

Valuations: Indian companies

Company	Price (INR)	EV/EBITDA (x)		P/B (x) FY18E
		FY18E	FY19E	
Steel				
Tata Steel	450	7.3	6.6	2.9
JSW Steel	187	6.5	5.6	1.8
JSPL	119	9.6	6.7	0.3
SAIL	60	58.1	10.3	0.8
Non-Ferrous				
Hindalco	184	6.0	5.3	1.3
Nalco	73	5.7	5.0	1.3
Vedanta	231	5.3	5.3	1.2
Mining				
Coal India	279	6.6	6.0	6.8
HZL	273	6.7	5.8	3.0
NMDC	127	6.6	6.2	1.6

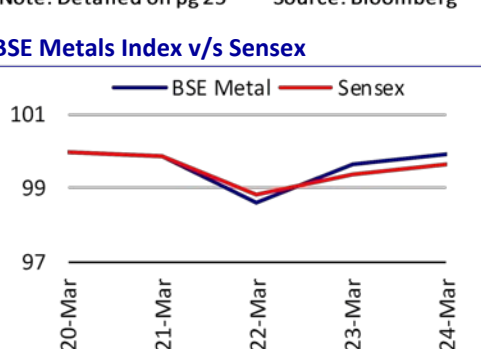
Note: Detailed table on pg 25 Source: MOSL

Valuations: Global companies

	Price	EV/EBITDA (x) P/B (x)		
		CY17	CY18	CY17
Mining				
BHP	AUD 23.93	5.2	5.7	nm
FMG	AUD 5.09	3.1	4.3	nm
Rio Tinto	AUD 58	4.8	5.8	nm
Vale	USD 25.4	4.8	5.7	1.0
Teck Res.	USD 21.51	4.1	5.4	0.9
Steel				
A. Mittal	EUR 6.69	4.5	4.5	nm
Posco	k KRW 267	5.5	5.3	0.5
US Steel	USD 28.73	4.8	4.3	2.1
Nucor	USD 57.33	6.7	6.7	2.3
JFE	JPY 1789	8.9	6.7	nm
Gerdau	BRL 9.37	6.6	5.4	1.1
Angang	CNY 5.48	7.3	6.6	0.8
Non Ferrous				
Alcoa	USD 31.76	3.9	4.5	1.0
Hydro	NOK 49.51	6.0	5.9	1.2
Rusal	HKD 3.8	9.2	9.0	nm

Note: Detailed on pg 25 Source: Bloomberg

BSE Metals Index v/s Sensex



Source: Bloomberg

Note: Indexed to 100 on 19 April 2017

Stock performance table on pg 26

Investors are advised to refer through important disclosures made at the last page of the Research Report.

Metal Prices

	CMP	change since						
		18-Apr	%	11-Apr	%	1-Jan	%	1-Apr
STEEL								
TMT- Mumbai (INR/ton)	33,000	-2	33,800	8	30,600	20	27,600	
HRC- Mumbai (INR/ton)	37,333	0	37,333	-2	38,222	22	30,667	
HRC (USD/ton) fob CIS	450	-7	483	-9	495	22	368	
METALLICS								
Sponge iron - Raipur (INR/ton)	17,600	-5	18,500	10	15,950	32	13,300	
Pig iron - Raipur (INR/ton)	25,100	1	24,875	11	22,550	30	19,300	
Iron ore spot (USD/ton) cfr China	69	-9	75	-13	79	25	55	
Coking coal (USD/ton) fob Aus.	314	11	283	31	240	283	82	
Shred. scrap (USD/ton) Rotterdam	260	0	260	-7	278	10	235	
ALUM.								
LME Spot (USD/ton)	1,890	-2	1,930	10	1,714	24	1,524	
Indian prices (INR '000/ton)	124	0	123	7	116	22	101	
LME inventories ('000 ton)	1,746	-3	1,803	-21	2,202	-37	2,783	
ZINC								
LME Spot (USD/ton)	2,562	-4	2,665	0	2,563	39	1,842	
Indian prices (INR '000/ton)	167	0	167	-4	174	-86	1,222	
LME inventories ('000 ton)	359	-2	367	-16	428	-17	435	
COPPER								
LME Spot (USD/ton)	5,655	-2	5,770	3	5,501	16	4,880	
Indian prices (INR '000/ton)	369	0	370	-1	374	16	319	
LME inventories ('000 ton)	255	-4	267	-18	312	79	143	
OTHERS								
Gold (INR/10gms)	29,416	1	29,140	6	27,812	1	29,080	
Sliver (INR/1kg)	42,251	0	42,143	9	38,921	15	36,651	
Lead Spot LME (USD/ton)	2,185	-3	2,261	10	1,985	27	1,720	
Brent crude (USD/bbl)	54.9	-2	56.0	-3	56.8	42	38.7	
MISC.								
INR/USD	64.5	0	64.3	-5	68.0	-3	66.2	
BDI	1,294	1	1,282	35	961	188	450	

Chinese steel export prices down 6-12% WoW

- **Indian steel:** Long product (TMT Mumbai) prices were down ~2% WoW. Sponge iron prices were down ~5% WoW while domestic scrap prices were down ~6% WoW. Domestic iron ore prices were unchanged while pellet prices were marginally lower. Domestic HRC prices were unchanged but with falling import prices, risk is to the downside.
- **Raw Materials:** Iron ore prices (China cfr) were down ~9% WoW on lower steel price in china, high port inventories and increasing local supply. Iron ore port inventories in China were however marginally lower WoW. Thermal coal prices were unchanged WoW. Coking coal prices were up ~11% WoW on weather related disruptions in Australia. Chinese pellet import prices were down 8% WoW.
- **Europe:** HRC prices were down ~3% WoW. CIS export HRC prices were down 7% WoW. Rotterdam scrap prices were unchanged.
- **China:** local HRC prices were down ~4% WoW, following ~10% decline last week. Rebar steel prices were down ~2% WoW. Export steel prices were however down ~6%/12% for rebar/HRC, respectively, WoW.
- **Base metals:** Aluminum (cash LME) was down 2% WoW. Spot premiums in Japan were higher. Alumina prices were down by ~1% WoW. Zinc (cash LME) was down ~4% WoW while lead was down ~3% WoW. Copper was down ~2% WoW. Crude oil (Brent) prices were down ~2% WoW.

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Ferrous

Domestic HRC prices were unchanged at INR37,333/t.

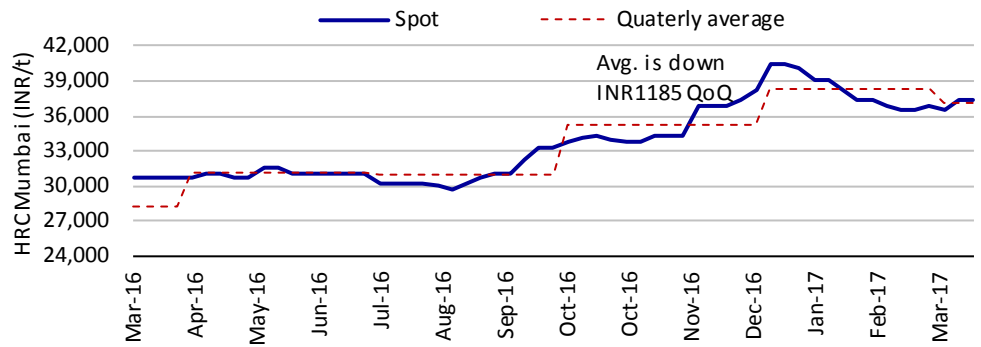
Long products (TMT Mumbai) prices were down 2.4% WoW to INR33,000/t.

Sponge iron prices were down by 4.9% WoW to INR17,600/t.

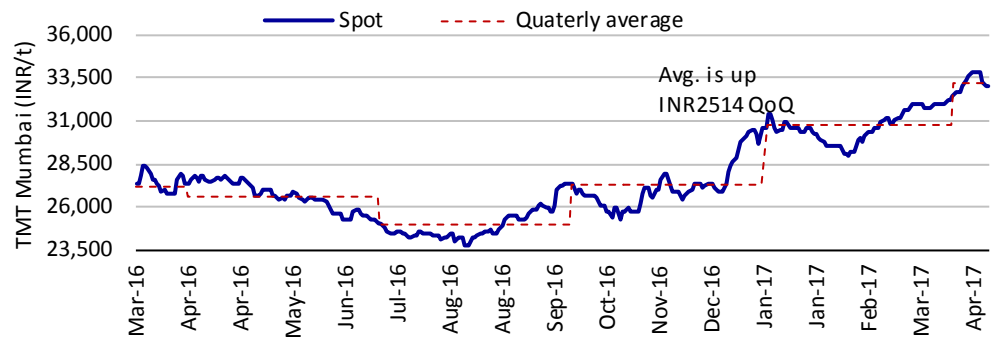
Ferrous

INDIA

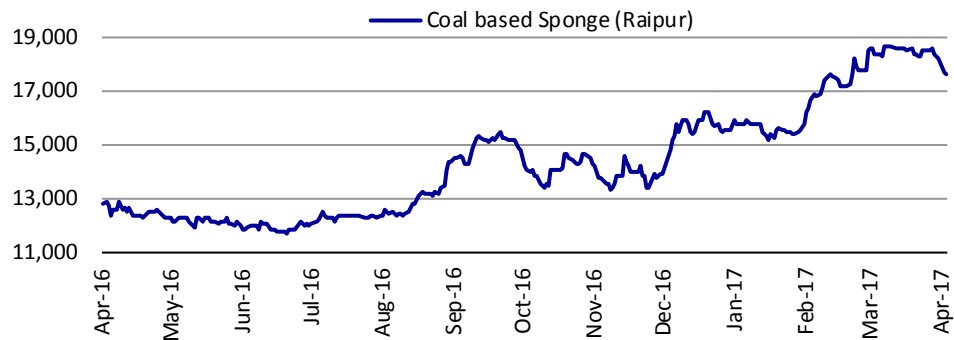
Indian flat domestic steel prices (INR/T, excl. ED & VAT)



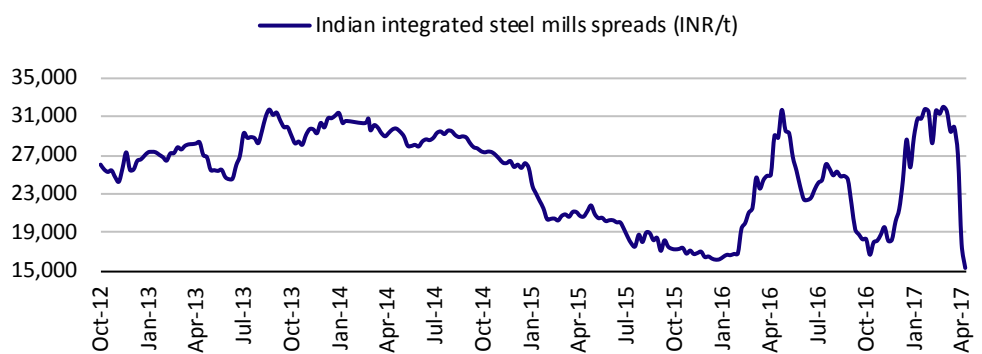
Indian long steel price (INR/T, excl. ED & VAT)



Sponge iron (made from lumps) prices (INR/T, excl. ED & VAT)



India: Integrated steel mills spreads (Import parity HRC – 1xcoking coal)



Source: SteelMint, WSA, MOSL

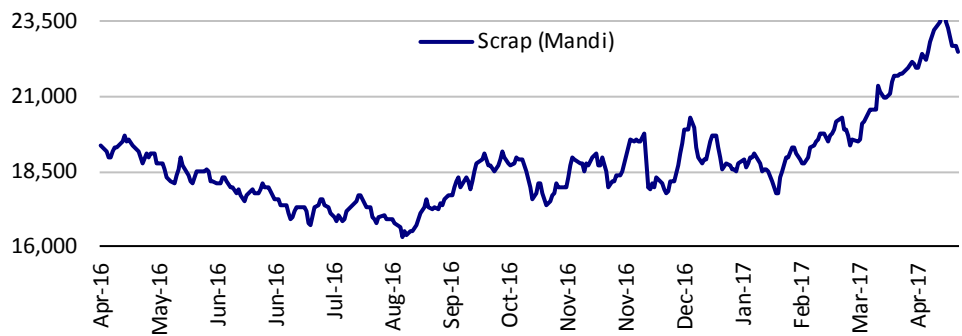
Ferrous

Domestic scrap prices were down 5.7% WoW to INR22,500/t.

Ferrous

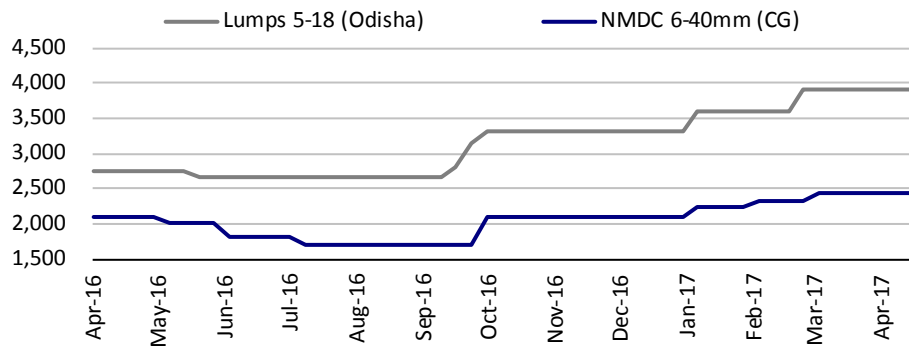
INDIA

Scrap Mandi (INR/t)



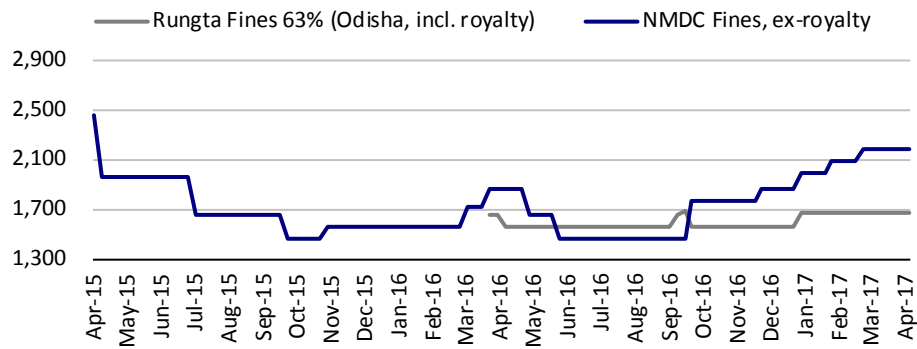
Iron ore lump prices were unchanged.

Iron ore lumps (INR/t)



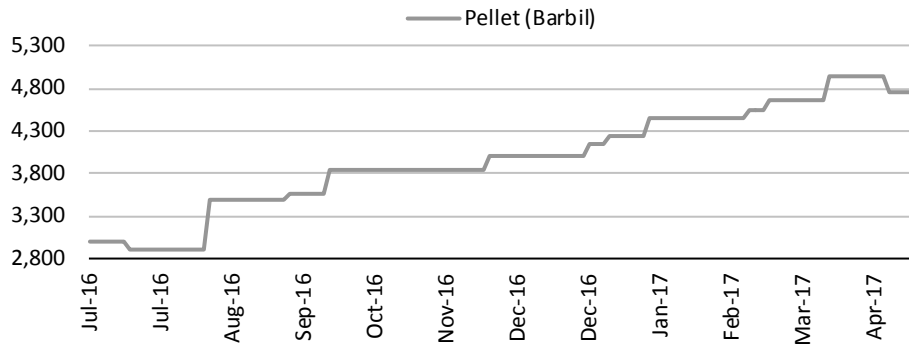
Iron ore fines prices were unchanged.

Iron ore fines (INR/t) ex mine



Pellet prices were at INR4,750/t.

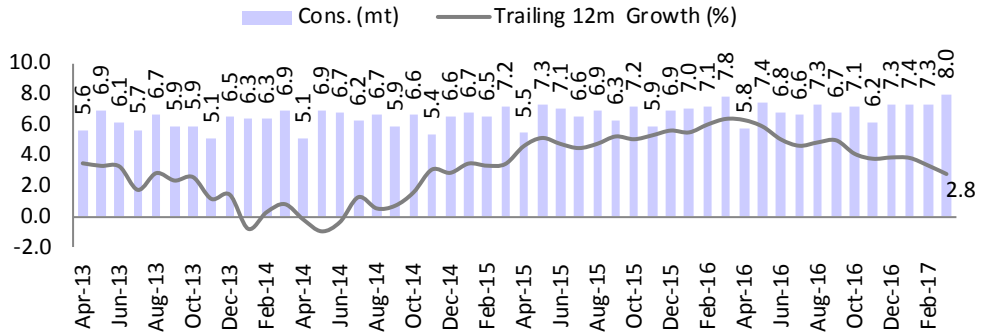
Pellet (Barbil) INR/t



Source: SteelMint, WSA, MOSL

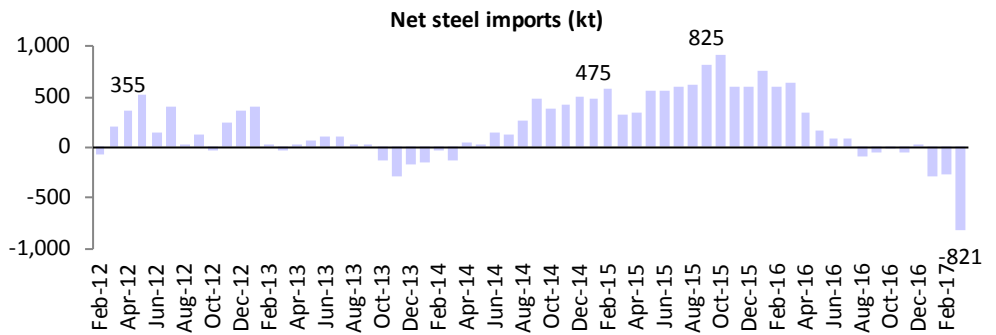
India Monthly steel trends

Steel consumption (mt) and growth (trailing 12-month) YoY %



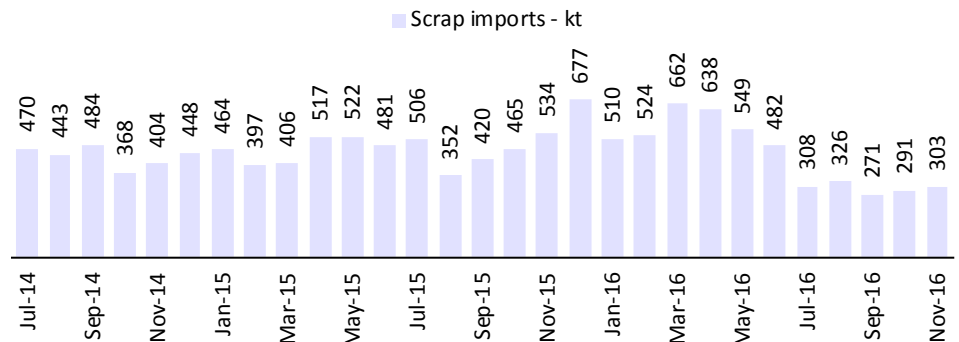
India steel demand grew 2.2% YoY to ~8mt in March 2017.

Steel imports and exports - kt



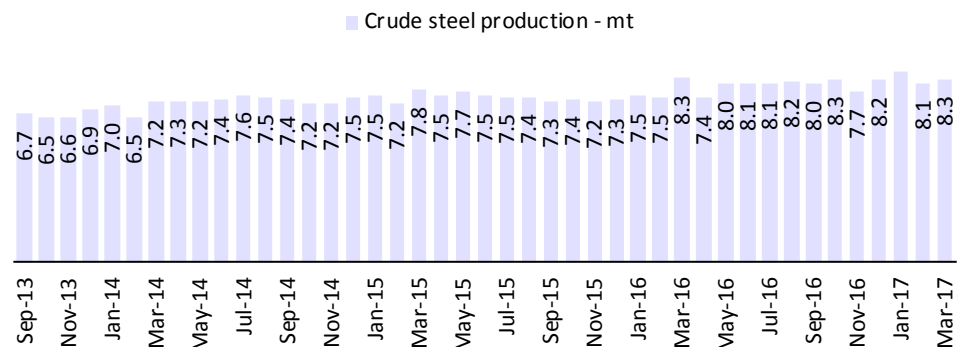
India was a net exporter of steel in 4Q.

Scrap imports - kt



Import of ferrous scrap was down 43% YoY to 303kt in November 2016.

Crude steel production - kt



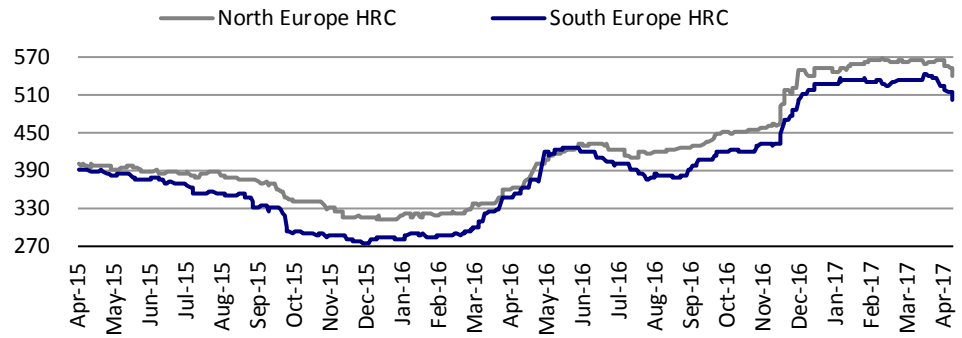
Crude steel production was up down 0.5% YoY to 8.3mt in March.

Source: JPC

European Union

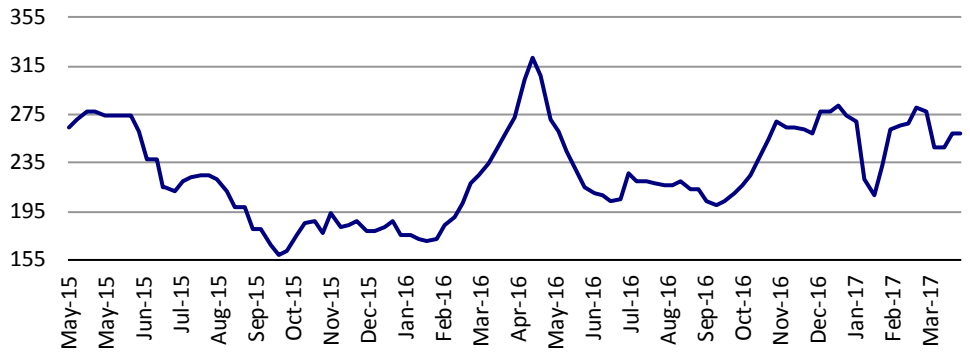
European HRC prices (EUR/ton)

EU HRC steel prices were down 2.9% WoW to EUR503/t.



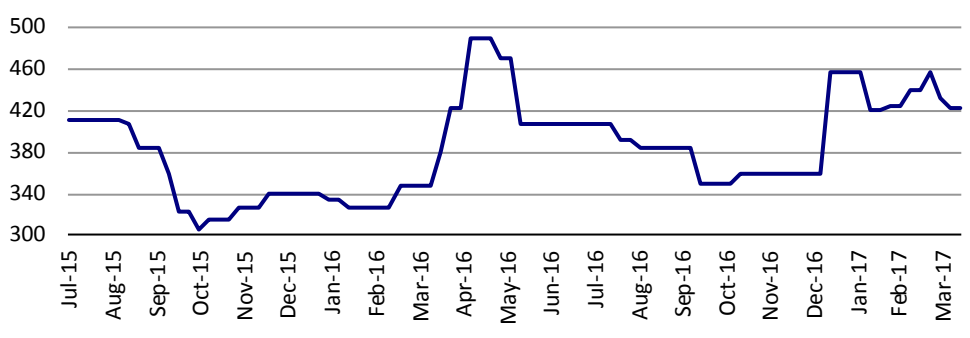
Shredded scrap prices (USD/t) fob Rotterdam

Rotterdam scrap prices were unchanged at USD260/t.



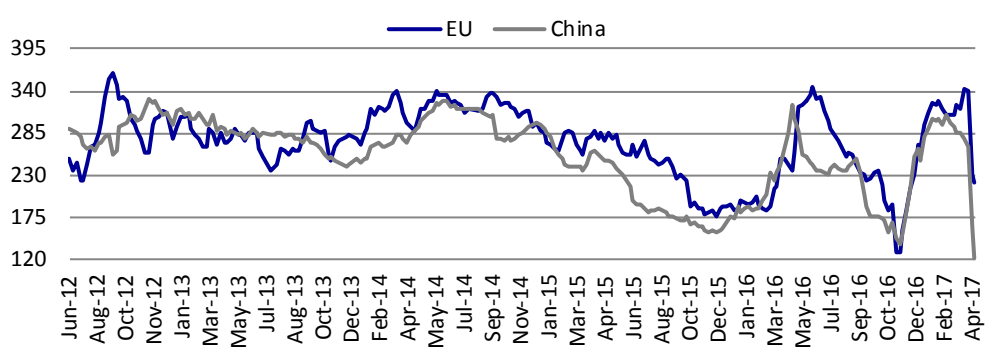
European wire rods southern region (Euro/t)

South Europe wire rod prices were unchanged.



Spreads (HRC-1.6xiron ore-0.7xcoking coal) – (USD/t)

EU steel mills spreads were lower on increase in coking coal prices.

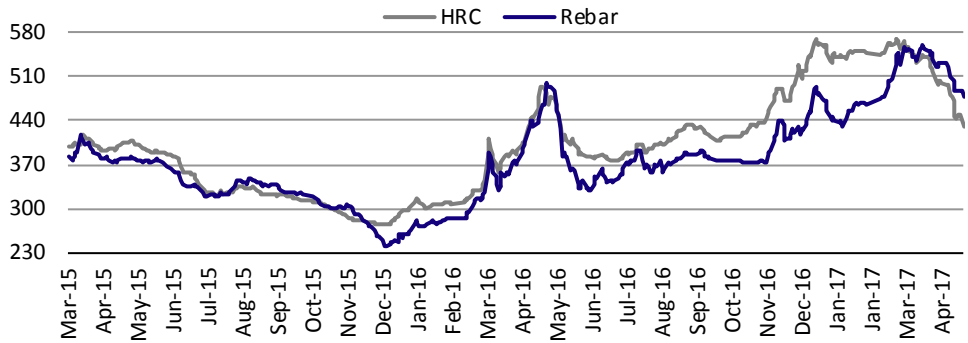


Source: Metal Bulletin, Bloomberg, WSA, MOSL

China

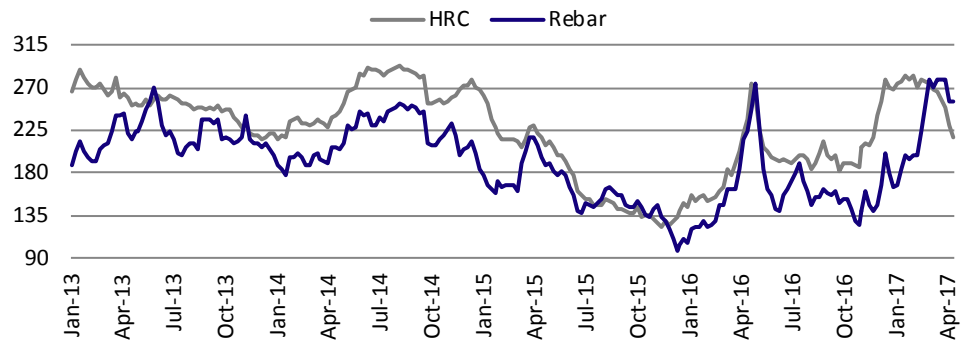
China domestic prices (USD/ton)

Chinese local HRC steel price was down 3.8% WoW to USD431/t, rebar was down 1.6% WoW to USD479/t.



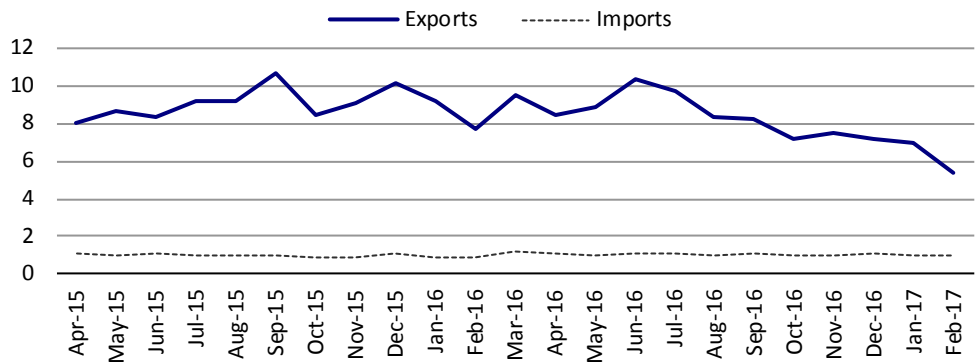
Steel spreads (Steel price – 1.6x iron ore – 0.55x coke) for Chinese producers

Chinese steel product spreads were lower on decline in steel prices.



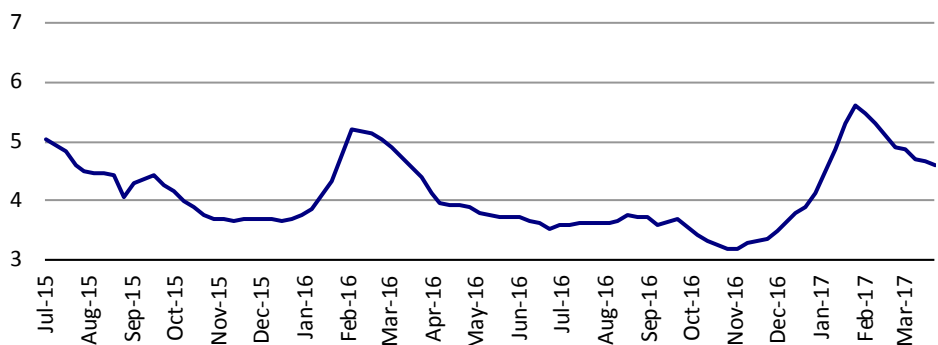
Steel trade (m ton)

Chinese steel exports were down 30% YoY to 5.4mt in February 2017.



Steel inventories in main China cities (m tons)

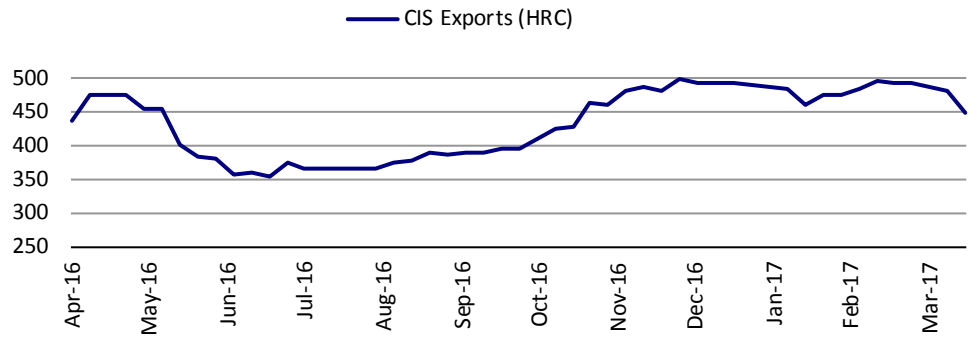
Steel inventories in China declined WoW.



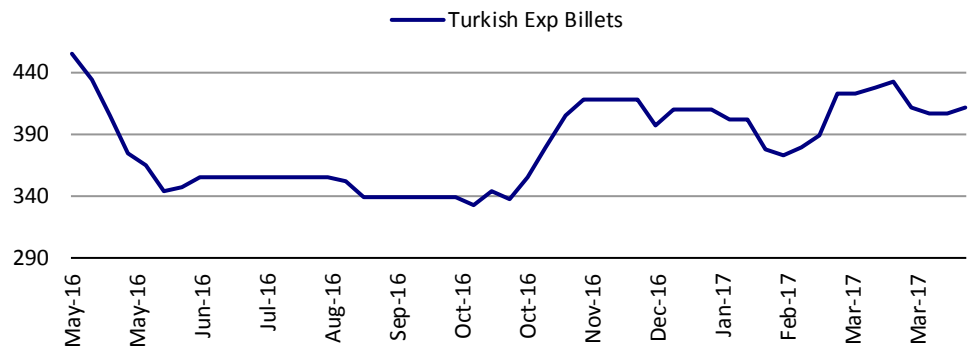
CIS export HRC prices were down 6.7% WoW to USD450/t.

Other regions

CIS HRC export prices (USD/ton) fob basis

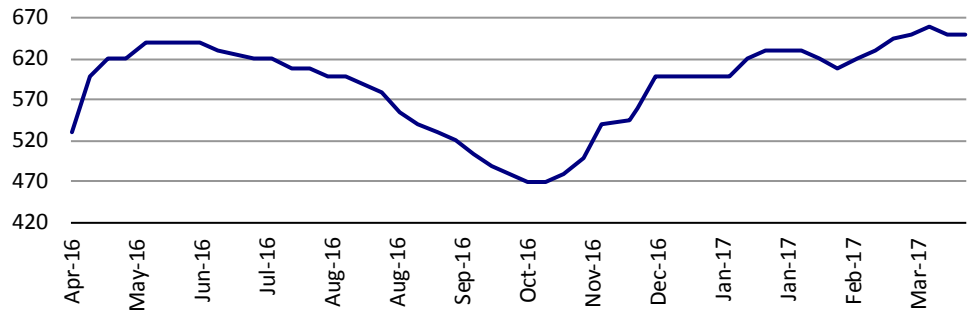


Turkish export billets (USD/ton)



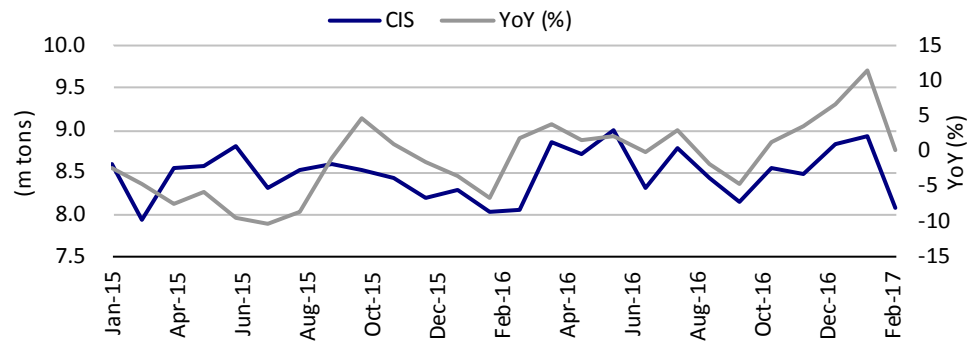
US HRC prices were flat WoW.

North America HRC prices (USD/ton)



CIS countries daily crude steel production increased ~3% YoY to 8.07mt in February 2017.

CIS: Monthly crude steel production

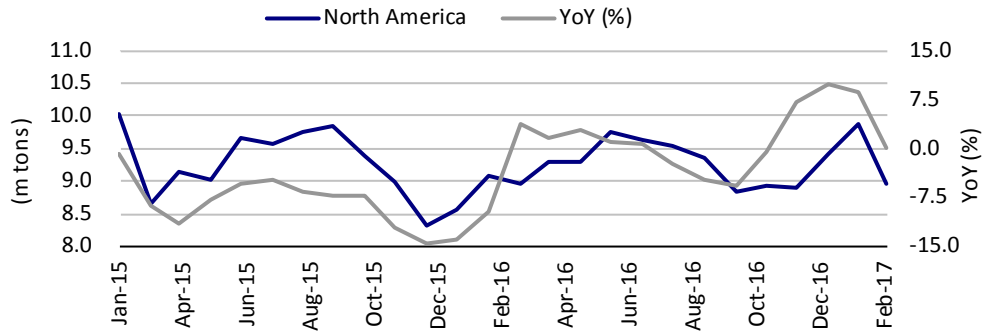


Source: Metal Bulletin, WSA, Bloomberg, MOSL

Other regions

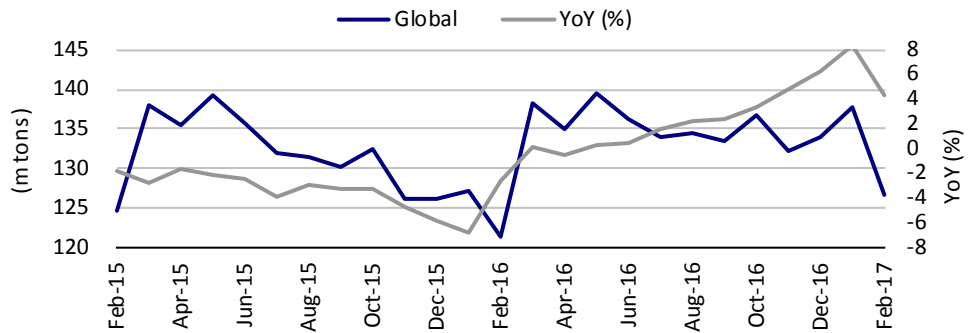
North America: Monthly crude steel production

US daily steel production grew ~3% YoY to ~9mt in February 2017.



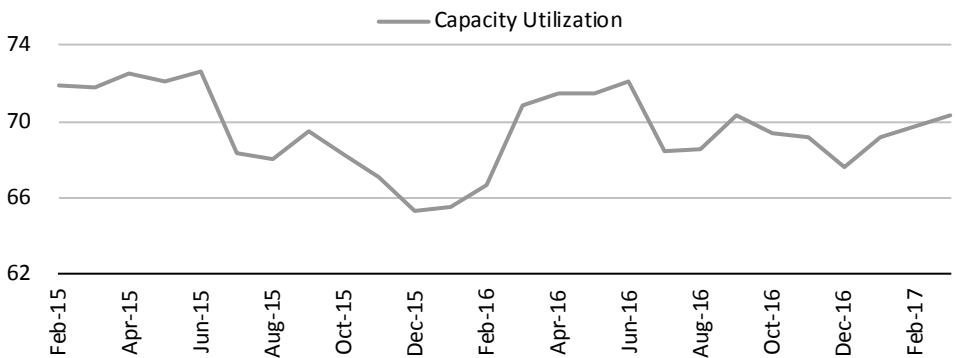
Global: Monthly crude steel production

Global daily crude steel production grew ~7% YoY to 127mt in February 2017.



Global: Monthly crude steel capacity utilization

Capacity utilization increased 360bps YoY to 70.3% in February 2017.

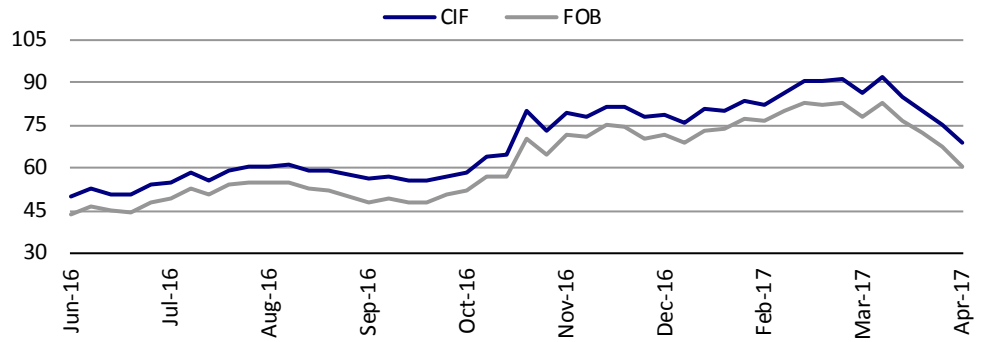


Source: Bloomberg, WSA, MOSL

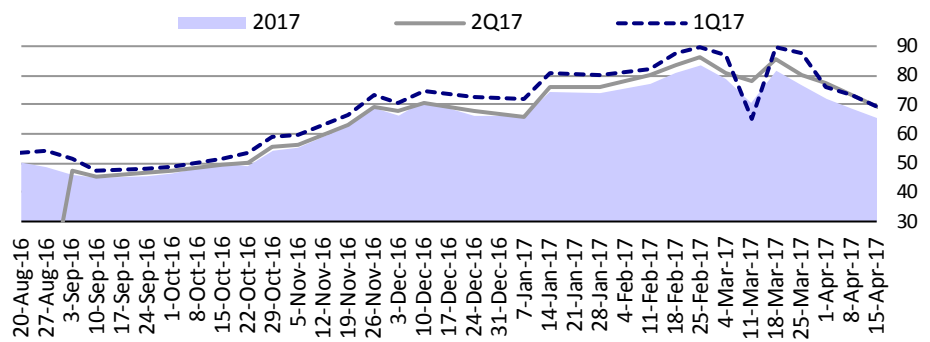
Iron ore (China cfr) prices were down 9% WoW to USD79/t.

Steel raw materials

Import price of 62% grade iron-ore fines in China (USD/ton)

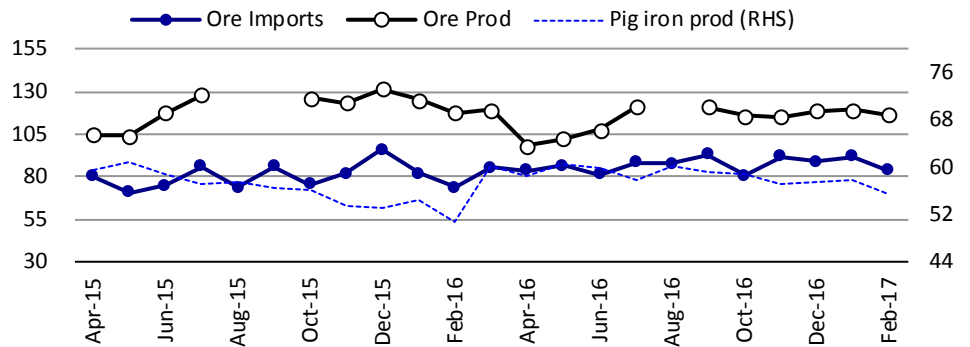


OTC iron-ore swaps (USD/ton)



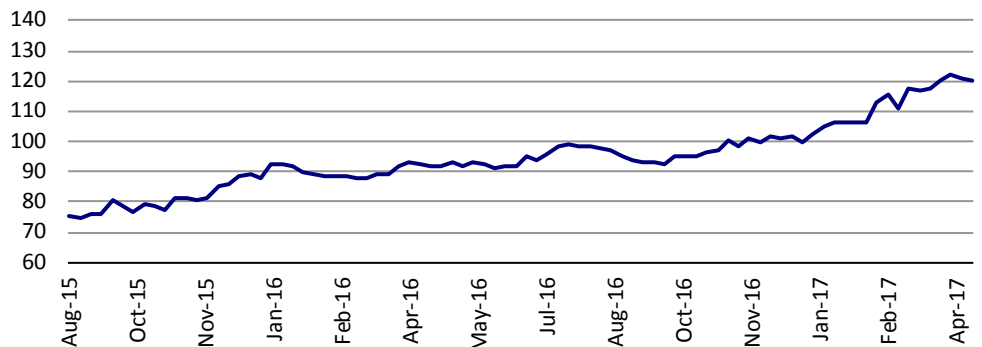
China iron ore imports increased ~12% YoY to 91.9mt in January 2017.

China iron-ore production and imports (m tons)



China iron ore inventories were marginally lower WoW.

China's iron-ore inventories (mt)

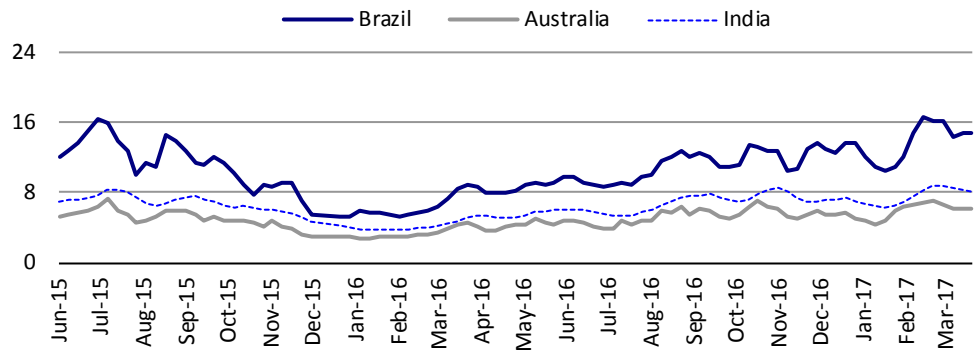


Source: Metal Bulletin, Bloomberg, MOSL

Steel raw materials

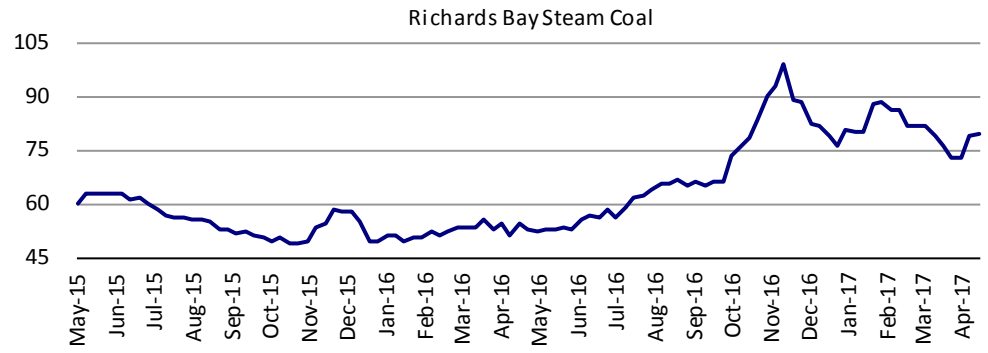
Freight rates to China (USD/ton)

Freight rates were lower WoW.

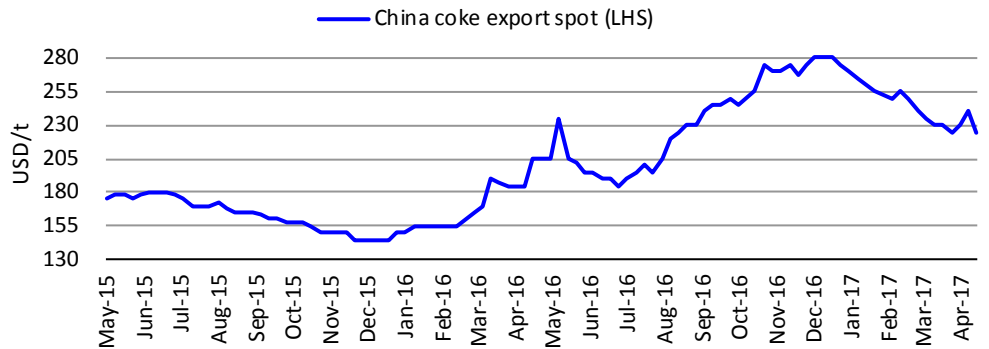


Coal price index

Richards Bay thermal coal prices were up to USD79/t.

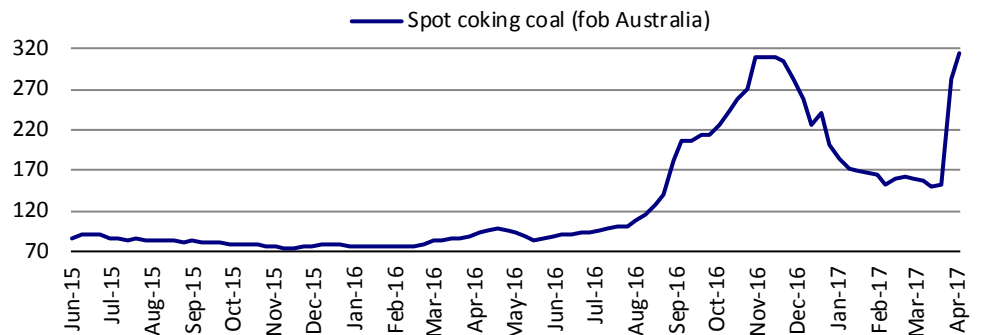


Coke price index (fob China)



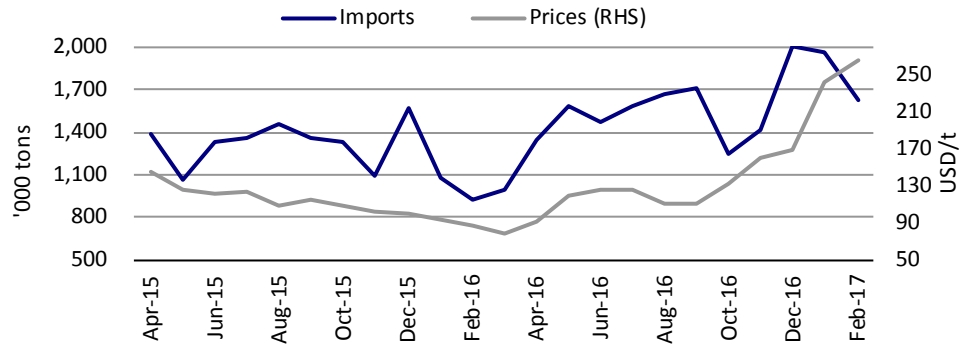
Coking coal (USD/t)

Coking coal prices were up 11% WoW to USD 314/t on weather related disruptions in Australia.

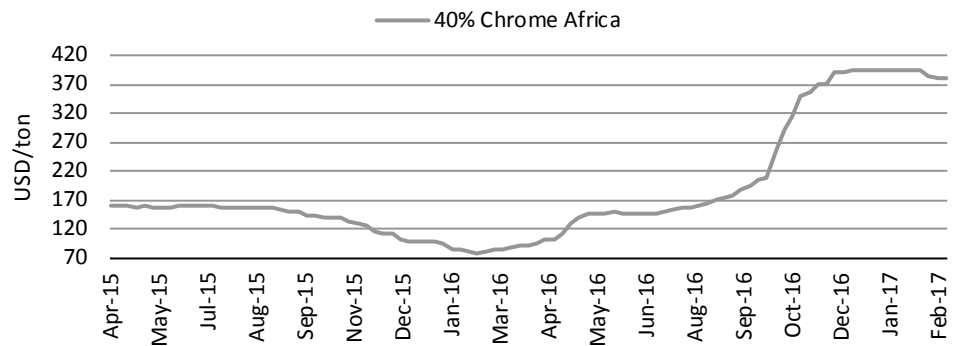


Ferro alloys

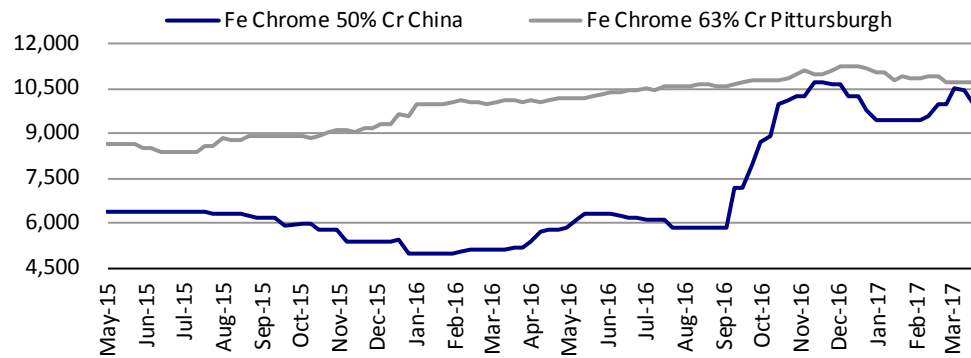
China's imports of manganese ore and concentrate



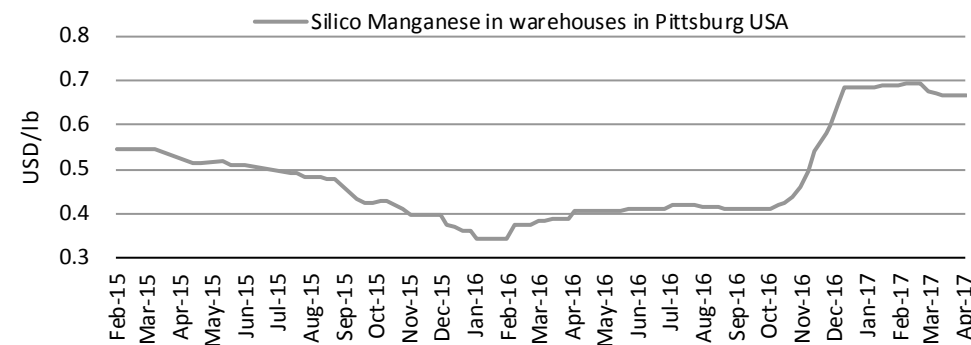
Chrome ore FOB spot prices



Ferro chrome CIF prices (CNY/t)



Silico Manganese prices



Source: Metal Bulletin, Bloomberg, MOSL

Non-ferrous

Aluminum (cash LME) was down 2% WoW to USD1,916/t.

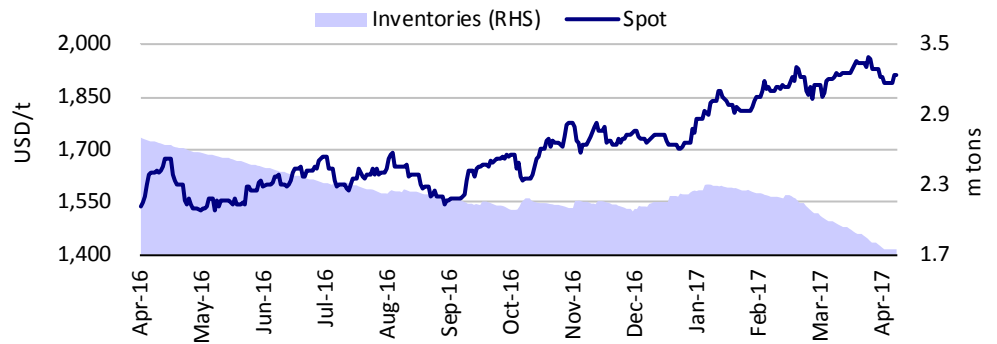
Global aluminum production increased by 12% YoY to 4.90mt in January 2017.

LME and SHFE arbitrage is unfavorable.

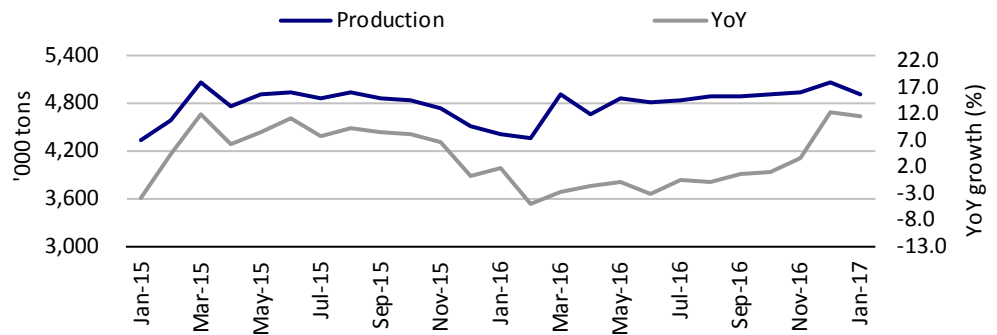
Non-ferrous

Aluminum

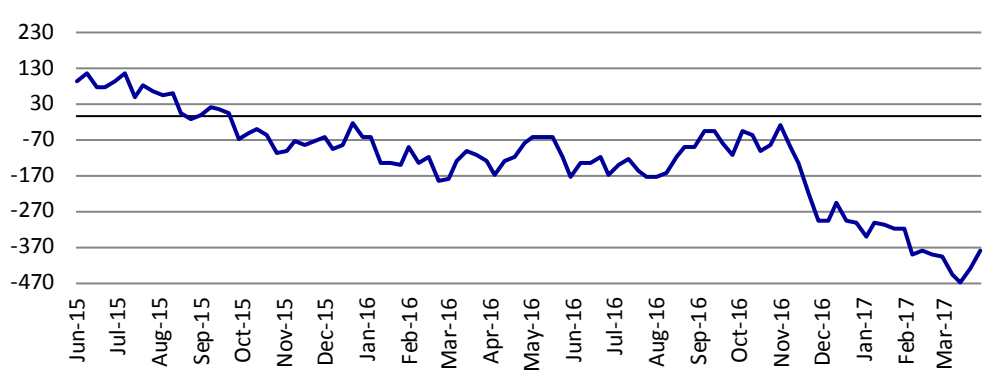
LME inventories and spot prices



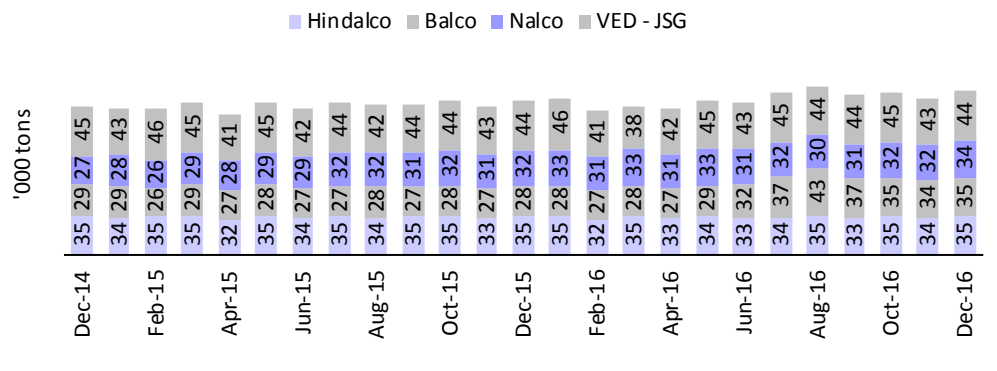
Global primary aluminum monthly production and YoY growth



Aluminum: SHFE Vs LME arbitrage (USD/T)



India: Company-wise primary aluminum monthly production

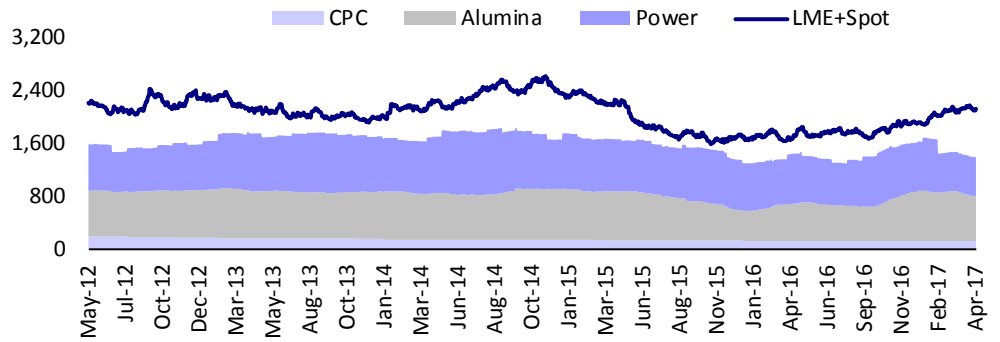


Non-ferrous

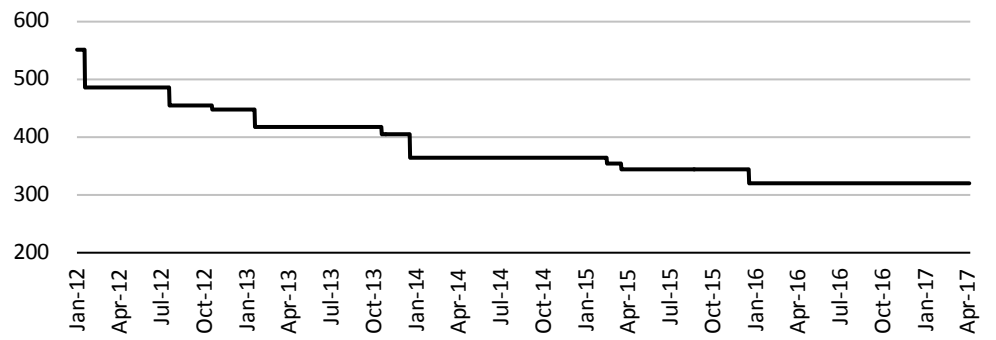
Aluminum

Aluminum raw material and power cost for marginal producer in USA (USD/t)

All-in-aluminum was at USD2,126/t.

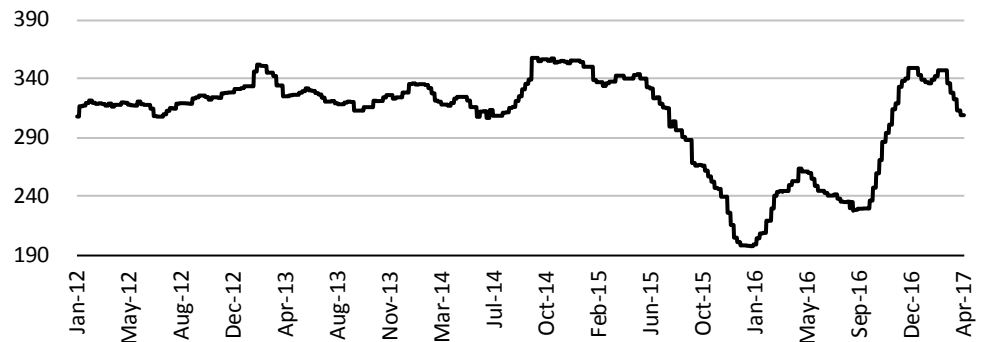


CPC US (USD/t)

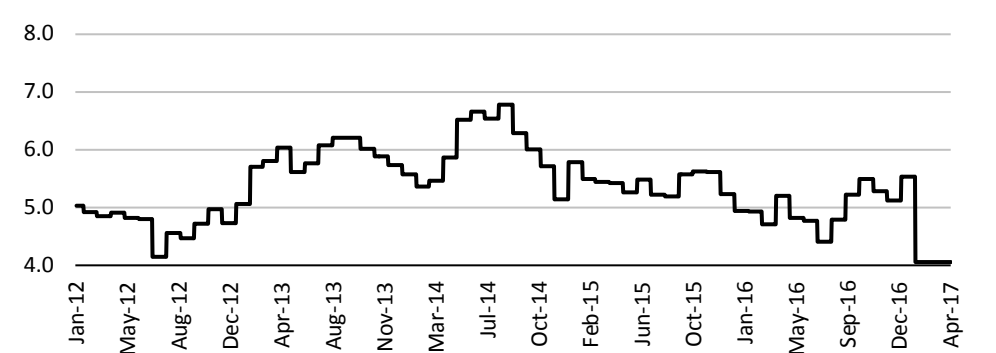


Alumina (USD/t)

Alumina was down to USD309/t.



Industrial Power US (Louisiana) per mwh



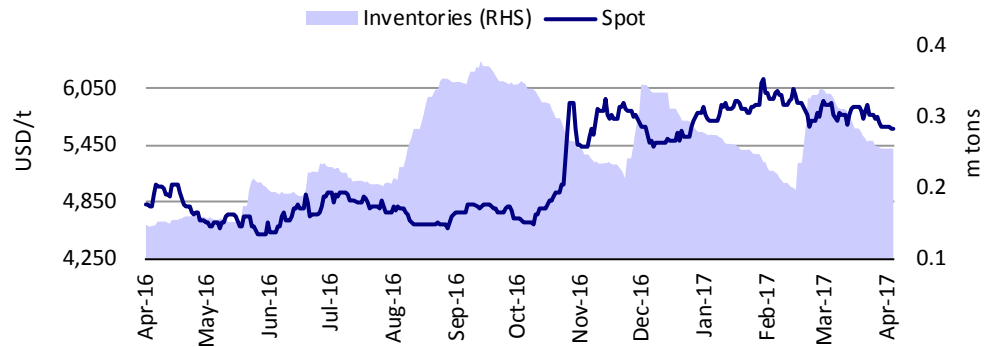
Source: Metal Bulletin, Bloomberg, Industry, MOSL

Non-ferrous

Copper

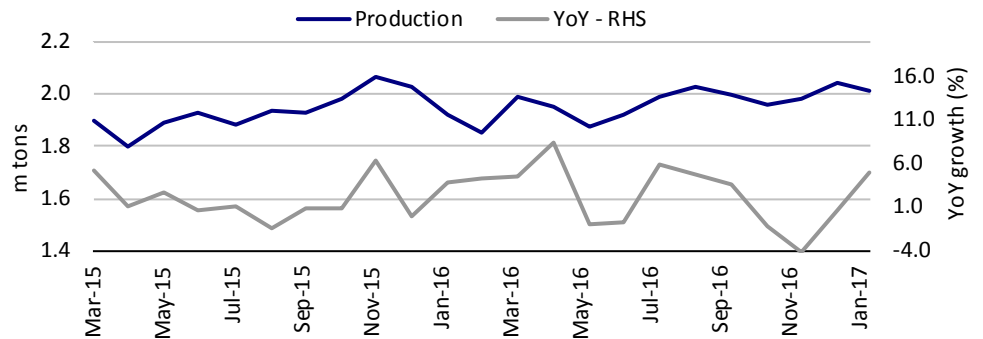
LME inventories and prices

Copper (cash LME) prices were down 2% WoW to USD5,621/t

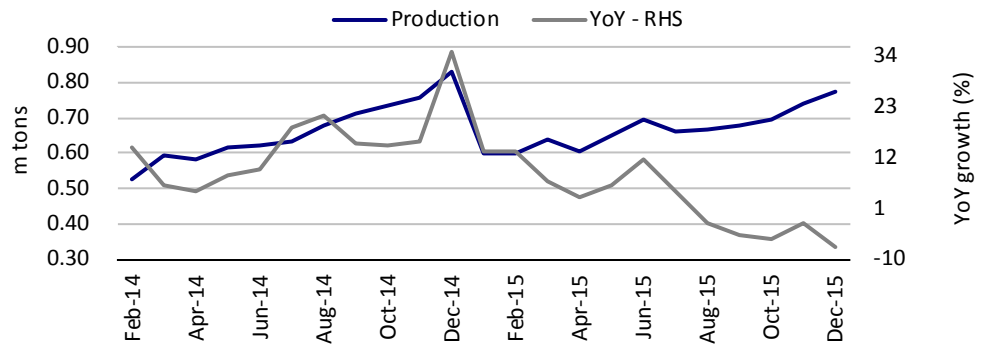


Global refined copper monthly production and YoY growth

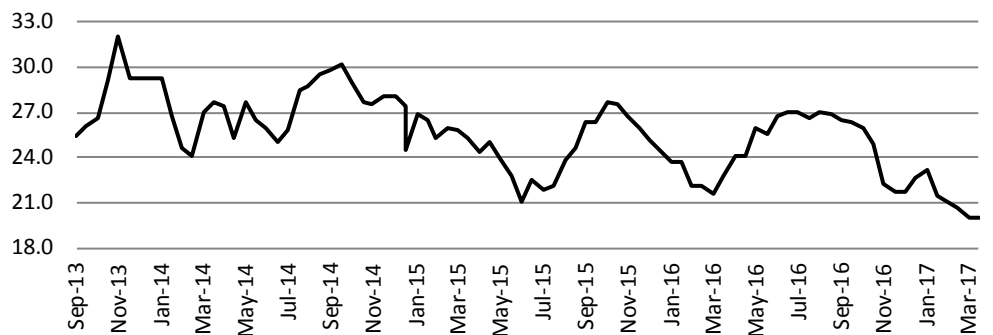
Global copper production was up 5.1% YoY to 2.01mt in January 2017.



China: Refined copper monthly production and YoY growth



Copper: Spot TCRC (USc/lb)

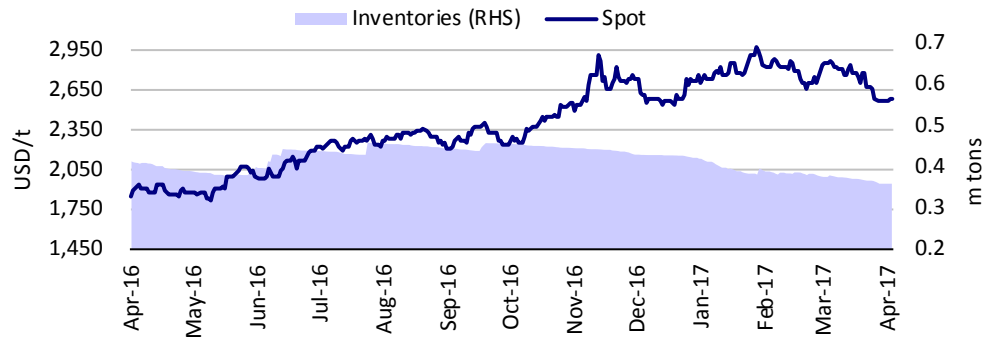


Non-ferrous

Zinc

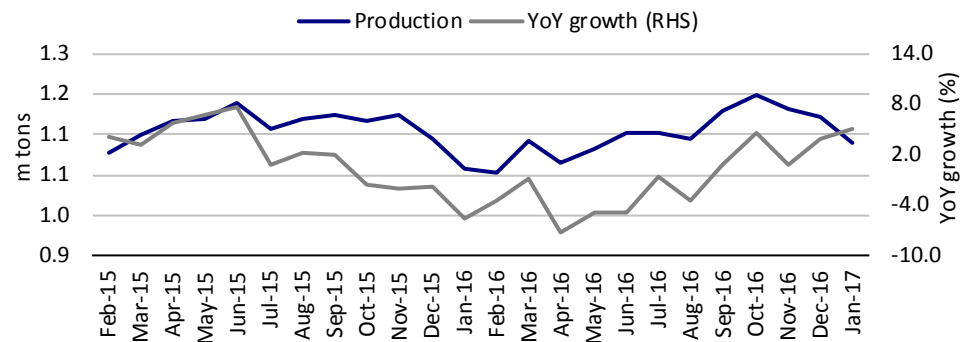
LME inventories and prices

Zinc (cash LME) was down ~4% USD2,581/t

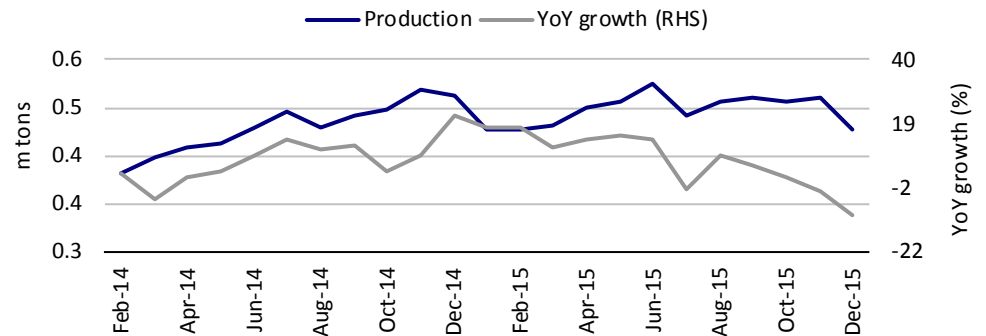


Global refined zinc monthly production and YoY growth

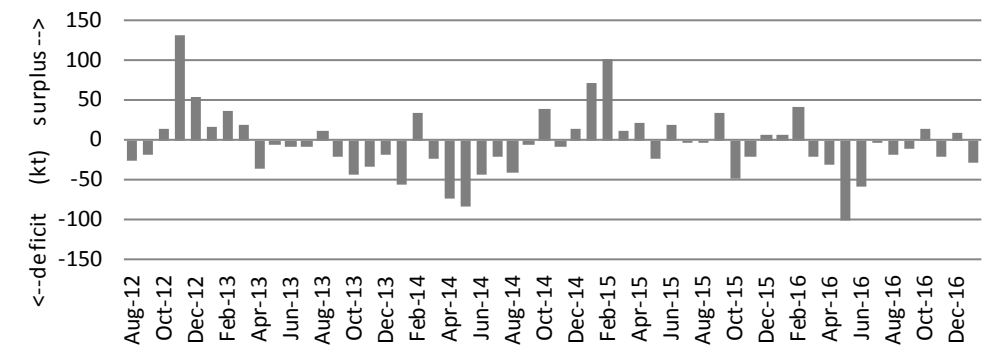
Global zinc production was up 5.1% YoY to 1.125mt in January 2017.



China: Refined zinc monthly production and YoY growth



Zinc: Global metal surplus (deficit) – kt

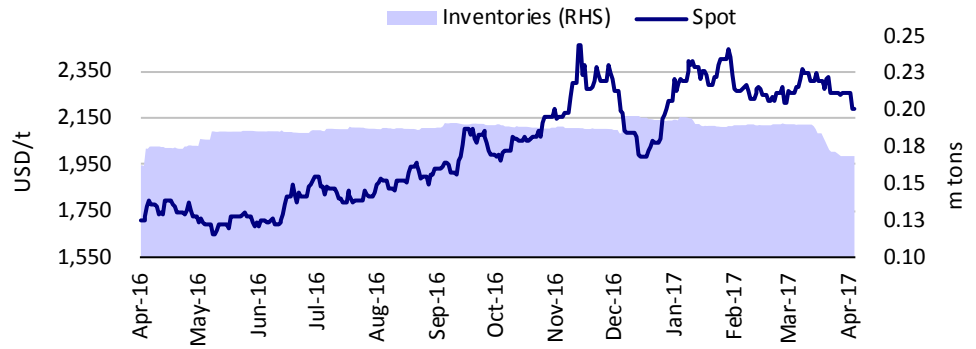


Non-ferrous

Lead

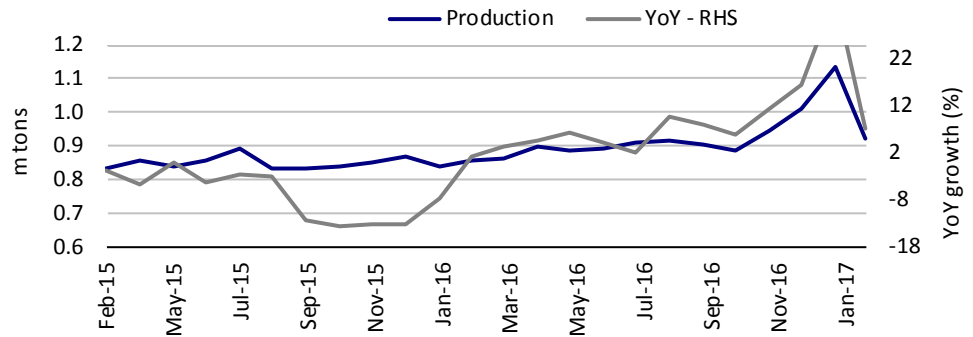
LME inventories and prices

Lead (cash LME) was flat
WoW at USD2,185/t.

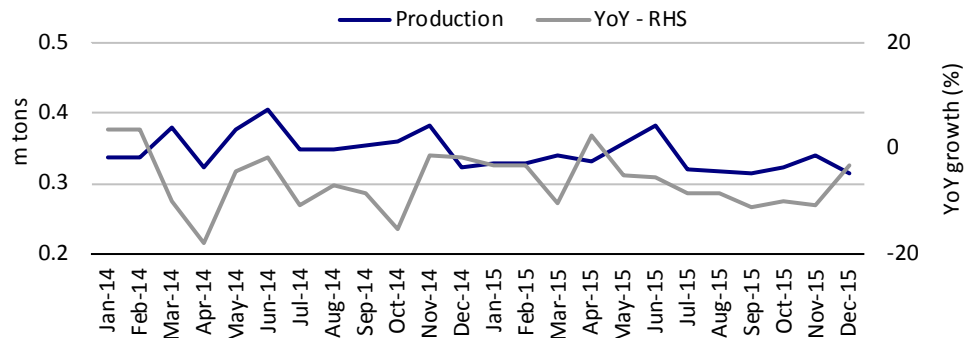


Global refined lead monthly production and YoY growth

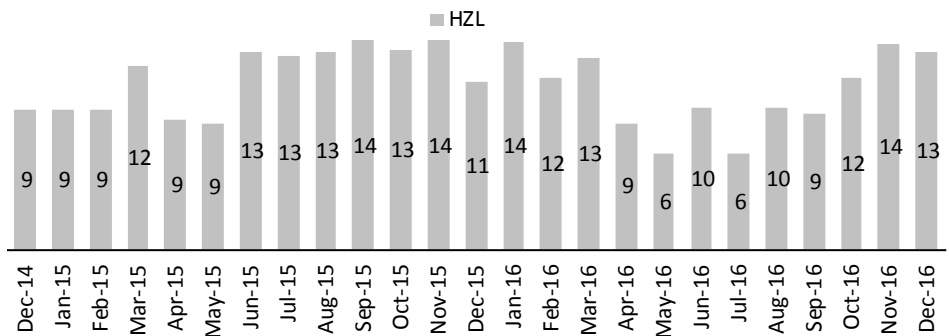
Refined lead production
increased 7% YoY to 921kt
in January 2017.



China: Refined lead monthly production and YoY growth



India: Company-wise refined lead monthly production

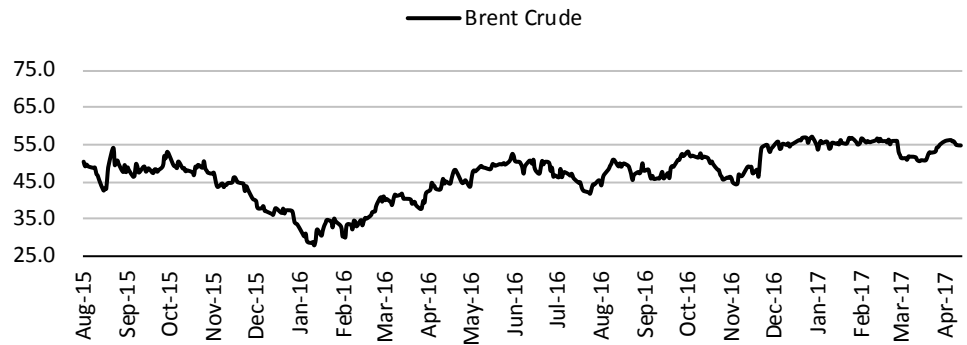


Source: Metal Bulletin, Bloomberg, MOSL

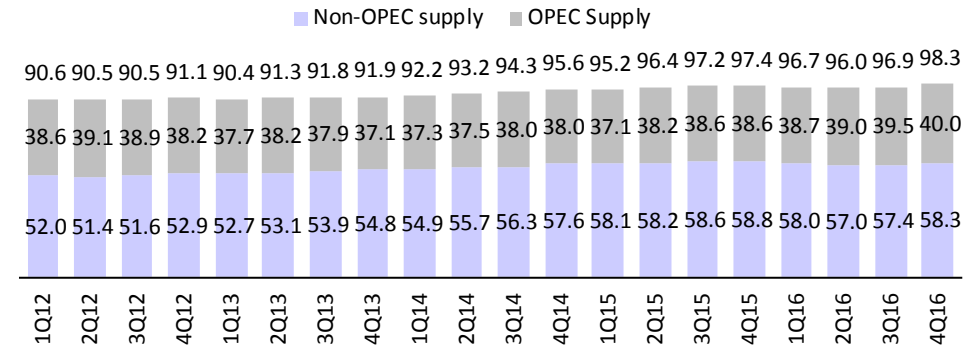
Crude Oil

Brent (crude oil) was down 1.9% WoW to USD54.8/bbl.

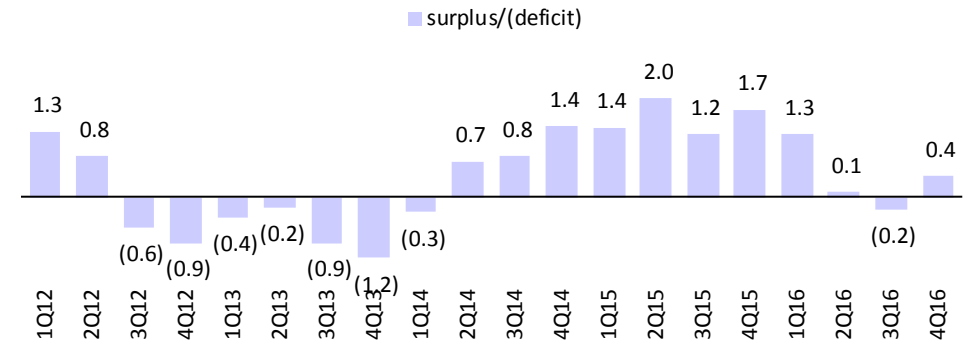
Brent crude oil price (USD/bbl)



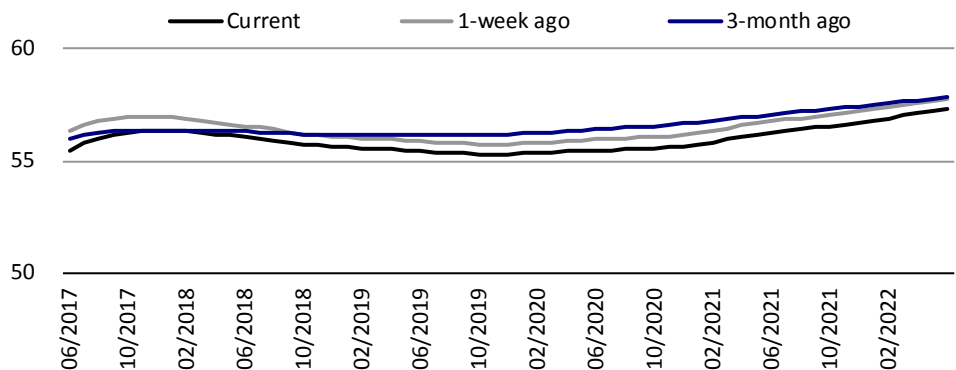
Global crude oil quarterly supply (mbpd)



Global crude oil surplus/(deficit) - mbpd



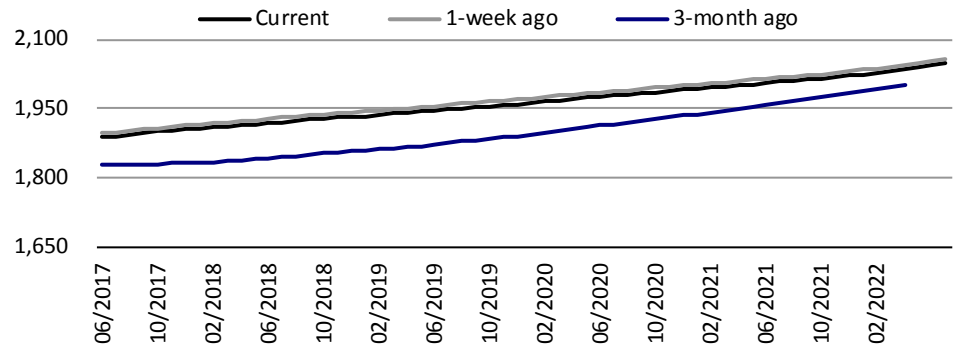
Crude oil futures (USD/bbl)



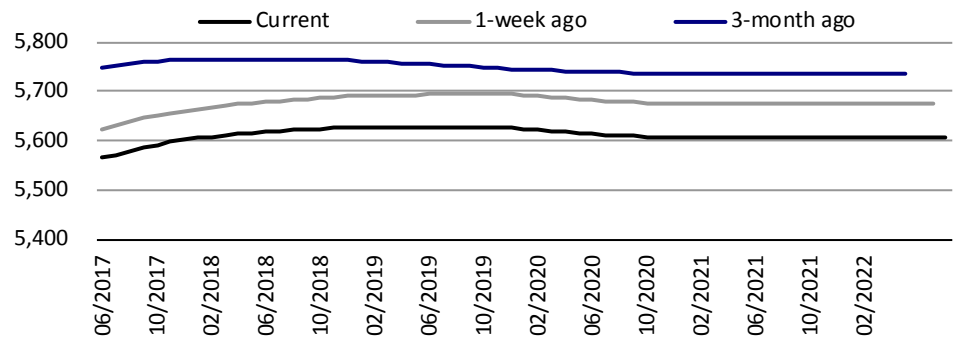
Source: Metal Bulletin, Bloomberg, MOSL

Commodity forward curves

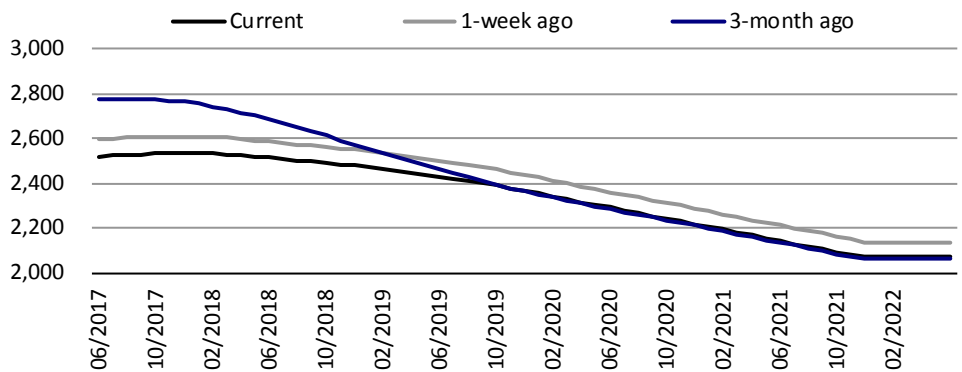
LME aluminum (USD/ton)



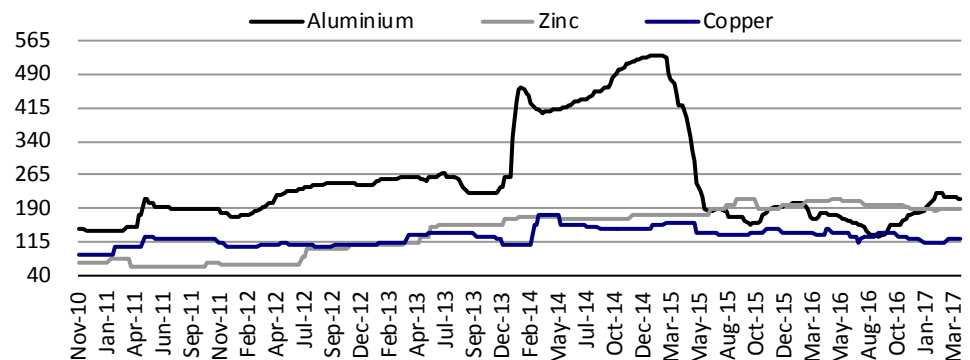
LME copper (USD/ton)



LME zinc futures (USD/ton)



Base metals US spot premium (USD/ton)

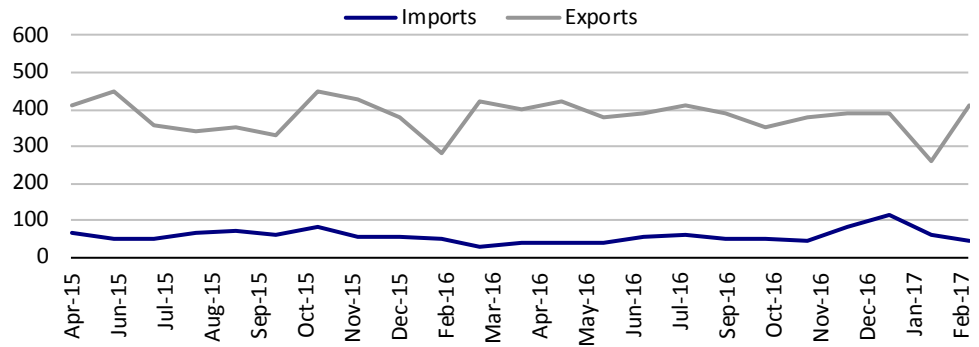


Source: Metal Bulletin, Bloomberg, MOSL

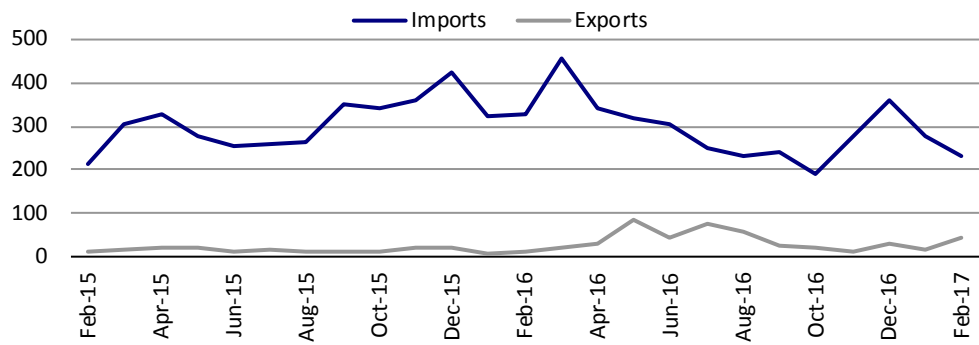
China non-ferrous trade data

Aluminum exports were down 7% YoY to 260kt in February 2017.

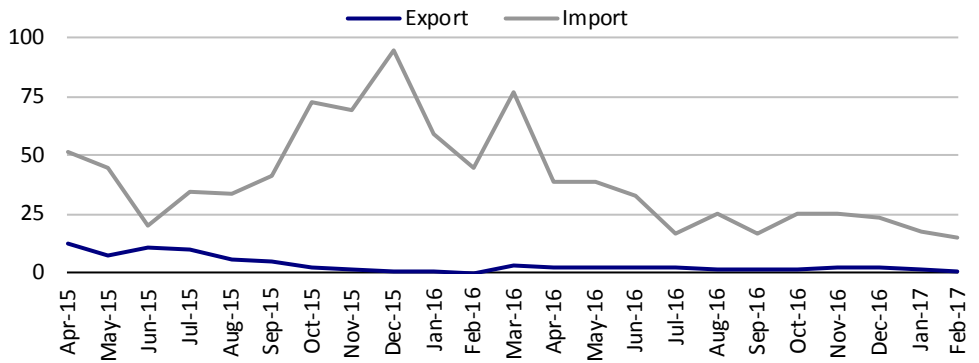
China's aluminum trade ('000 tons)



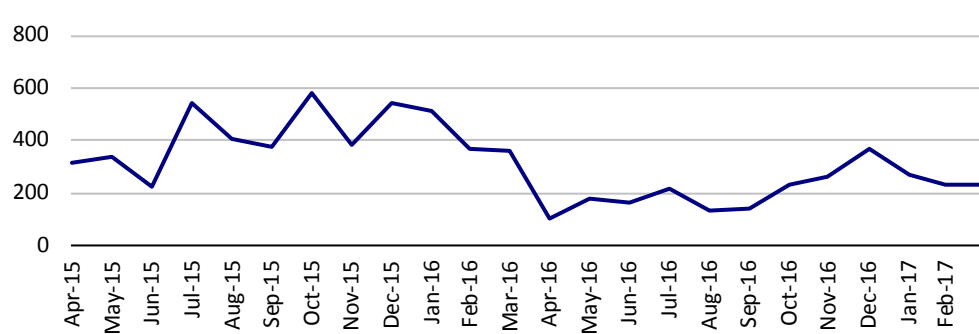
China's refined copper trade ('000 tons)



China's refined zinc trade ('000 tons)



China's alumina imports ('000 tons)

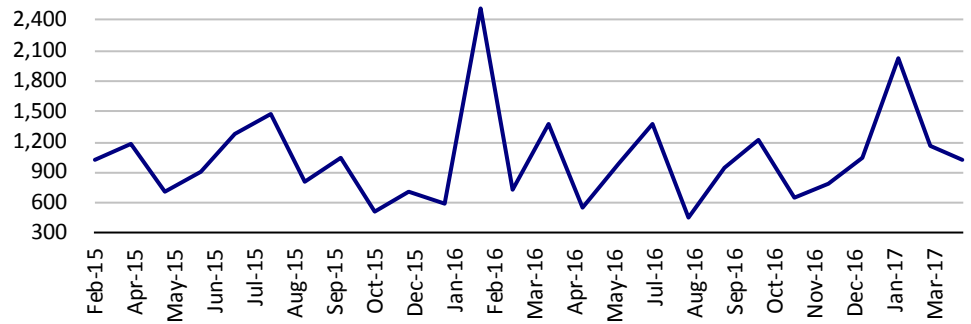


Chinese alumina imports declined 38% YoY to 230kt in February 2017.

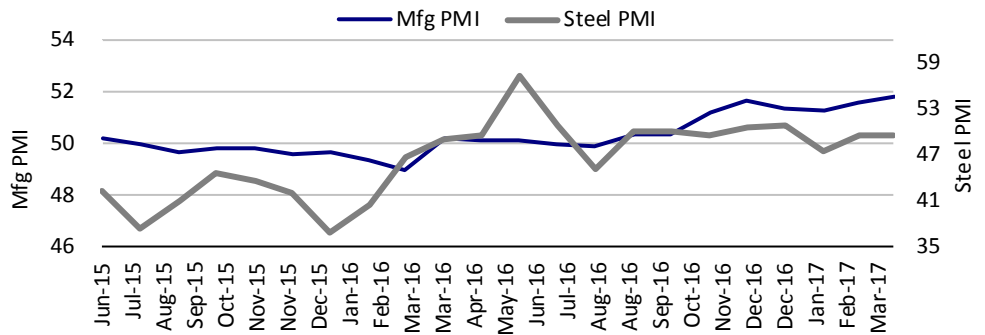
Source: Metal Bulletin, Bloomberg, MOSL

Key indicators

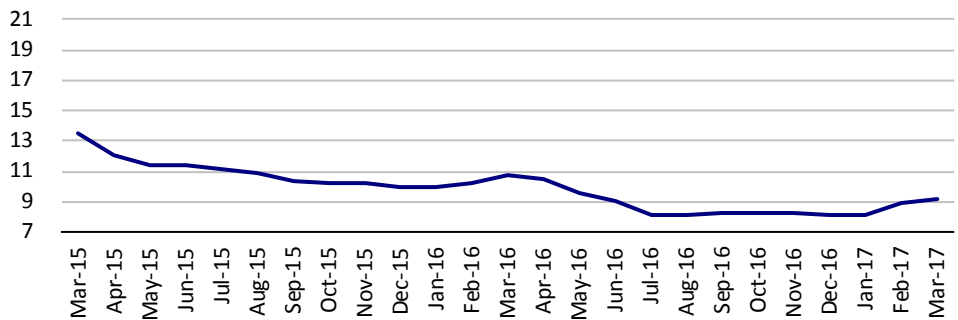
China new loan growth (Yuan b)



China: PMI

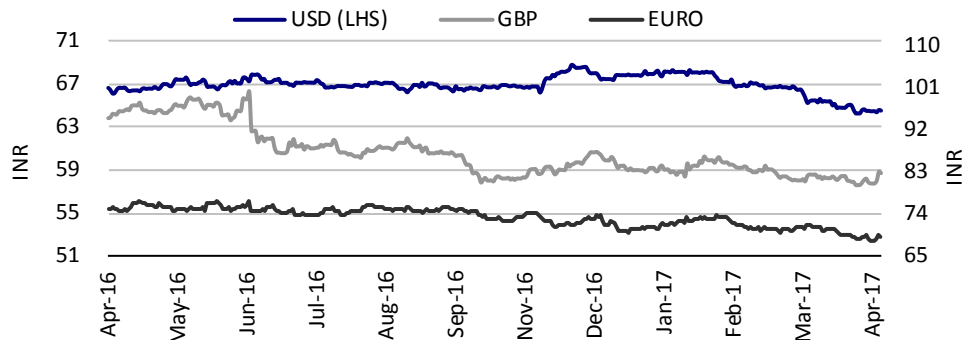


China: Fixed asset investment growth (%)



Fixed asset investment growth was at 9.1% YoY in February.

Currency movement with respect to the rupee

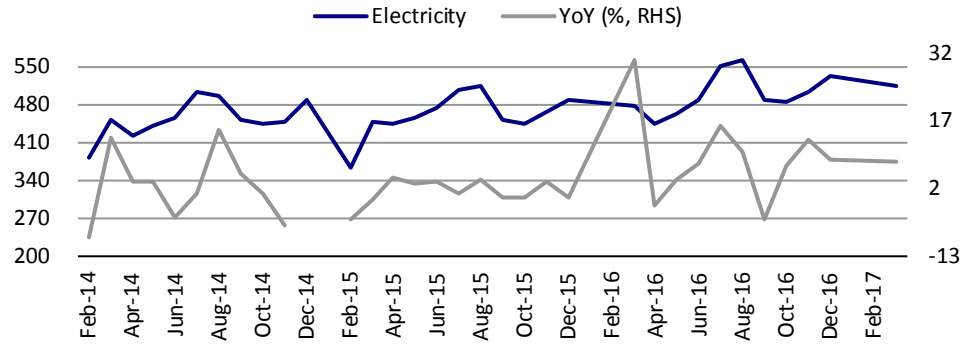


Source: Bloomberg, MOSL

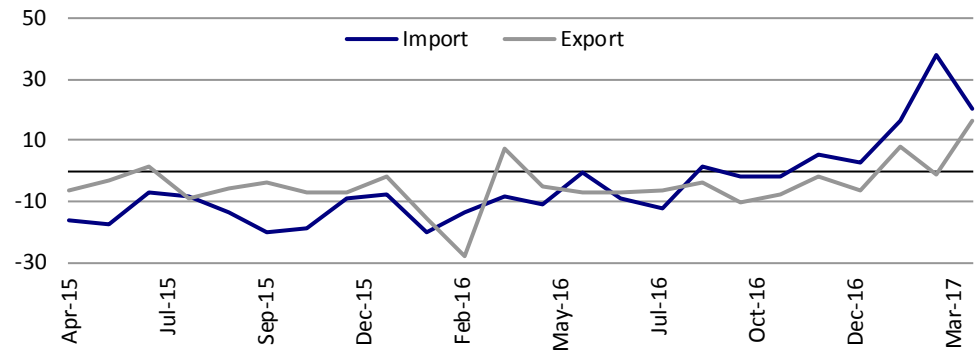
Key indicators (Contd...)

China electricity generation increased 8% YoY in March 2017.

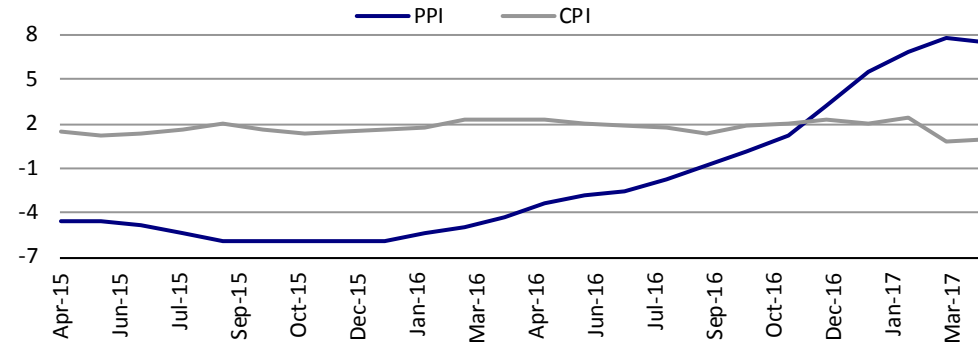
China Energy Production: Electricity (b kwh)



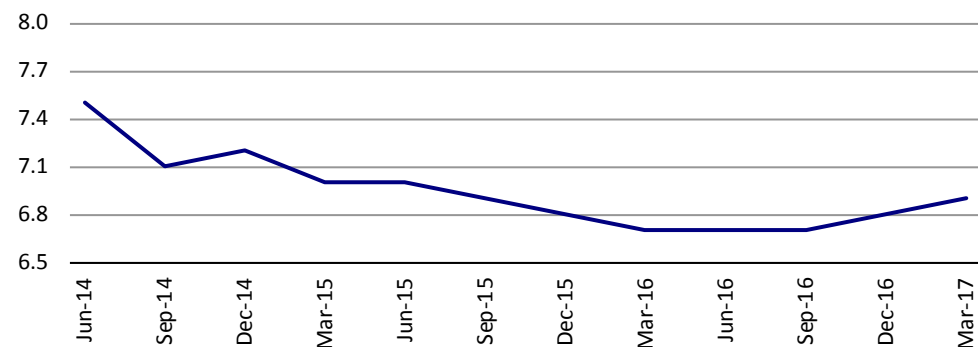
China Monthly Trade YoY (%)



China Price Index YoY (%)



China GDP YoY (%)

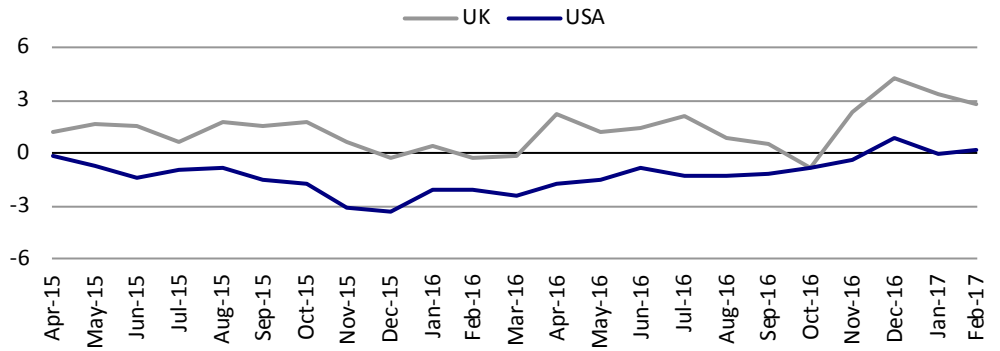


China's GDP growth was 6.9% in 4QCY16.

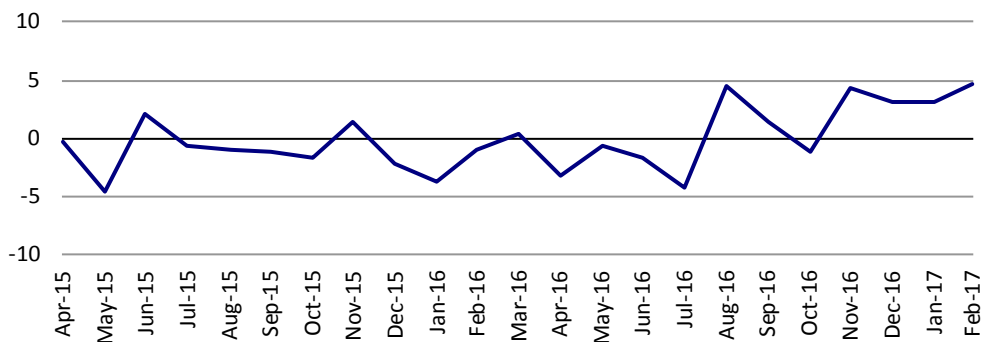
Source: Bloomberg, MOSL

Industrial production growth

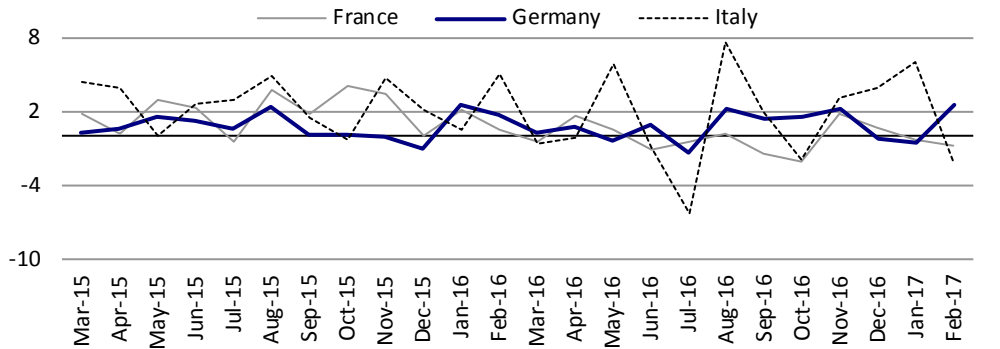
The UK and the USA (%)



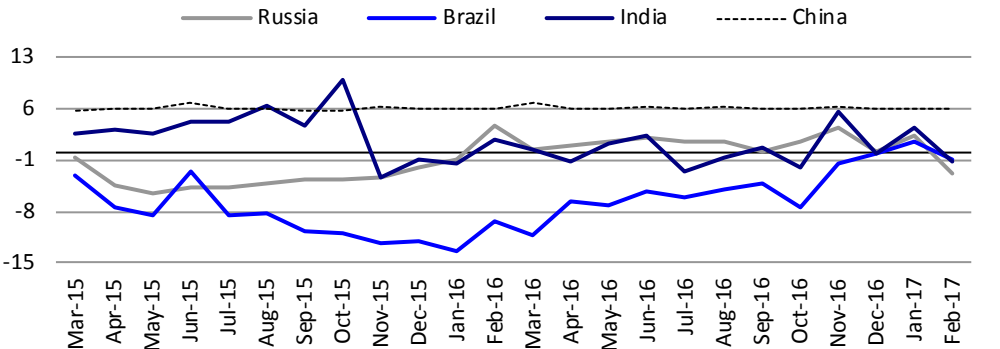
Japan (%)



European Union (%)



BRIC (%)



Source: Bloomberg, MOSL

Stock exchange announcements

None

Metals Valuation Matrix

	Rating	Price (INR)	MCAP (USD M)	EPS			P/E (x)		EV/EBITDA (x)		P/B(x)	
				FY17E	FY18E	FY19E	FY18E	FY19E	FY18E	FY19E	FY18E	FY19E
Steel												
Tata Steel	Sell	450	6,803	18.9	39.4	45.7	11.4	9.9	7.3	6.6	2.9	2.4
JSW Steel	Buy	187	7,040	13.6	18.3	20.5	10.2	9.1	6.5	5.6	1.8	1.5
JSPL	Buy	119	1,690	-22.3	-17.5	-2.2	-6.8	-53.8	9.6	6.7	0.3	0.3
SAIL	Sell	60	3,874	-7.4	-12.6	0.4	-4.8	161.6	58.1	10.3	0.8	0.8
Non-Ferrous												
Hindalco	Buy	184	5,902	16.9	22.6	25.4	8.1	7.2	6.0	5.3	1.3	1.1
Nalco	Buy	73	2,944	3.9	5.3	5.8	13.8	12.6	5.7	5.0	1.3	1.2
Vedanta	Neutral	231	10,630	17.6	28.1	31.3	8.2	7.4	5.3	5.3	1.2	1.1
Mining												
Coal India	Buy	279	27,419	16.7	20.1	22.1	13.9	12.7	6.6	6.0	6.8	6.8
Hindustan Zinc	Neutral	273	17,957	19.5	25.6	27.9	10.7	9.8	6.7	5.8	3.0	2.5
NMDC	Buy	127	7,816	11.9	12.1	12.8	10.5	9.9	6.6	6.2	1.6	1.5

CMP=current market price

Source: MOSL

Valuations: Global Companies

Company	BBG CODE	Currency	PRICE	MCAP (US\$ M)	PE (x)		EV/EBITDA(x)		P/BV (x)
					CUR YR	NXT YR	CUR YR	NXT YR	CY17
Mining									
BHP-Billiton	BHP AU	AUD	24	90,219	12.0	13.5	5.2	5.7	nm
FMG	FMG AU	AUD	5	12,270	4.9	7.9	3.1	4.3	nm
Rio Tinto	RIO AU	AUD	58	71,674	9.4	13.1	4.8	5.8	nm
Vale	Vale US	USD	25	44,110	6.6	9.0	4.8	5.7	1.0
Teck Resources	TCK US	USD	22	12,411	6.1	9.1	4.1	5.4	0.9
STEEL									
Arcelor Mittal	MT NA	EUR	7	21,988	8.6	8.4	4.5	4.5	nm
Posco	005490 KS	k KRW	267	20,057	9.1	8.5	5.5	5.3	0.5
US Steel	X US	USD	29	5,007	9.9	9.0	4.8	4.3	2.1
Nucor	NUE US	USD	57	18,282	12.6	13.2	6.7	6.7	2.3
JFE	5411 JT	JPY	1,789	10,138	20.3	10.2	8.9	6.7	nm
Gerdau	GGBR4 BZ	BRL	9	5,134	25.1	11.5	6.6	5.4	1.1
Angang	000898 CH	CNY	5	5,412	15.5	12.6	7.3	6.6	0.8
NON FERROUS									
Alcoa	AA US	USD	32	5,850	12.0	12.7	3.9	4.5	1.0
Norsk Hydro	NHY NO	NOK	50	12,026	13.6	13.1	6.0	5.9	1.2
Rusal	486 HK	HKD	4	7,270	6.6	5.9	9.2	9.0	nm

Source: Bloomberg

Metals Stock Performance

Among large-cap companies, JSW Steel was the best relative performer.

Among mid-cap companies, Jai Balaji was the best relative performer over one month.

Among global mining companies, BHP Billiton was the best relative performer over one week.

Among global steel majors, Nippon Mittal was the best relative performer.

Among the global aluminum, Chalco was the best relative performer

Metals stock performance on absolute and relative basis (%)

Months	Absolute Perf (%)				Relative Perf to Sensex (%)			
	1	3	6	12	1	3	6	12
Steel								
Tata Steel	-1.8	3.6	11.2	39.5	-1.9	-4.5	6.3	24.5
SAIL	3.1	8.4	22.8	40.4	3.0	0.3	17.9	25.5
JSW Steel	5.4	1.4	5.4	45.5	5.3	-6.7	0.5	30.5
JSPL	-2.1	51.6	54.0	79.7	-2.1	43.5	49.1	64.8
NMDC	-6.8	-6.8	9.3	28.4	-6.8	-14.9	4.4	13.5
Non-Ferrous								
Vedanta	-3.7	1.5	22.4	160.0	-3.7	-6.6	17.5	145.1
Hindustan Zinc	-3.4	2.2	11.9	69.6	-3.5	-5.9	7.0	54.7
Nalco	-0.3	0.3	38.5	76.0	-0.3	-7.9	33.6	61.0
Hindalco	-3.6	3.8	14.2	90.5	-3.7	-4.3	9.3	75.5
Mid Caps								
Monnet Ispat	5.6	44.1	52.3	55.6	5.5	36.0	47.4	40.6
Godawari	9.9	53.1	73.3	54.5	9.9	45.0	68.4	39.6
Sarda Energy	8.0	3.4	22.9	146.3	7.9	-4.7	18.0	131.3
Tata Sponge	24.6	38.1	35.2	63.4	24.5	30.0	30.2	48.4
Adhunik Metaliks	-1.9	2.0	-2.2	-36.9	-2.0	-6.2	-7.1	-51.9
Bhushan Steel	24.2	57.5	53.5	80.7	24.2	49.3	48.6	65.7
Jai Balaji	50.0	57.5	89.2	126.3	49.9	49.4	84.2	111.3
Rain Industries	3.9	89.3	94.0	202.3	3.8	81.2	89.1	187.3
Prakash Industries	14.1	32.6	55.7	120.8	14.0	24.5	50.8	105.8
SENSEX	0.1	8.1	4.9	15.0	-	-	-	-

Global Metals stock performance on absolute basis (%)

	Absolute Perf (%)					
	1week	1month	3 months	6 months	7 months	12 months
Mining						
Rio Tinto	-4.1	-5.9	-8.3	15.3	39.2	39.2
BHP Billiton	-1.1	1.8	-7.8	3.7	28.8	28.8
Vale	-5.5	-11.6	-7.6	49.8	66.1	66.1
FMG	-10.0	-11.1	-12.7	9.3	72.4	72.4
Anglo American	-5.3	-0.8	-10.7	12.4	69.5	69.5
Vedanta	-7.8	-6.6	-24.1	16.8	95.6	95.6
Steel						
US Steel	-13.2	-17.6	-10.4	68.1	55.9	55.9
Nucor	-6.3	-6.2	-6.0	20.6	15.5	15.5
Arcelor Mittal	-7.8	-13.3	-4.3	23.7	45.1	45.1
Angang	-2.1	-5.1	-3.5	17.2	10.1	10.1
Posco	-2.4	-5.2	-0.4	13.2	7.3	7.3
JFE Holdings	-0.4	-11.4	-2.8	24.8	1.7	1.7
Nippon	0.4	-9.1	-8.4	21.5	2.6	2.6
Thyssen Krupp	-3.0	-4.6	-7.3	-1.9	5.7	5.7
Voest Alpine	-3.0	-5.5	-2.9	15.7	22.0	22.0
Gerdau	-10.8	-23.3	-26.2	2.1	39.6	39.6
Aluminium						
Alcoa	-8.1	-9.4	-6.2	53.1	38.2	38.2
Rusal	-5.7	3.5	12.6	41.9	41.9	41.9
Chalco	-4.4	-1.5	14.4	34.1	43.0	43.0

NOTES

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