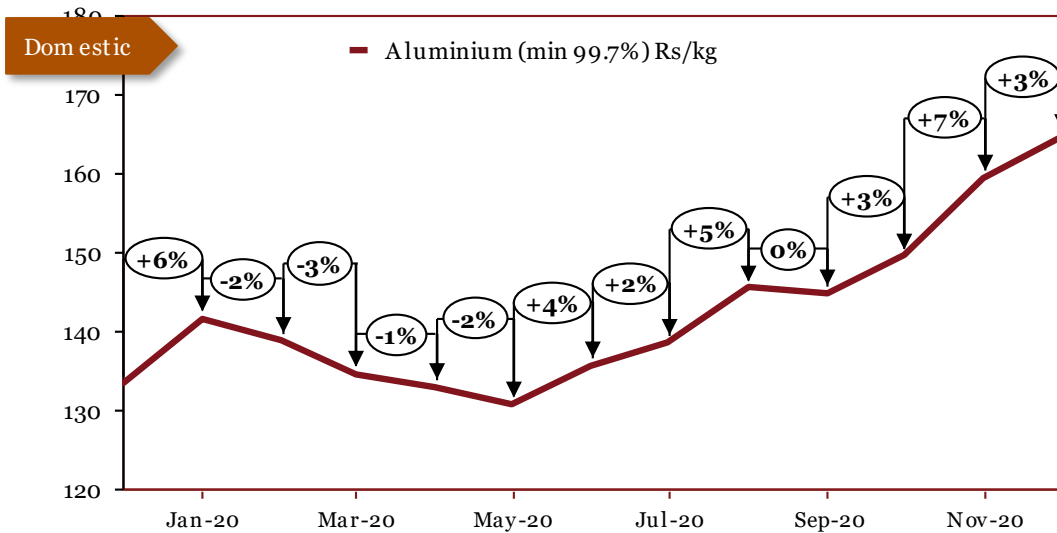
Base Metals

Base Metals		25
16	Aluminium	26
17	Copper	27
18	Zinc	28
19	Lead	29
20	Nickel	30
21	Tin	31
22	Magnesium	32

Aluminium



Source: LME



Source: MCX*

*Source updated in July 2019

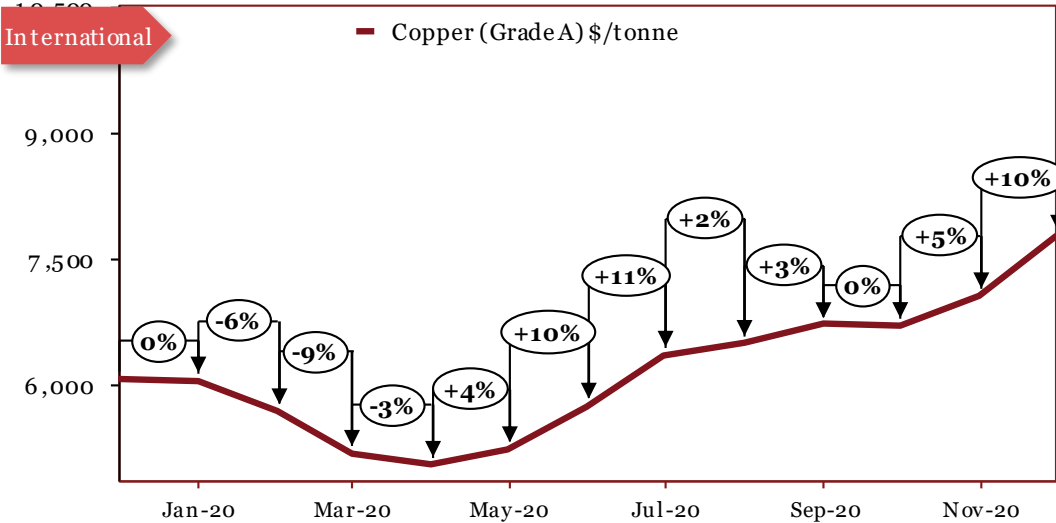
Monthly Average Prices		
Period	*Int'l (\$/tonne)	*Dom (Rs/kg)
Dec-19	1770	134
Jan-20	1771	142
Feb-20	1685	139
Mar-20	1611	135
Apr-20	1457	133
May-20	1460	131
Jun-20	1564	136
Jul-20	1639	139
Aug-20	1734	146
Sep-20	1745	145
Oct-20	1803	150
Nov-20	1932	160
Dec-20	2018	165

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

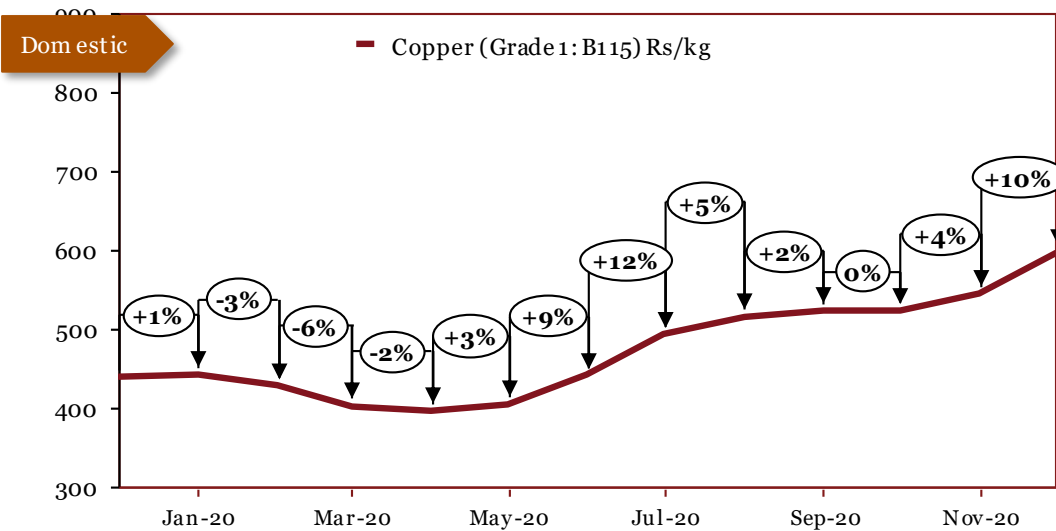
Outlook

In April, international prices declined on account of declining demand from producers. Domestic prices fell on account of the COVID-19 lockdown. In May, prices remained stable internationally, but continued to decline in the domestic market, as inventories built up and players worked towards lowering the production cost on it. In June and July, international as well as domestic prices began to climb upwards on pent-up demand, after bottoming out for months during lockdown. In August, prices rose on greater demand from construction industries, particularly in Europe. Domestic prices rose in tandem. In September, international prices rose slightly while domestic prices remained stable as while macroeconomic indicators suggested a global recovery was ongoing, supply and inventories had risen simultaneously. In October, international prices rose due to a surge in Chinese demand, while domestic prices rose on account of higher demand from domestic manufacturers following economic reopening. In November, international prices rose on account of improving demand in China and the United States, leading to higher prices domestically as well. In December, international prices rose on higher demand from China and the United States, coupled with higher freight prices. Domestic prices rose in tandem.

Copper



Source: LME



Source: MCX

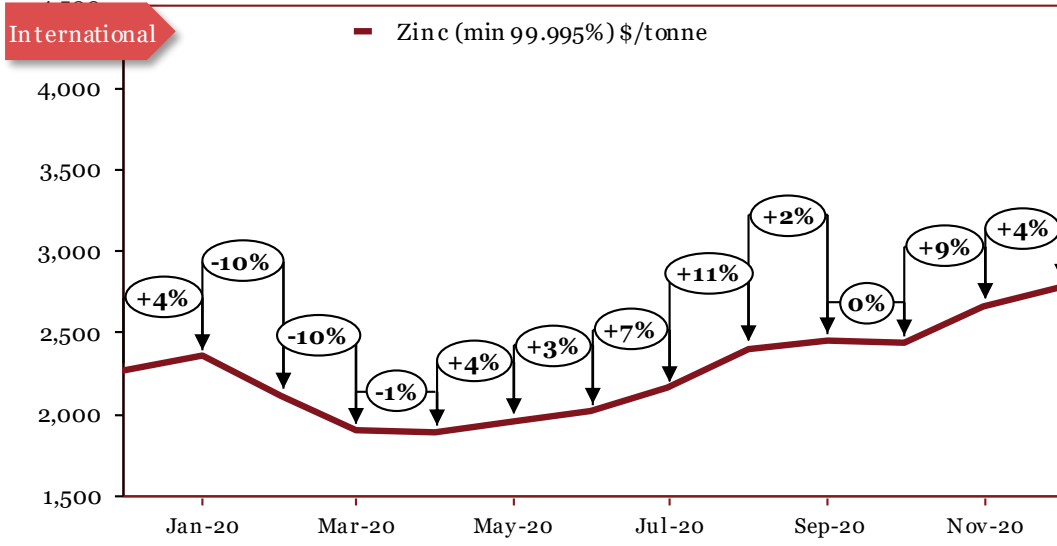
Monthly Average Prices		
Period	*Int'l (\$/tonne)	*Dom (Rs/kg)
Dec-19	6062	440
Jan-20	6049	444
Feb-20	5686	430
Mar-20	5179	403
Apr-20	5048	397
May-20	5234	407
Jun-20	5742	443
Jul-20	6354	494
Aug-20	6497	516
Sep-20	6712	524
Oct-20	6703	524
Nov-20	7063	545
Dec-20	7755	599

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

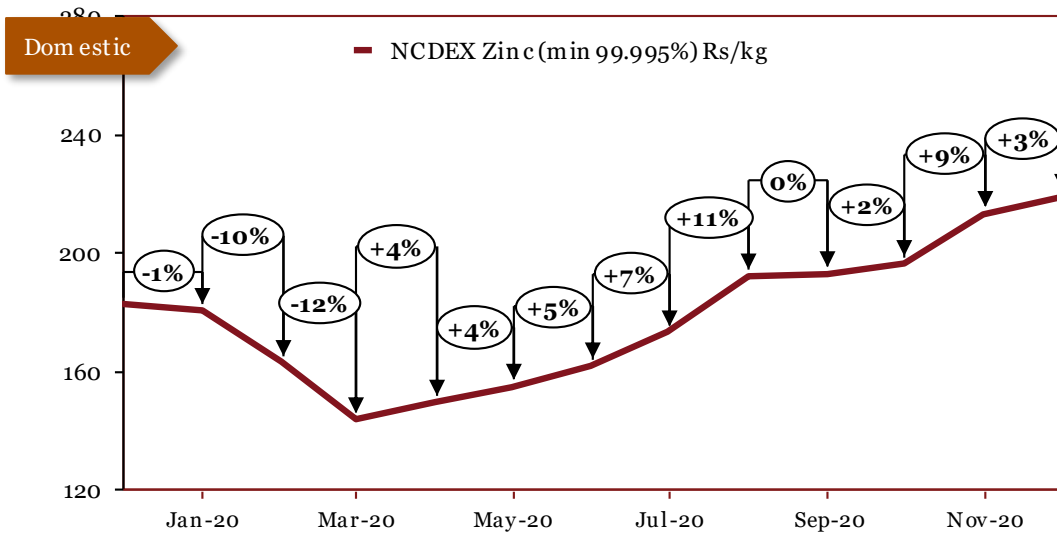
Outlook

In February, international prices fell as markets reacted to the coronavirus outbreak in China, and domestic prices followed suit. In March, international prices declined on account of the COVID-19 pandemic, and domestic prices similarly fell as a result of the national lockdown. In April, international and domestic prices continued their downward trajectory on account of the COVID-19 crisis. In May, prices rose after months of downturn on the hopes of an economic revival and the slow removal of lockdown measures in India and abroad. In June and July, international as well as domestic prices rose aggressively, due to supply disruptions in South America and greater optimism in the global economic recovery. In August, international and domestic prices rose as demand returned to normal around the world. In September, prices rose internationally and domestically as labor issues in Chile caused concerns about future supply. In October, international and domestic prices remained stable. In November, international prices rose on account of greater demand from China, reduced availability of supply. Domestic prices rose in tandem. In December, prices rose on the backs of a stronger economy and Chinese stockpiling.

Zinc



Source: LME



Source: MCX*

*Source updated in July 2019

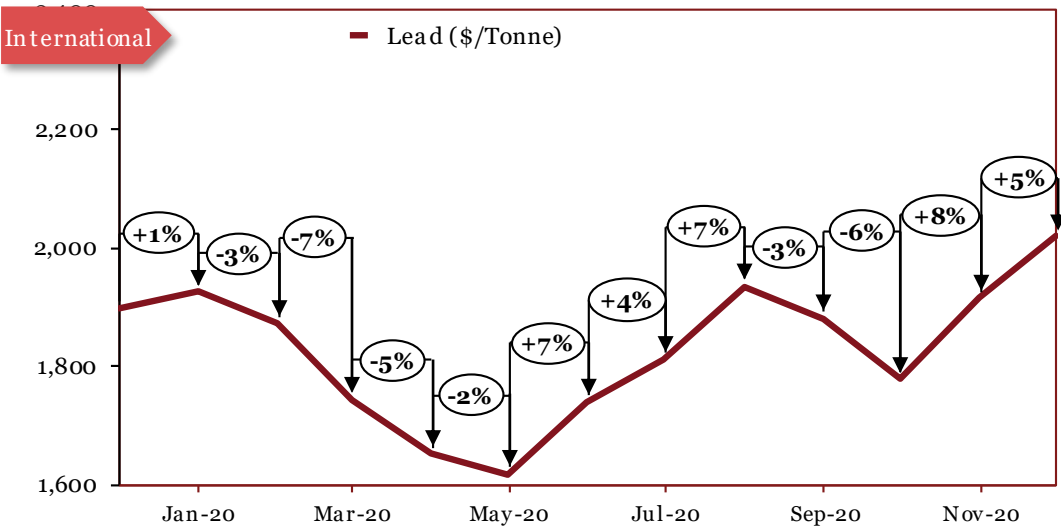
Monthly Average Prices		
Period	*Int'l (\$/tonne)	*Dom (Rs/kg)
Dec-19	2273	183
Jan-20	2357	181
Feb-20	2120	163
Mar-20	1905	144
Apr-20	1894	149
May-20	1963	155
Jun-20	2021	162
Jul-20	2162	173
Aug-20	2407	192
Sep-20	2451	193
Oct-20	2442	196
Nov-20	2670	213
Dec-20	2782	219

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

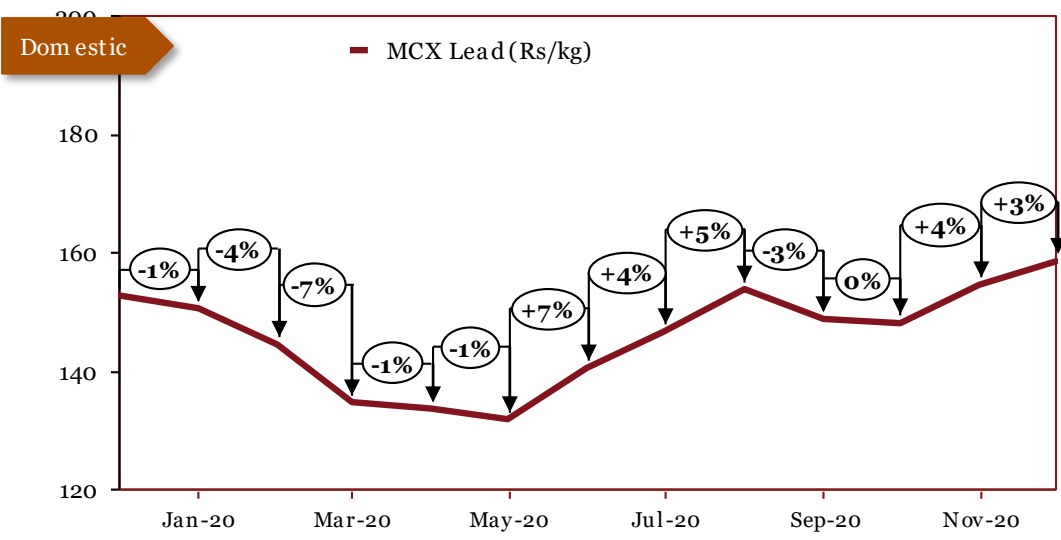
Outlook

In March, global zinc prices saw a marked decline due to pressure from the COVID-19 crisis. Domestic prices were also hurt by the halting of industrial activity. In April, the international price decline stabilised as China reopened factories, while domestic prices rose slightly. In May, international prices rose on greater demand while domestic prices were supported by a decline in output. In June and July, international and domestic prices rose despite growing unsold inventory, as investors continued to be bullish about the global recovery. In August, prices rose internationally as well as domestically as restrictions on mining were eased globally, and supply concerns regarding South America persisted. In September, international prices rose on stronger Chinese demand, while domestic prices remained stable. In October, international prices remained stable, while domestic prices rose on account of greater demand from consuming industries. In November, international as well as domestic prices rose on higher demand, reduced availability. In December, prices rose internationally on strong demand, while domestic prices benefited from a stronger rupee.

Lead



Source: LME



Source: MCX

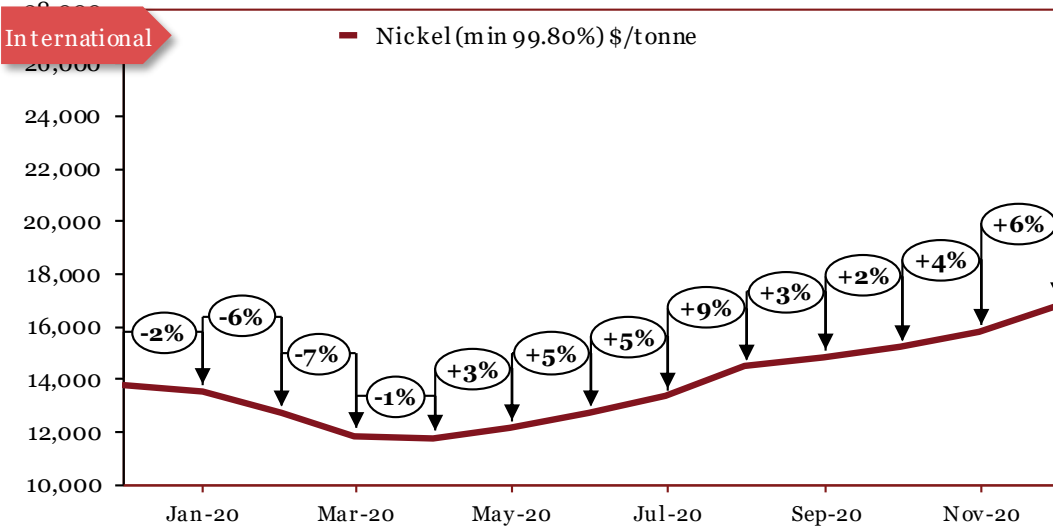
Monthly Average Prices		
Period	*Int'l (\$/tonne)	*Dom (Rs/kg)
Dec-19	1,899	153
Jan-20	1925	151
Feb-20	1872	145
Mar-20	1744	135
Apr-20	1652	134
May-20	1618	132
Jun-20	1739	141
Jul-20	1812	147
Aug-20	1935	154
Sep-20	1881	149
Oct-20	1777	148
Nov-20	1914	155
Dec-20	2019	159

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

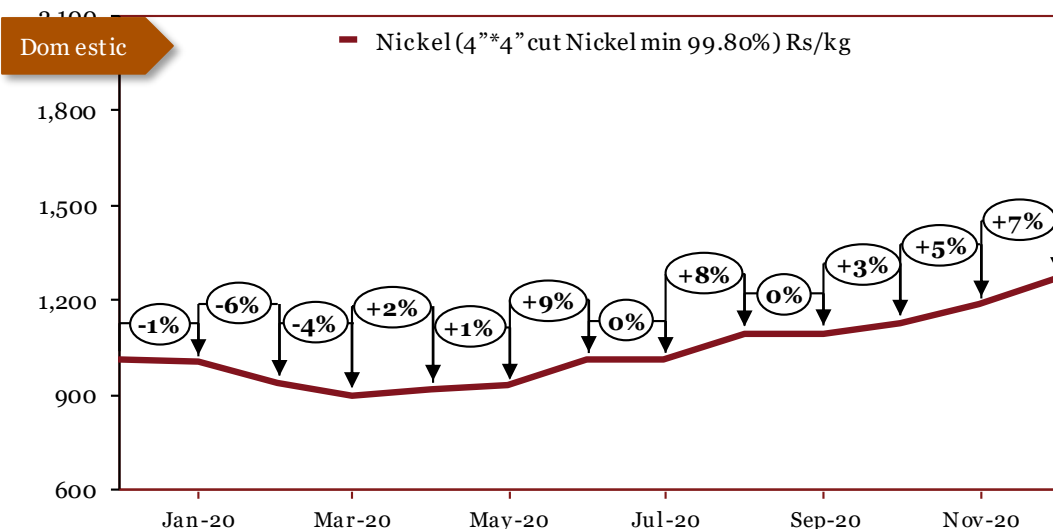
Outlook

In February, international as well as domestic prices fell as the coronavirus outbreak impacted industrial demand in China and around the world. In March, international prices fell on account of global uncertainty around the COVID-19 pandemic, and domestic prices fell on account of the halting of production following containment measures. In April, prices declined on account of decreased industrial activity internationally and in India. In May prices declined slightly, continuing their downward trajectory. In June and July, international as well as domestic prices rose on account of continued bullishness from investors and fears of supply disruptions. In August, international and domestic prices rose in tandem to higher demand as industries returned to pre-COVID normality. In September, international as well as domestic prices declined as inventory levels rose following months of upward price movement. In October, international prices fell on weak demand while domestic prices remained stable. In November, prices rose on the backs of an economic upturn, and demand from battery developers. Domestic prices rose in tandem as the economy continued to recover. In December, prices rose internationally, buoyed by continued low supply in the market. Domestic prices rose as the economic recovery continued.

Nickel



Source: LME



Source: MCX*

*Source updated in July 2019

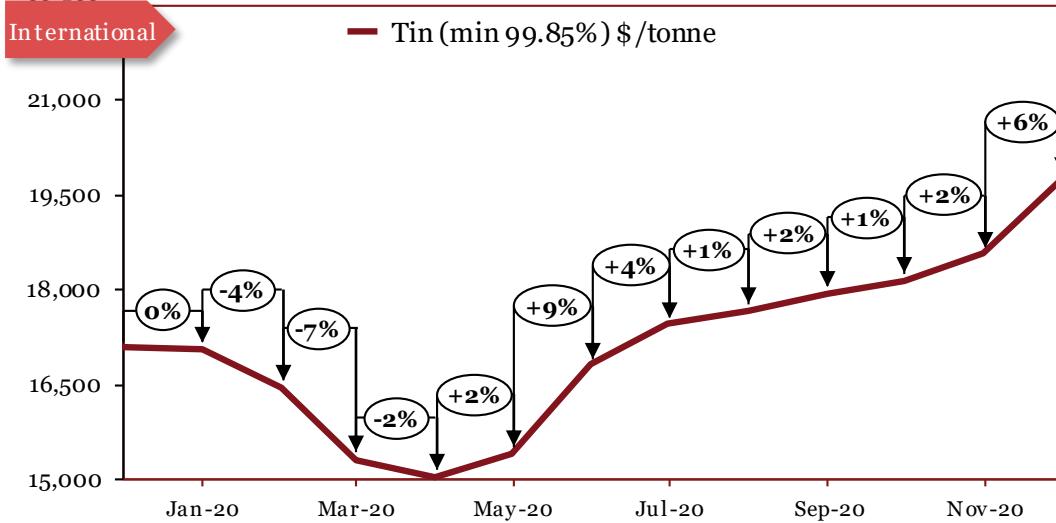
Monthly Average Prices		
Period	*Int'l (\$/tonne)	*Dom (Rs/kg)
Dec-19	13797	1016
Jan-20	13549	1003
Feb-20	12740	941
Mar-20	11870	901
Apr-20	11753	921
May-20	12135	930
Jun-20	12703	969
Jul-20	13341	1013
Aug-20	14487	1097
Sep-20	14866	1097
Oct-20	15219	1129
Nov-20	15796	1187
Dec-20	16807	1268

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

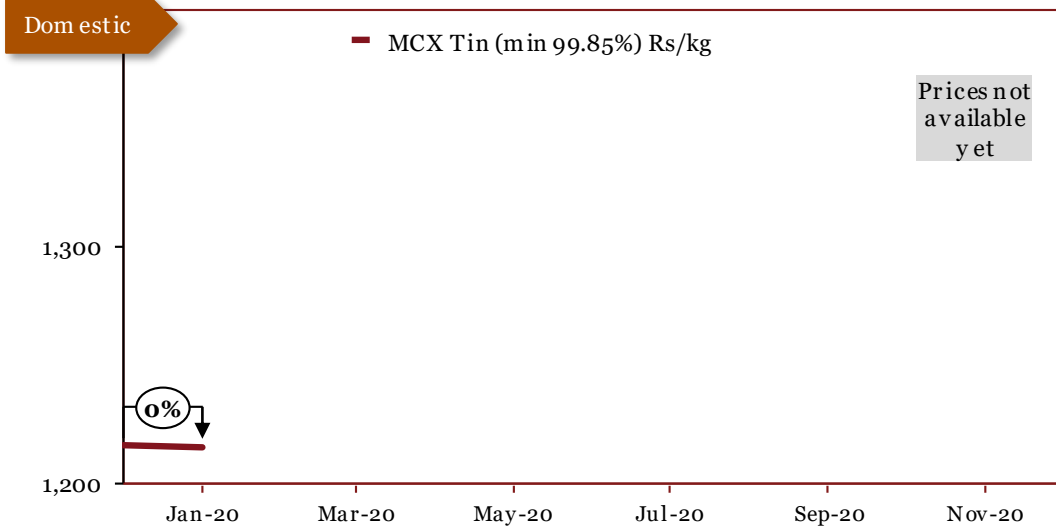
Outlook

In March, international as well as domestic prices were hurt by the reduction in stainless steel demand, as well as lower production of electric vehicles. In April, international prices declined, though supply shocks prevented further fall. Domestically, prices rose thanks to a supply shock and higher spot demand. In May, international and domestic prices rose on account of greater demand from alloy makers. In June and July, international prices continued to recover, buoyed by strong Chinese demand. Domestic prices rose in June, but remained more or less stable in July. In August, Nickel prices rose as a part of the trend of higher metals prices, buoyed by a strong Chinese economic recovery. In September, international prices rose on strong Chinese demand and whilst domestic prices remained stable. In October, international prices rose due to robust demand from the stainless steel industry, and concurrently rose domestically too. In November, international prices rose on account of greater Chinese demand, with the continued Indonesian export ban and typhoons in Philippines impacting supply. Domestic prices rose in tandem. In December, international prices rose as demand for batteries remained exceptionally bullish, taking prices close to their previous high. Domestic prices rose simultaneously.

Tin



Source: LME



Source: Bloomberg

Monthly Average Prices		
Period	*Int'l (\$/tonne)	*Dom (Rs/kg)
Dec-19	17083	1216
Jan-20	17062	1216
Feb-20	16447	
Mar-20	15315	
Apr-20	15039	
May-20	15409	
Jun-20	16806	
Jul-20	17453	
Aug-20	17672	
Sep-20	17946	
Oct-20	18154	
Nov-20	18568	
Dec-20	19727	

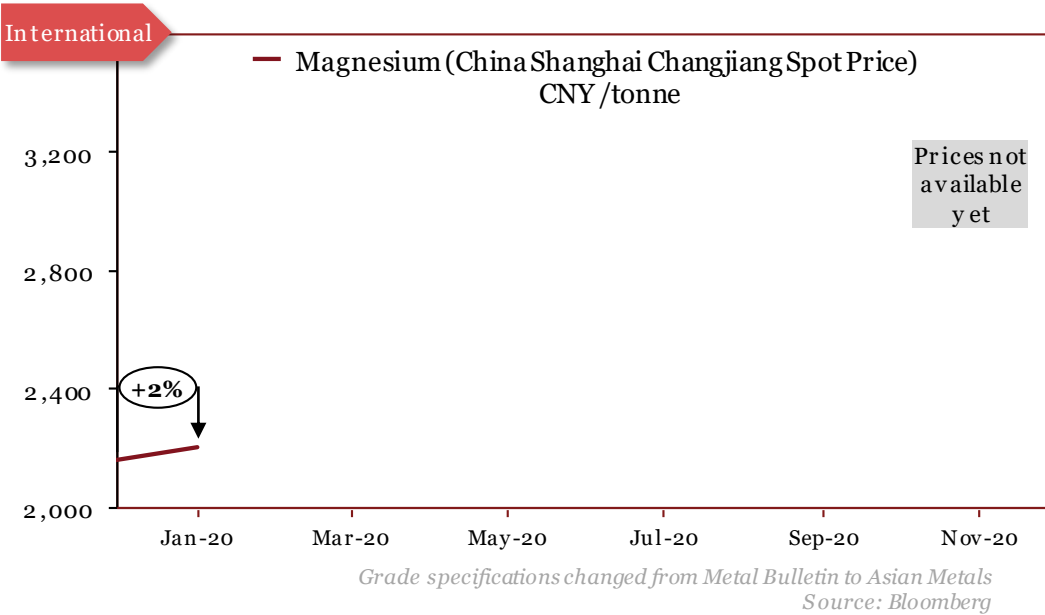
*The actual prices may vary depending on city, player, grade etc.

Outlook

In December, international prices finally looked to be picking up thanks to positive demand and the hopes of a US-China trade agreement. Domestic prices also rose in tandem with international prices. In January, international and domestic prices both remained unchanged. In February, tin prices fell internationally due to slackened demand. In March, international prices declined as major semiconductor markets Japan and South Korea rapidly curtailed industrial activity to contain COVID-19. In April, prices fell due to lower demand. In June, international prices edged upwards on account of industrial activity resuming globally. In June and July prices rose as supply constraints, particularly in South America, coincided with the reopening of economic activity. In August, international prices rose slightly. In September, prices rose internationally on account of stronger demand for electronics, particularly in Mainland China. In October, international prices rose slightly. In October, prices rose as supply was constrained due to lockdown in Peru. In November, international prices rose on the back of a resurgent global economy, particularly in China, along with continued strong demand for electronic products during the pandemic. In December, international prices surged due to a major shortfall in supply not expected to be filled for months.

Magnesium

Monthly Average Prices	
Period	*Int'l (\$/tonne)
Dec-19	2162
Jan-20	2207
Feb-20	
Mar-20	
Apr-20	
May-20	
Jun-20	
Jul-20	
Aug-20	
Sep-20	
Oct-20	
Nov-20	
Dec-20	



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

Outlook

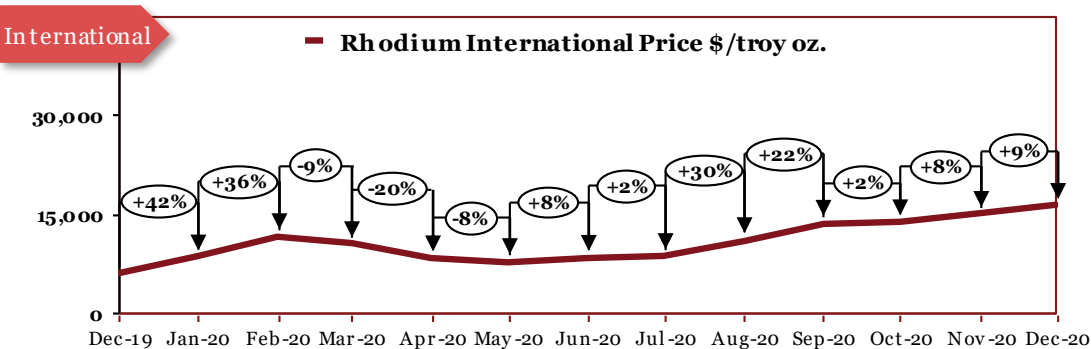
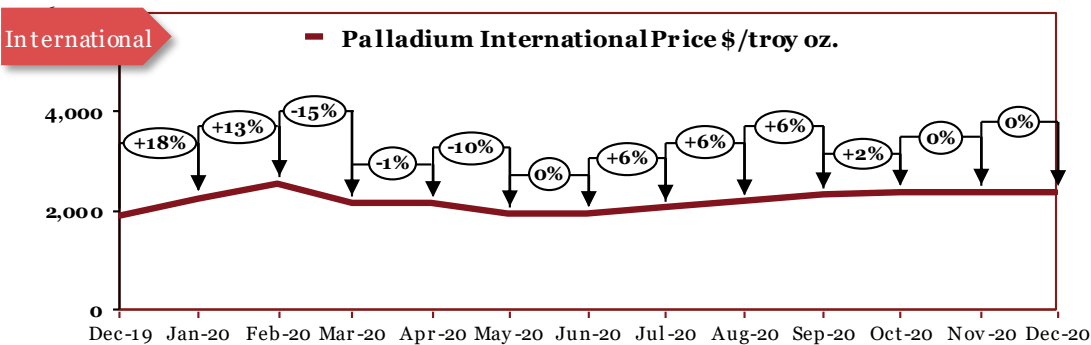
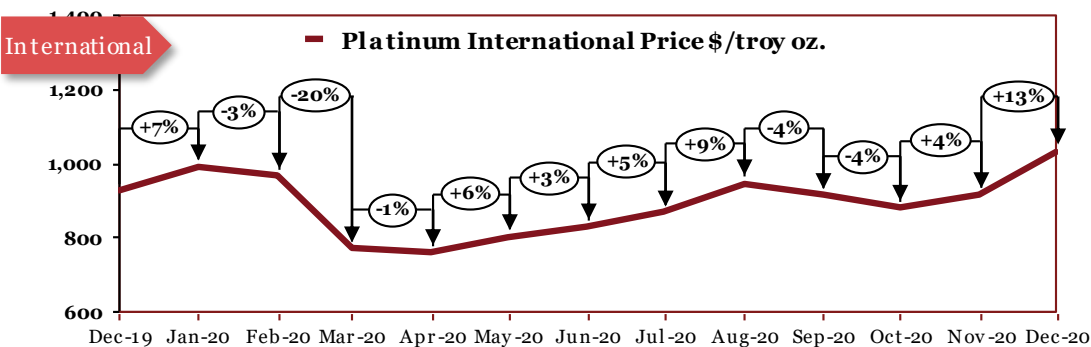
In May, June and July, magnesium prices have witnessed increasing trend owing to favourable market conditions. In August, prices continued to rise. In September, prices rose on account of tighter supply. In October, magnesium prices continued with increasing trend. In November and December 2018, magnesium prices rose on account of tight market supply primarily from China and decreased in January 2019 with fall in demand. In February, magnesium prices continued to fall. In March, price trend was reversed. In April, prices fell owing to subdued demand. In May, the declining trend in prices continued due to low demand across global markets. In June, prices fell due to oversupply in the market from Turkey. In July, prices continued to slide due to lower demand and from international markets. In August, a surplus of supply in the market led to a continued drop in prices globally. In September, the trend of international prices falling continued due to weak demand from buyers. In October, prices fell further due to weak demand in China and internationally. In November, prices continued on their downward trajectory due to weak market conditions. In December, the downward trend of prices continued. In January, magnesium prices rebounded slightly

^International prices changed due to change in grades at the source

Precious Metals

	Precious Metals	33
23	Precious Metals	34

Precious Metals



Monthly Average Prices (\$/Oz)			
Period	Pt	Pd	Rh
Dec-19	929	1909	6046
Jan-20	993	2258	8609
Feb-20	968	2544	11671
Mar-20	772	2170	10617
Apr-20	762	2156	8545
May-20	805	1949	7824
Jun-20	831	1952	8474
Jul-20	869	2062	8603
Aug-20	949	2191	11177
Sep-20	915	2314	13647
Oct-20	881	2369	13977
Nov-20	918	2368	15078
Dec-20	1034	2362	16436

Source: Johnson Matthey

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

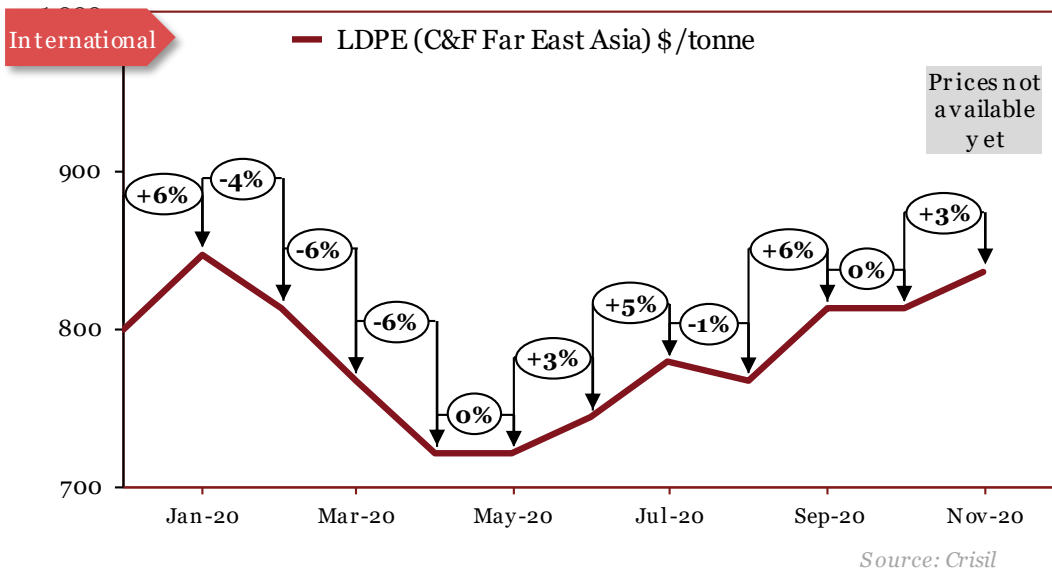
Outlook

In May, prices of Palladium and Rhodium continued to trend downwards from their earlier highs, while platinum prices rose as investors showed interest in it. In June and July, Rhodium and Palladium prices rose on the backs of growing automotive demand. Platinum prices rose due to interest from investors. In August, Rhodium prices rose rapidly as South African supply chains struggled to keep up with rising demand post-lockdown. Platinum prices continued to return to pre-COVID levels, while Palladium prices benefited from usage in electric vehicle production. In September, rhodium prices rose on the backs of continued demand from automotive manufacturers, with supply still constrained at mines in South Africa. Palladium prices rose on higher economic optimism, while platinum prices declined slightly. In October, rhodium and palladium prices rode upwards thanks to continued growth in automotive production, while platinum prices fell on oversupply in the market. In November, Rhodium and Platinum prices trended upwards, whereas Palladium prices remained stable and unchanged. In December, Rhodium prices returned to hit their pre-pandemic highs, while Platinum prices rose aggressively on investor interest. Palladium remained constant.

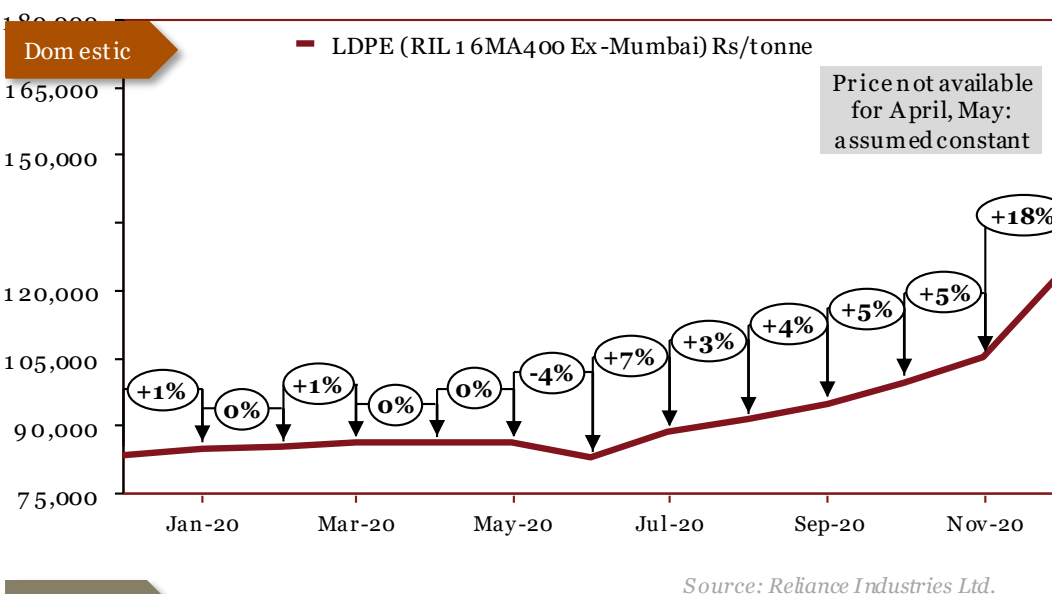
Polymers & Rubber

	Polymers & Rubber	35
24	Low density polyethylene (LDPE)	36
25	Polypropylene (PP)	37
26	Rubber	38

Low density polyethylene (LDPE)



Monthly Average Prices		
Period	*Int'l (\$/tonne)	*Dom (Rs/tonne)
Dec-19	800	83814
Jan-20	847	84922
Feb-20	813	85309
Mar-20	767	86309
Apr-20	721	86309
May-20	721	86309
Jun-20	744	83005
Jul-20	779	88626
Aug-20	767	91403
Sep-20	813	95103
Oct-20	813	99879
Nov-20	836	105106
Dec-20		123653

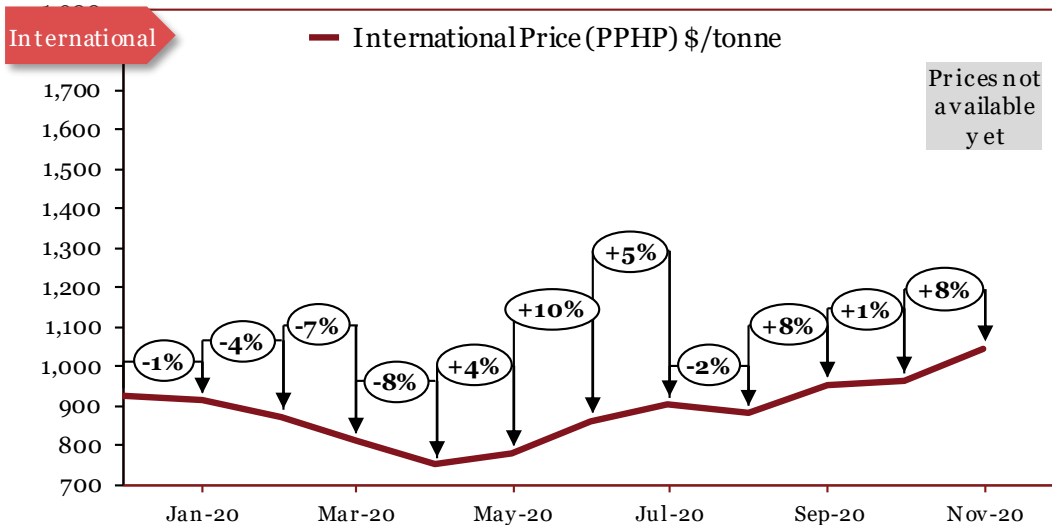


*The actual prices may vary depending on city, player, grade etc.

Outlook

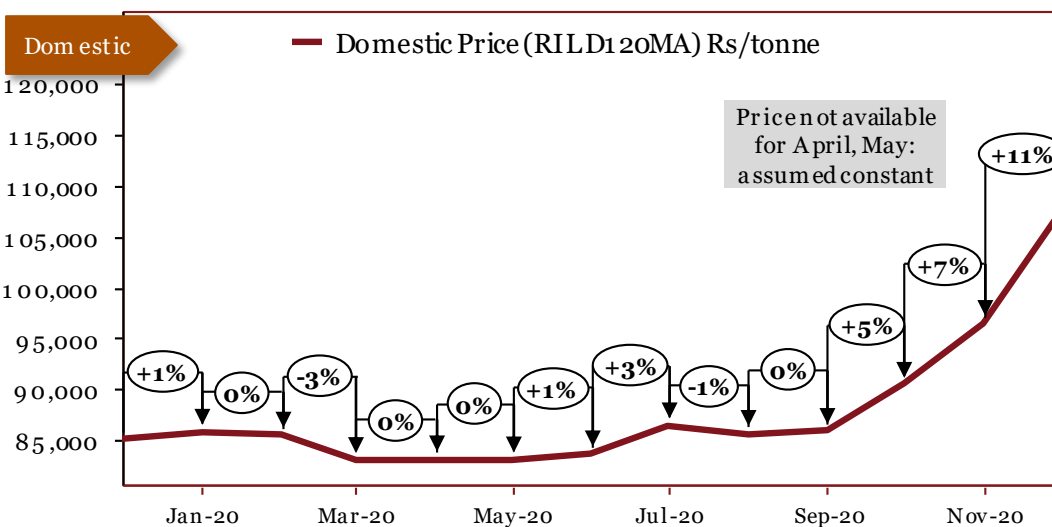
In October, international prices rose thanks to tighter spot supply, while domestic prices fell as supply was normalised. In November prices fell internationally and domestically as producers sought to drop their excess inventory, due to overproduction in the United States. In December, prices internationally and domestically continued to decline as oversupply in the market met sluggish demand. In January, international prices rose due to plant shutdowns in Japan and Thailand, with domestic prices also rising. In February, domestic prices remained unchanged. In March, international prices declined as a result of the fall in crude oil prices and the COVID-19 lockdown. In April, low crude prices caused further decline in international prices. In June, international prices rose, corresponding with the rise in oil prices. In July, domestic prices continued their upturn. In August, international prices declined slightly, while domestic prices rose on account of higher oil prices. In September, domestic prices rose on the backs of higher consumer goods sales as the festive season approaches. In October, domestic prices continued to rise as producers receive higher export demand, with limited availability and high shipping costs. In November, domestic prices rose on the back of higher crude oil prices.

Polypropylene (PP)



Source: Crisil

Monthly Average Prices		
Period	*Int'l (\$/tonne)	*Dom (Rs/tonne)
Dec-19	927	85116
Jan-20	914	85862
Feb-20	873	85482
Mar-20	812	83120
Apr-20	751	83120
May-20	782	83120
Jun-20	863	83616
Jul-20	903	86491
Aug-20	883	85636
Sep-20	954	85917
Oct-20	964	90503
Nov-20	1045	96407
Dec-20		107261



Source: Reliance Industries Ltd.

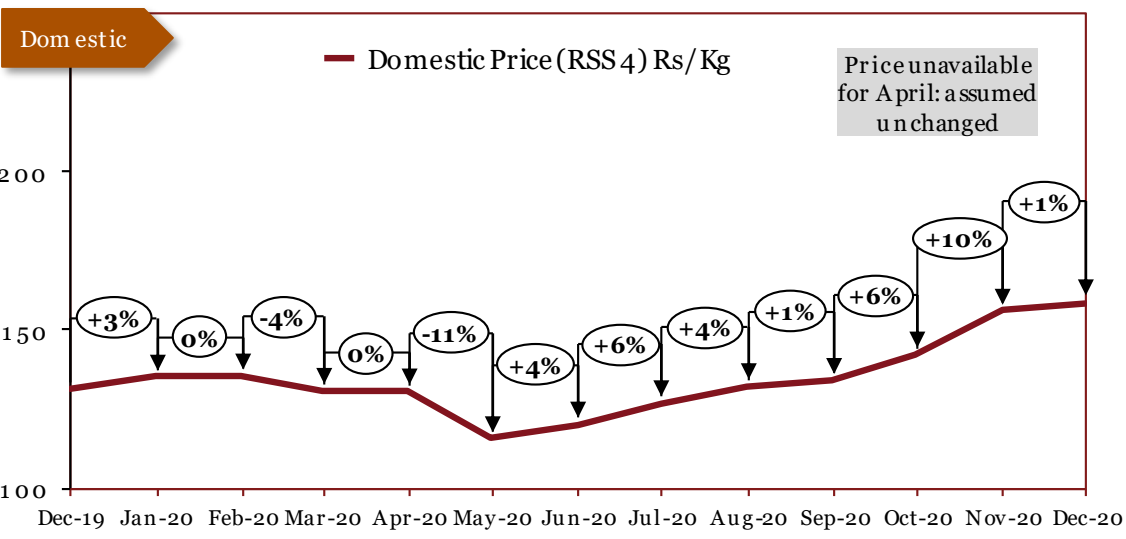
*The actual prices may vary depending on city, player, grade etc.

Outlook

In October, international prices rose, while domestic prices were cut to try and incentivize buying. In November, prices fell domestically and internationally on account of oversupply and a period of weak demand from the plastics industry. In December, international and domestic prices continued to decline, with ample inventory in the market as buyers resisted building up stocks. In January, the trend of falling international prices continued thanks to a production surge in China, while domestic prices rose on tighter availability of product in the domestic market. In February, domestic prices remained unchanged. In March, the dramatic decrease in crude oil prices led to the fall in Polypropylene prices internationally as well as domestically. In April, prices declined on low crude costs. In June, international prices rose on higher oil prices. Domestic prices followed suit. In July, domestic prices rose on account of higher oil prices. In July, domestic prices continued their upturn. In August, prices rose on account of higher oil prices. In September, domestic prices remained stable. In October, domestic prices rose on greater demand from exports, as well as a shortage of supply in the market. In November, domestic prices continued to trend upwards. In December, international prices rose alongside the spurt in oil prices.

Rubber

Monthly Average Prices	
Period	*Dom (Rs/kg)
Dec-19	131
Jan-20	135
Feb-20	135
Mar-20	130
Apr-20	130
May-20	116
Jun-20	120
Jul-20	127
Aug-20	132
Sep-20	134
Oct-20	142
Nov-20	156
Dec-20	158



Source: Rubber board

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

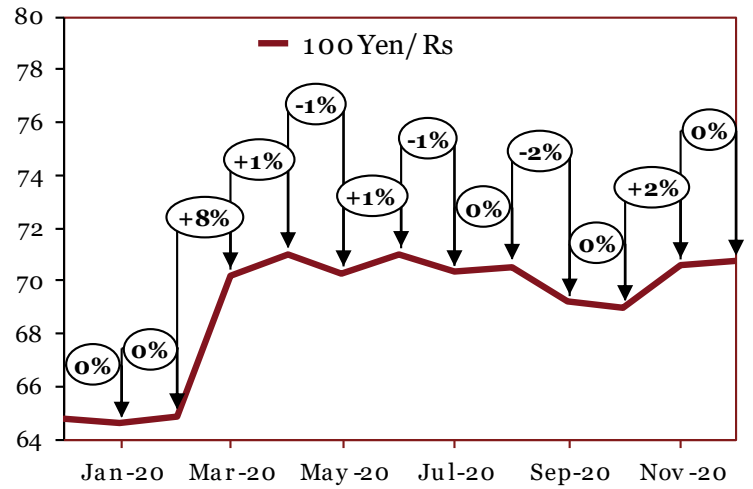
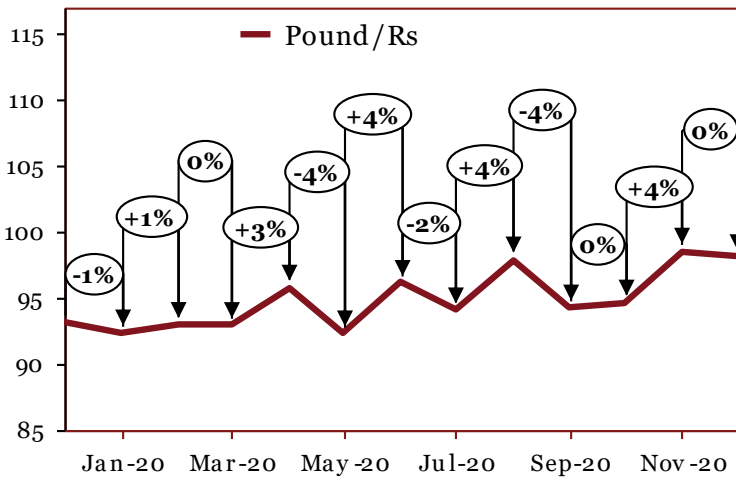
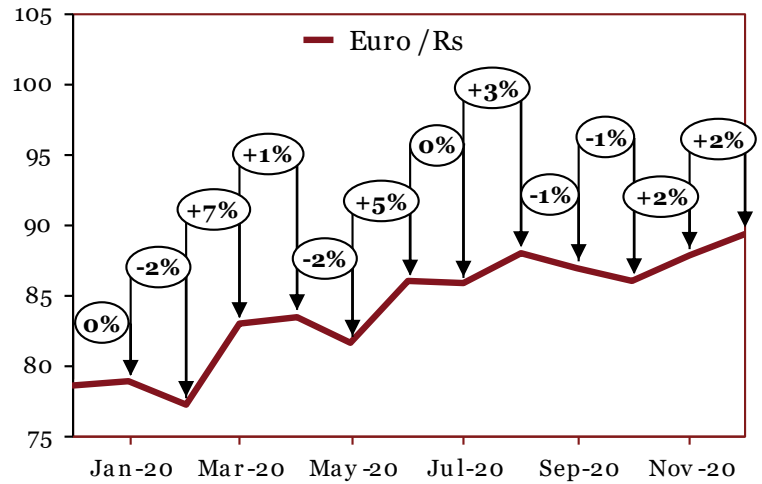
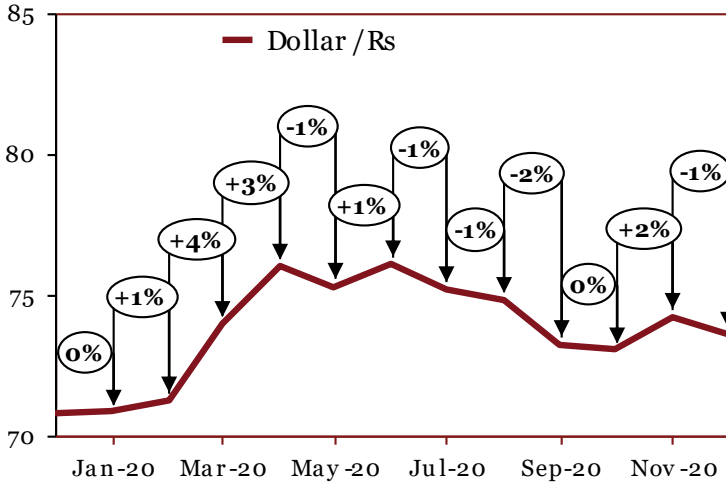
Outlook

In December, rubber prices rose due to the Pestalotiopsis disease on rubber plantations lowering international supply, alongside the higher oil price and the breakthrough in US-China trade relations. In January prices continued to trend upwards due to worsening supply problems. In February, domestic prices remained mostly unchanged despite buyers fears regarding the impact of the coronavirus crisis. In March, domestic prices fell as the COVID-19 pandemic halted all industrial activity, including in the tyre industry. In June and July, prices of rubber rose on stronger demand and supply disruptions. In August, prices rose mirroring a continued upward trend in global markets. In September, prices rose on strong Chinese demand and supply challenges in South East Asia. In October, prices continued to move upwards due to continued demand in China. In November, domestic prices continued to move upwards, with strong demand from China along with supply constraints in Thailand and other parts of Southeast Asia partly responsible. In December, international prices rose alongside the spurt in oil prices. In December, prices rose slightly, stabilising after months of upward movement.

Appendices

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Forex Movement

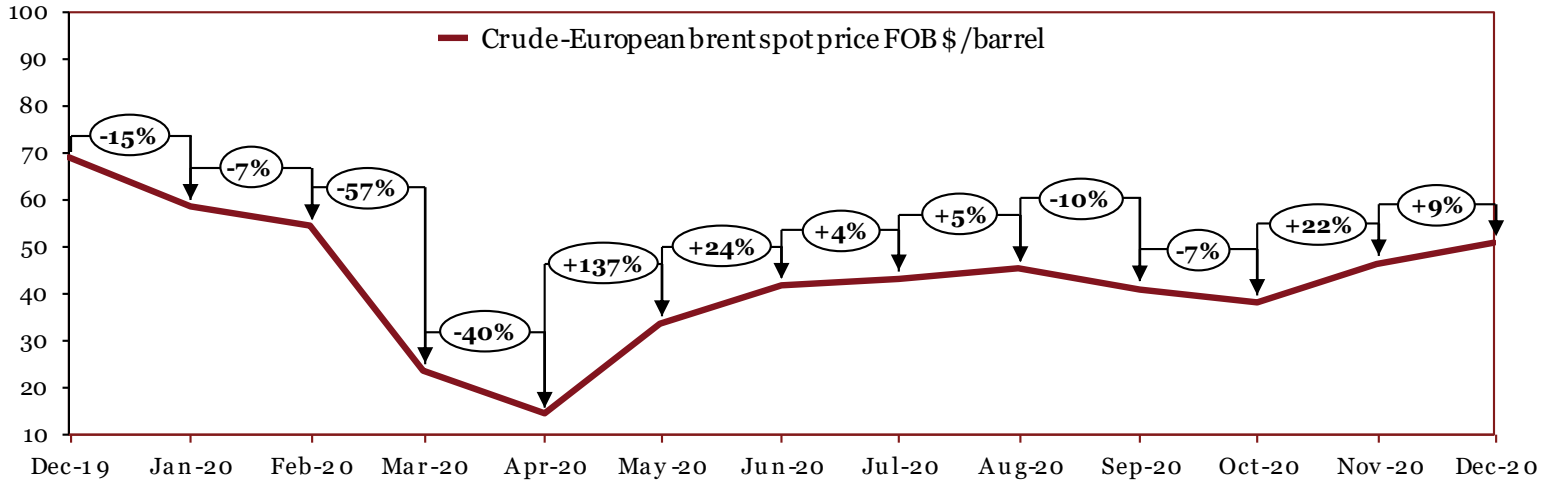


Source: Reserve Bank of India

Monthly Average Prices (Rs)

	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20
\$	71	71	71	74	76	75	76	75	75	73	73	74	74
£	93	92	93	93	96	92	96	94	98	94	95	99	98
€	79	79	77	83	83	82	86	86	88	87	86	88	89
¥	65	65	65	70	71	70	71	70	71	69	69	71	71

Crude Oil



Source: EIA

Monthly Average Prices (\$/barrel)

	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20
	69	59	54	24	14	34	42	43	45	41	38	46	51

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 titanium	Ferrotitanium (Europe-70% In Warehouse Rotterdam) <i>Previously: Ferrotitanium (min 70% in warehouse Rotterdam, Europe) \$/kg</i>	NA
Ferro chrome	Crisil : FOB Hong Kong Cr 50%	Crisil: Ex-factory Cr 60%
Ferro molybdenum	Ferro-molybdenum (China-60% EXW) <i>Previously: Ferro-molybdenum (65% min in warehouse Rotterdam, Europe) \$/kg</i>	NA

Commodity Specifications

Commodity	International	Domestic
Ferro vanadium	Ferro Vanadium (China -80% FOB) \$/kg <i>Previously: Ferrovandium 78-82% V max 1.5% Si FOB North America warehouse USD/lbs</i>	NA
Ferro silicon	Crisil - FOB China Si 75%	Crisil - Ex-factory Si 70%
Aluminium	LME -Primary aluminium with impurities no greater than the chemical composition of one of the registered designations: •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”	NCDEX, MCX (July’19 onwards) -Primary aluminium 99.7% purity (minimum) form: ingots, T-bars,
Copper	LME -Grade A copper must conform to the chemical composition of one of the following standards: •BS EN 1978:1998 - Cu-CATH-1 •GB/T 467-2010 - Cu-CATH-1 •ASTM B115-10 - cathode Grade 1	MCX - Grade 1 electrolytic copper as per B115 specification
Zinc	LME -Special high-grade zinc of 99.995% purity (minimum) must conform to the chemical composition of one of the following standards: •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	NCDEX, MCX (July’19 onwards) - Zinc of 99.995% minimum purity. Zinc must conform with the 99.995% graded chemical composition of BS EN 1179:1996 Standard entitled “Zinc and Zinc alloys primary Zinc” Form: ingots

Commodity Specifications

Commodity	International	Domestic
Lead	LME - Lead of 99.97% purity (minimum) conforming to BS EN 12659:1999 - GB/T 469/2005	MCX - Lead ingots with minimum purity of 99.97%
Nickel	LME - Nickel of 99.80% purity (minimum) conforming to B39-79 (2013) - GB/T 6516-2010	NCDEX, MCX (July'19 onwards) - 4" x 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
Magnesium	Magnesium (China Shanghai Changjiang Spot Price) CNY/tonne <i>Previously: Magnesium (99.8% FOB China Main Ports Spot Price) \$/tonne</i>	NA
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
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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