

# ***Metals Deals***

## **Forging Ahead**

### **2016 outlook and 2015 review**



<i>Introduction</i>	<i>2</i>
<i>2016 deal outlook: broader deal revival still some way off</i>	<i>3-5</i>
<i>2015 deal flow: sector deal value falls to record low</i>	<i>6-7</i>
<i>Dealmakers: who's doing what?</i>	<i>8-9</i>
<i>Deal places: regional analysis</i>	<i>10</i>
<i>PwC contacts</i>	<i>11</i>

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## **Introduction**


*Welcome to Metals Deals: Forging Ahead 2016 outlook and 2015 review, PwC's annual analysis of deal activity in the metals industry and our outlook on the prospects for dealmaking in the year ahead.*

Global dealmaking is breaking record levels but M&A has all but stalled in the metals industry. While sectors such as healthcare, consumer products, retail, technology and industrials reach new highs, metals dealmaking has moved in the opposite direction from an already low base. Despite some big announcements – Berkshire Hathaway's US\$32.1bn purchase of Precision Castparts and Alcoa's planned demerger – completed deal value in the sector fell to a record low in 2015.

Looking ahead, away from these specific situations, we maintain our view that the constrained and somewhat uncertain overall context for global growth will continue to translate into a weak overall environment for metals dealmaking in 2016. In particular, low oil prices and the resulting decrease in steel demand have led to increased un-

certainty in the steel industry and steel deals. The forecast from our modelling of metals M&A flow against wider commodities and macroeconomic trends suggests deal volume in 2016 will be close to that seen in 2015, but could be accompanied by an upturn in total deal value. Our volume forecast from a year ago proved accurate, with the number of announced deals in 2015 turning out in line with the model's prediction. We also anticipated an upturn in announced deal value, which proved to be the case in the light of the Berkshire Hathaway announcement.

This report is the latest annual review edition in our Forging Ahead series on dealmaking in the sector. It sits alongside our quarterly Forging Ahead reports and is one of a range of deals publications from PwC, covering sectors including aerospace & defence, renewable energy and power. Together, the family of deals reports provides a comprehensive analysis of M&A activity across industries worldwide.



**Jim Forbes**  
Global Metals Leader

# 2016 deal outlook: broader deal revival still some way off

We predicted last year that there weren't sufficient macro-economic signals to suggest the kind of growth outlook that would support a recovery in metals M&A activity in 2015. Our forecast has been borne out as dealmaking stayed largely in the doldrums. On a global level, we are still waiting for recovery in the oil price and the kind of overall global pick-up in demand that would give the confidence needed to agree on valuations. With steel companies still largely focused on shedding capacity, buyers are either not in the market or are limiting themselves to carefully chosen situations.

The larger deals that we have seen come through are focused on specialty and engineered metals. Significant hurdles remain in the way of a broader pick-up in dealmaking. We don't anticipate any significant revival in 2016 beyond some notable specific situations such as the Alcoa demerger and Berkshire Hathaway's completion of its Precision Castparts acquisition. Indeed, the risks weighing on global economic growth are intensifying rather than diminishing.

Much of the industry outlook is affected by China, as the largest global consumer of both steel and iron ore. Chinese year-on-year steel demand growth is now firmly negative, forecast at -3.5% for 2015 and -2% in 2016.<sup>1</sup> After a long and sustained period of demand growth from China, the country is now turning its economy from exports and public investment to consumption and from manufacturing to services with a consequent impact on metals demand. It is possibly a more sustainable growth path in the long-term but it poses trouble for the worldwide steel industry in the short- to medium-term as a huge amount of excess Chinese steel is exported at low prices.

The outlook in China is offset by expectations of positive demand growth in 2016 from the North American Free Trade Area (2.1%), the European Union (2.2%), the Middle East and North Africa (5.2%) and, most notably, India (7.6%).<sup>2</sup> The problem is that, possibly with the

exception of India, various uncertainties cloud the outlook in all these relative bright spots. And India, with steel consumption less than a seventh of that of China, is not a substitute for the engine that China has been providing for the world market in the past decade. Overall world steel demand is forecast to grow only slightly by 0.7% in 2016 compared with a forecast outturn of -1.7% for 2015.<sup>3</sup> Looking further ahead our latest Steel 2025 forecast expects global demand for steel to be approximately 2.35 billion tonnes by 2025.<sup>4</sup> This is a downward revision of two percentage points lower from the previous year's forecast (2.39 billion tonnes) and is equivalent to an average global growth of 3.3% per annum over the wider period from 2012 to 2025.

The other big factor is, of course, the downward slide in commodities prices. Iron ore prices have significantly dropped, reflecting oversupply and a lack of confidence that capacity will be taken out of the market. Prices for copper and zinc have slumped. And, although in much less of a decline, aluminium prices have also fallen in the last year reflecting concerns about an oversupplied market. It is difficult to anticipate a sustained upward movement in the absence of some convincing moves involving China to cut capacity and excess supply.

We stated in last year's report that it was reasonable to assume that a lower oil price environment would persist and this has proved to be the case, indeed with further oil price declines. The oil price impact on the sector is a complex one with benefits on the 'input' side and a more mixed effect on the 'output' side depending on sector exposure. Companies with exposure to the oil and gas extraction sector have felt the greatest negative impact. The brakes have been applied sharply to capex by US shale gas companies. Demand for both pipes and tubes, oil country tubular goods and plates used for marine structures and for line pipes are highly vulnerable to fluctuations in oil prices. On the other hand,

metals companies with exposure to sectors benefiting from lower oil prices will themselves gain.

As 2016 unfolds, we believe the following key considerations are likely to characterise metals M&A activity in the period ahead.

## **Metals M&A lull set to continue**

The outlook for economic growth is very relevant to metals sector M&A, given the cyclical nature of the sector and the way it is significantly affected by general economic conditions. Downside risks are increasing and global growth forecasts have been adjusted downward. It is clear from the announcements by Berkshire Hathaway and Alcoa that 2016 deal values are likely to get a boost from their specific moves. But more widely we maintain our view that the constrained and somewhat uncertain overall context for global growth will continue to translate into a weak overall environment for metals dealmaking in 2016. Current pricing levels are leaving many companies facing a cash burn. This could result in transactions at bargain prices or even capacity simply evaporating from the market as plants shut without buyers. Further filings for bankruptcy are a distinct possibility. Our modelling of metals M&A flow against wider commodities and macroeconomic trends indicates announced deal volume in 2016 will remain close to the level seen in 2015, although there could be potential for an upturn in total deal value (see panel at the end of this section).

## **No end in sight for commodity price turnaround**

2015 ended with no end in sight for a commodity price turnaround and 2016 began with further pessimism as China market concerns weighed down sentiment. Iron ore supply surpluses continue to escalate. The outlook for commodity prices in major end markets such as oil and gas is similarly downbeat. Metals prices themselves are not faring any better with an excess of production continu-

1 World Steel Association, Short Range Outlook, October 2015.

2 Ibid.

3 Ibid.

4 PwC, Steel in 2025: Quo Vadis?, 2015.



ing to overhang the market. The situation is most acutely felt in steel where world prices have plunged amid excess stock from China. But the outlook is little better in aluminum where prices are back to levels seen in the 1990s and close to the sharp low recorded after the 2008 world financial crisis.

### **China capacity and consolidation outlook**

OECD estimates suggest that there is almost 700Mt of excess steel capacity worldwide.<sup>5</sup> The oversupply of world steel is reaching a crunch point and concerns about trade are intensifying. Towards the end of 2015, nine steel associations from around the world released a joint statement voicing their concern over China's attempt to gain market economy status by the end of 2016. The statement was rebutted by the China Iron and Steel Industry Association which pointed to wider influences which have led to a supply glut. Certainly, producers in other countries such as India have been adding capacity. But a sustained price recovery is unlikely until Chinese production falls and much-needed consolidation takes place. There have been some mill closures in China and the direction of environmental as well as wider economic policy points towards capacity consolidation. But it remains too uncertain to foresee how significant this will be and when it will occur.

### **Possible consolidation moves in India and Japan**

We see pressures for consolidation building in countries such as India and Japan as companies bid to be competitive. We believe that Indian companies may consider pursuing vertical integration opportunities – both forward integration to higher value added products to yield higher realisation, and backward integration to reduce the price of production. These transactions may be a combination of domestic and cross border deals with the potential acquisition of mines leading these companies to the international market. Since most Indian metal majors have recently expanded capacity and are running on low utilisation, we do not see much scope for deals to gain access to additional capacity. In Japan, Godo Steel and Osaka Steel have recently announced takeovers of rival companies and other

companies have announced shutdowns. The pressure continues for further consolidation and capacity reduction.

### **Exchange rates provide an important backdrop**

Currency weakness in key markets may present an opportunity for buyers and sellers. During 2015, for example, the Brazilian real lost nearly a third of its value against the US dollar. The real's fall comes on top of earlier slides since 2012. Currency weakness continues also to affect the Russian ruble, the Indian rupee and the Japanese yen. It's an important factor in further dampening appetite for international acquisitions by companies in these territories but, at the same time, it makes disposals of foreign assets by those companies more attractive in home currency terms. And, of course, the currency weakness also reduces the cost of any inbound moves for assets.

### **Demerger moves come on the table**

We expect some companies may make moves away from vertical integration. In some cases, depressed commodity prices are putting strains on vertically integrated companies that have resource supply footprints that significantly exceed the physical requirement needed for their own production. In other cases, as companies move towards greater specialisation, they are identifying value opportunities from disintegration. For example, Alcoa has recently announced its intention to split into an upstream bauxite, alumina, aluminum casting and energy business and a downstream specialist metals and products group. The company sees both businesses as strong value engines each with their own distinctive strategic directions. The split is expected to be completed in the second half of 2016.

### **Digitisation becoming a primary focus**

The pricing background and outlook will maintain companies' focus on cost management, internal efficiencies and innovation to improve competitiveness. In a survey of chief operating officers, we found a strong focus among metals COOs on securing cost reductions and better operational efficiency. But only 57% and 54% of metals COOs say they are confident that their operations are

designed to support revenue growth targets and cost and margin targets respectively.<sup>6</sup> Many companies may feel the time is right to use more innovative approaches to streamline operations and deliver improvement, incorporating technological change and developments such as the internet of things to improve their end-market competitiveness. A key focus is on new product innovation and on digitisation of the supply chain. Industry 4.0, also referred to as the fourth industrial revolution, is an increasingly important component in company thinking as they seek to use the benefits of advanced connectivity and automation to reduce costs, gain greater efficiencies, enhance product offerings and improve customer service.

### **Private equity pickings**

Private equity and other buyers from outside of the sector have largely stayed away in the current slump. But depressed valuations, if they reach fire-sale levels, might spur some interest. Given low capacity utilisation, it is difficult to see buyers coming in from within the sector, except where assets fill a portfolio or geographic gap. Private equity and other financial buyers, on the other hand, may be able to provide deal financing that would allow them to plan for a turnaround opportunity.

### **Importance of growth areas greater than ever**

The focus of current larger deals in the sector on more highly engineered products, lightweighting and advanced metals highlights the importance of companies positioning themselves in growth parts of the market. We expect to see a continued flow of such deals and don't rule out more big moves by outside buyers, such as the one we have seen from Berkshire Hathaway for Precision Castparts. Companies will be equally alert to upturn opportunities in currently depressed end-markets, particularly situations where there is potential to benefit from a double-rebound, both from a wider market improvement and an improving specific situation. For example, reforms in Mexico's energy sector are opening up the country's oil and gas industry for investment with potential infrastructure development opportunities.

5 OECD Steel Committee

6 PwC, Global Operations Survey, 2015.

# Modelling metals M&A flow against wider commodities and macroeconomic trends

*PwC has conducted an analysis testing the historical relationship of metals sector M&A with a variety of macroeconomic variables and metal commodities indicators. The analysis encompasses factors including nominal GDP, direct investment levels, trade volumes and commodity prices. In particular, metals prices and the business cycle are often good predictors of deal activity.*

We found strong correlations between trends in metals deal activity and the set of wider metals and macroeconomic measures in the analysis, especially in terms of flows in metals deal announcements. Our updated models produce coefficient of determination (R2) values of 0.709 and 0.828 for announced deal volume and value respectively. We've taken the analysis back over two decades with the following results:

## 2005-2015

What the analysis predicted:

- 1.2% compound annual growth rate (CAGR) in announced deal numbers.
- -2.8% CAGR in announced deal value.

What the actual outcome was:

- -0.3% CAGR in announced deal numbers.
- -1.4% CAGR in announced deal value.

Deal volume tends to be the more stable series over time, as judged by the average year-over-year change in actual number of deals. Deal value is more volatile – while it has statistically significant relationships with economic and metal commodity variables, it is also susceptible to variability arising from the potential for a few exceptionally large deals to drive the annual totals. This can make deal value less certain to predict compared to the trend in deal volume.

In our prior year report, our model predicted deal volume would remain subdued, which has proved to be in line with the actual outcome. We also forecast a significant rise in announced deal value which, buoyed by the Berkshire Hathaway/Precision Castparts deal, proved to be the case. But we must again emphasise the greater volatility and forecast error associated with the deal value forecast.

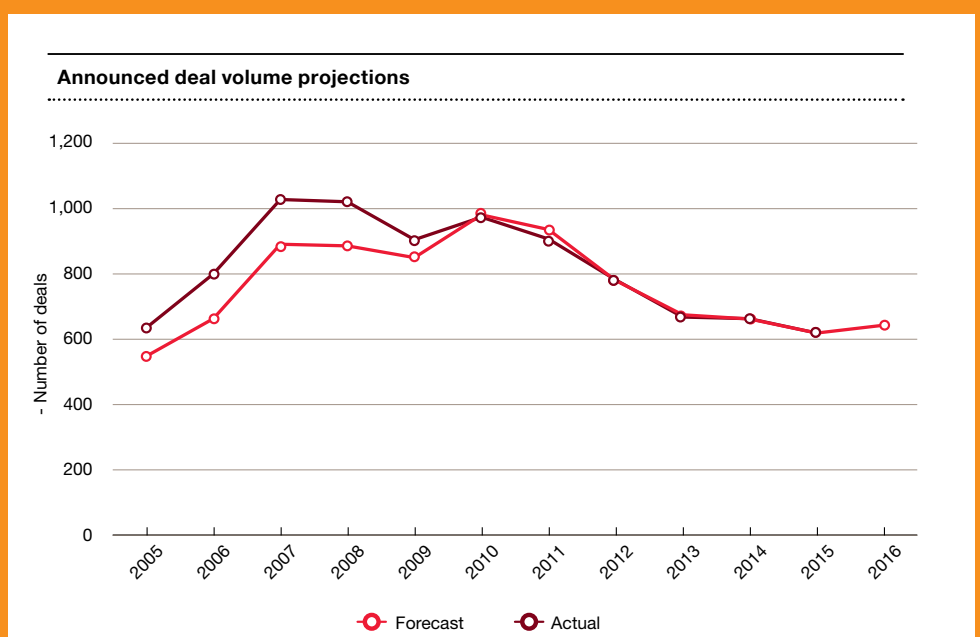
## Looking ahead

What the model predicts for the year ahead:

- 3.9% CAGR in announced deal numbers.
- 8.7% CAGR in announced deal value.

Our updated models indicate a modest year on year increase in announced metals M&A deal numbers in 2016 and a growth in deal value. The data and forecasts for these indices were sourced from the Oxford Economics.

We publish the outcome only for announced deals here because the historical analysis indicates that this provides the most robust and strong correlation. Please note that this differs from the analysis in the rest of this report, which is based on completed deals.



## Deal flow: sector deal value falls to record low

The total value of metals sector deals in 2015 fell to the lowest levels recorded in our series of reports. Deal value dropped 32% year on year, from US\$16.8bn in 2014 to US\$11.4bn in 2015, US\$3.7bn below the low of 2009, immediately post-credit crunch, and US\$4.7bn below the level of 2003, the first year of our data series (figure 1). It's a far cry from the 2006-08 period when total deal value in the sector was an average of nearly nine times higher (figure 1).

During periods of high sector M&A, much of the focus was on larger, international deals. These have become fewer in number with a greater concentration on smaller, often domestic deals. So despite the record low in total deal value, deal volume, while significantly short of some peaks reached at the turn of the decade, is broadly comparable with many earlier years.

Crossborder deal volume was down 7% and the total value of international deals plunged 65%, from US\$9.6bn in 2014 to just US\$3.4bn in 2015 (figure 2), surpassing the previous lowest international deal value seen in 2013. US\$2.5bn of these international deals were cross-continental in nature compared to US\$7.4bn in the previous year.

Deal activity, as measured by the value of completed transactions, was largely focused on 'other metals', which took a two-thirds share of sector deal value (figures 3 and 4). Much of the 'other metals' deal value features in the top deals discussed in the next section. In steel, total deal value more than halved year on year, from an already low US\$7.6bn in 2014 to US\$3.3bn in 2015. Total worldwide aluminium deal value was negligible at US\$0.7bn. But deal volume actually rose year on year in steel, reflecting the focus on smaller deals.

**Figure 1: Total metals deals, 2003-2015**

	Number	Cross border number as % of total number	Value (US\$bn)	Cross border value as % of total value
2015	321	27%	11.4	30%
2014	336	28%	16.8	57%
2013	357	26%	34.8	11%
2012	507	30%	45.8	39%
2011	531	33%	38.2	57%
2010	548	34%	26.1	51%
2009	521	25%	15.1	29%
2008	397	38%	60.6	62%
2007	411	35%	144.7	68%
2006	385	29%	86.4	73%
2005	250	40%	34.8	49%
2004	166	40%	37.0	31%
2003	164	30%	16.1	60%

**Source:** PwC Forging Ahead deal analysis, using data from Bloomberg, mergermarket, Thomson Financial and PwC analysis.

**Figure 2: Domestic and crossborder metals deals, 2014-2015**

	Number of deals			Deal value (US\$bn)		
	2014	2015	% change	2014	2015	% change
Domestic	242	234	-3%	7.2	8.1	13%
Cross-border	94	87	-7%	9.6	3.4	-65%
<b>Total</b>	<b>336</b>	<b>321</b>	<b>-4%</b>	<b>16.8</b>	<b>11.4</b>	<b>-32%</b>

**Note:** Deal values are rounded to a single decimal place. Figures may not sum due to rounding and are instead reported accurately for both total and sub-totals.

**Figure 3: Deal making industry sector (by target)**

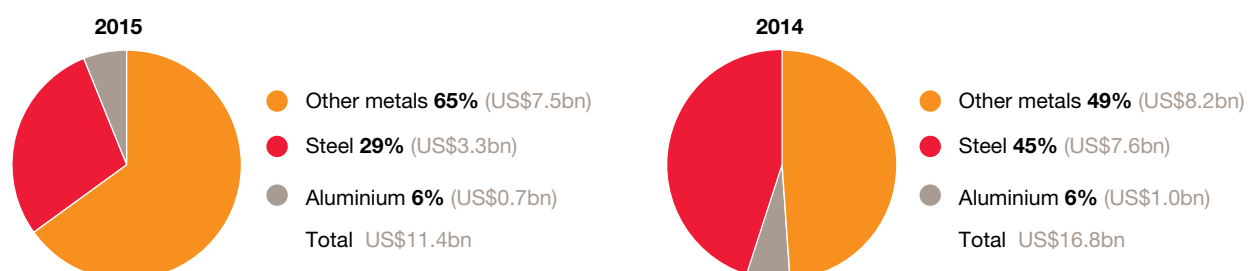
Steel	Number of deals			Deal value (US\$bn)		
	2014	2015	% change	2014	2015	% change
Domestic	69	87	26%	3.0	2.2	-26%
Cross border	28	28	0%	4.7	1.1	-77%
<b>Total</b>	<b>97</b>	<b>115</b>	<b>19%</b>	<b>7.6</b>	<b>3.3</b>	<b>-57%</b>

Aluminium	Number of deals			Deal value (US\$bn)		
	2014	2015	% change	2014	2015	% change
Domestic	44	28	-36%	.7	.6	-11%
Cross border	16	14	-13%	0.3	0.1	-75%
<b>Total</b>	<b>60</b>	<b>42</b>	<b>-30%</b>	<b>1.0</b>	<b>.7</b>	<b>-32%</b>

Other Metals	Number of deals			Deal value (US\$bn)		
	2014	2015	% change	2014	2015	% change
Domestic	129	119	-8%	3.5	5.2	48%
Cross border	50	45	-10%	4.6	2.2	-52%
<b>Total</b>	<b>179</b>	<b>164</b>	<b>-8%</b>	<b>8.2</b>	<b>7.5</b>	<b>-8%</b>

**Note:** Total deal values are rounded to a single decimal place. The % change column reports accurate percentage change in total values before rounding and may differ from the percentage change in rounded values.

**Figure 4: Dealmaking by industry sector (by target)**  
(Deal value shown in parenthesis)



## Deal makers: who's doing what?

*Growth areas such as lightweighting and specialist metals for sectors such as automotive, aerospace and solar were the focus for many of the largest deals. The big landmark move - Berkshire Hathaway's US\$31.6bn purchase of Precision Castparts - is a deal that dwarfed the whole of the rest of the year's dealmaking but remained pending at the close of the year and hence is outside the completed deals data for 2015.*

Precision Castparts is a worldwide, diversified manufacturer of complex metal components and products. It serves the aerospace, power, and general industrial markets and is a market leader in many castings, forged components and other highly engineered parts for the aerospace sector. The deal was greeted by comments about the size of the multiple being paid but it comes at a time of relatively cheap financing and, like other Berkshire Hathaway moves, is being made with very long-term horizons in mind.

Away from Precision Castparts, the top deals table reflects the decline in the size of metals M&A deals. The largest deal - Grupo Ferroatlantica's US\$1.3bn combination with Globe Specialty Metal - would have been ranked number five in value if it had been completed a year earlier and would have been outside of the top five in most previous years.

The largest completed deals also had a strong focus on metals targeted at growing end-markets. The Globe Specialty Metal merger brings together Globe's footprint in North America and

FerroAtlántica's European footprint. Globe Specialty Metal is a North American producer of silicon metal and silicon alloys serving customers in the specialty chemical, aluminum, solar, steel and ductile iron foundry industries while FerroAtlántica is a global producer of silicon metal, silicon-based alloys and manganese alloys.

Similarly, Alcoa's US\$1.3bn purchase of RTI International Metals gives it greater capacity in the titanium and specialty metal products and services used in the aerospace, defense, energy and medical device markets. RTI's multi-material aerospace portfolio, includes a contract with Airbus for finished titanium structural supply parts for the new A350-1000 aircraft programme. Further down the list, diversified industrial company NN Incorporated's US\$615m acquisition of Precision Engineered Products was another example of reach into aerospace as well as advanced engineering and production of components for customers in the medical, electrical and transportation markets.

There was a greater geographical spread of buyers and targets in 2015. Three of the ten largest deals were for US targets but, a year earlier, there were seven such deals in the top ten. Five of the top ten featured Asia Pacific buyers and three of these deals were domestic transactions, two in China and one in South Korea. In the largest, South Korean steel producer Hyundai Steel, a sister company of automakers Hyundai Motor, absorbed its steelmaking affiliate Hyundai Hysco. The biggest outbound move by an Asia Pacific buyer was Australia's BlueScope Steel's US\$760m acquisition from Cargill of 50% share of US mini-mill operator North Star BlueScope Steel that it did not already own.



**Figure 5: Top ten metals deals 2015**

Rank	Completion Date	Target	Sector	Bidder	Target Nation	Bidder Nation	Value (\$m)
1	12/23/2015	Globe Specialty Metals Inc	Other Metal	Grupo Ferroatlantica SA	United States	Spain	1,333
2	7/23/2015	RTI International Metals Inc	Other Metal	Alcoa Inc	United States	United States	1,266
3	9/1/2015	Mineracoes Brasileiras Reunidas Sa MBR	Other Metal	Fundo de investimento em Participacoes Multisetorial Plus II	Brazil	Brazil	1,185
4	7/1/2015	Hyundai Hysco Co Ltd	Steel	Hyundai Steel Co	South Korea	South Korea	1,148
5	10/30/2015	North Star Bluescope Steel	Steel	BlueScoop Steel Ltd	United States	Australia	760
6	3/19/2015	Jiangsu Shagang Co Ltd	Other Metal	Investor Group	China	China	734
7	10/20/2015	Precision Engineered Products LLC	Other Metal	NN Inc	United States	United States	615
8	9/30/2015	Ambatovy Nickel Project	Other Metal	Sumitomo Corp	Madagascar	Japan	447
9	12/10/2015	Shangai Krupp Stainless Co Ltd	Steel	Lujiazui International Trust Corp Ltd	China	China	420
10	5/19/2015	Ningxia Xinri Hengli Steel Wire Co Ltd	Steel	Shangai Zhongneng Enterprise Development Group Co Ltd	China	China	210

**Figure 6: Top five deals still pending at year end 2015**

Rank	Month announced	Target	Sector	Bidder	Target Nation	Bidder Nation	Value (\$m)
1	Aug 2015	Precision Castparts Corp	Steel	Berkshire Hathaway Inc	United States	United States	31,595
2	May 2015	Iron Mining International (Mongolia) Ltd	Other metals	Zhongrun Resources Investment Corp	Mongolia	China	1,935
3	March 2015	Zhejiang Deqing Hanggang Fuchun Renewable Technology Co Ltd	Other metals	Hangzhou Iron & Steel Co Ltd	China	China	1,664
4	Aug 2015	Shougang Jingtang Iron & Steel Corp	Steel	Beijing Shougang Co Ltd	China	China	1,652
5	May 2015	Xining Special Steel Co Ltd	Steel	Investor Group	China	China	1,974

# Deal places: regional analysis

The year-on-year falls in metals deal value in recent years to relatively low levels have translated into considerable volatility in regional shares of worldwide metals deal activity. In recent years, the largest share of deal value has alternated between the Asia Pacific region and North America. In the last twelve months it was Asia Pacific's turn, with a 40% share of deal volume and a 45% share of deal value (figure 7). The 45% Asia Pacific value share was up sharply on its lowly 17% share in 2014 but still short of the 61% share in 2013.

The importance of Asia Pacific to 2015 deal value is highlighted in figure 8 – target deal value in the rest of the world more than halved year on year. Much of this came from a sharp fall in North American completed deal target value, down by over a third from US\$7.6bn in 2014 to US\$4.8bn in 2015. South America recorded an increase in target deal value, but from a very low base. Most striking, though, is the near drying-up of deal value in western Europe and also in central and eastern Europe (CEE). The Russian Federation is counted in the CEE totals. Russian sanctions and currency weakness are among the factors clouding that region's deal environment.

**Figure 8: Total metals deals excluding Asia Pacific targets, 2010-2015**

	Number	Value (US\$bn)
2015	194	6.2
2014	198	14.0
2013	193	13.7
2012	253	14.7
2011	325	30.9
2010	309	15.4

**Figure 7: M&A activity by target continent**

North America	Number	% of all world deals	Value (US\$bn)	% of total value
2014	75	22%	7.6	45%
2015	66	21%	4.8	42%
<b>% change</b>	<b>-12%</b>		<b>-37%</b>	
Asia Pacific	Number	% of all world deals	Value (US\$bn)	% of total value
2014	138	41%	2.8	17%
2015	127	40%	5.2	46%
<b>% change</b>	<b>-7%</b>		<b>86%</b>	
Central & South America	Number	% of all world deals	Value (US\$bn)	% of total value
2014	12	4%	0.3	2%
2015	9	3%	1.2	11%
<b>% change</b>	<b>-25%</b>		<b>300%</b>	
Western Europe	Number	% of all world deals	Value (US\$bn)	% of total value
2014	77	23%	5.9	35%
2015	68	21%	0.1	2%
<b>% change</b>	<b>-12%</b>		<b>-98%</b>	
Central & Eastern Europe	Number	% of all world deals	Value (US\$bn)	% of total value
2014	34	10%	0.3	2%
2015	51	16%	0.0	0%
<b>% change</b>	<b>50%</b>		<b>-100%</b>	

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## Methodology

*Metals Deals* 2015-16 is based on published transactions from the SDC Platinum (Thomson Reuters) database, January 2016. The report includes data from prior years and is the latest in an annual series of metals deals reports. Comparative data for prior years may differ from that appearing in previous editions of our annual analysis. This can arise, for example, because of updated information or methodological refinements and consequent restatement of the input database.

Analysis encompasses only those deals which are completed in the calendar year, except for figure 6, which is based on pending deals. Deal values are the consideration value announced or reported, including any assumption of debt and liabilities. Figures relate to actual stake purchased and are not extrapolated to 100%. The geographical split of the deals refers to the location of the target company or assets. Deals located in the territory of the Russian Federation are included in the totals for central and eastern Europe. The analysis relates to target companies in the supply chain for metals and basic metal products, including recycling.

The sectors and subsectors analysed include deals for targets with primary SIC codes that fall into one of the following industry groups: iron ores; ferroalloy ores, except vanadium; steel works, blast furnaces, rolling mills and finishing mills; iron and steel foundries; primary smelting and refining/nonferrous; secondary smelting and refining/nonferrous; rolling, drawing, and extruding/nonferrous; nonferrous foundries; miscellaneous primary metals products; and metals service centres and offices.

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