Metal Bulletin Research

Ferro-alloys Market Tracker

A unique source of market intelligence, analysis and forecasts covering the international ferro-alloys industry

Prices stabilising as holiday lull approaches...
...with purchases limited as year-end nears...
...but renewed momentum expected in Q1 2014

The momentum enjoyed in many ferro-alloy markets in recent weeks has dissipated in November, as market participants prepare for the end of the year and look ahead to 2014. EU and US steelmakers are positioning themselves for the upcoming holiday season, preparing for seasonal outages, and looking to minimise raw material inventories. The notable exception has been in China where the combination of stronger demand from steelmakers and rising power costs in southern China in particular, has led to rising prices for a number of alloys including ferro-silicon, silicon metal, and silico-manganese. We expect momentum in Chinese alloy pricing to be maintained into early 2014 as hydroelectric power supplies are restricted in southern China, leading to both reduced output and higher production costs.

Buyers and sellers are focusing on annual contract negotiations, with sellers aiming for reduced discounts in 2014. With the EU economy believed to be finally turning higher, the outlook for the steel industry is improving, and will lend support to alloy markets next year. Power costs and electricity supply issues will create a pricing floor in several ferro-alloy markets, including ferro-silicon, silicon metal, silico-manganese, and ferro-chrome, while the presence of ample ferro-alloy capacity will cap potential prices next year. We expect most average annual ferro-alloy prices in 2014 to exceed 2013 levels, but will remain below averages earlier in the decade.

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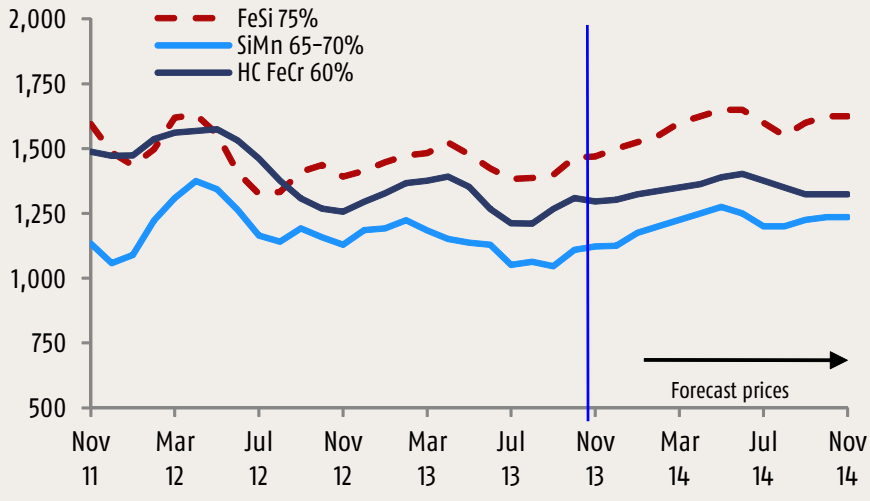
European ferro-alloy price forecasts ($/tonne)

Prices are generally flattening out as the holiday season approaches, but we expect momentum to return in the first quarter of 2014



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		2010 Year	2011 Year	2012 Year	2013 Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
EUROPEAN FREE MARKET PRICES[1,3]												
Ferro-silicon, 75% Si	€/t	1,326	1,331	1,131	1,165	1,138	1,083	1,053	1,040	1,048	1,076	1,087
Ferro-manganese, 78% Mn	€/t	1,092	992	908	820	815	761	735	727	698	714	719
Silicon Metal, min. 98% Si, 10-20 tonne lots	€/t	2,290	2,251	2,199	2,000	1,970	1,950	1,983	2,000	2,000	1,980	1,975
Silico-manganese, 65-75% Mn	€/t	956	1,025	948	881	875	846	800	795	793	816	818
Medium-carbon ferro-manganese, 80% Mn	€/t	1,746	1,453	1,261	1,180	1,140	1,130	1,120	1,180	1,175	1,175	1,175
Charge chrome, 52% Cr	$/lb	1.24	1.26	1.21	1.27	1.27	1.27	1.13	1.13	1.13	1.13	1.13
Ferro-chrome, 6-8% C, 60% Cr	$/lb	1.23	1.23	1.09	1.05	1.02	0.96	0.92	0.92	0.96	0.99	0.98
Ferro-chrome, 0.1% C, 68-70% Cr	$/lb	2.00	2.30	2.23	2.01	1.98	1.96	1.92	1.94	1.95	1.99	1.98
Nickel, LME cash(4)	$/lb	9.89	10.36	7.95	7.09	6.78	6.47	6.22	6.48	6.25	6.38	6.34
Nickel, 3-month forward(4)	$/lb	9.92	10.37	7.98	7.12	6.82	6.51	6.25	6.52	6.29	6.41	6.37
Ferro-molybdenum, 65-70% Mo	$/kg	39.86	38.37	31.44	27.61	27.71	26.41	24.03	23.49	23.74	24.08	24.85
Molybdic oxide, drummed(4)	$/lb	15.84	15.69	12.79	11.14	10.95	10.61	9.54	9.39	9.39	9.49	9.82
Ferro-titanium, 70% Ti	$/kg	6.75	8.37	7.38	6.29	6.21	6.12	5.80	6.05	6.06	5.95	5.88
Ferro-tungsten, 75% W(4)	$/kg	28.61	41.52	48.94	42.02	45.99	47.38	48.78	48.37	48.73	46.83	45.95
Ferro-vanadium, 70-80% V	$/kg	30.04	28.72	24.96	29.14	27.80	27.53	25.57	25.11	26.72	25.33	24.72
US FREE MARKET PRICES[1,5]												
Ferro-silicon, 75% Si	$/lb	0.96	1.03	0.91	0.93	0.92	0.91	0.89	0.91	0.95	0.97	0.98
Silicon metal	$/t	2,752	3,419	2,904	2,757	2,756	2,679	2,657	2,661	2,724	2,734	2,734
Ferro-manganese, 78% Mn	$/t	1,393	1,323	1,226	1,120	1,075	1,066	1,038	1,038	1,028	1,000	1,000
Silico-manganese, 65-75% Mn	$/t	1,378	1,362	1,391	1,213	1,213	1,171	1,116	1,102	1,102	1,102	1,102
Medium-carbon ferro-manganese, 80% Mn	$/lb	1.34	1.12	0.94	0.89	0.89	0.89	0.86	0.86	0.87	0.87	0.87
Ferro-chrome, 6-8% C, 60-65% Cr	$/lb	1.26	1.25	1.12	1.02	1.01	1.00	0.98	0.98	1.00	1.01	1.01
Ferro-molybdenum, 65-70% Mo	$/lb	18.42	17.83	14.91	12.15	12.09	12.16	11.77	11.22	11.35	11.13	11.08
Molybdic oxide, canned	$/lb	15.39	15.86	12.80	11.04	11.10	11.04	9.89	9.29	9.50	9.34	9.61
Ferro-vanadium, 70-80% V	$/lb	14.56	14.73	14.18	14.84	13.48	13.19	12.80	12.40	11.85	12.10	12.10
CHINESE PRICES[6]												
Ferro-silicon min 75% export	$/t	1,429	1,506	1,495	1,409	1,390	1,388	1,371	1,365	1,366	1,389	1,395
Ferro-manganese 75% Mn, 7.5% C export	$/t	1,504	1,505	1,505	1,505	1,505	1,505	1,505	1,505	1,505	1,505	1,505
Silico-manganese 65% Mn, max 17% Si export	$/t	1,476	1,510	1,510	1,510	1,510	1,510	1,510	1,510	1,510	1,510	1,510
Silicon metal min. 98.5% fob Chinese ports	$/t	2,142	2,448	2,175	1,861	1,873	1,875	1,851	1,837	1,942	2,055	2,065
Ferro-chrome 6-8% C, 50% Cr**	$/lb	0.96	0.99	0.98	0.86	0.85	0.86	0.86	0.86	0.86	0.86	0.86
JAPANESE IMPORT PRICES[7]												
Ferro-silicon, Chinese	$/t	1,517	1,539	1,396	1,425	1,405	1,405	1,380	1,370	1,380	1,421	1,430
Silicon metal, spot	$/t	2,334	2,597	2,274	1,965	1,865	1,890	1,840	1,840	1,860	1,968	2,130
Silico-manganese, Chinese	$/t	1,572	1,561	1,548	1,560	1,525	1,538	1,555	1,555	1,578	1,599	1,615
Charge chrome, producer	$/lb	1.26	1.27	1.23	1.29	1.29	1.29	1.15	1.15	1.15	1.15	1.15
Molybdic oxide	$/lb	15.70	15.51	12.72	10.75	11.15	10.80	10.07	9.34	9.55	9.41	9.81
Ferro-vanadium	$/kg	29.80	28.77	24.93	29.90	27.80	27.60	26.53	24.35	26.75	25.53	25.00
BULK ORE PRICES												
Manganese Ore 48-50%, max 0.1%P fob*	$/mtu	7.72	6.03	4.90	5.78	5.73	5.61	5.49	5.17	5.12	5.22	5.25
Chrome Ore South Africa UG2 Met 40% [8]	$/t	243	245	188	178	178	163	159	150	150	155	155
EXCHANGE RATES												
Dollar/sterling	$/£	1.55	1.60	1.59	1.53	1.54	1.55	1.51	1.54	1.58	1.61	1.60
Yen/dollar	¥/$	87.78	79.73	79.81	97.75	100.59	97.12	100.09	97.57	99.40	97.82	99.14
Dollar/euro	$/€	1.33	1.39	1.29	1.30	1.30	1.32	1.30	1.33	1.33	1.36	1.35

Source: Metal Bulletin Research

Notes:

Current month's averages are to the 15th

(1) Tonnage prices are bulk basis; lb or kg prices are metal contained

(3) Delivered basis, except (4) in warehouse (5) in warehouse, Pittsburgh (6) fob main Chinese ports

(7) average of Tex report bimonthly quotes, (8) cif main Chinese ports

* MB Manganese Ore Index 44% Mn, CIF Tianjin $/dmtu of metal contained

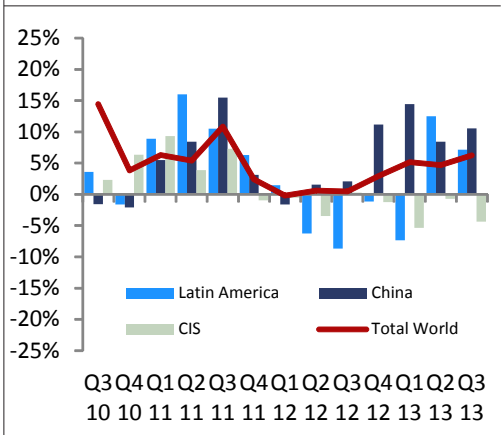
** Ferro-chrome China domestic spot 6-8% C, basis 50% Cr delivered duty paid

Global Crude Steel Production
(million tonnes)

	2011	2012	2013f	2014f	Q2 12	Q3 12	Q4 12	Q1 13	Q2 13	Q3 13	Apr 13	May 13	Jun 13	Jul 13	Aug 13	Sep 13	Oct 13
Belgium	8.02	7.12	7.13	7.20	2.01	1.77	1.74	1.78	1.80	1.71	0.63	0.56	0.62	0.50	0.57	0.64	0.66
France	15.51	15.54	15.83	15.99	4.24	3.61	3.55	3.98	4.05	3.88	1.25	1.42	1.38	1.34	1.16	1.37	1.29
Germany	44.27	42.60	42.61	43.25	11.04	10.52	10.21	10.81	10.75	10.18	3.56	3.65	3.54	3.40	3.17	3.62	3.76
Italy	28.44	27.10	24.32	24.56	7.40	6.02	6.38	6.13	6.61	5.32	2.12	2.32	2.18	2.10	1.09	2.13	2.22
Spain	15.91	13.69	14.63	14.78	3.82	3.21	2.98	3.67	3.96	3.21	1.39	1.37	1.21	0.91	1.03	1.27	1.36
United Kingdom	9.53	9.61	11.85	12.03	2.74	2.43	2.54	2.74	3.00	3.09	0.97	0.98	1.05	1.01	1.00	1.08	1.05
Other Europe	86.53	84.81	83.16	87.32	21.70	21.02	19.77	20.32	19.91	21.45	7.20	5.48	7.23	7.27	6.80	7.38	7.63
Total Europe	**208.21**	**200.47**	**199.54**	**205.13**	**52.95**	**52.42**	**47.17**	**49.42**	**50.08**	**48.82**	**17.10**	**15.78**	**17.20**	**16.53**	**14.82**	**17.48**	**17.96**
% Change Y-o-Y	*4.6%*	*-3.7%*	*-0.5%*	*2.8%*	*-4.5%*	*4.6%*	*-6.2%*	*-4.6%*	*-5.4%*	*-6.9%*	*-2.2%*	*-12.7%*	*-1.0%*	*-2.5%*	*-0.1%*	*4.2%*	*7.7%*
Canada	13.09	13.62	12.97	13.56	3.52	3.30	3.45	3.48	3.28	2.95	1.16	1.14	0.98	0.98	0.98	1.00	1.10
USA	86.09	87.97	87.19	90.68	22.68	21.98	20.69	21.21	21.87	22.19	7.26	7.52	7.09	7.44	7.47	7.29	7.39
Total N America	**99.18**	**101.58**	**100.17**	**104.24**	**26.20**	**25.28**	**24.13**	**24.69**	**25.15**	**25.14**	**8.42**	**8.66**	**8.07**	**8.41**	**8.44**	**8.29**	**8.49**
% Change Y-o-Y	*5.5%*	*2.4%*	*-1.4%*	*4.1%*	*5.4%*	*-1.1%*	*-3.6%*	*-5.0%*	*-4.0%*	*-0.5%*	*-5.0%*	*-2.3%*	*-4.6%*	*-2.5%*	*-1.2%*	*2.3%*	*5.6%*
Latin America	**48.50**	**46.68**	**48.63**	**55.44**	**11.88**	**11.30**	**11.63**	**11.00**	**13.39**	**12.05**	**3.95**	**5.59**	**3.85**	**3.96**	**4.05**	**4.05**	**4.09**
% Change Y-o-Y	*10.4%*	*-3.8%*	*4.2%*	*14.0%*	*-6.2%*	*-8.7%*	*-1.1%*	*-7.3%*	*12.6%*	*6.7%*	*-4.4%*	*40.2%*	*2.2%*	*-1.3%*	*7.3%*	*15.2%*	*-2.2%*
Japan	107.50	104.90	110.33	111.98	27.50	27.27	23.58	26.63	28.07	27.72	9.17	9.62	9.28	9.29	9.14	9.29	9.52
India	71.62	75.20	79.30	82.08	18.58	19.11	19.51	19.66	19.88	19.79	6.62	6.73	6.53	6.67	6.58	6.54	6.76
South Korea	68.27	68.88	65.29	66.59	17.88	17.19	17.23	16.40	16.48	15.61	5.50	5.53	5.46	5.55	4.89	5.16	5.92
Taiwan	21.13	21.41	21.42	21.84	5.39	5.48	4.81	5.14	5.51	5.49	1.60	2.06	1.85	1.88	1.98	1.64	1.71
China	677.21	698.43	776.48	826.95	182.02	178.35	174.22	187.46	197.35	197.17	65.65	67.03	64.66	65.47	66.28	65.42	65.08
Total Asia	**945.72**	**968.82**	**1,052.80**	**1,109.44**	**251.37**	**247.38**	**239.35**	**255.29**	**267.29**	**265.77**	**88.54**	**90.98**	**87.78**	**88.86**	**88.86**	**88.05**	**88.99**
% Change Y-o-Y	*7.1%*	*2.4%*	*8.7%*	*5.4%*	*2.2%*	*2.1%*	*6.5%*	*10.6%*	*6.3%*	*7.4%*	*6.1%*	*7.7%*	*5.2%*	*4.2%*	*8.6%*	*9.7%*	*12.1%*
Africa	**14.18**	**14.64**	**15.02**	**16.97**	**3.78**	**3.80**	**3.60**	**3.61**	**3.67**	**3.90**	**1.18**	**1.24**	**1.25**	**1.29**	**1.27**	**1.34**	**1.33**
Australasia	**7.29**	**6.03**	**5.70**	**6.73**	**1.48**	**1.43**	**1.43**	**1.46**	**1.40**	**1.41**	**0.47**	**0.49**	**0.45**	**0.48**	**0.48**	**0.45**	**0.48**
Russia	69.55	71.38	68.64	74.14	17.78	17.92	17.76	16.87	17.36	17.30	5.59	6.09	5.69	5.74	5.87	5.68	5.67
Ukraine	34.91	32.61	32.72	35.01	7.99	8.34	8.02	8.10	8.24	8.30	2.75	2.77	2.72	2.81	2.80	2.69	2.63
Other CIS	8.11	7.18	6.29	6.79	1.75	1.84	1.89	1.42	1.71	1.54	0.57	0.59	0.55	0.49	0.49	0.56	0.58
World Total	**1,455.73**	**1,469.35**	**1,565.11**	**1,613.88**	**380.24**	**381.68**	**360.12**	**376.72**	**398.30**	**395.31**	**130.21**	**137.16**	**130.93**	**132.25**	**130.82**	**132.24**	**133.94**
% Change Y-o-Y	*6.2%*	*0.9%*	*6.5%*	*3.1%*	*0.6%*	*3.4%*	*3.0%*	*5.2%*	*4.7%*	*3.6%*	*3.1%*	*7.0%*	*4.2%*	*3.5%*	*7.7%*	*8.8%*	*10.2%*

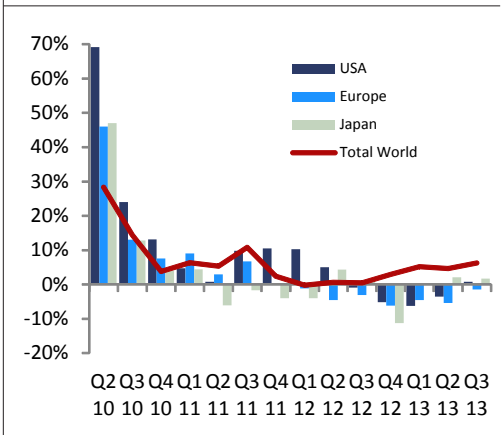
Source: World Steel Association, Metal Bulletin Research

Quarterly crude steel production – emerging markets (% change y-o-y)



Source: Metal Bulletin Research

Quarterly crude steel production – mature markets (% change y-o-y)



Source: Metal Bulletin Research

Ferro-silicon highlights

- Chinese ferro-silicon prices rising…
- …but smuggled shipments are a growing problem
- US and European prices stabilise

Market Outlook

We expect the Chinese ferro-silicon market to climb steadily in the coming weeks, with the bulk of tender prices from steel mills likely to edge up RMB100-200/tonne from October due to tight prompt supply and increased tender volumes. Chinese ferro-silicon prices have rallied amid tightness in the spot market as steel mills have been replenishing their stocks against limited shipments from alloy producers. Ferro-silicon prices in Europe, which have improved, look to stabilise through early December, with industry sources hoping for renewed demand before year-end holidays as consumer stocks are at low levels. The US spot ferro-silicon market has eased, with business quieter after a recent bout of deals in longer term and prompt delivery contracts. We may see some cheaper numbers closer to the end of this year as industry players liquidate stocks and book profits ahead of the holidays. Ferro-silicon prices should post further gains in January.

Chinese market poised for improvement

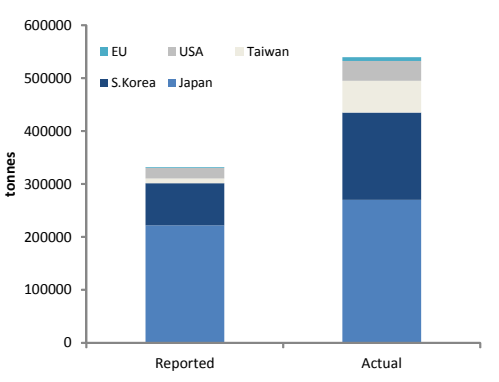
Producers in Inner Mongolia report that some ferro-silicon suppliers are restricting their level of shipments to encourage price increases, while some have been withholding material in the expectation of stronger prices in the near term. Spot prices for 72% grade ferro-silicon are in the range of RMB6,100-6,200/tonne ($995-1,015/tonne) ex-works, up RMB100/tonne, while spot prices of ferro-silicon 75% grade are in the range of RMB6,300-6,400/tonne ($1,030-1,045/tonne) ex-works, up RMB150/tonne.

Significant variance between official and actual Chinese exports

While Chinese production growth is expanding rapidly, official export statistics are indicating lower Chinese exports this year. Official Chinese export statistics, of course, are masking the problem of increasing smuggling of ferro-silicon out of China and exports via illegal routes in order to evade Chinese export taxes. In 2012, official export figures indicated a 29% decline in Chinese ferro-silicon exports this year. However, our analysis shows, that over 200,000 tonnes of ferro-silicon was exported via illegal channels. This boosts the overall Chinese total export figure for last year, and we estimate Chinese exports actually rose 7% last year to around 620,000 tonnes.

Chinese reported exports of ferro-silicon vs. actual imports from China - 2012

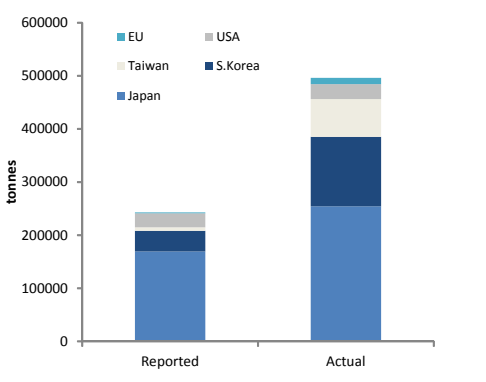
Largest discrepancies evident with other Asian trading partners



Source: Metal Bulletin Research

Chinese reported exports of ferro-silicon vs. actual imports from China - 2013e

We estimate actual imports from China into key trading partner countries will be over 250,000 tonnes higher than reported export figures in 2013



Source: Metal Bulletin Research

The quantity of ferro-silicon leaving China and evading taxes is in fact rising in 2013. Based on our annualized estimates of trade data for the first 6-9 months of the year depending on country, while Chinese official export statistics are indicating a 25% decline in exports thus far this year, actual imports from China into key trading partner countries will be over 250,000 tonnes higher than China's reported export figures in 2013.

The largest discrepancies between official Chinese exports and imports of ferro-silicon from China can be seen in China's largest Asian trading partners – Japan and South Korea. It is also clear from our analysis that illegal exports have increased sharply since the second quarter of 2013. Taiwan is also clearly a much larger trading partner for China than is indicated by official export statistics, with Chinese exports of a mere 9,000 tonnes reported last year – well below Taiwan's imports of 60,000 tonnes of Chinese ferro-silicon.

The trend is not exclusive to China's Asian trading partners, but is just more pronounced within the region. There are also discrepancies in trading figures to both the USA and Europe. Shipments of smuggled Chinese ferro-silicon to the USA have actually slowed this year, perhaps in part as the US market was rendered less attractive earlier this year by low prices. With anti-dumping investigations underway against imports from Russia and Venezuela, we expect to see rising official and unofficial exports of ferro-silicon to the USA in the near term, attracted by both rising prices and stronger demand as consumers look for alternative supply sources.

Using trade data for Germany, the Netherlands and Italy as a proxy for the EU, we can see that at least 5,000 tpy of unofficial Chinese ferro-silicon exports have come into the EU over the past several years, and the trend is holding in 2013 as well.

We understand the Chinese government is contemplating reducing its 25% export tariff on ferro-silicon at the end of this year, with rumours that the export tariff may be reduced to 10%. If implemented, this may help reduce illegal ferro-silicon trade, but is unlikely to eliminate it completely.

Europe looking supported

The European spot market has been working on a hand-to-mouth basis since the seasonal slowdown, and prices are expected to remain stable into December. January prices are looking stable to stronger given energy costs and low stock levels around Europe. European spot market ferro-silicon prices are at €1,120-1,150/tonne ($1,510-1,555/tonne) delivered.

US slips on profit-taking

US spot market prices are at $0.98-1.01/lb in-warehouse, slightly off a two-year peak, with industry sources expecting a further dip in the coming weeks. We have heard reports of more Chinese material arriving in the USA, although not enough to fill the gap left by absent Russian material. Given our expectation of another government shutdown in January, any decisions on the trade case could face delays.

Global Ferro-silicon Supply-Demand Balance ('000 tonnes Si content)

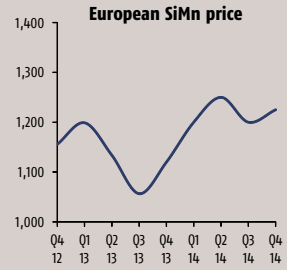
	Q1 12	Q2 12	Q3 12	Q4 12	2012	Q1 13	Q2 13	Q3 13	Q4 13f	2013f	Q1 14f	Q2 14f	Q3 14f	Q4 14f	2014f
Global Consumption	1,265	1,490	1,275	1,350	5,380	1,297	1,548	1,326	1,379	5,550	1,333	1,613	1,372	1,398	5,717
Global Production	1,290	1,470	1,300	1,340	5,400	1,325	1,525	1,350	1,360	5,560	1,325	1,575	1,440	1,410	5,750
Market Balance	25	-20	25	-10	20	28	-23	24	-19	10	-8	-38	68	12	34
Price Forecast - European Market ($/t)	1,517	1,532	1,352	1,415	1,454	1,468	1,475	1,390	1,480	1,453	1,550	1,650	1,575	1,600	1,594
Price Forecast - US Market ($/lb)	0.94	0.93	0.89	0.90	0.91	0.93	0.92	0.92	0.98	0.94	1.00	1.01	0.99	0.98	1.00

Source: Metal Bulletin Research

Silicon metal highlights

- US prices improving as annual contract talks progress
- European prices stabilise in a narrowing range
- Chinese prices supported by rising power costs

Market Outlook



Source: Metal Bulletin Research

US spot buying has been fairly active through November as some consumers used their contract deliveries faster than expected, while recent tariffs introduced in Canada on Chinese silicon metal have also increased spot supplies. We believe cheaper supply is harder to get given tight availability as most producers are well sold. The current trade action appears to have deterred Chinese material from going to Canada, and therefore more US metal is being attracted into Canada, which may mean less spot availability in the USA. In Europe, November business has been a bit more active than in October and should be supported through December as there are positive signs for the New Year. There is consumer interest for delivery through the first quarter, with contracts settled for delivery as late as March, signalling firming consumer sentiment that prices may increase in the coming months. In China, we expect silicon metal prices to be supported on steady demand from the Chinese aluminium sector and chemical industry, as well as rising power costs.

US spot market edges up, annuals follow

The US silicon metal price has edged up as supplies have been under pressure in recent weeks amid trade action in Canada and some fourth-quarter buying. US silicon metal spot prices for 5-5-3 material have increased to $1.25-1.29/lb delivered, up from $1.22-1.26/lb in October.

The Canada Border Services Agency (CBSA) introduced a 60% anti-dumping duty on imports of Chinese silicon metal, while US anti-dumping duties on silicon metal from Russia are already in place.

Producers and consumers are also finishing up annual contract negotiations for 2014 deliveries, with fixed price deals roughly settling in a range of $1.25-1.26/lb, compared with $1.23-1.24/lb this year. Brazilians have sold out of material and metal is tight, while a couple of the bigger aluminium companies have yet to settle and are looking for numbers well below $1.26/lb. We believe silicon metal prices may end this year at slightly below $1.30/lb, before bouncing through 2014 and 2015.

Europe first-quarter interest emerges

The European silicon metal market has been broadly steady, although standard grade material has narrowed in its current price range, with prices well supported on persistent buying interest.

European prices for standard secondary aluminium-grade (98.5% grade) (5-5-3) metal are at €1,875-1,925/tonne ($2,530-2,600/tonne) FCA (free on truck) duty paid, closing €25/tonne at either end. Refined grades of low iron content silicon metal (4-4-1) are at €1,930-1,970/tonne ($2,605-2,665/tonne). One dealer reported business done for more than 500 tonnes of standard material at €1,895/tonne duty paid in-warehouse in November. We have also noted increased activity in inter-merchant business in recent weeks.

Chinese power costs support prices

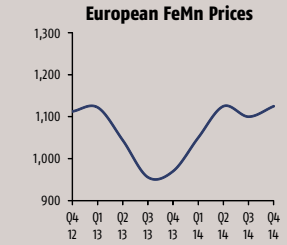
The Chinese silicon metal market has been stable in line with demand and firm electricity prices in southern China. Yunnan-based producers expect electricity costs to increase during the dry season, which runs through April. Electricity prices in Yunnan province will be increased RMB0.02-0.1/kWh in December with that market at RMB0.33-0.48/kWh ($0.05-0.08/kWh).

Silicon metal 5-5-3 grade prices are holding firm at RMB12,000/tonne delivered Kunming city, while in Sichuan province domestic business has been steady and prices of silicon metal 5-5-3 grade are around RMB12,200-12,300/tonne delivered. Spot transaction prices of silicon metal 5-5-3 grade are RMB12,100-12,300/tonne ($1,975-2,010/tonne) delivered, and about RMB12,700-12,900/tonne ($2,075-2,110/tonne) delivered for silicon metal 4-4-1 grade. Export prices of silicon metal 5-5-3 grade are $2,030-2,080/tonne FOB China and about $2,130-2,180/tonne FOB China for 4-4-1 grade.

Manganese highlights

- US manganese alloys markets remain stagnant
- European silico-manganese prices post improvement
- Chinese prices rising on stronger demand from steelmakers

Market Outlook



Source: Metal Bulletin Research

There has been little change in US manganese alloy markets this month, with business levels quiet across the country. The silico-manganese market has gained some support from better-than-expected construction data for the third quarter, although that has been insufficient to lend much support to prices. In Europe, bulk alloys producers and traders are cautiously optimistic about the price outlook for the coming months, with many citing manganese ore as the stand-out market for strong demand. Although most markets are stronger than they were this time last year, it was followed by a depressed first half this year, which has been cautioning sentiment. Manganese ore prices have strengthened, but are not yet filtering through to manganese alloys markets. Steel mills are stubbornly holding down costs, capping smelters' profit margins.

US market remains unimpressive

The US high-carbon ferro-manganese market has been steady in November, with prices unchanged at $1,020-1,040/long ton in-warehouse. Activity in medium-carbon and low-carbon ferro-manganese markets has also been at a low level. US medium-carbon ferro-manganese prices are also holding at $0.84-0.86/lb in-warehouse. Low-carbon ferro-manganese prices are stable at around $1.00-1.02/lb.

The US spot silico-manganese market has eased in November, paring gains from late October due to relative inactivity. The market is expected to remain quiet through the rest of this year. Spot market prices are around $0.50-0.52/lb, down from $0.52-0.54/lb last month. Larger buying enquiries have yet to emerge for 2014, although there have been attempts to push up the price. Still, there has not been a lot of end-user demand, and the odd one or two bids that have come in have been at within a cent or two above 50 cents a pound.

Domestic producer Felman has not yet restarted its idled furnace that was switched off in the third quarter due to weak demand. We understand company officials are contemplating if they are going to restart in the first quarter, looking at their power contract before deciding how to proceed.

European FeMn market looks to 2014

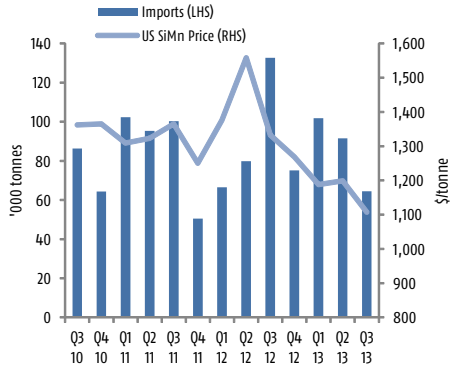
The European ferro-manganese market has been unchanged after the annual mating season during the Metal Bulletin International Ferro-alloys Conference in Barcelona, Spain saw few deals done and sentiment looking forward to fresh momentum in the New Year. Spot European high-carbon ferro-manganese 78% grade material remains stagnant at €710-740/tonne ($960-1,000/tonne) delivered.

Medium-carbon ferro-manganese prices are also unchanged at €1,160-1,190/tonne ($1,565-1,610/tonne) delivered. In Barcelona there were few deals done, although market sentiment was better than expected. Dealers were keen for the year to be over and for prices to bounce off what they see as a floor level close to production costs.

With maintenance and holiday shutdowns occurring in late December and early January, fresh momentum in prices is not expected until business activity is well underway in the calendar New Year. Until then, the manganese

US imports of silico-manganese vs. prices

Imports have fallen in line with weakening domestic prices, with lower supply potentially lending support to prices next year



Source: Metal Bulletin Research, Customs data

ore market may prove more influential than usual, and will be watched as it only recently arrested a sustained price decline. Manganese ore prices have been flat this month, however, after a pick-up in business activity and a small bounce in prices since late August through October. Prices for manganese ore 38% grade FOB South Africa are around $3.83/mtu. Ore producers are more positive about near term demand, although traders have been more cautious, noting muted demand from alloy smelters.

European silico-manganese climbs, consolidates

The European spot silico-manganese market has edged up, with prices expected to remain stable at current levels through December. European spot market prices are at €780-800/tonne ($1,055-1,080/tonne) delivered, up from €760-780/tonne last month, in western countries, and about €10-20/tonne more in eastern Europe, reflecting higher production costs. In northern Europe, silico-manganese prices have started to recover slowly and should extend that trend into the first quarter of next year.

Chinese tenders increase

In China, steelmakers' tender prices for 65/17 grade silico-manganese are RMB7,300/tonne ($1,190/tonne) delivered. Tender prices for high-carbon 65% Mn grade ferro-manganese are around RMB6,150/tonne ($1,005/tonne) delivered. Prices for 78% Mn, 2% C medium-carbon ferro-manganese grade are around RMB8,200/tonne ($1,340/tonne) delivered. Tender prices for 78% Mn, 1.5% C grade medium-carbon ferro-manganese are RMB8,400/tonne ($1,370/tonne) delivered.

Producers in Ningxia province said increased purchase volumes from steel mills have resulted in tighter prompt supply and have pushed up prices, forcing steelmakers to increase their tender prices to secure enough materials for their needs to see out the year.

Production highlights

Eramet Norway will shut one of its two ferro-manganese furnaces at its Sauda facility for at least twelve weeks from November 25. The furnace, which has a monthly capacity for 11,000 tonnes of high-carbon ferro-manganese was due for maintenance, although it will be offline for an extended period due to poor demand and low prices. The furnace may be offline even longer if market conditions dictate, though the company also stated that all contractual requirements with customers and partners will be met.

Raw and Refined Commodities is considering restarting production at its Skopski Leguri manganese alloys plant in Macedonia in the first quarter of next year, depending on demand. The company has also been cutting production costs through revamps at its facilities. The plant, which is capable of producing 10,000 tpm of manganese alloys and 300 tpm of ferro-nickel, has been offline since July last year.

In industry news, BHP Billiton has abandoned the attempted sale of its Temco plant. Temco has nominal capacity for 130,000 tonnes of high carbon ferro-manganese, 125,000 tonnes of silico-manganese and 350,000 tonnes of sinter. The company's focus will now be solely on ensuring the safe and long term sustainability of the operation. Still, the future of BHP's manganese division is a hot topic amid industry talk that the company has appointed a major investment bank to handle the sale of the entire division, although some believe the company is only planning to sell its South African assets.

Global High-carbon Ferro-manganese Supply-Demand Balance *('000 tonnes)*

	Q1 12	Q2 12	Q3 12	Q4 12	2012	Q1 13	Q2 13	Q3 13	Q4 13f	2013f	Q1 14f	Q2 14f	Q3 14f	Q4 14f	2014f
Global Consumption, Mn Content	900	950	830	940	**3,620**	923	987	851	940	**3,700**	950	1,029	876	975	**3,830**
Global Production (Gross Weight)	1,050	1,175	1,200	1,294	**4,719**	1,075	1,275	1,215	1,250	**4,815**	1,100	1,300	1,225	1,325	**4,950**
Global Production, Mn Content	819	917	936	1,009	**3,681**	839	995	948	975	**3,756**	858	1,014	956	1,034	**3,861**
Market Balance, Mn Content	-81	-34	106	69	**61**	-84	7	97	35	**56**	-92	-15	79	59	**32**
Price Forecast - European Market ($/t)	**1,160**	**1,254**	**1,133**	**1,100**	**1,162**	**1,122**	**1,044**	**950**	**1,000**	**1,029**	**1,050**	**1,125**	**1,100**	**1,125**	**1,100**
Price Forecast - US Market ($/l.ton)	**1,215**	**1,286**	**1,224**	**1,175**	**1,225**	**1,133**	**1,087**	**1,035**	**1,035**	**1,073**	**1,100**	**1,125**	**1,110**	**1,150**	**1,121**

Global Silico-manganese Supply-Demand Balance *('000 tonnes)*

	Q1 12	Q2 12	Q3 12	Q4 12	2012	Q1 13	Q2 13	Q3 13	Q4 13f	2013f	Q1 14f	Q2 14f	Q3 14f	Q4 14f	2014f
Global Consumption, Mn Content	1,585	1,650	1,500	1,615	**6,350**	1,617	1,708	1,553	1,623	**6,500**	1,657	1,773	1,599	1,666	**6,695**
Global Production (Gross Weight)	2,300	2,600	2,400	2,362	**9,662**	2,350	2,650	2,410	2,440	**9,850**	2,375	2,700	2,425	2,500	**10,000**
Global Production, Mn Content	1,541	1,742	1,608	1,583	**6,474**	1,575	1,776	1,615	1,635	**6,600**	1,591	1,809	1,625	1,675	**6,700**
Market Balance, Mn Content	-44	92	108	-32	**124**	-42	68	62	12	**100**	-66	36	26	9	**5**
Price Forecast - European Market ($/t)	**1,224**	**1,322**	**1,170**	**1,155**	**1,218**	**1,200**	**1,134**	**1,057**	**1,120**	**1,128**	**1,175**	**1,200**	**1,150**	**1,185**	**1,178**
Price Forecast - US Market ($/lb)	**0.62**	**0.71**	**0.60**	**0.58**	**0.63**	**0.54**	**0.54**	**0.51**	**0.53**	**0.53**	**0.56**	**0.58**	**0.55**	**0.57**	**0.57**

Source: Metal Bulletin Research
Note: We have revised some of our historical consumption and production figures to reflect improved data

Global Stainless Steel Production ('000 tonnes)

	2011	2012	Q3 2012	Q4 2012	Q1 2013	Q2 2013	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13
Belgium	1,241	1,241	275	271	363	341	121	112	104	123	114	80	90
France	300	285	55	64	83	79	27	31	26	27	26	30	10
Germany	1,502	1,313	302	303	335	302	108	120	105	103	94	68	64
Italy	1,602	1,702	363	430	456	389	147	165	138	127	124	150	17
Spain	807	844	184	180	244	244	79	79	91	90	62	36	47
United Kingdom	330	294	61	60	80	66	29	22	23	22	21	16	17
Sweden	586	510	106	116	141	123	41	49	45	39	38	24	32
Finland	1,003	1,078	277	240	299	254	96	107	94	84	75	102	98
Austria	70	66	14	15	18	17	6	7	7	5	5	4	5
Total EU15	7,441	7,332	1,636	1,680	2,020	1,814	653	692	635	621	558	509	380
Other Europe[2]	387	332	90	85	94	114	30	32	35	36	34	32	32
Total Europe	**7,828**	**7,664**	**1,726**	**1,765**	**2,114**	**1,928**	**684**	**724**	**670**	**657**	**593**	**542**	**413**
% Change Y-o-Y	1.2%	-2.1%	1.4%	-6.1%	-2.0%	-5.6%	-3.1%	-3.5%	3.8%	-6.9%	-14.3%	-12.0%	-15.3%
USA	2,074	1,974	509	459	492	486	159	150	168	166	151	165	172
Brazil	413	394	94	86	108	111	25	27	28	28	26	*27*	*29*
Total Americas	**2,487**	**2,368**	**603**	**545**	**600**	**597**	**184**	**177**	**196**	**194**	**177**	***192***	***201***
% Change Y-o-Y	-4.6%	-4.8%	9.0%	-2.2%	-1.2%	-2.6%	-7.9%	-13.2%	-5.9%	-6.5%	-10.1%	*-7.3%*	*-0.6%*
South Africa	444	505	120	122	137	134	41	45	44	45	44	*45*	*45*
% Change Y-o-Y	-7.2%	13.7%	29.7%	17.0%	-2.7%	9.8%	-13.4%	-3.6%	2.6%	12.1%	13.3%	*15.1%*	*4.6%*
China[3]	14,091	16,087	3,947	4,480	4,404	4,413	1,416	1,530	1,486	1,460	1,467	1,570	1,623
India	2,158	2,351	567	586	601	601	226	183	200	201	200	*185*	*190*
Japan[4]	3,293	3,132	797	744	765	791	248	266	256	258	278	266	264
South Korea	2,115	2,131	497	526	502	508	157	168	172	172	164	*173*	*180*
Taiwan	1,203	1,106	258	285	278	248	85	99	88	86	74	76	89
Total Asia	**22,860**	**24,807**	**6,065**	**6,620**	**6,550**	**6,562**	**2,132**	**2,245**	**2,202**	**2,176**	**2,184**	***2,271***	***2,346***
% Change Y-o-Y	12.8%	8.5%	5.4%	13.9%	10.1%	6.3%	9.0%	9.3%	6.1%	4.6%	8.2%	*10.7%*	*16.0%*
Total Stainless[5]	**33,619**	**35,344**	**8,514**	**9,052**	**9,401**	**9,221**	**3,039**	**3,192**	**3,112**	**3,073**	**2,998**	***3,050***	***3,005***
% Change Y-o-Y	8.1%	5.1%	5.1%	8.4%	6.2%	3.0%	4.6%	4.4%	4.7%	1.3%	1.8%	*4.7%*	*9.1%*

Sources: ABINOX, Acerinox, AISI, CSSC, Eurofer, ISSF, KOSA, TSIIA, TTG, INSG, MBR. [1] Italicised data is estimated. [2] Includes CIS. [3] 2011/2012 data revised by ISSF in December, 2012. 4 Derived from finished production. 5 Monthly data is not reported for Brazil, China, India, and South Africa, and has been estimated.

Historical and forecast global stainless steel production growth rates (% change y-o-y)

	Q3 13	Q4 13	Q1 14	Q2 14
('000 tonnes)	9,315	9,605	10,141	10,112
(chg yoy)	9%	6%	8%	10%

Global stainless steel output rose 4.6% year-on-year in the first half of 2013 to 18.6m tonnes, reaching a new record high. Output growth slowed from the first quarter to the second quarter of 2013, however. We believe growth increased again in the third quarter, but is poised to slow in the final quarter of 2013.

USA *Stainless steel output in the Americas fell 1.9% year-on-year in the first half of 2013 to 4.1m tonnes*

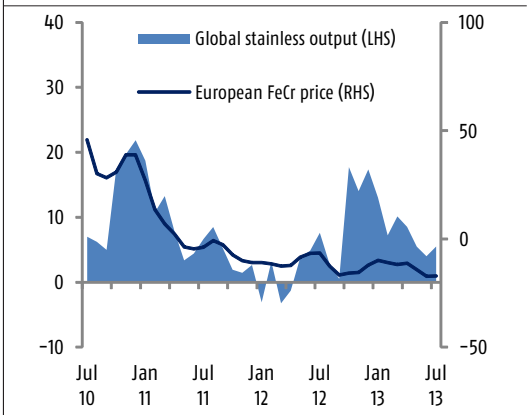
Europe *Western European stainless output fell 4.0% year-on-year in the first half of 2013 to 4.1m tonnes.*

Asia *Chinese stainless output jumped 15.1% year-on-year in the first six months of 2013 to 8.8m tonnes. Growth in Chinese output offset declining production in other Asian producers including Japan, South Korea, and Taiwan.*

Source: Metal Bulletin Research

European HC ferro-chrome price vs global stainless steel production (% change y-o-y)

Ferro-chrome prices declined in early 2013 y-o-y despite gains in stainless output

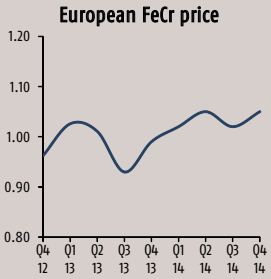


Source: ISSF, Metal Bulletin Research

Ferro-chrome highlights

- Chinese, European spot prices slip; US prices up
- Chinese high-carbon ferro-chrome spot price at $0.85/lb, down $0.01/lb
- Stability likely to prevail in the short term

Market Outlook



Following the general trend seen throughout 2013, November has been yet another month of stability for the ferro-chrome industry. Spot market price movements have been marginal since October, moving at most by $0.02/lb, or about 2%, month-on-month. The stability is likely to continue into December, with large stainless mills, particularly in Europe, set to reduce output over the Christmas period. Into early 2014, however, sustained price increases may be seen. The past three years have seen US spot prices end the first quarter higher than they began it as mills have begun to restock raw materials. With falling stainless steel production in both Europe and the USA this year, however, the impact from a rise in mill demand may not be so sharp in early 2014. Longer term through 2014 and beyond, however, there are a number of factors that may lead to rising prices, which we will look at in more detail next month.

Ferro-chrome market optimism hit by falling prices

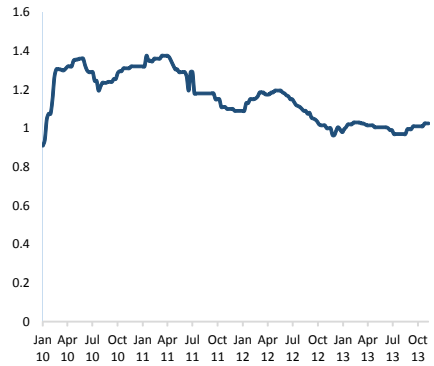
Following last month's improving sentiment in the ferro-chrome market, as spot prices in all regions either held steady or rose, this month has seen that optimism tempered somewhat. Spot prices in China and Europe have both fallen since our last publication, although price growth has continued in the USA. In China, spot prices are down by $0.01/lb to $0.85/lb; in Europe prices are down by $0.02/lb to $0.98/lb; and in the USA they are up by $0.02/lb to $1.03/lb.

It would be easy to attribute the relative strength of US prices to economic fundamentals. Nevertheless, the country's stainless steel industry is not particularly sharing in the country's economic improvement this year. During the first eight months of this year, US stainless steel production has fallen by about 3% year-on-year and capacity utilisation, along with finished product pricing, remains low. Hence MBR understands that the price increase this month is not particularly driven by improved demand from stainless steel mills and so is unlikely to be part of a longer, or particularly strong, upward trend.

Year-end traditionally a weak period before Q1 strengthening

That said, we do note that the end of the year generally sees the prices of stainless steel raw materials begin to bottom out somewhat in the USA (see chart). Stainless steel mills begin to restock following the gradual exhaustion of materials through the year and look to book

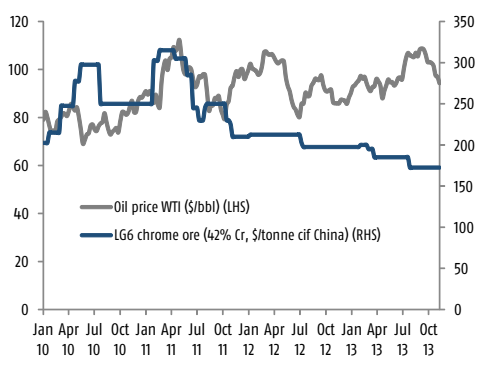
US high-carbon ferro-chrome spot price ($/lb contained Cr), *Although on a general downward trend since early 2010, US ferro-chrome prices have typically experienced periods of strength during the first quarter*



Source: Metal Bulletin Research

Oil prices versus chrome ore prices

With oil prices having fallen since September, cost pressures on ore miners have faded somewhat



Source: Metal Bulletin Research

materials in order to see them through the winter and early spring – seasons which often bring transport difficulties, particularly in the north-eastern parts of the USA where most of the country's stainless steel mills are located. The recent stability in prices is likely to hold through Q1 2014 with the possibility for slight price increases. Each of the last three years have seen US ferro-chrome prices end the first quarter higher than they ended the fourth quarter and given that raw material stocks at stainless steel mills are understood to be typically low, we would not be surprised to see this phenomenon repeat itself in early 2014.

Limited cost pressure for ferro-chrome smelters...

For the time being, however, ferro-chrome suppliers are content to generally roll over prices. Key input costs such as chrome ore and reductants have remained steady month-on-month, with South African LG6 chrome ore (42% Cr) remaining at $165-180/tonne cif China and UG2 chrome ore holding at $150-160/tonne cif China. Meanwhile, coking coal prices are understood to have fallen slightly this month and both of these dynamics have helped to ease the pressure on non-integrated producers (largely those in China) that rely on external sources for their raw materials. Again, little change is now expected until early 2014. Oil prices have been falling since September now and this has helped to keep mining costs under control (see chart). The oft-highlighted fall in the exchange rate of the South African rand against the US dollar is also weighing on dollar-denominated chrome ore prices.

...although longer-term cost pressure likely to increase

Electricity costs are becoming a larger portion of total ferro-chrome production costs, however, particularly in South Africa, where electricity tariffs have risen by about 110-120% since 2009. Tariffs are set to rise by roughly 50% more between now and 2018 in order to finance new power plants in the country, according to Eskom. These tariffs are from a low base of course, hence the large increases in percentage terms, but the increases are still set to make South African ferro-chrome smelters less competitive compared to their major competitor, ENRC of Kazakhstan, which enjoys access to integrated thermal power sources. While South African smelters will still remain viable and enjoy lower production costs than their Chinese counterparts, their margins will be squeezed by these tariff increases. This is all likely to see marginal production costs on ferro-chrome rise, and with them long-term prices, which is something we will look at in more detail next month as we present our views for 2014.

The difficulties with respect to increasing power availability in South Africa have been highlighted again this month though with the news that Eskom has suspended activity on all of its construction sites, including the two coal power stations at Medupi and Kusile, following an accident on October 31 on its Ingula project, another of Eskom's new power projects, that resulted in six fatalities. The incident will not have any impact on short-term costs in the country but serves to highlight the ease with which delays can occur in bringing on stream the new power generation capacity that the country desperately needs if it is to remain a large player in the global ferro-chrome industry in the long term, rather than increasingly being viewed as an ore supplier.

***Ferro-chrome Supply-Demand Balance** ('000 tonnes)*

	Q1 12f	Q2 12	Q3 12	Q4 12	2012f	Q1 13e	Q2 13e	Q3 13f	Q4 13f	2013f	Q1 14f	Q2 14f	Q3 14f	Q4 14f	2014f
Global Consumption	2,198	2,312	2,144	2,419	**9,073**	2,418	2,506	2,416	2,465	**9,805**	2,539	2,644	2,501	2,563	**10,246**
Global Production	2,218	2,244	2,415	2,128	**9,004**	2,470	2,485	2,495	2,432	**9,882**	2,550	2,625	2,550	2,575	**10,300**
DLA Stock Disposals	0	0	0	2	**2**	2	1	2	1	**6**	1	1	1	1	**4**
Market Balance	20	-68	270	-291	**-67**	54	-20	81	-32	**83**	12	-18	50	13	**58**
Price Forecast - Europe ($/lb)	**1.15**	**1.18**	**1.04**	**0.98**	**1.09**	**1.03**	**1.01**	**0.93**	**1.00**	**0.99**	**1.02**	**1.05**	**1.02**	**1.05**	**1.04**
Price Forecast - USA ($/lb)	**1.15**	**1.18**	**1.09**	**1.02**	**1.11**	**1.02**	**1.01**	**0.98**	**1.01**	**1.00**	**1.03**	**1.05**	**1.03**	**1.05**	**1.04**

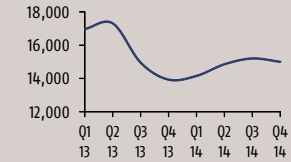
Source: Metal Bulletin Research *Note: We have updated our 2012 balance with new historical data*

Nickel highlights

- Chinese stainless steel production surprised on the upside in Q3 2013
- NPI output seems to be running ahead of earlier expectations too…
- …but 2014 is difficult to call until Indonesia's intentions are clear

Market Outlook

Nickel price forecast ($/tonne)



Source: Metal Bulletin Research

The nickel market is now poised precariously just above the $13,500/tonne level, and in some respects it appears vulnerable to further declines now that trend-setting metal copper has broken lower. At the moment, however, we are taking the view that copper is playing catch-up to the other metals, including nickel, that had already sold off this month, not that copper's belated pull-back will infect the rest of the complex with fresh weakness. Our technical analysis suggests that support at current levels for nickel is solid, so as a short-term trading strategy we are actually recommending buying into rebounds from here. In general, concerns over the timing and implications of QE tapering have again been the main cause of negativity in the base metals market, and there was disappointment that China's Communist party's third plenum meeting failed to produce any more metal-intensive commitments. However, with Indonesia's government expected to clarify at any time its export restriction policy for next year, we doubt whether nickel market players will be prepared to take aggressive positions yet.

Chinese stainless output exceeds expectations

Based on the latest data from China, it would appear that we were too cautious on our third-quarter stainless steel production expectations for the country. Output came in 4.847m tonnes in the third quarter against our forecast for 4.5m tonnes. Growth was seen in the major series of stainless steel, but was more stable for the low or no-nickel grades compared with 300 series, which saw a very strong quarter of growth, up 300,000 tonnes from the level in the second quarter, despite the outages over much of the period. Our forecast for fourth-quarter output is 4.7m tonnes, but this is starting to look too low as well given that nickel prices have fallen back to the third-quarter trading range, which would have been a factor in encouraging such strong growth in nickel-bearing stainless grades.

Separately, we hear at a recent industry conference that the acceptability of NPI across China's stainless steel industry is growing far more rapidly than we realised, with some mills using NPI for 80% of their nickel feed. At the same event, there was talk of NPI production reaching 478,000 tonnes this year (a 33% rise) and far higher than our expectations of a 25% gain. Of more concern was talk of output doubling in 2014. We are actually looking for growth to slow next year, not accelerate, though admittedly this does depend on Indonesia's ore export policy.

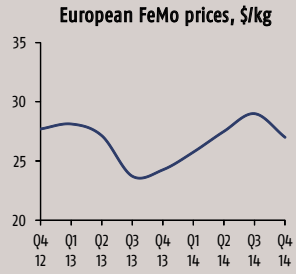
Global refined nickel supply-demand balance ('000 tonnes) and base case price forecasts, 2010-2015

		2012	2013f	2014f	2015f	2010				2011				2012				2013				2014			
		Year	Year	Year	Year	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4f	Q1f	Q2f	Q3f	Q4f
Production		**1,731**	**1,878**	**1,932**	**2,023**	**338**	**366**	**356**	**365**	**384**	**374**	**407**	**429**	**428**	**418**	**429**	**456**	**480**	**466**	**465**	**467**	**477**	**478**	**482**	**495**
% change year-on-year		8.6%	8.5%	2.9%	4.7%	7.5%	15.8%	11.3%	9.0%	13.5%	2.1%	14.3%	17.5%	11.5%	11.8%	5.5%	6.3%	12.2%	11.6%	8.4%	2.4%	-0.6%	2.5%	3.7%	6.0%
Consumption		**1,655**	**1,759**	**1,847**	**1,965**	**340**	**357**	**357**	**361**	**405**	**388**	**404**	**390**	**413**	**412**	**404**	**426**	**440**	**433**	**437**	**449**	**448**	**467**	**452**	**480**
% change year-on-year		4.3%	6.3%	5.0%	6.4%	31.8%	25.3%	13.7%	6.5%	19.1%	8.7%	13.2%	8.1%	2.0%	6.2%	-0.1%	9.2%	6.6%	5.1%	8.2%	5.4%	1.8%	7.8%	3.4%	6.9%
Balance		**76**	**119**	**85**	**58**	**-2**	**9**	**-1**	**4**	**-21**	**-14**	**3**	**39**	**15**	**6**	**25**	**30**	**40**	**33**	**28**	**18**	**29**	**11**	**30**	**15**
% of consumption		4.6%	6.8%	4.6%	3.0%	0.6%	2.5%	0.3%	1.1%	5.3%	3.7%	0.7%	9.9%	3.6%	1.4%	6.3%	7.0%	9.1%	7.6%	6.4%	4.0%	6.5%	2.4%	6.6%	3.1%
Reported stocks		**381**	**500**	**585**	**643**	**288**	**297**	**296**	**300**	**278**	**264**	**266**	**305**	**320**	**326**	**351**	**381**	**421**	**454**	**482**	**500**	**529**	**540**	**570**	**585**
Weeks consumption		12.0	14.8	16.5	17.0	11.0	10.8	10.8	10.8	8.9	8.8	8.6	10.2	10.1	10.3	11.3	11.6	12.4	13.6	14.3	14.5	15.4	15.0	16.4	15.8
LME cash price	**$/tonne**	**17,520**	**15,085**	**15,138**	**16,425**	**20,077**	**22,566**	**21,188**	**23,598**	**26,899**	**24,168**	**22,043**	**18,303**	**19,651**	**17,146**	**16,317**	**16,967**	**17,309**	**14,952**	**13,930**	**14,150**	**14,850**	**15,200**	**15,000**	**15,500**
	$/lb	7.95	6.84	6.87	7.45	9.11	10.24	9.61	10.70	12.20	10.96	10.00	8.30	8.91	7.78	7.40	7.70	7.85	6.78	6.32	6.42	6.74	6.89	6.80	7.03

Molybdenum highlights

- European ferro-molybdenum prices continue their upward trend
- US prices show moderate growth
- Long-term molybdenum supply outlook could pressure prices

Market Outlook



Source: Metal Bulletin Research

European ferro-molybdenum prices have continued to rise over November, on the back of what appears to be real demand strength. Improved consumption has taken some supply out of the market, leaving it tight for the remainder of the year, which will support higher prices into the new year. The Chinese molybdenum oxide market has been improving gradually since late October but is lacking any strong upward momentum. Prices have been increasing predominantly due to customers' buying support arising from previously moderate prices. Based on expected stainless steel production in China, ferro-molybdenum demand is not expected to increase dramatically before the end of the year. Chinese demand could follow its traditional seasonal increase in Q1 2014 before the Chinese New Year.

US ferro-molybdenum prices fail to rise along with European prices

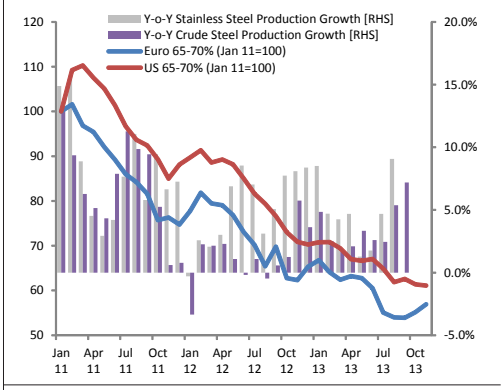
US ferro-molybdenum prices have not taken strength from rising stainless steel production. As the chart below shows, there has been an uptick in stainless steel production in comparison to previous years, which has increased demand for ferro-molybdenum, and supported European prices (as explored below). However, the chart also shows that while US prices are no longer falling as rapidly as they were earlier in 2013, they equally have not enjoyed any upward momentum. Although average US domestic spot ferro-molybdenum prices in November were 0.4% lower than average October prices, since the start of the month they have been climbing moderately.

European ferro-molybdenum prices continue to show strength

European ferro-molybdenum prices have been moving up steadily over November, climbing 3.2% higher than average October prices, to trade in the range of $24.30-25.25/kg. The upward pricing momentum which started at the beginning of October continued as demand was sustained. At the beginning of November there was some increase in demand, but it came from only a small number of players. In several instances, however, buyers were requesting delivery of material within 24 hours, implying that suppliers had let them down, or that they had left entering the market until very late, perhaps having previously underestimated their requirements. Thus, at the beginning of November it seemed that either suppliers had inadequate supplies, or buyers were surprised by stronger than anticipated demand.

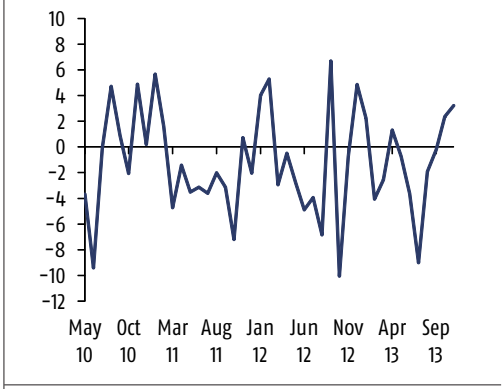
FeMo prices vs global stainless steel production (Jan 2011=100)

Prices have been rising in Europe, and have slowed their downwards trend in the USA, as stainless production has been increasing



Source: Metal Bulletin Research

European ferro-molybdenum (65-70%) price month-on-month % change, *Prices have been rising for two months now, but the increases are not strong, and are within the context of prices which have been falling month-on-month for most of the year*



Source: Metal Bulletin Research

As the month progressed more and more buyers entered the market, which is unusual for November as the year-end and associated tax concerns approach. As was the case in the ferro-vanadium market, there was little material available for prompt delivery, and when buyers became aware of this, some of them attempted to increase their purchases before prices rose even higher.

The number of buyers entering the market, and the timing of it suggests that there is some strength and depth to demand for ferro-molybdenum, and the price increase is not just the result of a technical reaction as some market participants suggested. MBR is aware that demand is also strong for molybdenum scrap, and customers with long-term contracts are requesting all of their optional volumes, further supporting the view that prices are not just being pushed up by opportunistic traders, but that it is based on actual demand from steelmakers.

Supply of ferro-molybdenum set to grow in coming years

While the real demand for ferro-molybdenum has been strong over the past six weeks, compared to historical levels it remains relatively weak. While demand is not strong, supply is stable, and the latest reports suggest that molybdenum production remained unchanged in the third quarter of 2013. There is not expected to be any significant curtailment to production for the remainder of the year to counter the weak demand environment. Thus, for the time being the market is looking stable, with limited risks to the downside, but also little likelihood of risks to the upside. But looking ahead, supply of molybdenum is expected to increase.

The main new source will come from the Sierra Gorda mine in Chile. The mine will commence saleable production in 2014, at an estimated rate of 50m lbs per year. The mine is a joint venture between KGHMI (55%), Sumitomo Metal Mining (31.5%) and Sumitomo Corporation (13.5%). There are at least seven other by-product expansions or new projects which will see molybdenum supply increase by over 100m lbs before 2020.

Furthermore, Avanti Mining expects to have permitting to begin construction of its Kitsault molybdenum mine in British Columbia by the end of 2013. The review of Avanti's environmental impact statement was completed in September, and the Canadian minister of environment will render a decision before the end of 2013. In June, Avanti signed an offtake agreement with ThyssenKrupp Metallurgical Products for 50% of Kitsault's molybdenum production. Avanti also completed a new mine plan. It had previously envisaged producing 374m lbs of molybdenum over 16 years, but it now expects production of 367m lbs over 14 years.

***Primary Molybdenum Supply-Demand Balance** (million lb Mo contained)*

	Q1 12	Q2 12	Q3 12	Q4 12	2012	Q1 13	Q2 13	Q3 13	Q4 13f	2013f	Q1 14f	Q2 14f	Q3 14f	Q4 14f	2014f
Global Consumption	**144**	**146**	**140**	**142**	**572**	**151**	**149**	**149**	**153**	**602**	**156**	**155**	**152**	**156**	**618**
Global Supply															
Global Mined Production	142	166	148	135	592	137	145	154	152	588	145	160	162	160	627
Conversion Losses to Oxide (1.5%)	-2	-2	-2	-2	-9	-2	-2	-2	-2	-9	-2	-2	-2	-2	-9
Recovery from Catalysts	1	1	1	1	4	1	1	1	1	4	1	1	1	1	4
Total Global Supply	**141**	**165**	**147**	**134**	**587**	**136**	**144**	**153**	**151**	**583**	**144**	**159**	**161**	**159**	**622**
Market Balance	**-3**	**19**	**7**	**-8**	**15**	**-15**	**-5**	**4**	**-2**	**-19**	**-12**	**4**	**9**	**3**	**4**
Price Forecast - European Market															
Ferro-Molybdenum ($/kg)	**34.78**	**33.32**	**30.08**	**28.50**	**31.67**	**28.12**	**27.14**	**23.71**	**24.25**	**25.81**	**25.75**	**27.50**	**29.00**	**27.00**	**27.31**
Molybdic Oxide ($/lb)	**14.26**	**13.80**	**11.88**	**11.50**	**12.86**	**11.17**	**10.90**	**9.44**	**9.85**	**10.34**	**10.45**	**11.15**	**11.75**	**11.00**	**11.09**

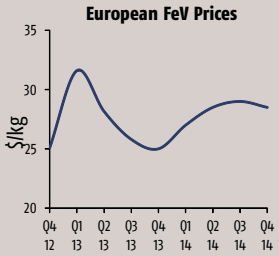
Source: Metal Bulletin Research

Note: We have revised our historical molybdenum consumption and production figures to reflect improved data

Vanadium highlights

- Average November prices lower than in October, but prices are rising
- Long-term contract renegotiations help to absorb supply
- Demand increasing as traders seek to buy before further expected price rises

Market Outlook



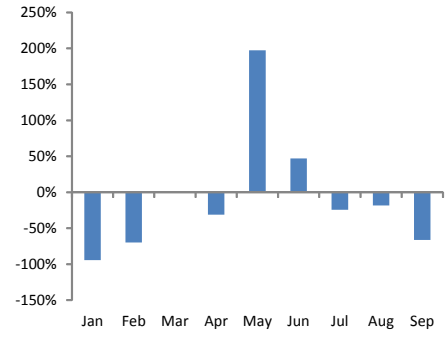
In October, European ferro-vanadium prices fell as market participants and traders were keen to sell material before the end of the year. Prices looked to be heading to levels which could have made it difficult for producers to turn a profit. Prices have been rising, however, since the beginning of November due to a more balanced market, which has left little supply remaining on the spot market. Thus, MBR maintains the view that prices will hold stable-to-higher over the remainder of the year, and rise further in 2014. The one risk to the downside is Chinese exporters. They are not now exporting large quantities, but if they return to the market, this could push European prices lower.

European prices move higher as November progresses

European ferro-vanadium domestic spot prices traded in a range of $24.00-25.20/kg over the first half of November, down 2.4% from October when prices traded in a range of $24.70-26.50/kg. Although prices were higher on average in October, the trend over the month was downwards. By the end of October, even small cargoes, which should command a premium due to the higher relative trucking costs, were seeing low transaction levels. As prices turned decidedly upwards at the beginning of November, it may have been the case that the market was adversely affected by a small number of traders who were keen to get rid of material in October, even at lower prices. In addition to the few traders keen to offload material at relatively low prices, several market participants were anxious about holding stock ahead of the end of the year for tax reasons.

Although average November prices have been lower than in October, they have been rising since the beginning of the month. The two factors pushing prices higher have been limited availability of supply and increased enquiries from buyers. A major German steel mill entered the market towards the beginning of November, which took some of the slack out of the market. Furthermore, numerous buyers were caught with low stocks, meaning they also had to enter the market, increasing demand. Many buyers appear to hold MBR's view that prices will rise further in January, and traders are keen to buy ahead of those expected increases, further boosting demand. Renegotiations of longer-term contracts has also reduced spot market availability, leaving a more balanced market which is likely to maintain the higher price levels for the remainder of the year.

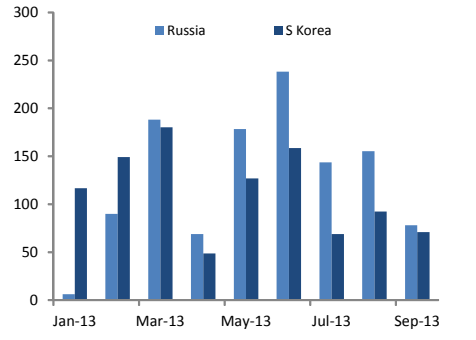
***2013 Russian ferro-vanadium exports year-on-year change**, For most of 2013 Russian ferro-vanadium exports have been lower than they were in 2012, apart from March when exports more than doubled to the level in the previous year, which was the third highest export month in 2012…*



Source: Metal Bulletin Research

Selected ferro-vanadium exports

…however, although Russian ferro-vanadium exports were very low at the beginning of the year, they have since recovered market share to overtake South Korean exports.

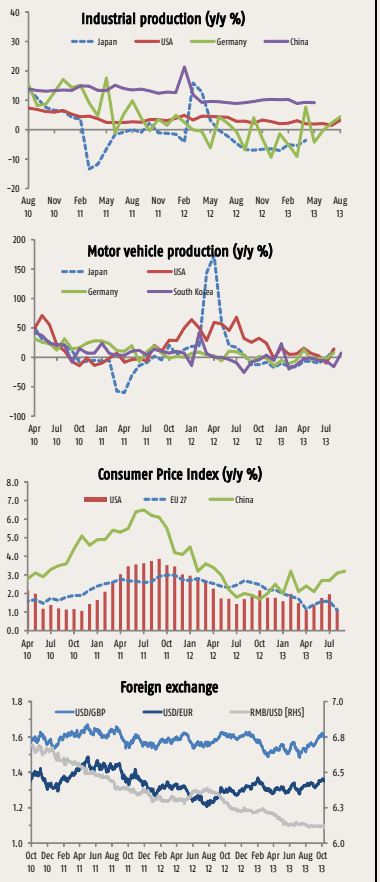


Source: Metal Bulletin Research

Selected demand indicators

	Unit	2011	2012	2012 Q4	2013 Q1	2013 Q2	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13
Japan												
IP: Mining & Manufacturing	y/y %	-2.3	-0.7	-6.7	-5.9	-4.7	-	-	-	-		
Motor vehicle production	y/y %	-12.3	33.9	-12.7	-14.1	-13.2	-6.7	-10.1	-1.4	-7.6	13.0	
CPI	y/y %	-0.3	0.0	-0.2	-0.6	-0.3	-0.3	0.2	0.7	0.9	1.0	
Construction: new build started	y/y %	4.3	5.3	12.9	9.6	13.1	13.6	11.9	12.9	7.7	15.4	
China												
Industrial production: MV	y/y %	2.5	8.7	4.2	14.8	12.4	12.4	9.3	14.7	13.5	14.9	24.3
PMI:Mfg	N/A	51.4	50.8	50.5	50.5	50.5	50.8	50.1	50.3	51.0	51.1	51.4
CPI	y/y %	5.4	2.7	2.1	2.4	2.4	2.1	2.7	2.7	2.6	3.1	3.2
FDI: y/y construction	y/y %	41.44	55.21	23.0	-34.0	-8.1	-9.2	-4.9	-3.8	-2.8	-5.4	-6.9
Industrial production[1]	y/y %	13.7	10.8	10.0	3.0	9.1	9.2	8.9	9.7	10.4	10.2	10.3
USA												
Industrial production	y/y %	2.5	3.7	2.8	2.4	2.0	1.9	2.1	1.5	2.8	3.3	3.2
Automobile production	y/y %	51.4	39.4	18.2	9.1	8.1	6.4	2.5	9.9	0.6	14.3	
Inventories: sales ratio	N/A	5.4	2.5	2.3	2.3	2.5	2.6	2.5	2.4	2.4	2.6	
Private housing starts	y/y %	5.2	28.8	36.7	33.7	17.0	28.6	8.0	19.1	17.7		
CPI	y/y %	13.7	3.7	1.9	1.7	1.4	1.4	1.8	2.0	1.5	1.2	
ISM: manufacturing PMI	N/A	55.2	51.8	50.6	52.9	50.2	49.0	50.9	55.4	55.7	56.2	56.4
EU												
Industrial production	y/y %	3.1	-2.0	-2.8	-2.1	-0.9	-2.0	-0.1	-1.6	-1.3		
Construction production	y/y %	-0.2	-5.2	-5.6	-5.1	-3.4	-3.7	-2.0	-1.2	-0.9		
CPI	y/y %	2.7	2.5	2.3	1.8	1.4	1.4	1.6	1.6	1.3	1.1	
Brazil												
Industrial production	y/y %	0.4	-2.6	-0.4	1.4	3.3	2.0	4.3	0.8	0.7	0.9	
Mfg: capacity utilisation (SA)	%	82.1	81.3	81.2			-	-	-			
CPI	y/y %	6.6	5.4	5.6	6.4	6.6	6.5	6.7	6.3	6.1	5.9	5.8
Russia												
Industrial production	y/y %	4.8	2.5	1.6	-0.2	0.2	-1.5	-0.1	-0.8	0.1	0.4	0.0
Fixed capital investment	y/y %	15.8	16.4	9.6	7.0	5.3	7.0	3.0	8.6	1.9	4.9	
CPI	y/y %	8.5	5.1	6.5	7.1	7.2	7.4	6.9	6.4	6.5	6.1	6.3
India												
Industrial production	y/y %	4.8	0.8	2.3	2.2	-1.0	-2.5	-1.8	2.8	0.4	2.0	
Industrial production: mining	y/y %	-1.7	-1.4	-2.9	-3.9	-4.7	-5.9	-4.6	-2.5	-1.0	3.3	
Motor vehicle production	y/y %	16.6	4.7	2.1	-1.3	-3.7	-4.1	-4.7	-0.9	8.2	8.6	14.1
Foreign inward investment: direct	y/y %	122.6	13.9	-23.9	3.0	10.9	11.2	6.9	-0.4	-26.4	-25.6	
WPI	y/y %	9.5	7.5	7.3	6.7	4.8	4.6	5.2	5.9	7.0	6.5	7.0
Germany												
Industrial production	y/y %	8	-1	-2.8	-5.2	1.0	-4.2	-0.3	2.3	-2.4	4.4	
Motor vehicles	y/y %	14	1	-4.6	-7.3	2.6	-3.7	-1.8	-1.9	-1.4	7.6	
Construction: new builds started	unit	2,151	2,048	1972	1808	2215	2,183	2,133	2,522	2,246	2,212	
France												
Industrial production	y/y %	2	-2	-2.7	-3.8	0.8	1.1	-1.8	1.9	-4.9	1.5	
Construction: new building started	sq m '000	2,282	1,989	2079	2175	2420	2,552	2,540	2,339	2,037	2,506	
UK												
Industrial production	y/y %	-1.2	-2.5	-2.3	-3.9	0.8	0.0	0.0	-	-		
Vehicle production: passenger	y/y %	5.5	9.7	5.9	-1.9	6.2	-8.4	10.4	7.0	16.2	9.9	
Vehicle production: commercial	y/y %	-1.6	-5.8	-5.8	-18.8	-7.3	-20.0	1.4	-11.8	-51.4	-27.5	
CPI	y/y %	4.5	2.8	2.7	2.8	2.7	2.7	2.9	2.7	2.7	2.7	
Italy												
Industrial production	y/y %	1.4	-6.5	-7.0	-4.2	-3.7	-4.3	-2.1	-4.2	-4.6	-3.0	
IP: motor vehicles, trailers and semi trailers	y/y %	1.5	-16.2	-15.9	-16.9	-0.9	2.5	0.0	-8.3	1.9	6.2	
Canada												
Industrial production	y/y %	2.6	1.6	1.1	1.4	1.3	1.6	1.1	1.4			
PMI	%	59.3	58.4	49.3	56.9	59.4	70.8	56.6	45.7	51.9	59.4	64.2
Turkey												
Industrial production	y/y %	9.2	2.3	1.4	1.3	3.2	1.9	2.9	5.9	-1.3	6.4	
Motor vehicle production	y/y %	9.4	-9.9	-9.5	-3.0	2.2	-3.9	6.0	19.1	26.7	13.1	-2.1
CPI	y/y %	6.5	8.9	6.8	7.2	7.0	6.5	8.3	8.9	8.2	7.9	7.7
Mexico												
Industrial production	y/y %	4.0	3.1	1.7	0.7	-1.1	0.3	-1.5				
Motor vehicle production	y/y %	13.2	9.2	10.7	3.4	9.0	12.0	-0.8	0.5	4.1	-4.6	
Construction output	MXN mn	15,987.1	17,129.6	18,323	15,503	15,860	15,804	15,719	15,662	15,446		
South Korea												
Industrial production	y/y %	7.0	1.1	-0.1	-1.6	-0.7	-1.3	-2.4	0.9	3.2	-3.6	
Motor vehicle production	y/y %	9.3	-1.6	-2.0	-3.2	-3.0	-0.9	-5.5	-6.0	44.7	-16.1	7.3
Buildings commenced	y/y %	5.7	5.1	1.2	-11.8	-13.4	-22.4	-13.0	-22.6	-12.9	4.3	-5.9

Sources: CEIC. Notes: SA: seasonally adjusted, CPI: Consumer Price Index, PMI: Purchasing Managers Index, FCI: Fixed Capital Investment. e denotes a quarter-to-date value. 1 For chart purposes, the January data point for Chinese Industrial Production is calculated as an average of the December and February value.



Historical and forecast global steel production growth rates (% change y-o-y)

	Q3 13	Q4 13	Q1 14	Q2 14
('m tonnes)	394	390	382	406
(chg yoy)	3.2%	8.2%	1.5%	2.0%

Based on figures for the first nine months of 2013, we are forecasting global crude steel output to rise 6.0% year-on-year in 2013 to 1.56bn tonnes. China will continue to drive expansion in global crude steel output, with Chinese production on target to rise a further 11% year-on-year in 2013.

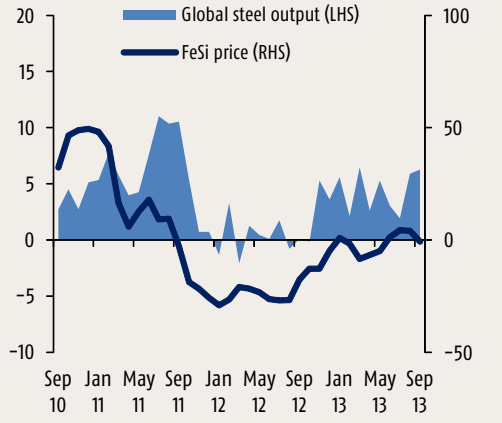
USA US crude steel output fell 3.1% year-on-year in the first nine months of 2013. Output remains excessive, however, relative to demand, as steelmakers struggle to raise finished steel product prices.

Europe EU27 crude steel output fell 4.2% year-on-year in the first nine months of 2013. We expect further declines in regional output as economic conditions remain challenging.

Asia Chinese crude steel output maintained impressive growth in early 2013, gaining 8.0% year-on-year in the first nine months of the year. Supply is exceeding demand, however, dampening finished product pricing.

Source: Metal Bulletin Research

European ferro-silicon price vs global steel production (% change y-o-y)



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