

www.pwc.com

# *Commodity price monitor*

## *December-18*

Prepared for ACMA

*Strictly private  
and confidential*

*January 2019*



**pwc**

# Contents

|                                  |                           |           |
|----------------------------------|---------------------------|-----------|
| <b>Commodity trend dashboard</b> |                           | <b>5</b>  |
| <b>Iron &amp; Steel</b>          |                           | <b>8</b>  |
| 1                                | Iron Ore                  | 9         |
| 2                                | Pig Iron                  | 10        |
| 3                                | Wire Rod                  | 11        |
| 4                                | Steel Billets             | 12        |
| 5                                | Hot-Rolled (HR) Coils     | 13        |
| 6                                | Cold-Rolled (CR) Coils    | 14        |
| <b>Ferro-alloys</b>              |                           | <b>15</b> |
| 7                                | Ferro titanium            | 16        |
| 8                                | Ferro chrome              | 17        |
| 9                                | Ferro molybdenum          | 18        |
| 10                               | Ferro vanadium            | 19        |
| 11                               | Ferro silicon             | 20        |
| 12                               | EN8 Alloy Steel (Forging) | 21        |

***To navigate this report  
on-screen (in pdf format)***

From any page – click on the section title in the header navigation bar

From this Contents page – click on the title of the section or sub-section

From the contents listing on any section divider – click on the title of the sub-section

# Contents

|                              |                                 |           |
|------------------------------|---------------------------------|-----------|
| 13                           | Stainless Steel                 | 22        |
| 14                           | 20MnCr5 Alloy Steel (Forging)   | 23        |
| <b>Base Metals</b>           |                                 | <b>24</b> |
| 15                           | Copper                          | 25        |
| 16                           | Zinc                            | 26        |
| 17                           | Nickel                          | 27        |
| 18                           | Tin                             | 28        |
| 19                           | Magnesium                       | 29        |
| <b>Precious Metals</b>       |                                 | <b>30</b> |
| 20                           | Precious Metals                 | 31        |
| <b>Polymers &amp; Rubber</b> |                                 | <b>32</b> |
| 21                           | Low density polyethylene (LDPE) | 33        |
| 22                           | Polypropylene (PP)              | 34        |
| 23                           | Rubber                          | 35        |
| <b>Appendices</b>            |                                 | <b>36</b> |

***To navigate this report  
on-screen (in pdf format)***

From any page – click on the section title in the header navigation bar

From this Contents page – click on the title of the section or sub-section

From the contents listing on any section divider – click on the title of the sub-section

# Contents

|    |                          |    |
|----|--------------------------|----|
| 24 | Forex Movement           | 37 |
| 25 | Crude Oil                | 38 |
| 26 | Commodity Specifications | 39 |

***To navigate this report  
on-screen (in pdf format)***

From any page – click on the section title in the header navigation bar

From this Contents page – click on the title of the section or sub-section

From the contents listing on any section divider – click on the title of the sub-section

# *Commodity trend dashboard*

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

## Calendar Year 18-19: Q vs. Q update

| Commodity               | Region              | Q-o-Q Up | Q-o-Q Down |
|-------------------------|---------------------|----------|------------|
| <b>Iron &amp; Steel</b> |                     |          |            |
| Iron Ore                | International       | 8% ▲     |            |
|                         | Domestic low grade  |          |            |
|                         | Domestic high grade |          |            |
| Pig Iron                | International       |          | -5% ▼      |
|                         | Domestic            | 0% ▲     |            |
| Stainless steel         | Domestic            |          | -3% ▼      |
|                         | Domestic            |          | -2% ▼      |
| Wire rod                | International       |          | -4% ▼      |
|                         | Domestic            | 1% ▲     |            |
| Steel Billets           | International       |          | -6% ▼      |
|                         | Domestic            |          | -2% ▼      |
| Hot-rolled coils        | International       |          | -11% ▼     |
|                         | Domestic            | 2% ▲     |            |
| Cold-rolled coils       | International       |          | -6% ▼      |
|                         | Domestic            | 2% ▲     |            |
| EN8                     | Domestic            | 3% ▲     |            |
| 20MnCr5                 | Domestic            | 3% ▲     |            |
| <b>Ferro-alloys</b>     |                     |          |            |
| Ferro titanium          | International       | 11% ▲    |            |
| Ferro chrome            | International       |          | -5% ▼      |
|                         | Domestic            | 4% ▲     |            |
| Ferro molybdenum        | International       | 8% ▲     |            |
| Ferro vanadium          | International       | 62% ▲    |            |
| Ferro silicon           | International       |          | -3% ▼      |
|                         | Domestic            | 2% ▲     |            |

ND: Not disclosed by the source

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

## Calendar Year 18-19: Q vs. Q update

| Commodity                       | Region        | Q-o-Q Up |   | Q-o-Q Down |   |
|---------------------------------|---------------|----------|---|------------|---|
| <b>Base Metals</b>              |               |          |   |            |   |
| Aluminum                        | International |          |   | -4%        | ▼ |
|                                 | Domestic      |          |   | -2.24%     | ▼ |
| Copper                          | International | 1%       | ▲ |            |   |
|                                 | Domestic      | 3%       | ▲ |            |   |
| Zinc                            | International | 4%       | ▲ |            |   |
|                                 | Domestic      | 6%       | ▲ |            |   |
| Nickel                          | International |          |   | -13%       | ▼ |
|                                 | Domestic      |          |   | -11%       | ▼ |
| Tin                             | International |          |   | -1%        | ▼ |
|                                 | Domestic      | 4%       | ▲ |            |   |
| Magnesium                       | International | 2%       | ▲ |            |   |
| <b>Precious Metals</b>          |               |          |   |            |   |
| Platinum                        | International | 2%       | ▲ |            |   |
| Palladium                       | International | 23%      | ▲ |            |   |
| Rhodium                         | International | 6%       | ▲ |            |   |
| <b>Polymers</b>                 |               |          |   |            |   |
| Low density polyethylene (LDPE) | International |          |   | -7%        | ▼ |
|                                 | Domestic      |          |   | -1%        | ▼ |
| Polypropylene (PP)              | International |          |   | -6.1%      | ▼ |
|                                 | Domestic      |          |   | -2%        | ▼ |
| Rubber                          | Domestic      |          |   | -6%        | ▼ |
| <b>Currency Exchange</b>        |               |          |   |            |   |
| Dollar                          | International | 3%       | ▲ |            |   |
| Pound                           | International | 1%       | ▲ |            |   |
| Euro                            | International | 1%       | ▲ |            |   |
| Yen                             | International | 1%       | ▲ |            |   |

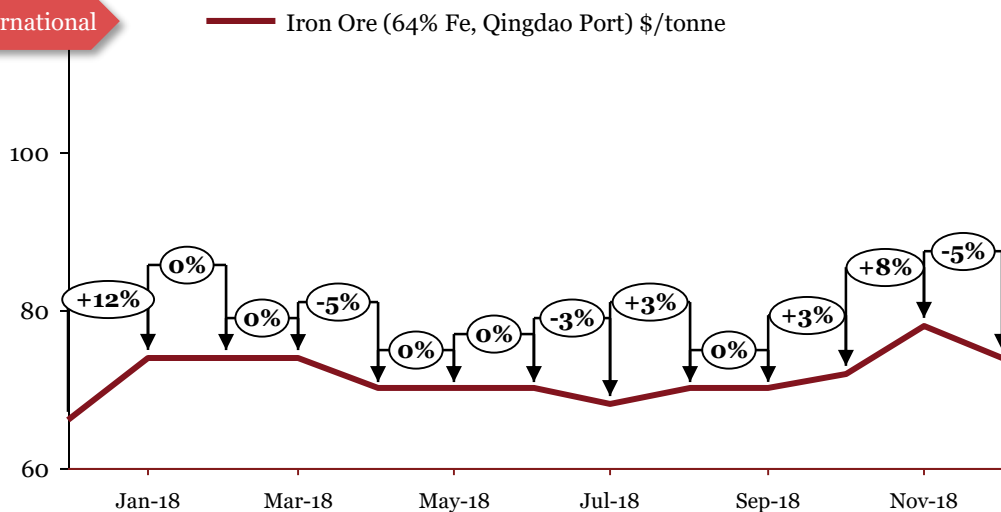
# *Iron & Steel*

|   |                         |          |
|---|-------------------------|----------|
|   | <b>Iron &amp; Steel</b> | <b>8</b> |
| 1 | Iron Ore                | 9        |
| 2 | Pig Iron                | 10       |
| 3 | Wire Rod                | 11       |
| 4 | Steel Billets           | 12       |
| 5 | Hot-Rolled (HR) Coils   | 13       |
| 6 | Cold-Rolled (CR) Coils  | 14       |



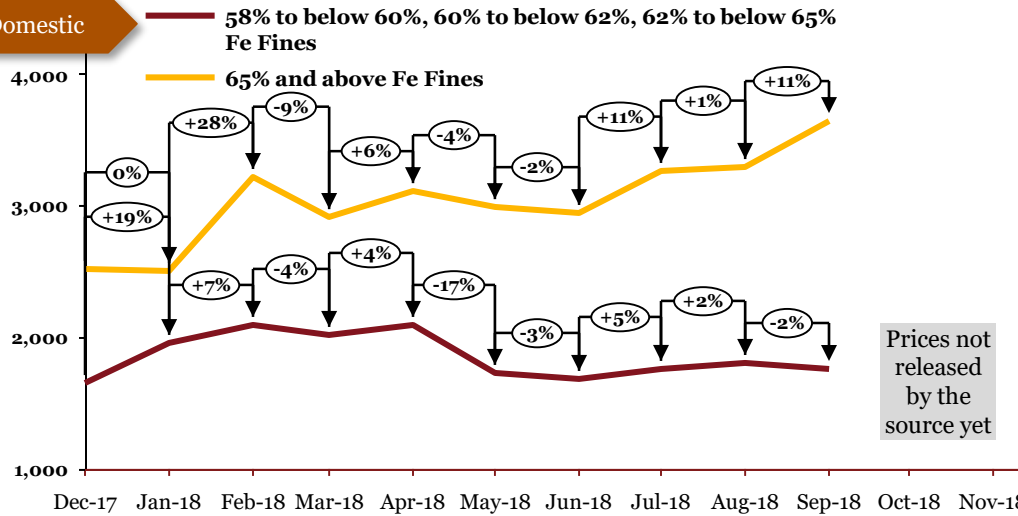
# Iron Ore

## International



Source: Crisil

## Domestic



Source: Crisil

| Monthly Average Prices |                 |               |             |
|------------------------|-----------------|---------------|-------------|
| Period                 | *Int'l \$/tonne | *Dom Rs/tonne |             |
|                        |                 | 65% & below   | 65% & above |
| Jan-18                 | 74              | 1,953         | 2,507       |
| Feb-18                 | 74              | 2,099         | 3,216       |
| Mar-18                 | 74              | 2,012         | 2,919       |
| Apr-18                 | 70              | 2,087         | 3,106       |
| May-18                 | 70              | 1,726         | 2,993       |
| Jun-18                 | 70              | 1,676         | 2,946       |
| Jul-18                 | 68              | 1,757         | 3,264       |
| Aug-18                 | 70              | 1,799         | 3,289       |
| Sep-18                 | 70              | 1,760         | 3,648       |
| Oct-18                 | 72              | -             | -           |
| Nov-18                 | 78              | -             | -           |
| Dec-18                 | 74              | -             | -           |

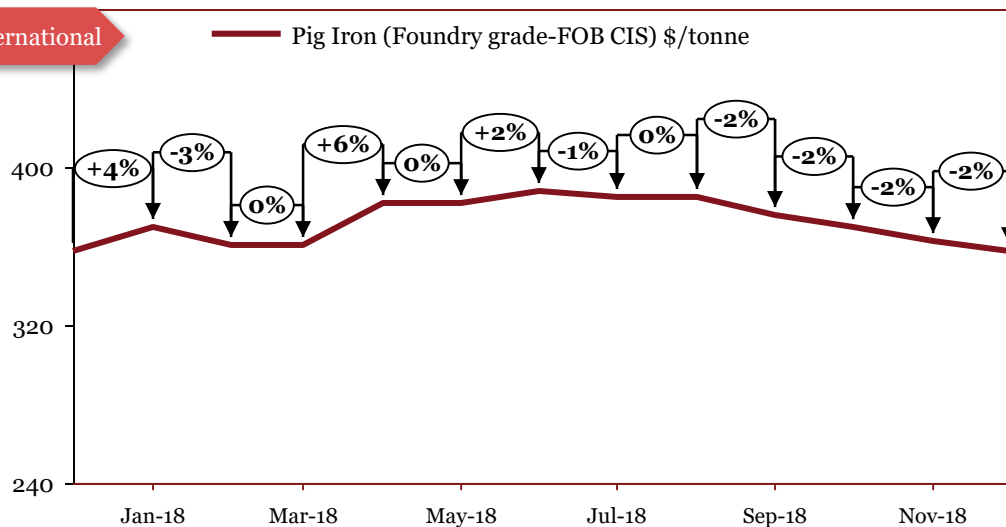
\*The actual prices may vary depending on city, player, grade etc.

## Outlook

In January 2018, international ore prices followed similar trends as it did last month. However, the prices are expected to slow down as the market stabilizes. In Feb 2018, the international ore prices remained constant. In March, the international prices remained stable as the supply and demand balanced. In April, the international prices decreased owing to the closure of steel mills in China due to environmental sanctions. In May, prices in the international market remained unchanged due to slated capacity cuts by Chinese steel producers owing to government regulation. In June, prices in the international market remained unchanged owing to stable demand. In July, expansion in global mine supply, easing in steel prices and renewed production curbs at mills in China blunted overall demand and caused a decline in prices in the international market. In August, international prices rose mainly due to increased demand from China and decreased supply from Brazil. In September, international prices remained stable. In October, international iron ores increased with improvement in steel demand and high import from China. In November, iron ore prices witnessed increase. In December, prices declined owing to sluggish demand.

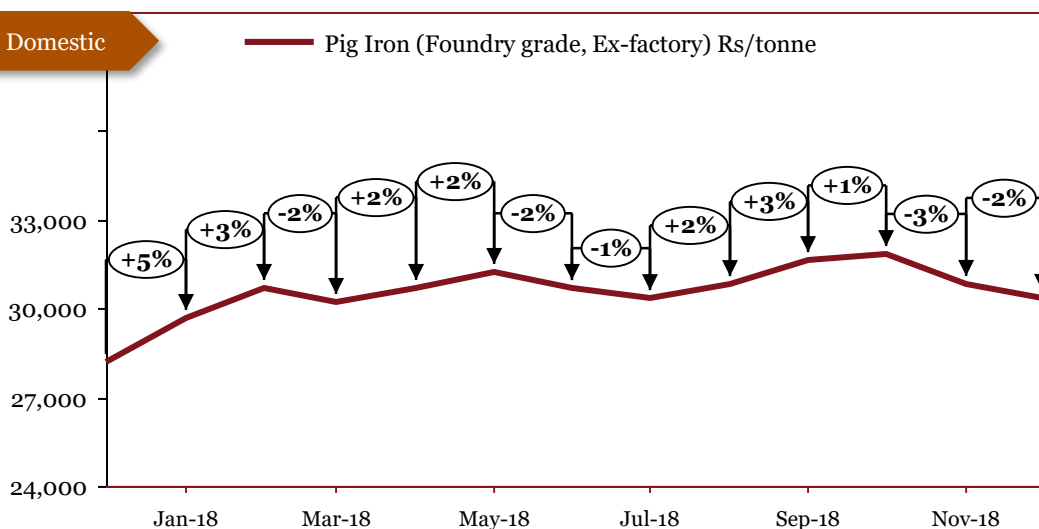
# Pig Iron

## International



Source: Crisil

## Domestic



Source: Crisil

## Monthly Average Prices

| Period | *Int'l \$/tonne | *Dom Rs/tonne |
|--------|-----------------|---------------|
| Jan-18 | 370             | 29,700        |
| Feb-18 | 360             | 30,700        |
| Mar-18 | 360             | 30,200        |
| Apr-18 | 382             | 30,700        |
| May-18 | 382             | 31,200        |
| Jun-18 | 388             | 30,700        |
| Jul-18 | 385             | 30,350        |
| Aug-18 | 385             | 30,850        |
| Sep-18 | 376             | 31,650        |
| Oct-18 | 370             | 31,850        |
| Nov-18 | 363             | 30,850        |
| Dec-18 | 357             | 30,350        |

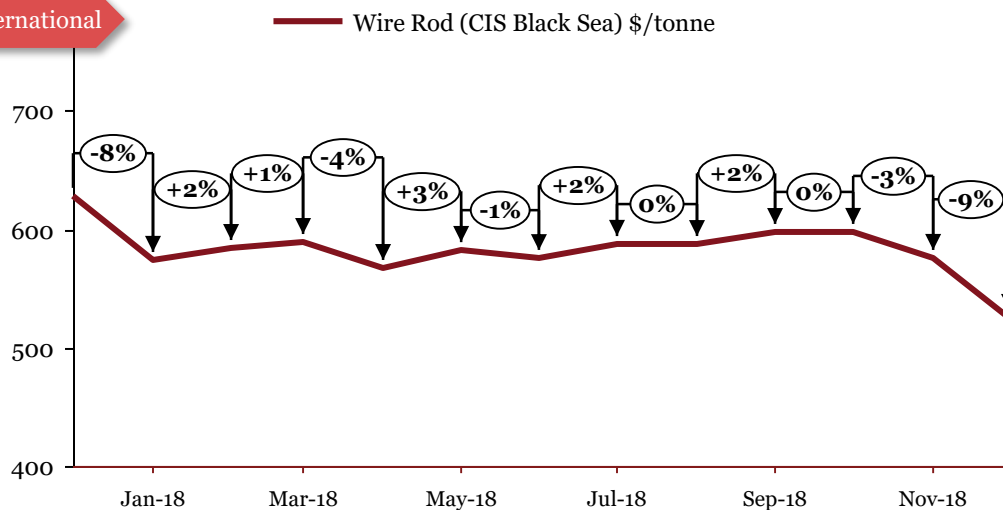
\*The actual prices may vary depending on city, player, grade etc.

## Outlook

In April, the international prices increased owing to the increased demand. The domestic prices increased on back of the rising domestic steel prices. In May, the international prices increased initially due to increased purchasing activity, however, this slowed down after buyers' restocking activity, resulting in stable prices. Domestic prices continued to increase at a steady pace. In June, international prices increased due to higher deal prices in Italy, where buyers accepted higher offers as they needed to restock. Domestic pig iron prices declined in June on back of increased supply in the market. In July, domestic prices declined in line with falling domestic steel prices. Further, seasonally subdued demand along with dull export market created downward pressure on prices. In August, domestic pig iron prices increased in line with the rising steel prices. Further, rising raw material prices have also pushed up the price. In September, domestic pig iron prices increased during the month on back of higher raw material cost and rising steel prices. In October, pig iron prices increased during the month on back of sustained demand. In November, prices decreased owing to decline in prices of finished steel products. In the month of December 2018, pig iron (foundry grade) prices decreased on back of slump in domestic steel prices.

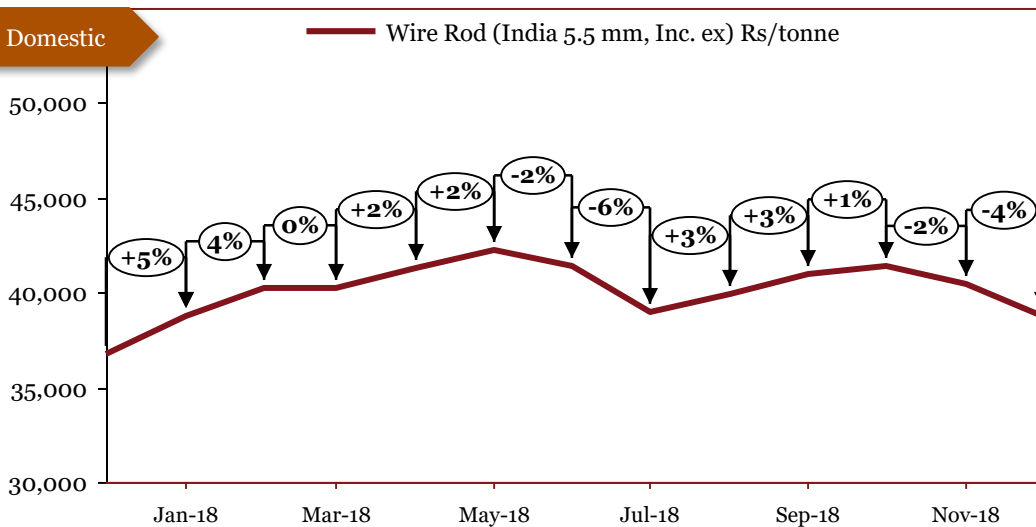
# Wire Rod

## International



Source: Crisil

## Domestic



Source: Crisil

## Monthly Average Prices

| Period | ^*Int'l (\$/tonne) | *Dom (Rs/tonne) |
|--------|--------------------|-----------------|
| Jan-18 | 574                | 38,744          |
| Feb-18 | 584                | 40,244          |
| Mar-18 | 588                | 40,244          |
| Apr-18 | 568                | 41,244          |
| May-18 | 583                | 42,244          |
| Jun-18 | 576                | 41,444          |
| Jul-18 | 587                | 38,944          |
| Aug-18 | 587                | 39,944          |
| Sep-18 | 597                | 40,944          |
| Oct-18 | 597                | 41,444          |
| Nov-18 | 576                | 40,444          |
| Dec-18 | 525                | 38,744          |

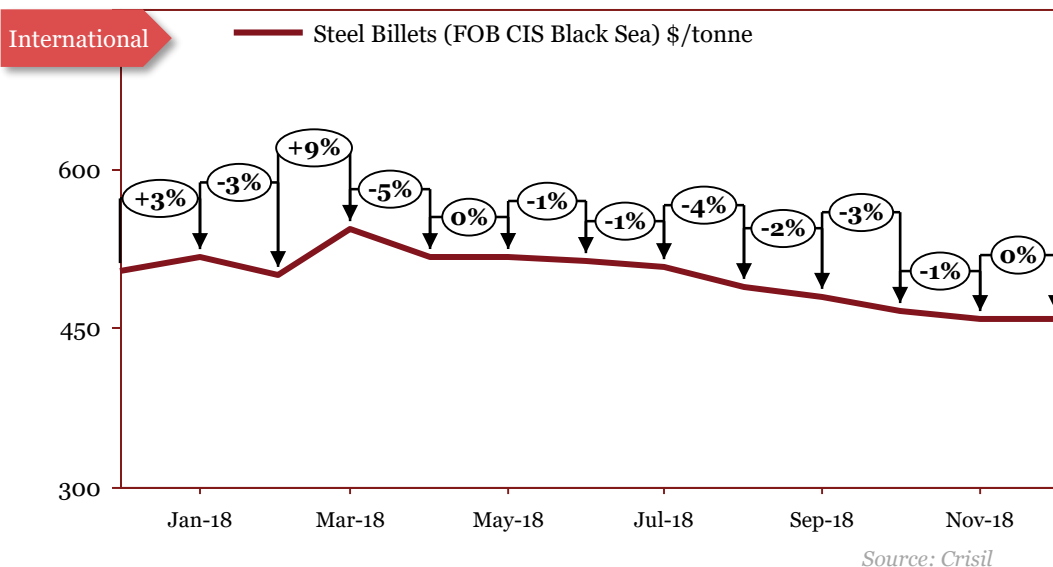
\*The actual prices may vary depending on city, player, grade etc.

## Outlook

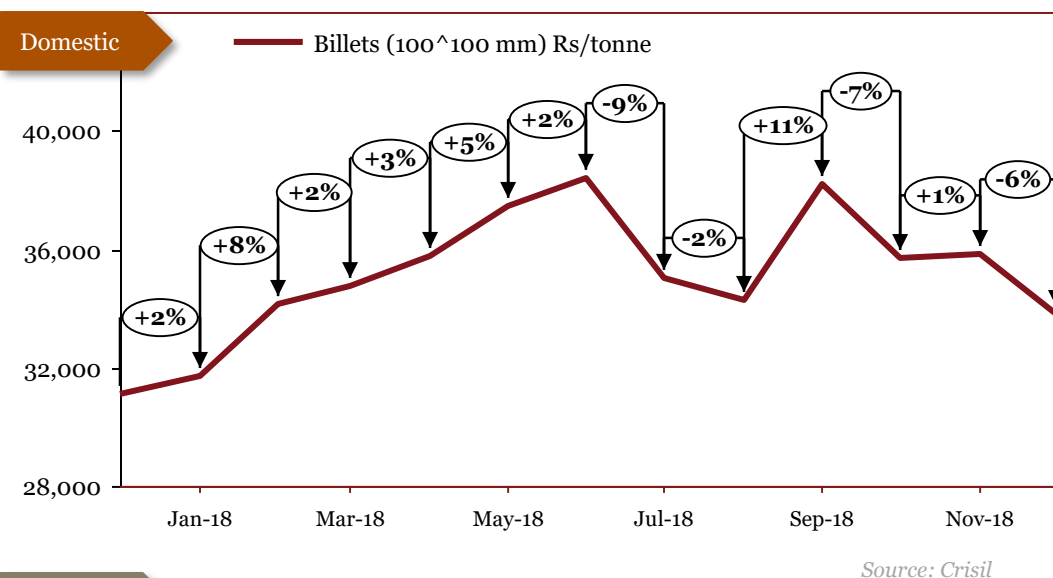
In April, the international prices decreased owing to the slower demand. Domestic prices increased owing to the improved demand. In May, international prices increased due to improved demand. Domestic prices increased due to demand outpacing supply. In June, international prices declined owing to subdued demand. Domestic prices decreased primarily owing to muted demand due to onset of monsoon. In July, international prices increased and domestic prices continued to decline owing to decreased demand due to the monsoon season. In August, declining trend in domestic prices was reversed due to small and medium sized players increasing prices due to increased demand. In September, domestic prices increased led by healthy domestic demand and rise in raw material costs. In October, prices increased during the month led by healthy domestic demand, currency depreciation, and rise in raw material costs. In November, domestic prices fell owing to sluggish demand sentiment. In December, fall in global prices and domestic supply situation led to decrease in domestic prices.

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

# Steel Billets



| Monthly Average Prices |                    |                 |
|------------------------|--------------------|-----------------|
| Period                 | ^*Int'l (\$/tonne) | *Dom (Rs/tonne) |
| Jan-18                 | 516                | 31,375          |
| Feb-18                 | 500                | 33,800          |
| Mar-18                 | 543                | 34,733          |
| Apr-18                 | 517                | 34,700          |
| May-18                 | 516                | 37,467          |
| Jun-18                 | 513                | 38,367          |
| Jul-18                 | 507                | 35,050          |
| Aug-18                 | 487                | 34,300          |
| Sep-18                 | 479                | 38,200          |
| Oct-18                 | 465                | 35,667          |
| Nov-18                 | 459                | 35,850          |
| Dec-18                 | 459                | 33,833          |



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

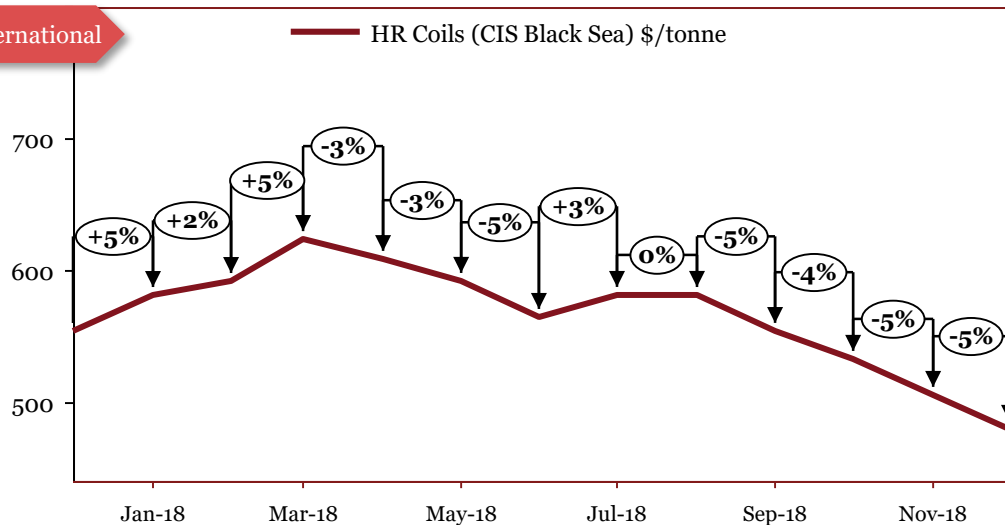
## Outlook

In April, the international and domestic prices remained flat owing to the limited activity in the market. In May, the rate of price increase in international markets fell due to decrease in scrap prices and market activity. Domestic prices increased owing to a pick-up in demand coupled with limited inventories. In June, international prices fell due to muted demand amid the threat of an escalating global trade war. Domestic prices rose on account of short supply of scrap. In July, prices in the domestic market fell due to decreased demand owing to fall in construction activity because of the monsoon season and reduced ability to export owing to international trade wars. In August, domestic prices continued to fall. In September, domestic prices increased primarily owing to increased off-take of medium size mills, lower inventories coupled with elevated input material costs. In October, billet prices experienced decline owing to weaker domestic demand. In November, prices fell in the global market due to a return of Chinese producers to the export market leading to increased supply. In December, international prices stagnated while domestic prices fell.

^International prices changed due to change in the grade

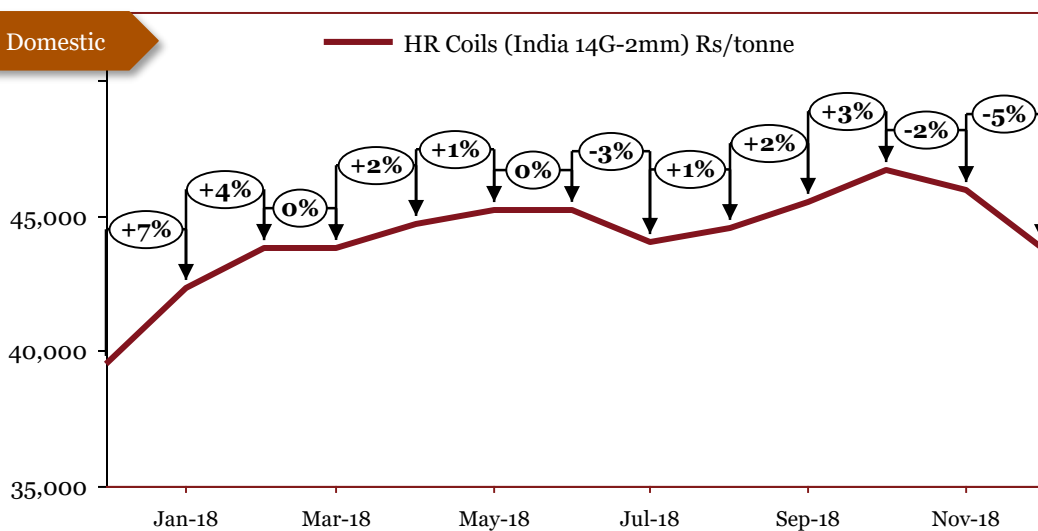
# Hot-Rolled (HR) Coils

## International



Source: Crisil

## Domestic



Source: Crisil

## Monthly Average Prices

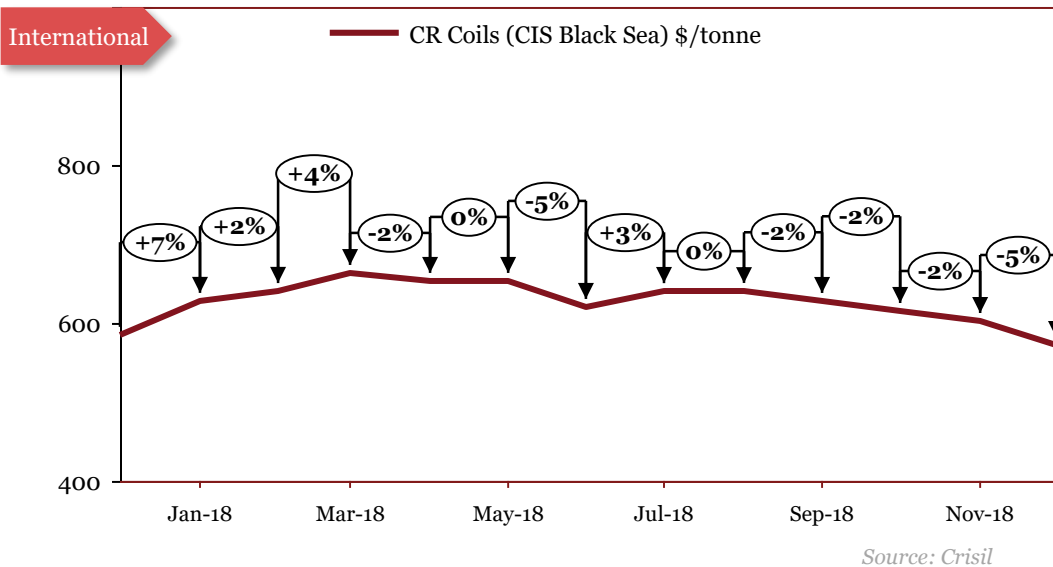
| Period | *Int'l (\$/tonne) | ^*Dom (Rs/tonne) |
|--------|-------------------|------------------|
| Jan-18 | 581               | 42,300           |
| Feb-18 | 592               | 43,800           |
| Mar-18 | 624               | 43,800           |
| Apr-18 | 608               | 44,700           |
| May-18 | 592               | 45,200           |
| Jun-18 | 565               | 45,200           |
| Jul-18 | 581               | 44,000           |
| Aug-18 | 581               | 44,500           |
| Sep-18 | 554               | 45,500           |
| Oct-18 | 533               | 46,700           |
| Nov-18 | 506               | 45,900           |
| Dec-18 | 480               | 43,800           |

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

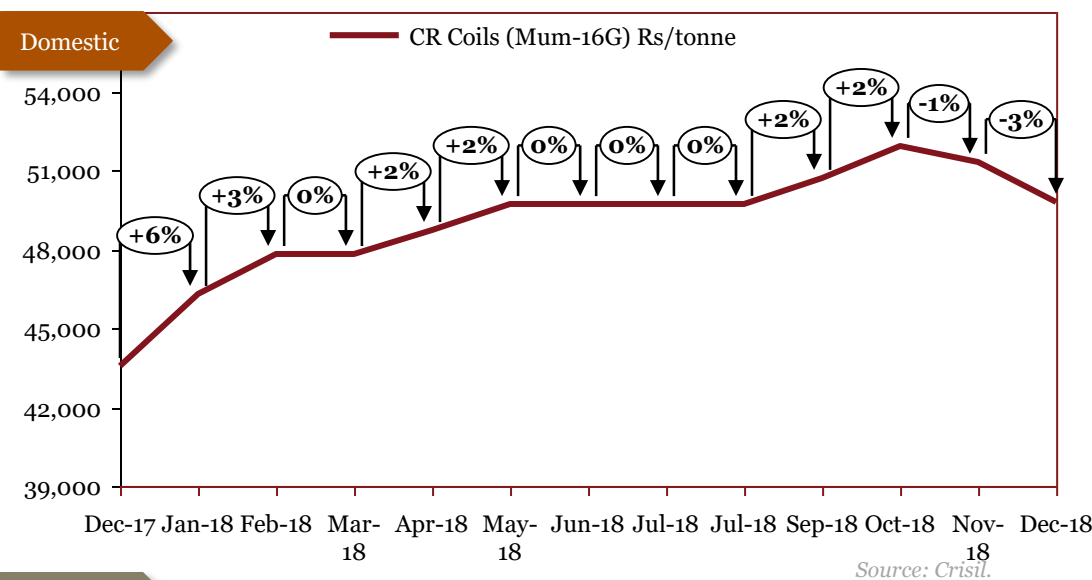
## Outlook

Prices increased in August on the domestic front on account of higher raw material prices like iron ore. In the beginning of the month, large players had rolled over the prices, however, on account of muted demand prices fell down. Hike in HR prices can also be attributed to iron ore prices increasing from the second week. In September, prices increased on the domestic front on account of higher raw material prices like iron ore. In the month of October 2018, international prices declined. However, on the domestic front, prices increased by about 3% on back of costlier imports amid currency depreciation, higher raw material cost (both iron ore and coking coal). In November, prices in the international market fell owing to lacklustre demand and prices in the domestic market fell owing to increased supply. In the month of December 2018, international prices declined on account of weak demand in China's domestic market along with tepid exports demand due to New Year holidays. In line with global prices, domestic prices declined owing to sluggish demand. Further, decline in global steel prices has led to landed costs of imports being more cost effective than domestic offers, leading to decline in domestic prices.

# Cold-Rolled (CR) Coils



| Monthly Average Prices |                   |                  |
|------------------------|-------------------|------------------|
| Period                 | *Int'l (\$/tonne) | ^*Dom (Rs/tonne) |
| Jan-18                 | 627               | 46,322           |
| Feb-18                 | 640               | 47,822           |
| Mar-18                 | 664               | 47,822           |
| Apr-18                 | 652               | 48,722           |
| May-18                 | 652               | 49,722           |
| Jun-18                 | 621               | 49,722           |
| Jul-18                 | 640               | 49,722           |
| Aug-18                 | 640               | 49,722           |
| Sep-18                 | 627               | 50,722           |
| Oct-18                 | 615               | 51,900           |
| Nov-18                 | 603               | 51,300           |
| Dec-18                 | 572               | 49,800           |



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

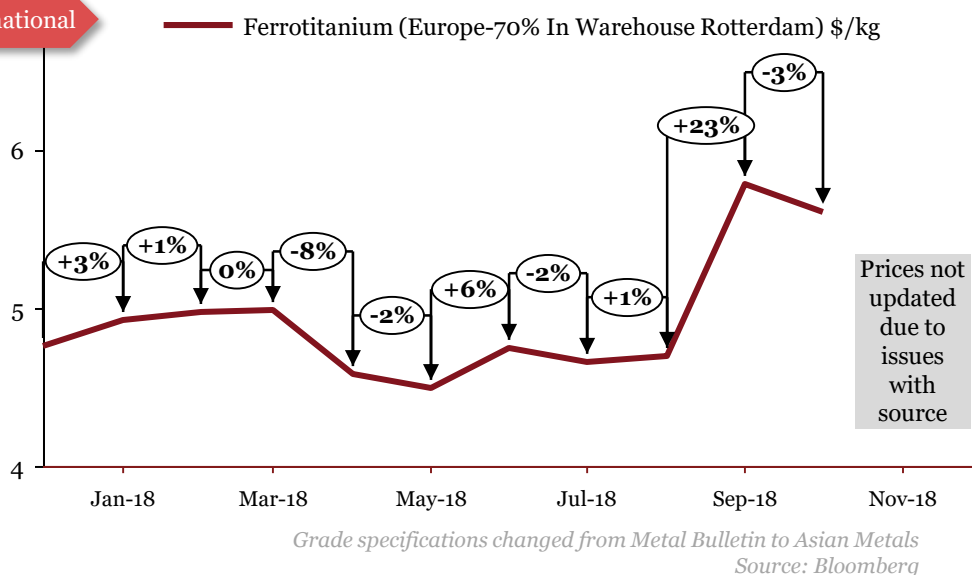
## Outlook

In April, the CR coils followed the HR coils trends. In May, international CR prices remained flat due to tepid demand. Domestic prices increased due to rise in demand owing to lower inventories. International CR coil prices declined in June on back of decline of 5% in International HR prices. Domestic CR prices remained stable, mirroring HR prices trend. In July, international CR prices rose on the back of rise in international HR prices. Domestic CR prices remained stable in August. In September, International CR coil prices declined on back of declining international HR prices. Domestic CR prices increased during the month, following the same trend as that of the HR coils. International indexed CR coil prices declined in October 2018 on back of declining international HR prices. Domestic CR prices increased during the month, mirroring HR prices trend. In November, international and domestic CR coil prices declined followed trend of declining HR prices. In December, international indexed CR coil prices declined in December 2018 on back of declining international HR prices.

|                            |                               |           |
|----------------------------|-------------------------------|-----------|
| <b><i>Ferro-alloys</i></b> | <b>Ferro-alloys</b>           | <b>15</b> |
| 7                          | Ferro titanium                | 16        |
| 8                          | Ferro chrome                  | 17        |
| 9                          | Ferro molybdenum              | 18        |
| 10                         | Ferro vanadium                | 19        |
| 11                         | Ferro silicon                 | 20        |
| 12                         | EN8 Alloy Steel (Forging)     | 21        |
| 13                         | Stainless Steel               | 22        |
| 14                         | 20MnCr5 Alloy Steel (Forging) | 23        |

# Ferro titanium

## International



| Monthly Average Prices |                 |
|------------------------|-----------------|
| Period                 | ^*Int'l (\$/kg) |
| Jan-18                 | 4.93            |
| Feb-18                 | 4.98            |
| Mar-18                 | 4.98            |
| Apr-18                 | 4.59            |
| May-18                 | 4.50            |
| Jun-18                 | 4.75            |
| Jul-18                 | 4.66            |
| Aug-18                 | 4.70            |
| Sep-18                 | 5.78            |
| Oct-18                 | 5.61            |
| Nov-18                 | -               |
| Dec-18                 | -               |

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

## Domestic

Relevant domestic price data not available

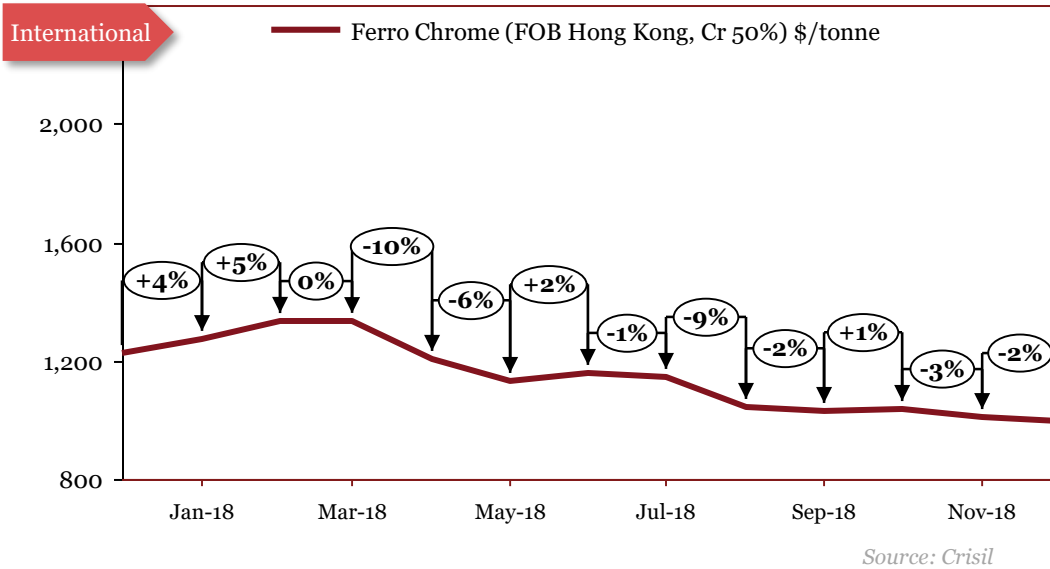
## Outlook

In January 2018, the prices increased owing to the steady increase in demand. In Feb 2018, the prices remained steady due to balanced market conditions. The traders are awaiting tenders from the global steel mills for deciding the price direction. In March, the prices in Europe increased on the back of the increasing demand. In April and May, prices in the global market declined due to lower demand. Prices increased in June and declined in July due to seasonal slowdown. In August, prices increased due to persistent low supply. Global prices in September increased due to tightness in ferro-titanium availability as well as higher grade scrap - particularly from Russia. In addition, consumer activity picking up after seasonal slowdown also led to increase in prices. In October 2018, high-volume sales to Europe from Russia dragged down prices.

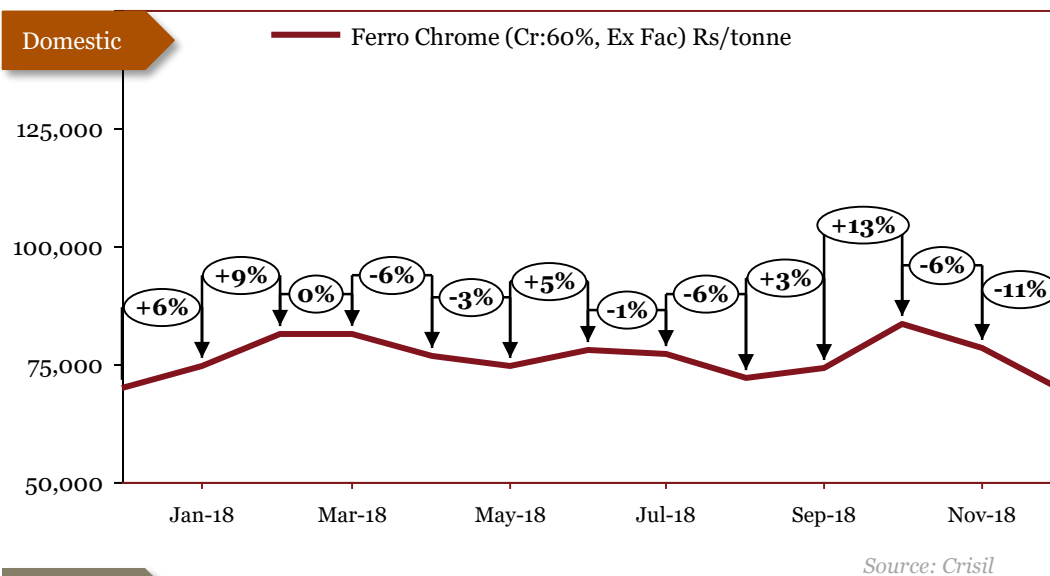
^International prices changed due to change in grades at the source



# Ferro chrome



| Monthly Average Prices |                   |                 |
|------------------------|-------------------|-----------------|
| Period                 | *Int'l (\$/tonne) | *Dom (Rs/tonne) |
| Jan-18                 | 1,275             | 74,500          |
| Feb-18                 | 1,335             | 81,500          |
| Mar-18                 | 1,335             | 81,500          |
| Apr-18                 | 1,207             | 76,500          |
| May-18                 | 1,130             | 74,500          |
| Jun-18                 | 1,156             | 78,000          |
| Jul-18                 | 1,147             | 77,000          |
| Aug-18                 | 1,044             | 72,000          |
| Sep-18                 | 1,027             | 74,000          |
| Oct-18                 | 1,036             | 83,500          |
| Nov-18                 | 1,010             | 78,500          |
| Dec-18                 | 993               | 70,000          |



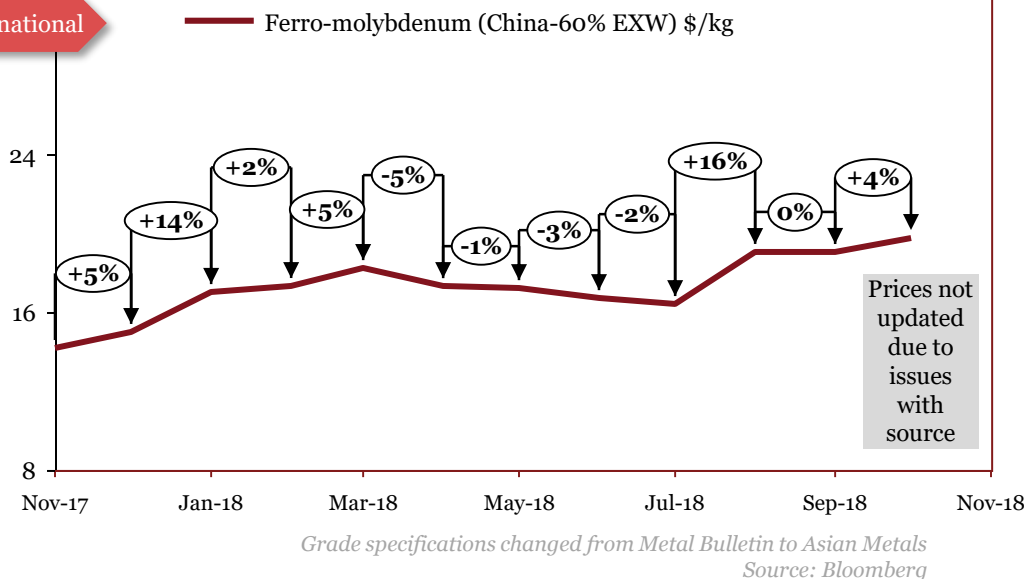
\*The actual prices may vary depending on city, player, grade etc.

## Outlook

In August, international price of ferro chrome declined on account of lackluster demand in China. Further, due to increased production there is abundant supply of the commodity in China. However, on account of lower demand from stainless steel market, demand for the commodity has been impacted. In September, international price of ferro chrome declined on account of muted demand in China. On domestic front, prices increased owing to firm demand and low inventory. In October, international index price of ferro chrome increased on account of weak demand in China. On domestic front, prices increased owing to higher chrome ore prices coupled with moderated demand. Further, depreciated INR also aided the price rise. In November, international price of ferro chrome declined on account of poor demand in China. On domestic front, prices declined owing to muted demand, in line with global prices. In December, international index price of ferro chrome declined on account of poor demand in China. Successive shutdown/production cut by stainless steel mills, and relatively high level of chrome ore stock, coupled with some mills facing capital restraints are the key factors for the downward trend in Ferro Chrome prices. In line with global prices, on domestic front, prices recorded a sharp decline primarily owing to weak demand.

# Ferro molybdenum

## International



## Domestic

Relevant domestic price data not available

## Monthly Average Prices

| Period | Int'l (\$/kg) |
|--------|---------------|
| Jan-18 | 17            |
| Feb-18 | 17            |
| Mar-18 | 18            |
| Apr-18 | 17            |
| May-18 | 17            |
| Jun-18 | 17            |
| Jul-18 | 16            |
| Aug-18 | 19            |
| Sep-18 | 19            |
| Oct-18 | 20            |
| Nov-18 | -             |
| Dec-18 | -             |

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

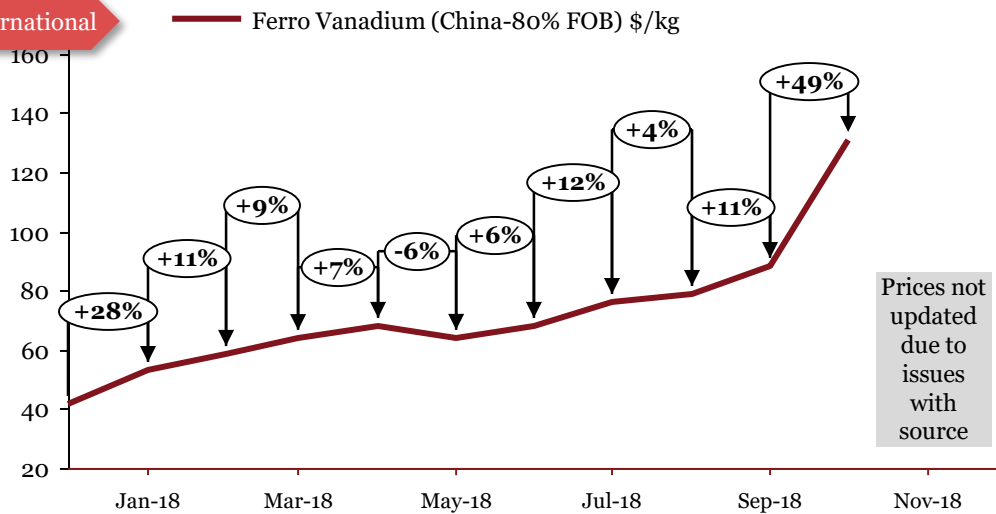
## Outlook

In October, the prices decreased due to subdued demand. In December, the prices increased due to tight supply, restocking and increased costs of raw materials. In January 2018, the prices continued to increase on back of the rising demand. In Feb 2018, the prices increased due to continued demand. The prices in March increased as the demand increased. In May, production from Chinese ferro molybdenum producers and global copper producers (molybdenum is produced as a by-product of copper production) acted as a cap for ferro molybdenum prices by enabling stable supply. In June and July, prices continued with declining trend. In August, declining trend in prices was reversed on account of firm demand. In September, prices remained stable. Prices increased in October 2018.

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

# Ferro vanadium

## International



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

Prices not updated due to issues with source

## Domestic

Relevant domestic price data not available

## Monthly Average Prices

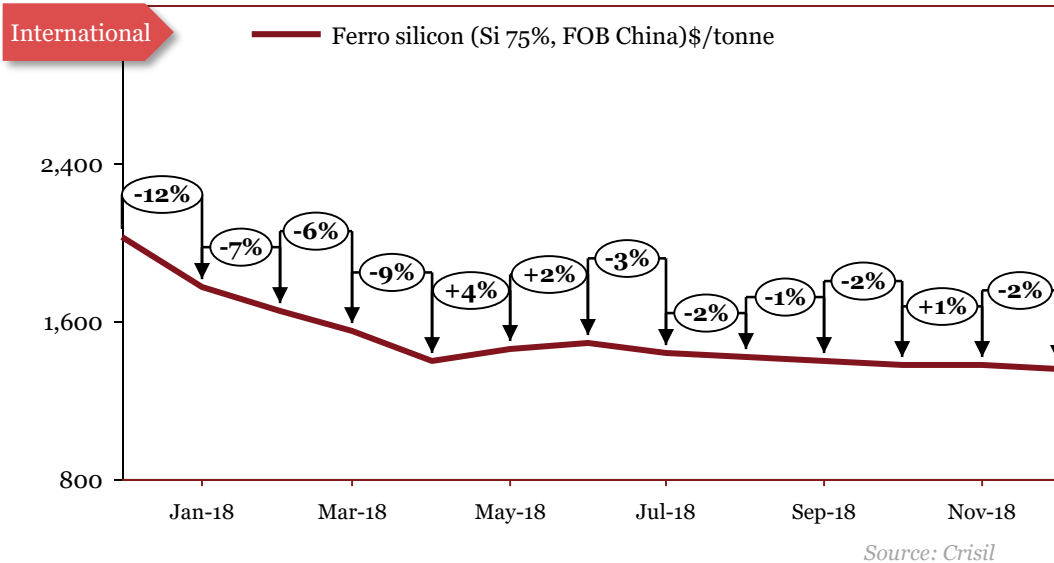
| Period | *Int'l (\$/kg) |
|--------|----------------|
| Jan-18 | 53             |
| Feb-18 | 59             |
| Mar-18 | 64             |
| Apr-18 | 68             |
| May-18 | 64             |
| Jun-18 | 68             |
| Jul-18 | 76             |
| Aug-18 | 79             |
| Sep-18 | 88             |
| Oct-18 | 131            |
| Nov-18 | -              |
| Dec-18 | -              |

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

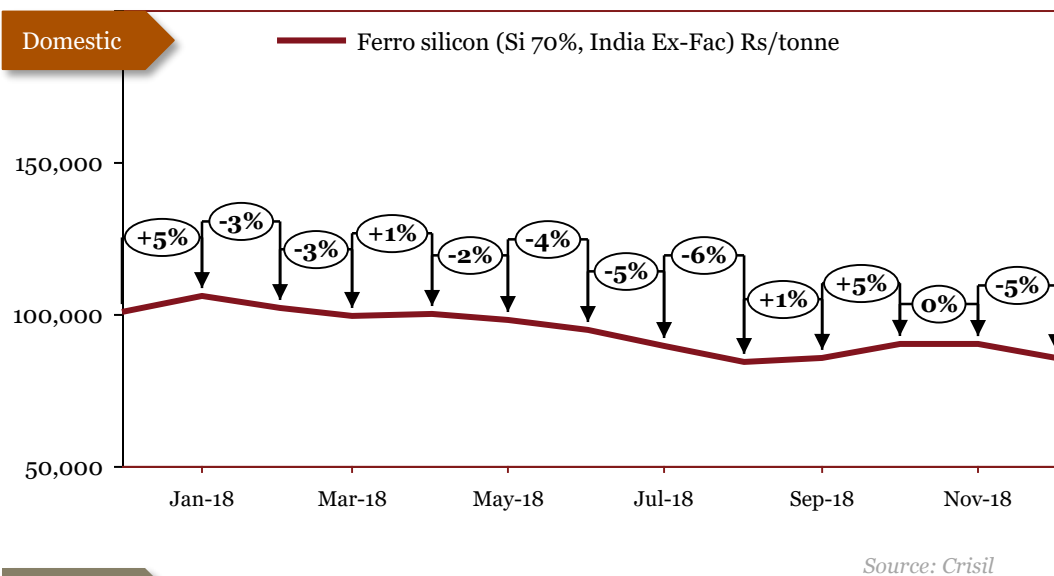
## Outlook

In January 2018, the prices continued to increase due to restricted supply from China. Increase in local demand in China for ferro vanadium has restricted the supplies globally. Moreover, the rising prices of Vanadium has also put an upward pressure on the ferro vanadium prices. In Feb 2018, the prices continued to increase due to supply tightness in Europe, US and China. In March, the prices increased owing to the rising supply constraints. In April, the prices increased owing to the increased demand. In May, prices registered a decline due to limited demand. In June and July, prices witnessed increase due to persistent tight supply in the international market. In August, prices continued to rise. In September, global prices continued with increasing trend due to global supply constraints. In October, prices increased due to the impending imposition of stringent rebar standards in China together with tight vanadium supply globally.

# Ferro silicon



| Monthly Average Prices |                   |                 |
|------------------------|-------------------|-----------------|
| Period                 | *Int'l (\$/tonne) | *Dom (Rs/tonne) |
| Jan-18                 | 1,773             | 105,700         |
| Feb-18                 | 1,649             | 102,200         |
| Mar-18                 | 1,546             | 99,200          |
| Apr-18                 | 1,401             | 99,700          |
| May-18                 | 1,456             | 98,200          |
| Jun-18                 | 1,490             | 94,700          |
| Jul-18                 | 1,442             | 89,700          |
| Aug-18                 | 1,415             | 84,500          |
| Sep-18                 | 1,401             | 85,500          |
| Oct-18                 | 1,373             | 90,000          |
| Nov-18                 | 1,380             | 90,200          |
| Dec-18                 | 1,359             | 85,700          |



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

## Outlook

International ferro silicon prices declined in July 2018 as inventory levels have increased resulting in increased supply in the market. Domestic ferro silicon prices decreased in line with global prices. International ferro silicon prices declined in August on account of low demand for the commodity. Domestic ferro silicon prices decreased in line with global prices due to lower off-take in the market. In September, international ferro silicon prices declined on account of low demand for the commodity. Domestic ferro silicon prices increased, on account of limited inventory. International ferro silicon prices declined in October 2018 on account of low demand for the commodity coupled with surplus supply. While, domestic ferro silicon prices increased by about 7% on account of healthy demand. Further, low inventory has also supported the prices. International ferro silicon prices increased while domestic prices remained firm in November 2018 on account of stable demand-supply sentiment for the commodity. International ferro silicon prices declined marginally in December 2018 owing to muted demand. In line with global prices, domestic ferro silicon prices declined on the back of increasing inventories with manufacturers and supply outstripping demand.

# EN8 Alloy Steel (Forging)

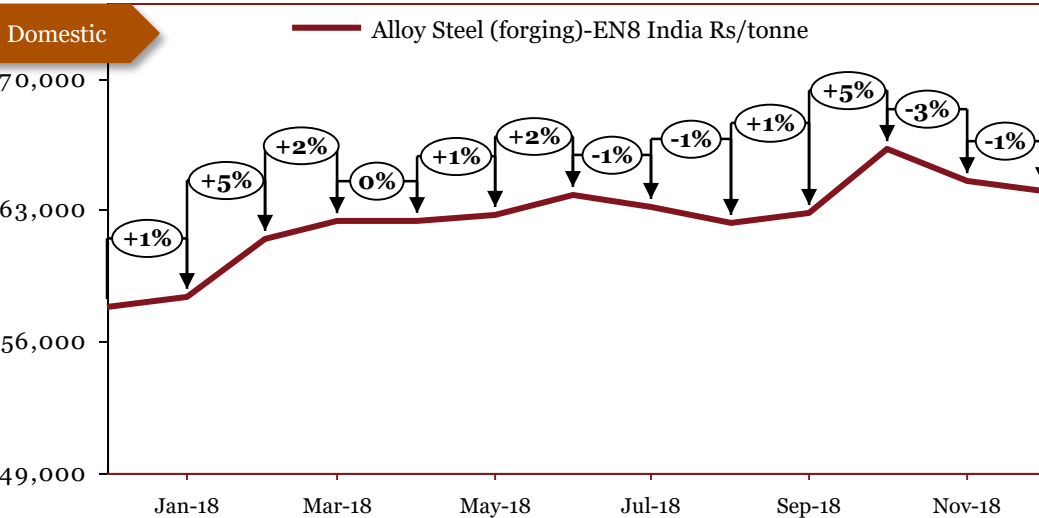
## International

Data not available for relevant (comparable to domestic) grades

## Monthly Average Prices

| Period | *Dom (Rs/tonne) |
|--------|-----------------|
| Jan-18 | 58,400          |
| Feb-18 | 61,400          |
| Mar-18 | 62,400          |
| Apr-18 | 62,400          |
| May-18 | 62,750          |
| Jun-18 | 63,800          |
| Jul-18 | 63,200          |
| Aug-18 | 62,300          |
| Sep-18 | 62,800          |
| Oct-18 | 66,200          |
| Nov-18 | 64,500          |
| Dec-18 | 64,000          |

## Domestic



Source: PwC Research

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

## Outlook

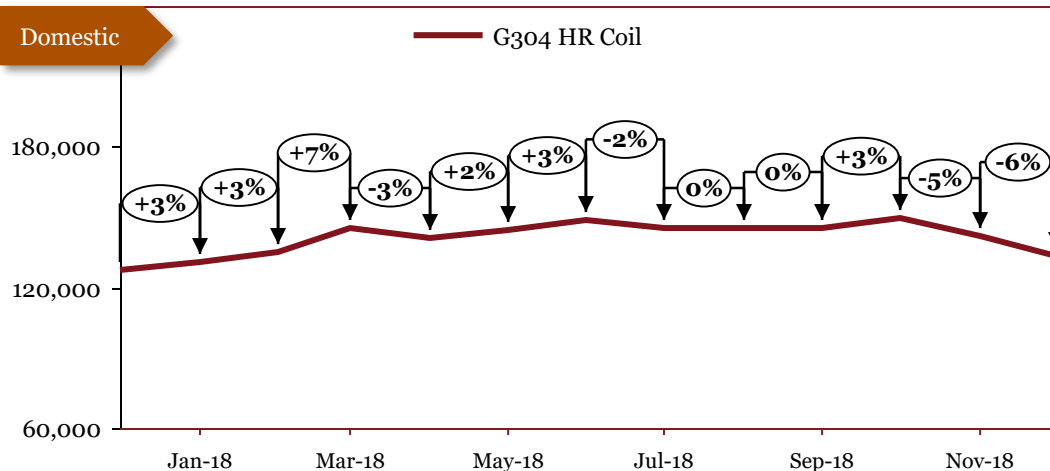
In January and Feb, the prices continued to increase due to increase in the raw material prices. In March, the domestic prices increased due to increased demand. In April, prices remained constant due to stable market conditions and increased in May along with other steel products. Similarly, prices increased in June in step with other steel products. In July, prices fell due to unfavourable demand. In August, prices continued to fall. In September, prices increased along with price rise in other steel products. In October, prices increased in line with other products whose prices depend on the fundamentals of the economy. In November, domestic prices witnessed decline. In December, prices declined further owing to a decrease in the Chinese market.

# Stainless Steel

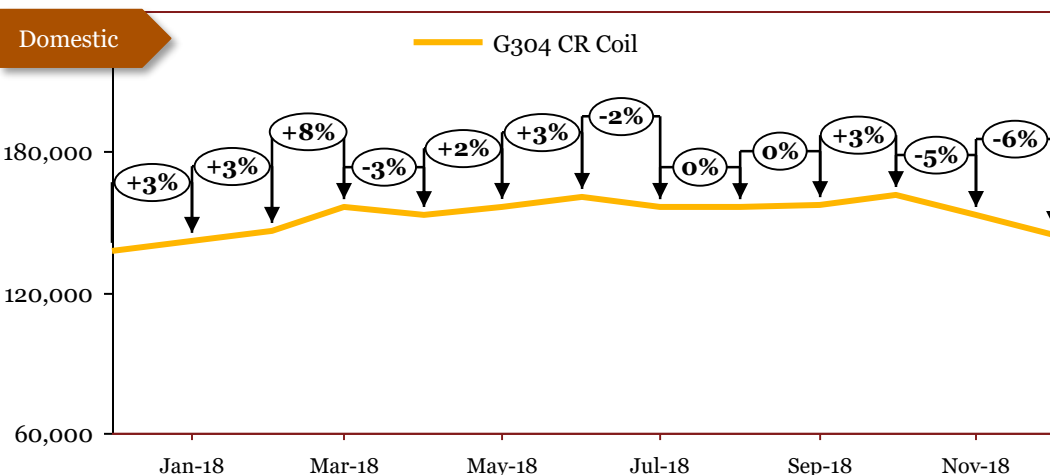
International

Data not available for relevant (comparable to domestic) grades

Domestic



Domestic



## Monthly Domestic Average Prices

| Period | *G304 HR (Rs/tonne) | *G304 CR (Rs/tonne) |
|--------|---------------------|---------------------|
| Jan-18 | 131,200             | 141,750             |
| Feb-18 | 135,200             | 145,750             |
| Mar-18 | 145,200             | 156,750             |
| Apr-18 | 141,200             | 152,750             |
| May-18 | 144,700             | 156,250             |
| Jun-18 | 148,700             | 160,250             |
| Jul-18 | 145,200             | 156,750             |
| Aug-18 | 145,200             | 156,750             |
| Sep-18 | 145,700             | 157,250             |
| Oct-18 | 149,700             | 161,250             |
| Nov-18 | 141,700             | 153,250             |
| Dec-18 | 133,200             | 144,750             |

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

Source: PwC Research

## Outlook

In October, the international prices decreased owing to the decrease in demand from China. In November, the domestic prices followed the suit of international prices, which decreased owing to the reduced demand in China. In December, the domestic prices decreased due to low export demand, caused by stable supply from China. In January 2018, the domestic prices increased owing to the increase in the zinc prices. In Feb 2018, the increase in the domestic prices continued on the back of the rising input material prices. In March, the prices continued to increase on the back of the rising demand. In April, the domestic prices decreased owing to the reduced demand and continued higher supply. In May, declining trend was reversed as prices increased. In June, prices increased owing to strong demand. In July, domestic prices for stainless steel declined following global cues. In August, prices remained the same owing to stable market conditions. In September, prices continued to remain stable. In October, prices increased after flat trend over past months. In November, international and domestic prices decreased simultaneously. In December, prices continues to decline.

## 20MnCr5 Alloy Steel (Forging)

### International

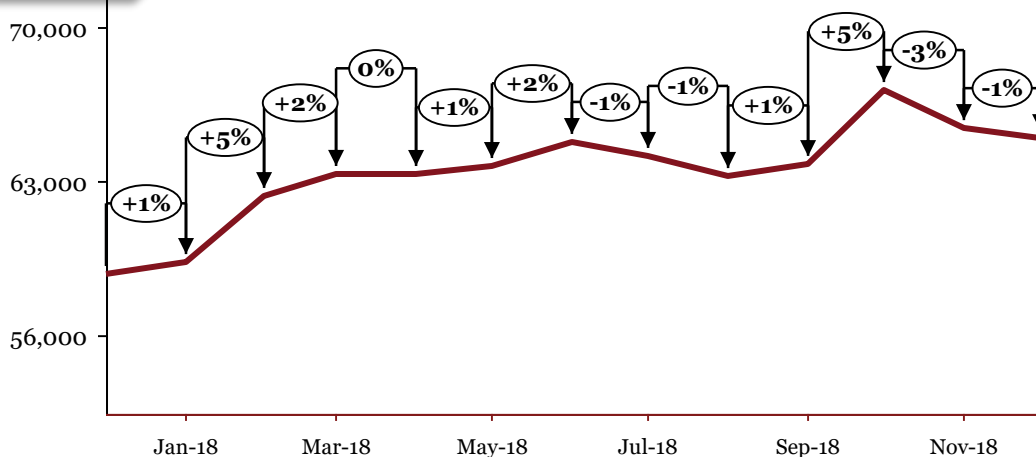
Data not available for relevant (comparable to domestic) grades

### Monthly Average Prices

| Period | *Dom (Rs/tonne) |
|--------|-----------------|
| Jan-18 | 59,400          |
| Feb-18 | 62,400          |
| Mar-18 | 63,400          |
| Apr-18 | 63,400          |
| May-18 | 63,750          |
| Jun-18 | 64,800          |
| Jul-18 | 64,200          |
| Aug-18 | 63,300          |
| Sep-18 | 63,800          |
| Oct-18 | 67,200          |
| Nov-18 | 65,500          |
| Dec-18 | 65,000          |

### Domestic

Alloy Steel (forging)-20MnCr5 India Rs/tonne



Source: PwC Research

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

### Outlook

The long term prospects seems promising for the forging industry as a whole. In November, increase in the domestic iron ore prices has resulted in the increase of alloy steel prices. In December, the price hike can be attributed to the rising cost of raw materials. In January and Feb, the prices continued to increase due to increase in the raw material prices. In March, the domestic prices increased due increased demand. In April, prices remained constant due to stable market conditions and increased in May along with other steel products. In June, prices increased in step with other steel products. Similarly, prices in the domestic market fell in line with other steel products owing to muted demand. In August, process continued to fall. In September, domestic prices reversed declining trend. In October, declining trend in prices was reversed. In November, prices fell due to muted demand. Prices fell in line with other steel products.

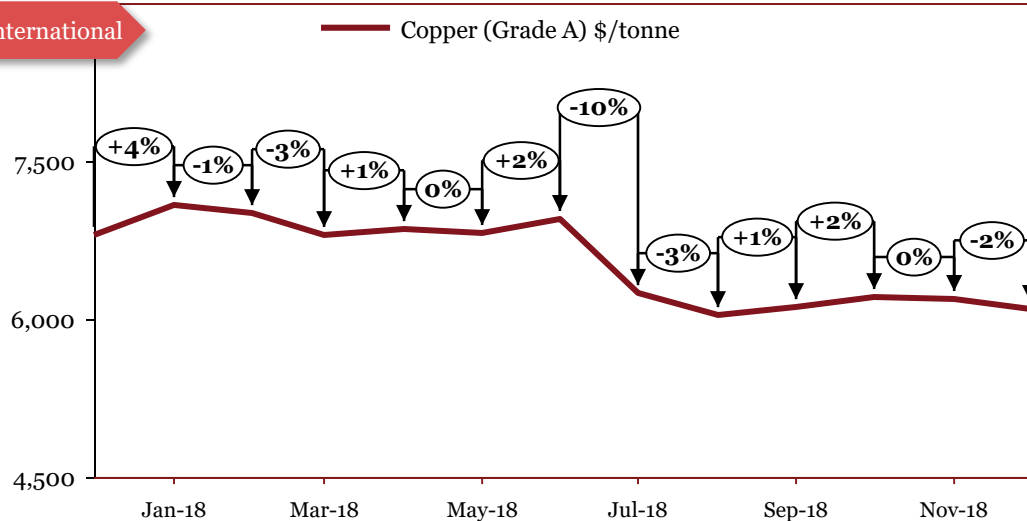
# *Base Metals*

|                    |           |           |
|--------------------|-----------|-----------|
| <b>Base Metals</b> |           | <b>24</b> |
| 15                 | Copper    | 25        |
| 16                 | Zinc      | 26        |
| 17                 | Nickel    | 27        |
| 18                 | Tin       | 28        |
| 19                 | Magnesium | 29        |



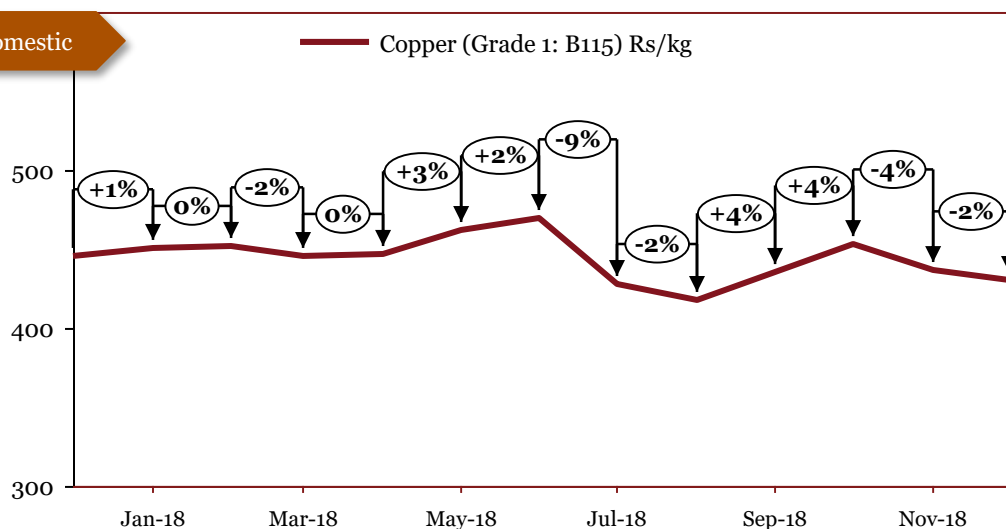
# Copper

## International



Source: LME

## Domestic



Source: MCX

## Monthly Average Prices

| Period | *Int'l (\$/tonne) | *Dom (Rs/kg) |
|--------|-------------------|--------------|
| Jan-18 | 7,080             | 451          |
| Feb-18 | 7,001             | 452          |
| Mar-18 | 6,795             | 445          |
| Apr-18 | 6,852             | 447          |
| May-18 | 6,821             | 462          |
| Jun-18 | 6,954             | 469          |
| Jul-18 | 6,248             | 428          |
| Aug-18 | 6,039             | 418          |
| Sep-18 | 6,020             | 436          |
| Oct-18 | 6,215             | 453          |
| Nov-18 | 6,192             | 437          |
| Dec-18 | 6,094             | 430          |

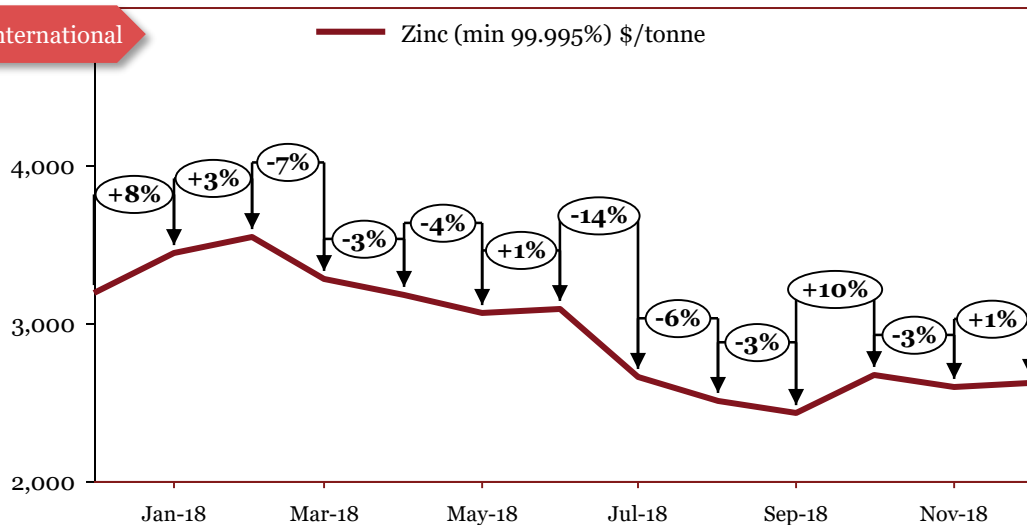
\*The actual prices may vary depending on city, player, grade etc.

## Outlook

In May, international prices remained flat due to stable supply and demand, however, the domestic prices increased due to a supply crunch caused by the shut down of Vedanta plant in Tamilnadu. In June, international copper prices increased due to an escalating trade war between US and China. Domestic prices rose on account of reduced supply resulting from aforementioned closure of Sterlite Copper's plant. In July, copper prices in the international market fell due to escalating trade war fears and fears of weakening demand from China. Domestic prices also fell due to developments in the international market. In August, international market prices declined owing to dampened demand that can be attributed to fall in value of emerging market currencies. Domestic market prices reflected the trend in international markets. In September, global prices fell further while domestic prices reversed declining trend. In October, international prices increased on account of high volumes of imports to China. Domestic prices rose on account of increased demand from consuming industries. In November, domestic prices followed trend in domestic demand from consuming industries. In December, prices in the international market fell due to lower volumes and continued market worries over a prolonged trade war.

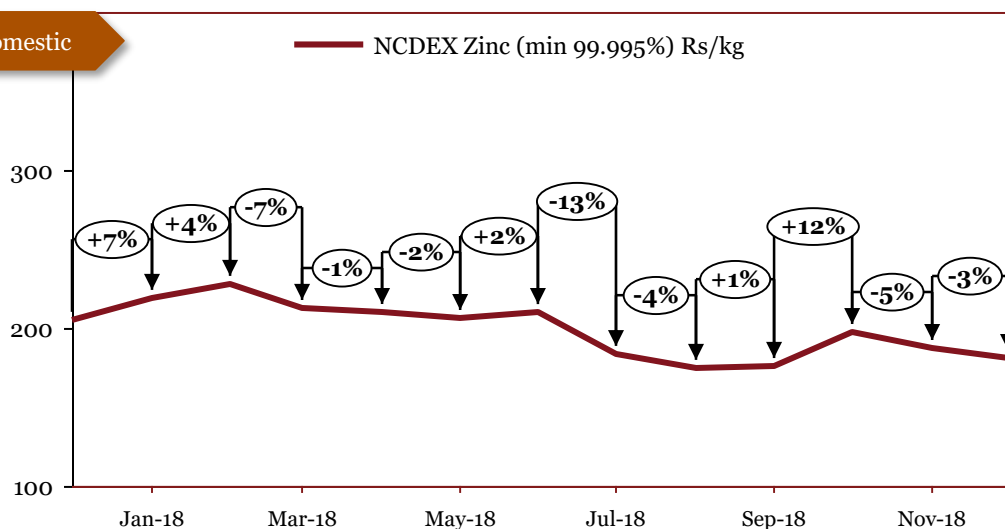
# Zinc

## International



Source: LME

## Domestic



Source: NCDEX

## Monthly Average Prices

| Period | *Int'l (\$/tonne) | *Dom (Rs/kg) |
|--------|-------------------|--------------|
| Jan-18 | 3,447             | 219          |
| Feb-18 | 3,539             | 228          |
| Mar-18 | 3,280             | 213          |
| Apr-18 | 3,183             | 210          |
| May-18 | 3,057             | 206          |
| Jun-18 | 3,091             | 210          |
| Jul-18 | 2,658             | 183          |
| Aug-18 | 2,510             | 175          |
| Sep-18 | 2,433             | 176          |
| Oct-18 | 2,671             | 197          |
| Nov-18 | 2,592             | 187          |
| Dec-18 | 2,625             | 181          |

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

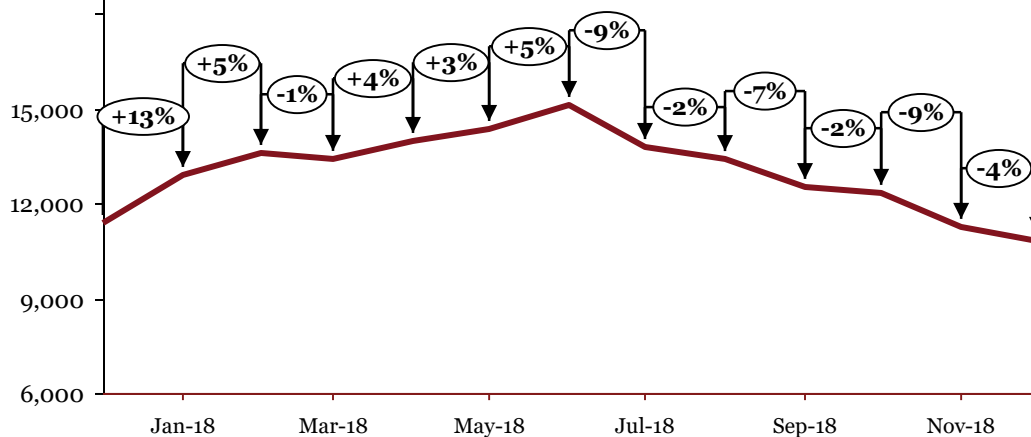
## Outlook

In March, the international prices decreased owing to the strengthening of the dollar and simmering trade concerns between US and China. Domestic market followed suit. In April, the international and domestic zinc prices decreased owing to the decrease in the demand. In May, international prices fell due to increased supply. Domestic prices fell due to similar increase in output. In June, decline in international prices and domestic prices was stemmed. In July, international prices fell due to surplus supplies and a narrowing deficit. The decline in prices was further catalyzed by escalating trade tensions. Domestic prices fell on the back of weak global cues amid easing demand from consuming industries. In August, zinc prices crashed owing to excess supply in the market and muted demand from China. In September, international prices fell further while domestic prices rose amid sustained demand from alloy industries. In October, global zinc prices rose due to depleting inventories and domestic prices followed suit. In November, prices fell due to slowing demand from major buyers owing to falling economic growth which in turn is putting pressure on prices. In December, prices in the international registered increase whereas prices in the domestic market continued to fall due to dampened demand.

# Nickel

## International

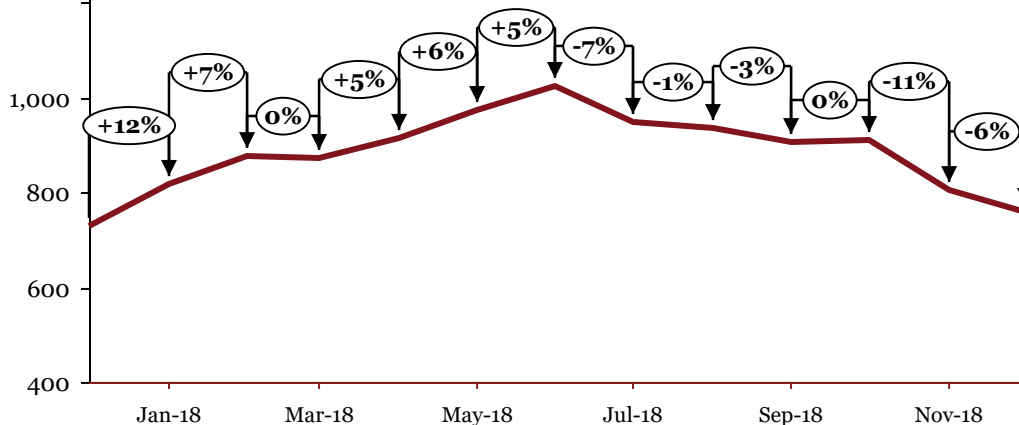
Nickel (min 99.80%) \$/tonne



Source: LME

## Domestic

Nickel (4"x4" cut Nickel min 99.80%) Rs/kg



Source: NCDEX

| Monthly Average Prices |                   |              |
|------------------------|-------------------|--------------|
| Period                 | *Int'l (\$/tonne) | *Dom (Rs/kg) |
| Jan-18                 | 12,876            | 816          |
| Feb-18                 | 13,573            | 875          |
| Mar-18                 | 13,400            | 873          |
| Apr-18                 | 13,965            | 915          |
| May-18                 | 14,352            | 970          |
| Jun-18                 | 15,107            | 1025         |
| Jul-18                 | 13,768            | 948          |
| Aug-18                 | 13,429            | 936          |
| Sep-18                 | 12,524            | 906          |
| Oct-18                 | 12,323            | 909          |
| Nov-18                 | 11,249            | 806          |
| Dec-18                 | 10,833            | 759          |

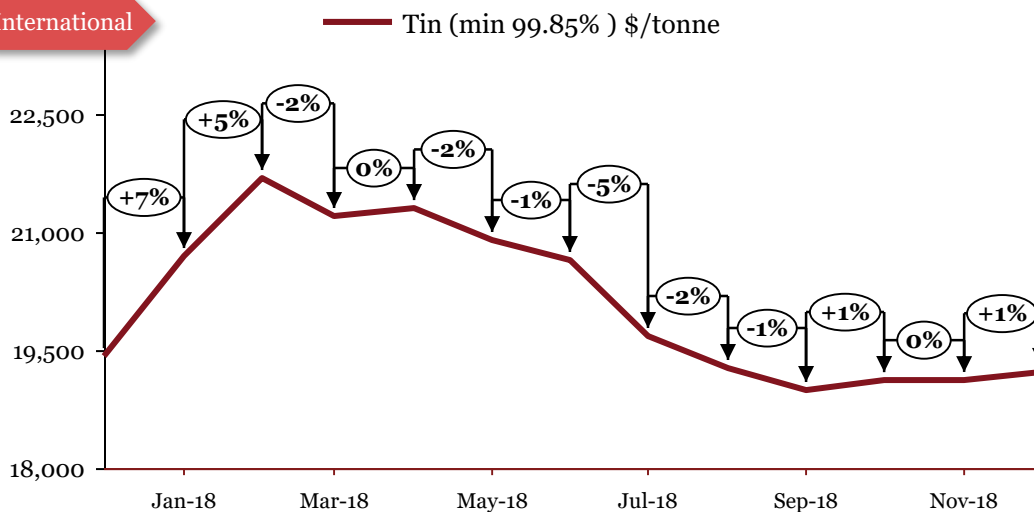
\*The actual prices may vary depending on city, player, grade etc.

## Outlook

In April 2018, the international prices increased owing to fear of Rusal sanctions being extended to the Nor-nickel, company linked with Rusal. Domestic prices followed suit. In May, nickel prices increased due to lower inventories, stronger demand and a weaker dollar. In June, domestic and overseas nickel prices rose after a blast at an iron ore mine in China and amid falling inventories. In addition, anticipation of increased electric vehicle demand and strong demand in the Stainless Steel sector further supported prices. In July, prices in the international market fell due to excess supply and ongoing trade dispute between US and China. Domestic prices followed suit. In August, prices declined following the trend in base metal prices. In September, prices continued to fall. In October, global prices fell due to weakness in the stainless steel market, increasing nickel pig iron production and rising Shanghai nickel inventory. In November, prices fell in the global market due to growing concerns over slowing demand in top consumer China. Domestic prices followed suit. In December, nickel prices declined, following the price trends of other base metals.

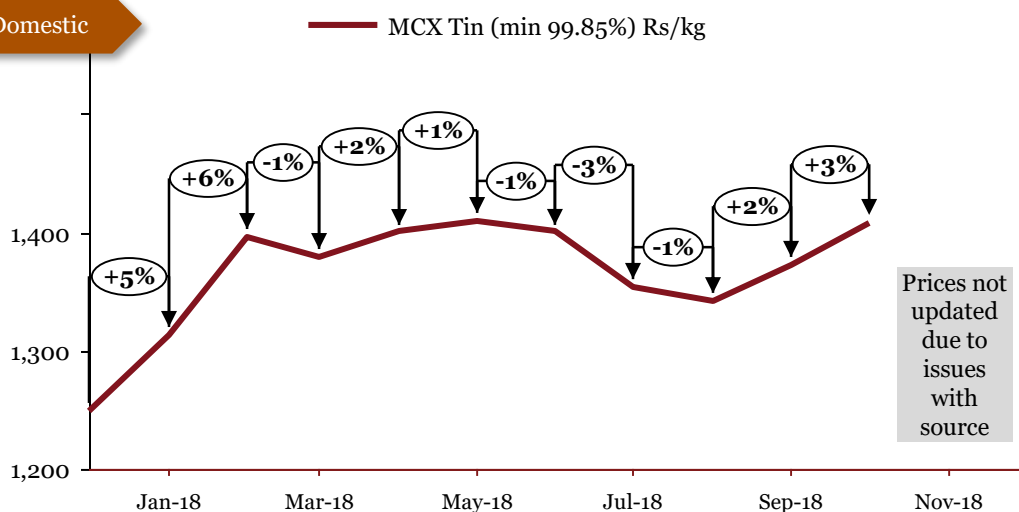
# Tin

## International



Source: LME

## Domestic



Source: MCX

## Monthly Average Prices

| Period | *Int'l (\$/tonne) | *Dom (Rs/kg) |
|--------|-------------------|--------------|
| Jan-18 | 20,703            | 1,313        |
| Feb-18 | 21,681            | 1,395        |
| Mar-18 | 21,203            | 1,379        |
| Apr-18 | 21,293            | 1,400        |
| May-18 | 20,888            | 1,410        |
| Jun-18 | 20,652            | 1,400        |
| Jul-18 | 19,689            | 1,353        |
| Aug-18 | 19,268            | 1,342        |
| Sep-18 | 18,990            | 1,372        |
| Oct-18 | 19,117            | 1,408        |
| Nov-18 | 19,130            | -            |
| Dec-18 | 19,232            | -            |

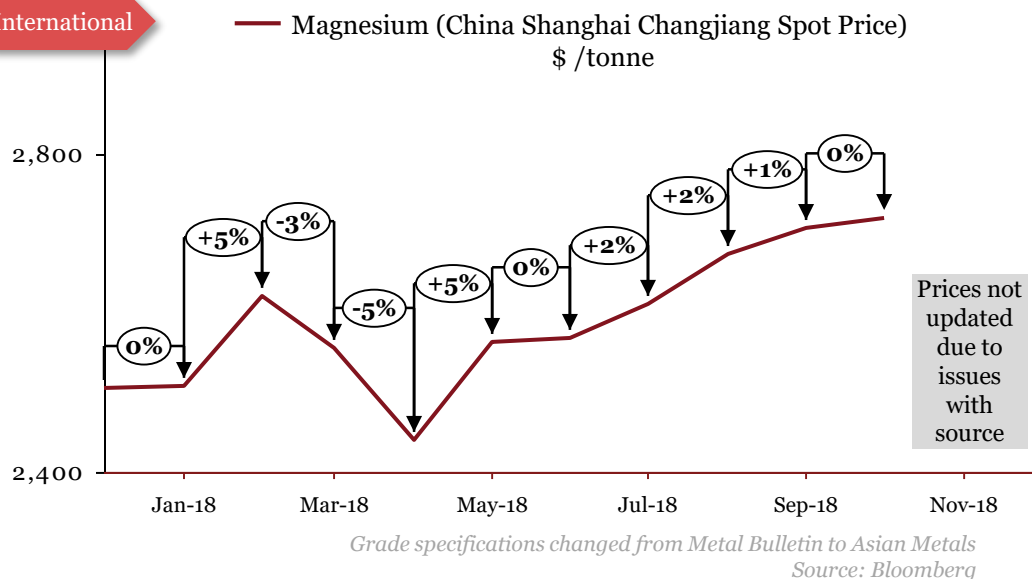
\*The actual prices may vary depending on city, player, grade etc.

## Outlook

In the month of March, the LME tin prices declined due to strengthening dollar. Domestic market followed suit. In May, tin prices declined due to higher inventories owing to rising Indonesian exports and order cancellations by buyers. Domestic prices rose due to higher industrial demand. In June, international tin prices fell owing to weak demand. In July, tin prices decreased in line with decrease with price trends for other base metals. In August, prices declined owing to strong dollar and weakening emerging market currencies in the international market. In September, international prices continued to fall while domestic prices witnessed reversed trend. In October, global tin prices increased on concerns of tightened supply. Domestic prices followed international price trend. In November, international prices were unchanged due to stable market conditions. In December, tin outperformed other base metals in the international market.

# Magnesium

## International



## Monthly Average Prices

| Period | *Int'l (\$/tonne) |
|--------|-------------------|
| Jan-18 | 2,509             |
| Feb-18 | 2,622             |
| Mar-18 | 2,556             |
| Apr-18 | 2,440             |
| May-18 | 2,565             |
| Jun-18 | 2,569             |
| Jul-18 | 2,612             |
| Aug-18 | 2,675             |
| Sep-18 | 2,708             |
| Oct-18 | 2,719             |
| Nov-18 | -                 |
| Dec-18 | -                 |

## Domestic

Relevant domestic price data not available

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

## Outlook

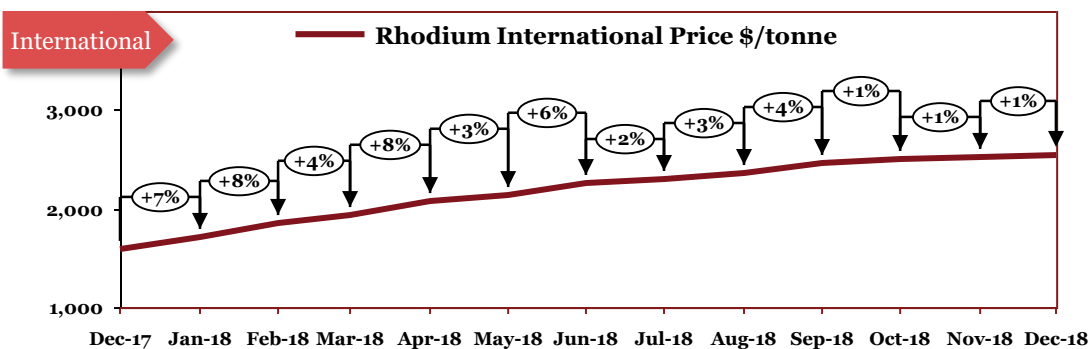
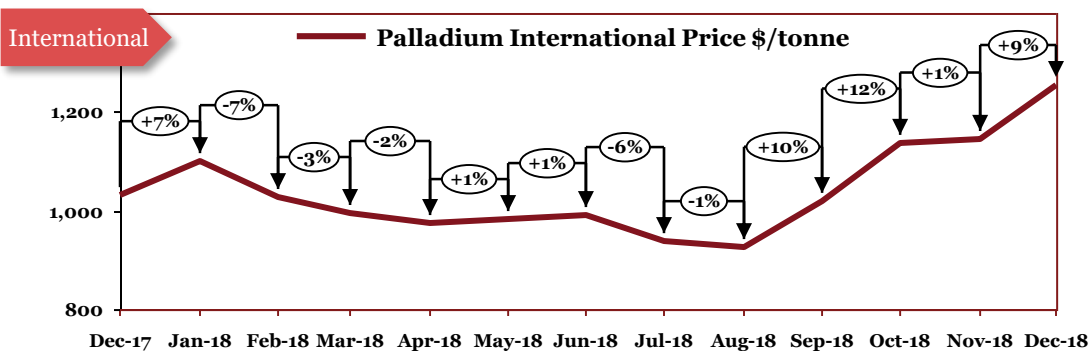
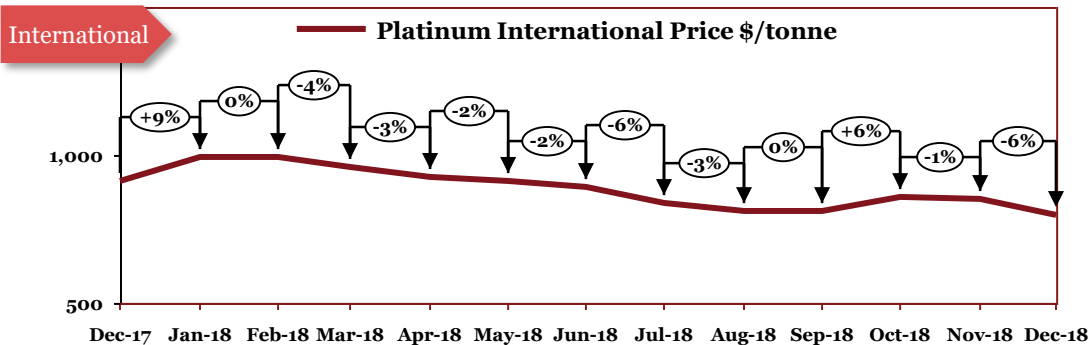
In January 2018, the market remained stable resulting in no fluctuations in prices. In Feb 2018, prices increased due to supply deficits and continued demand. In March, the prices declined due to decrease in the raw material prices. In April, the prices decreased owing to the slack in demand. In May, 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.

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

# *Precious Metals*

|    |                        |           |
|----|------------------------|-----------|
|    | <b>Precious Metals</b> | <b>30</b> |
| 20 | Precious Metals        | 31        |

# Precious Metals



Source: Johnson Matthey

## Monthly Average Prices (\$/Oz)

| Period | Pt  | Pd    | Rh    |
|--------|-----|-------|-------|
| Jan-18 | 991 | 1,101 | 1,706 |
| Feb-18 | 995 | 1,027 | 1,847 |
| Mar-18 | 960 | 993   | 1,923 |
| Apr-18 | 929 | 975   | 2,071 |
| May-18 | 909 | 984   | 2,133 |
| Jun-18 | 890 | 991   | 2,255 |
| Jul-18 | 835 | 936   | 2,295 |
| Aug-18 | 809 | 924   | 2,358 |
| Sep-18 | 808 | 1,017 | 2,463 |
| Oct-18 | 856 | 1,138 | 2,490 |
| Nov-18 | 851 | 1,145 | 2,512 |
| Dec-18 | 797 | 1,253 | 2,539 |

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

## Outlook

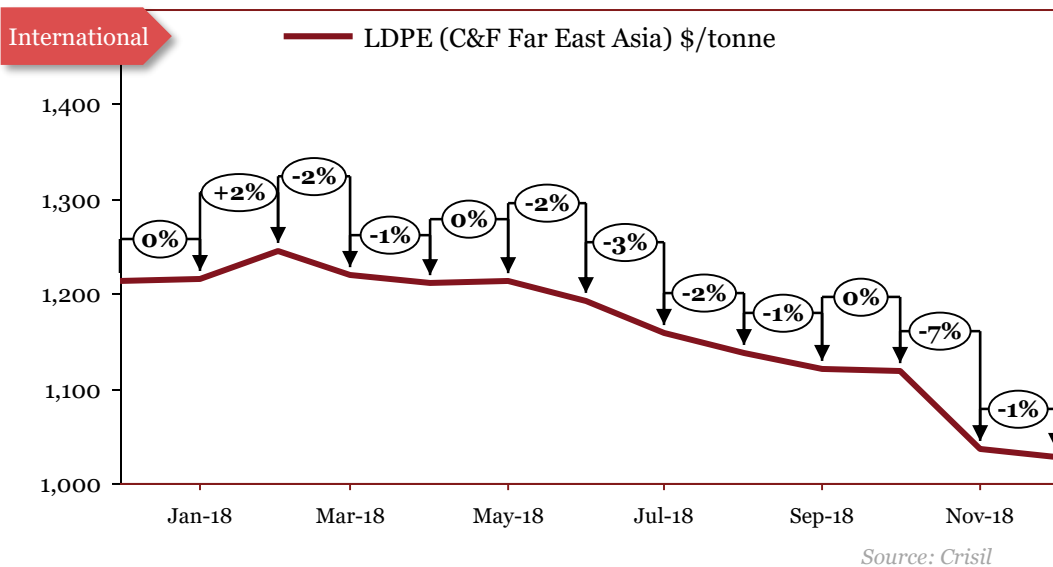
In June, platinum prices continued to fall owing to concern over future demand and state of diesel car sales whereas rhodium and palladium prices registered an increase. In July, platinum prices experienced downward pressure by trade tensions and the prospect of higher electric-vehicle adoption. Palladium prices experienced decline whereas rhodium prices increased owing to favourable market conditions. In August, platinum and palladium prices continued to fall owing to strong dollar. In September, rhodium prices increased owing to constricted supply from South Africa. Palladium prices increased on account of expected increase in the amount of palladium needed in every car owing to new emissions standards in China for cars becoming effective in 2020. Concerns over the intensifying trade dispute between the U.S. and China is also a contributor to the gains in palladium prices more recently. In October 2018, palladium prices increased owing to strong fundamentals and platinum prices increased in line with other precious metal price movements. In November, prices were largely unchanged. In December, platinum prices fell due to fall in demand from the automotive industry. Palladium prices increased due to increase in demand for hybrid and electric vehicles.

# *Polymers & Rubber*

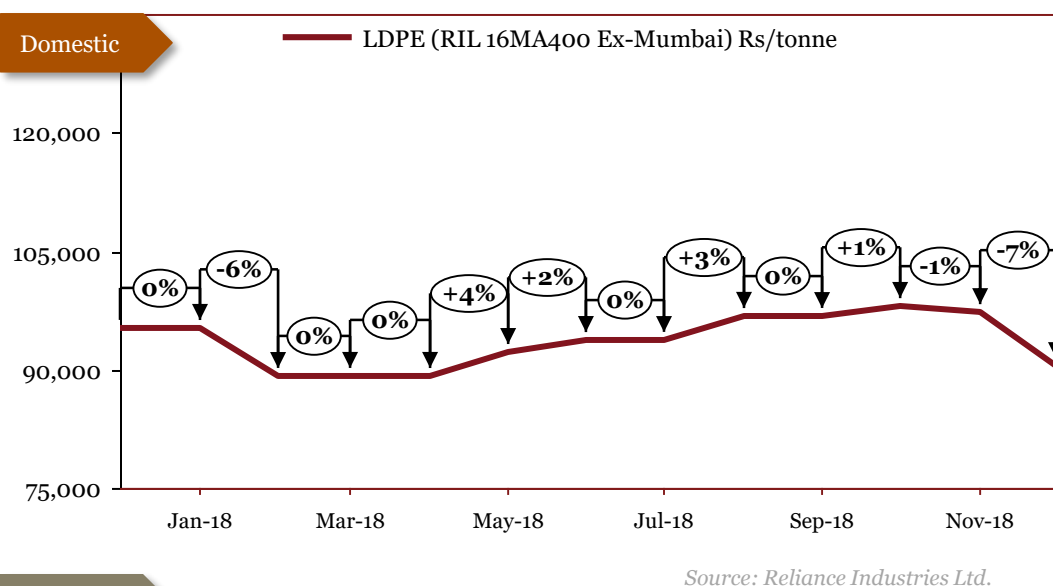
|                              |                                 |           |
|------------------------------|---------------------------------|-----------|
| <b>Polymers &amp; Rubber</b> |                                 | <b>32</b> |
| 21                           | Low density polyethylene (LDPE) | 33        |
| 22                           | Polypropylene (PP)              | 34        |
| 23                           | Rubber                          | 35        |



# Low density polyethylene (LDPE)



| Monthly Average Prices |                   |                 |
|------------------------|-------------------|-----------------|
| Period                 | *Int'l (\$/tonne) | *Dom (Rs/tonne) |
| Jan-18                 | 1,215             | 95,360          |
| Feb-18                 | 1,245             | 89,190          |
| Mar-18                 | 1,220             | 89,190          |
| Apr-18                 | 1,210             | 89,190          |
| May-18                 | 1,214             | 92,319          |
| Jun-18                 | 1,192             | 93,819          |
| Jul-18                 | 1,159             | 93,819          |
| Aug-18                 | 1,137             | 96,819          |
| Sep-18                 | 1,121             | 96,819          |
| Oct-18                 | 1,118             | 97,927          |
| Nov-18                 | 1,036             | 97,378          |
| Dec-18                 | 1,028             | 90,411          |



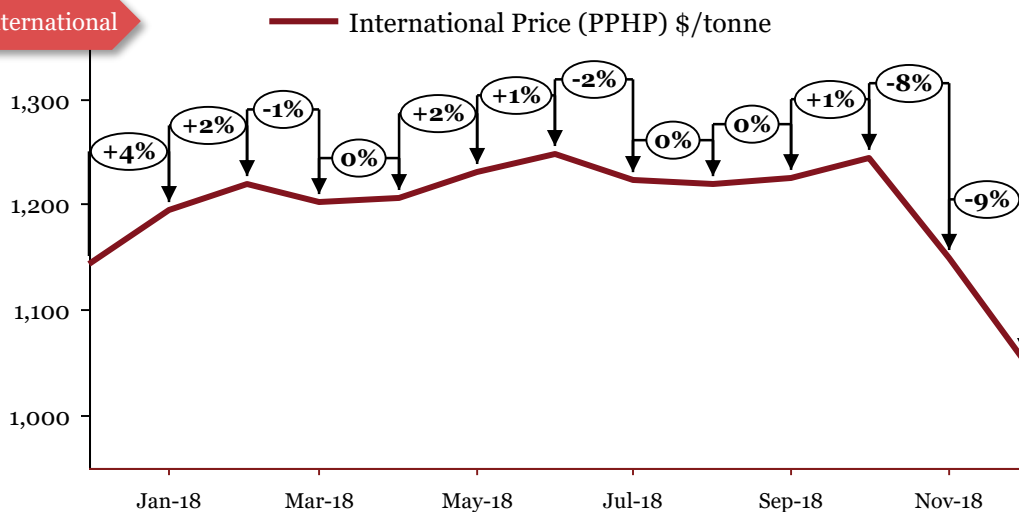
\*The actual prices may vary depending on city, player, grade etc.

## Outlook

In Feb 2018, the LDPE international prices increased due to increased demand and constrained supply caused by the maintenance shutdowns in several plants globally. In the domestic market, the prices decreased owing to the decrease in the ethylene feed stock prices. In March, the international prices decreased due to ample inventories. The domestic market remained stable. In April, the international prices decreased due to ample supply. In the domestic market, the prices remained flat for most of the month, however, the prices increased towards the end of the month. In May, international prices remained stable. In June, international prices witnessed decline whereas domestic prices continued to rise. In July, international prices fell owing to fall in feedstock ethylene prices coupled with weak demand. In August, international LDPE prices decreased in spite of rise in ethylene prices. On the domestic front, RIL increased domestic and deemed export prices of LDPE. In September, international LDPE prices declined due to due to weak demand. In October 2018, ldPE prices were stable given no major change in demand-supply. In October, global prices saw flat growth. In November, prices witnessed decline. In December, prices fell due to fall in feedstock prices.

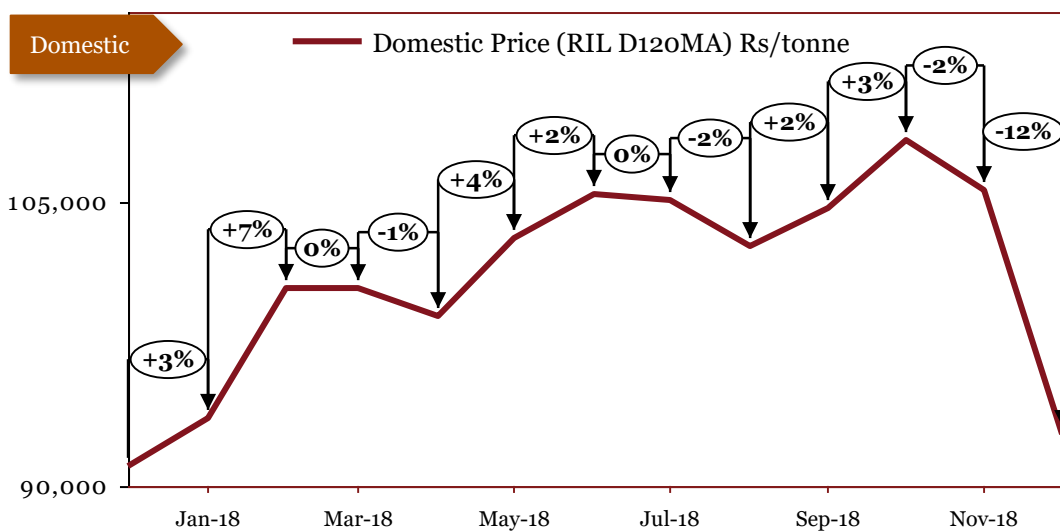
# Polypropylene (PP)

## International



Source: Crisil

## Domestic



Source: Reliance Industries Ltd.

## Monthly Average Prices

| Period | *Int'l (\$/tonne) | *Dom (Rs/tonne) |
|--------|-------------------|-----------------|
| Jan-18 | 1,195             | 93,558          |
| Feb-18 | 1,220             | 100,488         |
| Mar-18 | 1,203             | 100,488         |
| Apr-18 | 1,206             | 98,988          |
| May-18 | 1,231             | 103,128         |
| Jun-18 | 1,248             | 105,378         |
| Jul-18 | 1,224             | 105,128         |
| Aug-18 | 1,220             | 102,628         |
| Sep-18 | 1,226             | 104,628         |
| Oct-18 | 1,244             | 108,234         |
| Nov-18 | 1,150             | 105,618         |
| Dec-18 | 1,051             | 92,718          |

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

## Outlook

In April, the prices of PP remained range bound. In May, international prices increased due to supply tightness on account of ongoing maintenance turnaround. Domestic prices followed suit. In June, prices rose on account of supply tightness. In July 2018, prices decreased due to decline in feedstock propylene prices coupled with weak demand. In August, despite rise in feedstock propylene prices, international prices were range bound due to weak demand. In September 2018, PP prices increased due to rise in feedstock propylene prices. In October 2018, PP prices increased owing to uptick in demand during second half of month from manufacturing segment as plants resumed normal operations post Chinese golden week holidays. In October 2018, both global and domestic prices witnessed increase. In November, prices declined due to poor demand. In December 2018, PPHP prices decreased primarily on account of decline in feedstock propylene prices.

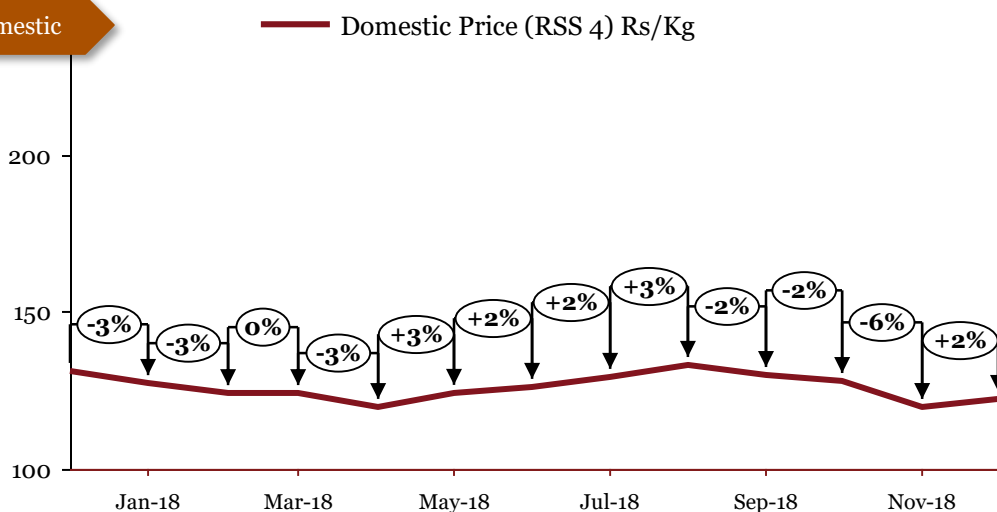
# Rubber

## International

Data not available for relevant (comparable to domestic) grades

| Monthly Average Prices |              |
|------------------------|--------------|
| Period                 | *Dom (Rs/kg) |
| Jan-18                 | 127          |
| Feb-18                 | 124          |
| Mar-18                 | 124          |
| Apr-18                 | 120          |
| May-18                 | 124          |
| Jun-18                 | 126          |
| Jul-18                 | 129          |
| Aug-18                 | 133          |
| Sep-18                 | 130          |
| Oct-18                 | 128          |
| Nov-18                 | 120          |
| Dec-18                 | 122          |

## Domestic



Source: Rubber board

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

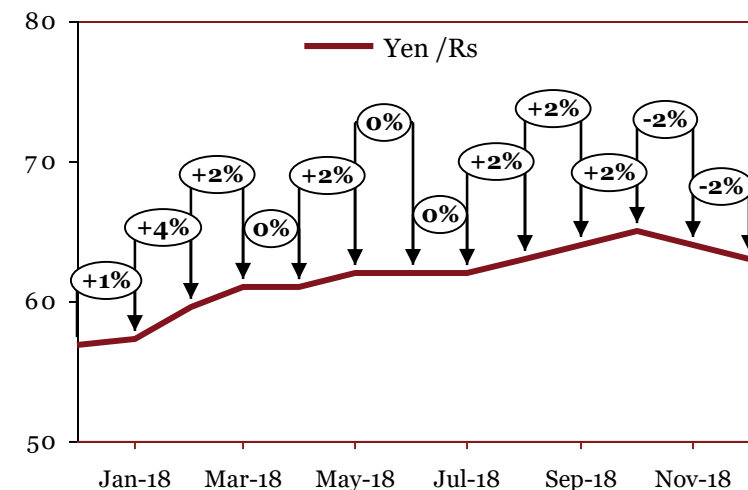
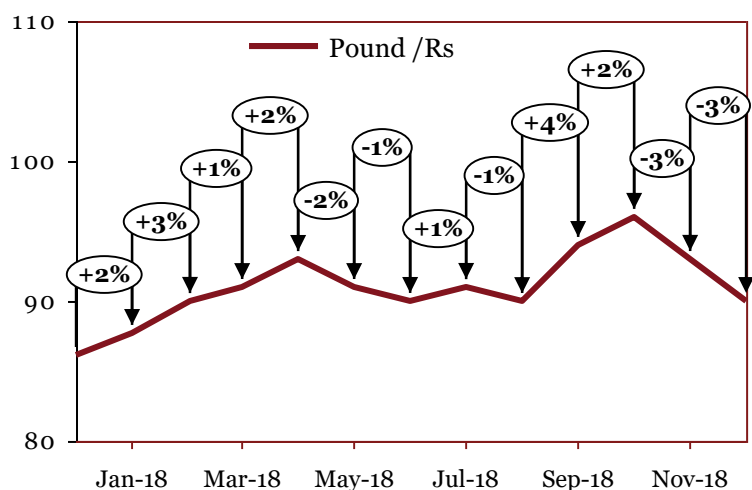
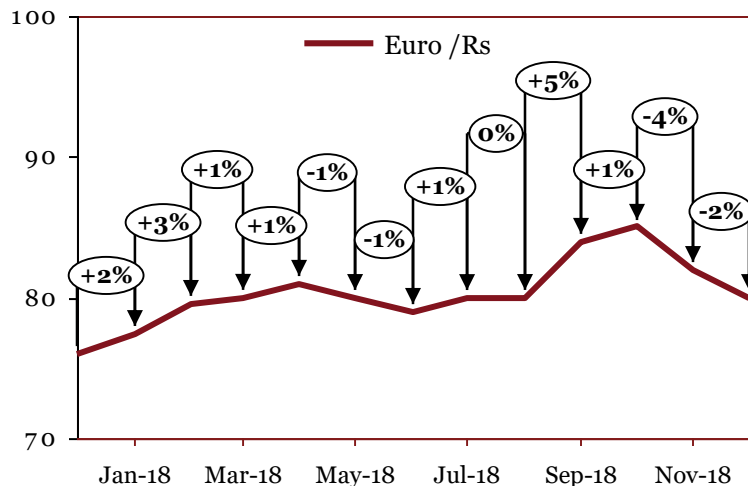
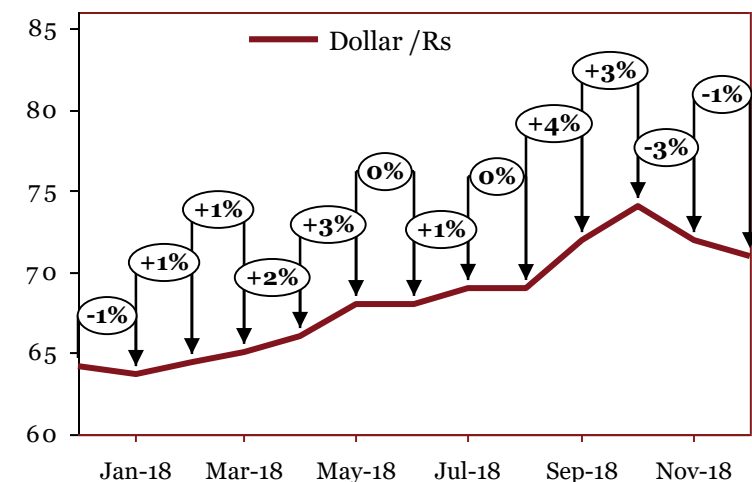
## Outlook

In November, the prices followed the similar trends as in the last month. In December, the rubber prices increased due to higher demand and increase in the crude oil prices. In January 2018, the prices decreased owing to weaker demand. In Feb 2018, the prices continued to decrease due to slackened demand. In March, the rubber market remained stable. In April, the prices decreased owing to the increase in the supply. In May, rising production coupled with high consumption led to an increase in prices. In June, prices rose due to supply tightness, demand from tyre manufacturers to deliver pending natural rubber contracts, and fluctuations in international prices. In July, rubber prices increased due to improved demand. In August, domestic rubber prices increased owing to floods in Kerala. In September, prices declined on account of subdued demand. In October, increasing trend in domestic prices was reversed. In November, prices continued to decline. In December, prices increased owing to improved market conditions from last month.

# *Appendices*

|    |                          |           |
|----|--------------------------|-----------|
|    | <b>Appendices</b>        | <b>36</b> |
| 24 | Forex Movement           | 37        |
| 25 | Crude Oil                | 38        |
| 26 | Commodity Specifications | 39        |

## Forex Movement

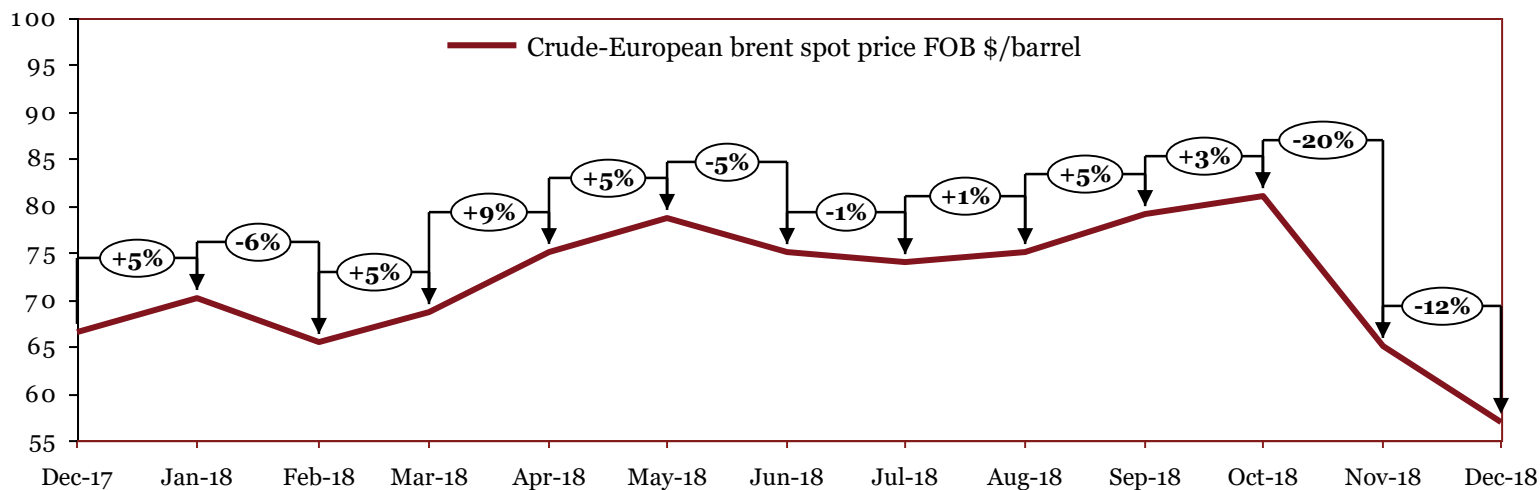


Source: Reserve Bank of India

### Monthly Average Prices (Rs)

|    | Jan-18 | Feb-18 | Mar-18 | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| \$ | 64     | 64     | 65     | 66     | 68     | 68     | 69     | 69     | 72     | 74     | 72     | 71     |
| £  | 88     | 90     | 91     | 93     | 91     | 79     | 80     | 80     | 84     | 85     | 82     | 80     |
| €  | 77     | 79     | 80     | 81     | 80     | 90     | 91     | 90     | 94     | 96     | 93     | 90     |
| ¥  | 57     | 59     | 61     | 61     | 62     | 62     | 62     | 63     | 64     | 65     | 64     | 63     |

# Crude Oil



Source: EIA

## Monthly Average Prices (\$/barrel)

|  | Jan-18 | Feb-18 | Mar-18 | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|  | 70     | 66     | 69     | 75     | 79     | 75     | 74     | 75     | 79     | 81     | 65     | 57     |

# Commodity Specifications

| Commodity                | International  | Domestic  |
|--------------------------|--|---|
| <b>Iron Ore</b>          | IOECI635 Index (CIF China)<br>- (Fe63.5%) CIF China  | Crisil<br>- Grade 1: 58% to below 60% Fe Fines<br>- Grade 2: 60% to below 62% Fe Fines<br>- Grade 3: 62% to below 65% Fe Fines<br>- Grade 4: 65% and above Fe Fines |
| <b>Pig Iron</b>          | Crisil<br>-Foundry grade FOB CIS   | Crisil<br>-Foundry grade ex-factory, India  |
| <b>Stainless steel</b>   | NA   | PwC Research<br>-G 304 CR Coil<br>-G 304 HR Coil  |
| <b>Wire rod</b>          | Crisil<br>-CIS Black Sea (US \$/Tonne)   | Crisil<br>- Wire rods: 5.5 mm (Prices are inclusive of excise duty by exclusive of VAT/Sales tax)   |
| <b>Steel Billets</b>     | Crisil<br>-FOB CIS Black Sea<br><i>Previously: FOB Latin America</i>   | Crisil<br>- 100^100 mm (Avg. prices collated from 2-3 locations)  |
| <b>Hot-rolled coils</b>  | Crisil<br>-CIS FOB Black Sea   | Crisil<br>- 14G 2mm (Avg. prices collated from 2-3 locations)   |
| <b>Cold-rolled coils</b> | Crisil<br>-CIS FOB Black Sea   | Crisil<br>- Mumbai 16G (Avg. prices collated from 2-3 locations)  |
| <b>EN 8</b>              | NA   | PwC Research<br>-EN8 Alloy forging  |
| <b>20MnCr5</b>           | NA   | PwC Research<br>-Alloy forging  |
| <b>Ferro titanium</b>    | Ferrotitanium (Europe-70% In Warehouse Rotterdam)<br><i>Previously: Ferrotitanium (min 70% in warehouse Rotterdam, Europe) \$/kg</i> | NA  |
| <b>Ferro chrome</b>      | Crisil : FOB Hong Kong Cr 50%  | Crisil: Ex-factory Cr 60%   |
| <b>Ferro molybdenum</b>  | Ferro-molybdenum (China-60% EXW)<br><i>Previously: Ferro-molybdenum (65%min in warehouse Rotterdam, Europe) \$/kg</i>                | NA  |

# Commodity Specifications

| Commodity             | International  | Domestic   |
|-----------------------|--|--|
| <b>Ferro vanadium</b> | Ferro Vanadium (80% in warehouse Pittsburgh, US) \$/kg<br><i>Previously: Ferrovandium 78-82% V max 1.5% Si FOB North America warehouse USD/lbs</i>   | NA   |
| <b>Ferro silicon</b>  | Crisil<br>- FOB China Si 75%   | Crisil<br>- Ex-factory Si 70%  |
| <b>Aluminium</b>      | LME<br>-Primary aluminium with impurities no greater than the chemical composition of one of the registered designations:<br>•P1020A in the North American and International Registration Record entitled “International Designations and Chemical Composition Limits for Unalloyed Aluminium” (revised March 2007)<br>•Al99.70 in the GB/T 1196-2008 Standard entitled “Unalloyed aluminium ingots for remelting” | NCDEX<br>-Primary aluminium 99.7% purity (minimum) form: ingots, T-bars,   |
| <b>Copper</b>         | LME<br>-Grade A copper must conform to the chemical composition of one of the following standards:<br>•BS EN 1978:1998 - Cu-CATH-1<br>•GB/T 467-2010 - Cu-CATH-1<br>•ASTM B115-10 - cathode Grade 1  | MCX<br>- Grade 1 electrolytic copper as per B115 specification   |
| <b>Zinc</b>           | LME<br>-Special high-grade zinc of 99.995% purity (minimum) must conform to the chemical composition of one of the following standards:<br>•BS EN 1179:2003 - 99.995% grade<br>•ISO 752:2004 - ZN-1 grade<br>•ASTM B6-12 - LME grade<br>•GB/T 470-2008 - Zn99.995 grade  | NCDEX<br>- 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”<br>Form: ingots |



# Commodity Specifications

| Commodity                              | International   | Domestic  |
|--|---|---|
| <b>Nickel</b>                          | LME<br>- Nickel of 99.80% purity (minimum) conforming to B39-79 (2013)<br>- GB/T 6516-2010  | NCDEX<br>- 4”*4” approved pure cut Nickel of 99.80% purity (minimum)                            |
| <b>Tin</b>                             | LME<br>- Tin of 99.85% purity (minimum) conforming to BS EN 610:1996  | MCX<br>- The LME approved tin ingot of 99.85 purity (minimum)                                   |
| <b>Magnesium</b>                       | Magnesium (China Shanghai Changjiang Spot Price) CNY/tonne<br><i>Previously: Magnesium (99.8% FOB China Main Ports Spot Price) \$/tonne</i> | NA  |
| <b>Platinum</b>                        | Metal in sponge form with minimum purities of 99.95% for platinum and palladium, and 99.9% for rhodium                                      |   |
| <b>Palladium</b>                       |   |   |
| <b>Rhodium</b>                         |   |   |
| <b>Low density polyethylene (LDPE)</b> | International price (C&F FEA) \$/tonne  | RIL-16MA400 grade   |
| <b>Polypropylene (PP)</b>              | International Price (PPHP) \$/tonne   | RIL-D120MA grade  |
| <b>Rubber Prices</b>                   | NA  | NCDEX/Rubber board<br>- RSS 4 (Ribbed Smoked Sheet 4) ex-warehouse Kochi exclusive of all taxes |
| <b>Forex Movement</b>                  | RBI reference rates   |   |
| <b>Crude</b>                           | European Brent spot price FOB \$/barrel – Energy Information Administration (EIA)   |   |



## *Disclaimer*

This document has been prepared solely for *[ACMA] Automotive Component Manufacturers Association of India*, being the express addressee to this document. PwC does not accept or assume any liability, responsibility or duty of care for any use of or reliance on this document by anyone, other than (i) ACMA, to the extent agreed in the relevant contract for the matter to which this document relates (if any), or (ii) as expressly agreed by PwC in writing in advance.

This publication has been prepared for general guidance on matters of interest only, and does not constitute professional advice. You should not act upon the information contained in this publication without obtaining specific professional advice. No representation or warranty (express or implied) is given as to the accuracy or completeness of the information contained in this publication, and, to the extent permitted by law, PwC, its members, employees and agents accept no liability, and disclaim all responsibility, for the consequences of you or anyone else acting, or refraining to act, in reliance on the information contained in this publication or for any decision based on it.

This publication contains certain examples extracted from third party documentation and so being out of context from the original third party documents; readers should bear this in mind when reading the publication. The copyright in such third party material remains owned by the third parties concerned, and PwC expresses its appreciation to these companies for having allowed it to include their information in this publication. For a more comprehensive view on each company's communication, please read the entire document from which the extracts have been taken. Please note that the inclusion of a company in this publication does not imply any endorsement of that company by PwC nor any verification of the accuracy of the information contained in any of the examples.

This publication contains various forward looking statements, which by their nature involve numerous assumptions, inherent risks and uncertainties, both general and specific, and risks that predictions, forecasts, projections and other forward looking statements will not be achieved. We caution readers of this publication not to place undue reliance on these forward looking statements, as a number of important factors could cause actual future results to differ materially from the plans, objectives, expectations, estimates, and intentions expressed in such forward looking statements.

This publication (and any extract from it) may not be copied, paraphrased, reproduced, or distributed in any manner or form, whether by photocopying, electronically, by internet, within another document or otherwise, without the prior written permission of PwC. Further, any quotation, citation, or attribution of this publication, or any extract from it, is strictly prohibited without PwC's prior written permission.

PwC contacts for ACMA Knowledge Partnership

- Kavan Mukhtyar, Partner & Leader-Automotive, PwC India - [kavan.mukhtyar@in.pwc.com](mailto:kavan.mukhtyar@in.pwc.com) / +912261198735
- Somnath Chatterjee, ACMA Knowledge Partnership Manager –[somnath.chatterjee@in.pwc.com](mailto:somnath.chatterjee@in.pwc.com) / +91124620724

© 2018 PricewaterhouseCoopers Private Limited. All rights reserved. In this document, "PwC" refers to PricewaterhouseCoopers Private Limited (a limited liability company in India), which is a member firm of PricewaterhouseCoopers International Limited, each member firm of which is a separate legal entity.