J.P.Morgan CAZENOVE

Europe Equity Research
14 December 2017

European Metals & Mining - 2018 Outlook

Evolution not revolution - growth, capital discipline & valuations support higher beta; upgrade GLEN to OW

Synchronised global growth, a low risk of a hard landing in China, supply discipline and attractive valuation, cash generation and returns profiles should, in our view, help the sector outperform again in 2018. However, we do expect H1 volatility from Chinese winter capacity shutdowns/restarts and fading price momentum in H2; in addition, Fed rate rises and rotation out of EM could be headwinds. On balance, though, we see upside risk to consensus growth and earnings expectations for the year, with a 27% fall in spot prices implied for the Diversifieds to reach market average FCF yields. We therefore take a slightly more aggressive approach on recommendations, upgrading **GLEN** to **OW (add to AFL)**. We also downgrade **RIO** to **N**, upgrade **BHP to N** and downgrade **NHY** to **N**. Our top picks are **AAL, GLEN, KAZ** – all **OW**, while our least preferred list includes **ANTO, BOL and MNOD (UW)**.

- **Macro outlook remains good, but with more risks than perhaps appreciated:** Our house view assumes solid global growth momentum and rising inflation expectations & bond yields, which are generally positive for the sector. In addition, supply side restructuring should help keep commodity markets well balanced. However, risks remain, including moderating Chinese growth, US rate increases and rotation out of EM. We lean towards the 2018 backdrop being broadly supportive for the sector, barring a significant geopolitical shock. Winter capacity shutdowns are likely to create volatility through until March/April.
- **Commodity preferences – base > bulks:** Our 2018 price assumptions are modestly below spot. We believe bulks are more vulnerable to a pullback than base metals given Chinese winter shutdown dynamics; we anticipate average **met** and **thermal coal** prices ~20-30% below spot and 15% downside to **iron ore**. Our **base metal** forecasts are -1-8% vs spot, with aluminium expected to be the strongest performer and copper weakest. **Precious metals** are most (negatively) exposed to rising US rates, which presents downside risk to our flat gold price profile, although silver and platinum should benefit from stronger industrial demand.
- **Key themes for 2018 - evolution, not revolution:** Stronger balance sheets see questions over capital allocation growing louder. We believe investors should expect strong returns of capital in 2018, with companies still focused on lower steady-state gearing. We do not expect major M&A, while capex is likely to creep, rather than jump, higher. We also believe the sector's valuation case remains strong. We forecast a spot FCF yield of ~14-16% for 2018-19E (ex-VED), ~10% on JPMe, vs the market at ~4.5-5.5%. EV/EBITDAs and leverage also screen attractively; we forecast ND/EBITDA of -0.2x on spot by YE'19 (0.0x JPMe). Assuming the supportive macro backdrop continues, we see scope for re-rating, with a 27% fall in spot prices required for the sector to reach market average FCF yields.
- **Quant overlay – Materials should outperform, but only if we remain in "expansion" phase of the cycle:** In the expansion phase, our colleagues in Quant Research favour good Value, high Growth, rising Momentum, low Quality, high Risk and Small caps stocks. Materials stocks screen

European Metals, Mining & Steel

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attractively and appear to reflect this phase more than other sectors. The risk is that many macro indicators are at high levels and may slow during Q1’18, an aggressive slowdown would reduce the attraction of Materials stocks.

- **Key recommendation changes:** We **upgrade GLEN from N to OW (and add to AFL)**. Stripping out the Marketing business, we estimate GLEN is the second cheapest of the diversified peers and generates a better FCF yield than both RIO and BHP. It also offers the cleanest exposure to structural growth trends such as electrification, lower exposure to the steel value chain and delivers strong volume growth while still deleveraging the balance sheet. We **upgrade BHP** and **downgrade RIO** to **N** following three years of relative re-rating for RIO and with little to choose on valuation grounds. We also **downgrade NHY & RRS (OW to N)**, and **BOL & ACA (N to UW)**.
- **Key calls – Diversifieds: AAL & GLEN (OW)** are our top picks. **GLEN**'s Industrial division now screens as the second cheapest of the peer group at 3.9x spot 2018E EV/EBITDA. Scope for latent capacity restarts, the strongest exposure to EV and strong FCF generation (CY'18E spot 13%) are also supportive. **AAL**’s valuation is the cheapest of the group, while scope remains to exceed expectations on operational improvement. The balance sheet is also now more resilient to lower commodity prices, with South African restructuring a potential wild card. **RIO (OW to N)** has outperformed **BHP (UW to N)** by >25% over three years and the valuation gap has now closed. With RIO’s lower ROCE resiliency and our view on aluminium price momentum having peaked, we collapse our spread recommendation. RIO’s more powerful capital returns story should, however, support the shares relative to BHP’s US Onshore disposal story.
- **Key calls – Mid-tier: KAZ (OW)** remains our favoured base metal producer, offering growth, low-cost operations, attractive valuation, and an ongoing transfer of value from debt to equity holders; it generates a spot FCF yield of 16% in 2019E. **BOL (UW)** remains high quality, but downgraded 2019 guidance (particularly on grades) leaves the shares looking expensive. On **ANTO** we are **UW**, given absolute and relative valuation is trading at or close to a 10-year high, while the volume growth, FCF and dividend outlooks are all muted.
- **Key calls – Precious Metals: Polyus (PLZL, OW)** is our only OW in precious metals given our view of price downside risk from Fed tightening and further synchronised global growth. **ACA (UW)** is, in our view, difficult to invest in at this juncture given the Tanzanian political situation and wholesale top level management change, while the cost profile of **HOC (UW)** means it remains highly leveraged to prices. **FRES** and **RRS (both N)** are safer exposures but, at ~9-12x spot EV/EBITDA, we see no strong rationale to buy at these levels.
- **Steel vs Mining – supply side reform and consolidation can continue to support steel:** We believe Chinese industrial restructuring, a reasonable demand outlook, European consolidation, and trade protection can continue to support steel prices in 2018. Global capacity utilisation is rising and is expected to reach >75% in 2018, which could begin to support pricing power for steelmakers and allow some sustained margin expansion. Within steel, we retain our preference for stainless vs carbon due to stronger demand growth and more consolidated supply. **APAM** and **OUTO (both OW)** are our top picks, with **TKA** and **SSAB (both N)** least preferred.

Equity Ratings and Price Targets

		Mkt Cap	Price		Rating		Price Target	
Company	**Ticker**	**($ mn)**	**CCY**	**Price**	**Cur**	**Prev**	**Cur**	**Prev**
Anglo American	AAL LN	23,762.33	GBp	1,390	OW	n/c	1,620	1,640
Anglo American (AGLJ.J)	AGL SJ	23,510.10	ZAc	25,041	OW	n/c	31,800	29,500
BHP Billiton	BLT LN	98,372.34	GBp	1,384	N	UW	1,400	1,235
BHP Billiton (BILJ.J)	BIL SJ	38,586.57	ZAc	24,985	N	UW	25,500	21,800
Rio Tinto plc	RIO LN	87,356.95	GBp	3,547	N	OW	3,750	4,100
Glencore PLC	GLEN LN	68,773.53	GBp	354	OW	N	450	320
Glencore plc (GLN SJ)	GLN SJ	67,961.98	ZAc	6,372	OW	N	8,200	5,400
Vedanta Resources	VED LN	2,484.75	GBp	676	N	n/c	650	n/c
Acacia Mining PLC	ACA LN	942.10	GBp	171	UW	N	170	230
Aluminium Bahrain	ALBH BI	2,262.29	BHD	0.61	OW	n/c	0.83	0.86
Antofagasta	ANTO LN	12,162.83	GBp	920	UW	n/c	700	660
Boliden	BOL SS	8,660.71	SEK	266.40	UW	N	225.00	220.00
Ferrexpo Plc	FXPO LN	2,043.11	GBp	262	N	n/c	240	175
Fresnillo Plc	FRES LN	12,863.27	GBp	1,301	N	n/c	1,450	n/c
Gem Diamonds Ltd	GEMD LN	132.51	GBp	72	N	n/c	95	100
Hochschild	HOC LN	1,662.62	GBp	233	UW	n/c	205	235
Hydro	NHY NO	13,788.25	NOK	56.35	N	OW	57.00	61.50
KAZ Minerals	KAZ LN	4,573.09	GBp	763	OW	n/c	850	700
Norilsk Nickel	MNOD LI	28,484.19	USD	18.00	UW	n/c	16.32	16.28
Petra Diamonds	PDL LN	485.77	GBp	69	OW	n/c	120	130
Polymetal International	POLY LN	4,864.99	GBp	843	N	n/c	920	n/c
Randgold Resources Ltd-ADR	GOLD US	8,656.45	USD	92.44	N	OW	95.00	109.00
Randgold Resources Ltd	RRS LN	8,537.65	GBp	6,795	N	OW	7,100	8,300
PJSC Polyus	PLZL RX	9,782.12	RUB	4,291	OW	n/c	5,711	6,056
Polyus PJSC	PLZL LI	9,763.32	USD	36.55	OW	n/c	49	53

Source: Company data, Bloomberg, J.P. Morgan estimates. n/c = no change. All prices as of 13 Dec 17 except for ALBH BI [14 Dec 17].

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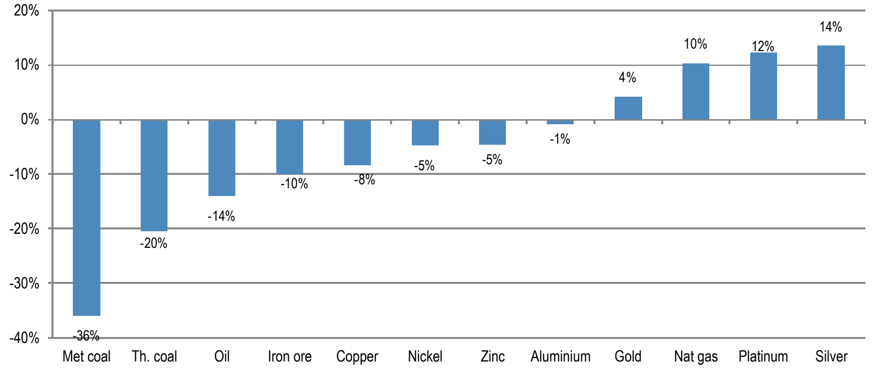
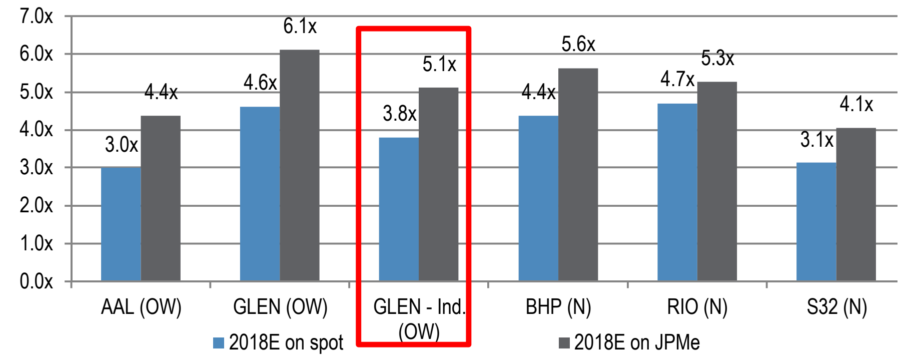
Executive Summary

We highlight below the key conclusions of our European Mining & Steel outlook for 2018, and key recommendations.

Section I: 2018 macroeconomic outlook & commodity preferences

Theme	Our conclusions	Key Charts	Page
2018 macroeconomic outlook – base case is constructive	• Commodity price increases across 2017 have modestly overshot fundamentals, but downside risk broadly priced into equities. JPM forecasts downside to industrial metals, although risk weighted to H2. Base metals to outperform bulks. • Macro is providing mixed signals. **Bullish**: Above trend global growth and rising bond yields/inflation. **Bearish:** US rate rises, rotation out of EM; China GDP forecast to slow but potential upside risk. • Decoupling of commodity prices from US interest rates was a notable development in 2017. • Complacency levels high. Geopolitical shocks (e.g. North Korea), Fed policy with JPMe of 125bps rate increase by end of 2018 and potential global economic slowdown arguably not reflected in market valuations. • JPM forecast China GDP will slow to +6.5% in 2018; we ascribe a low risk to a hard landing scenario.	**J.P.Morgan 2018E commodity prices vs spot prices 12th Dec'17 – expansion to sustain**  Source: J.P.Morgan Commodity Research forecasts, JPMorgan forecasts, Bloomberg	pp.22
Commodity preferences	• Mining equities are highly correlated to commodity prices. JPM commodity forecasts imply earnings headwind, particularly in H2. H1 outlook appears more supportive. Chinese winter shutdowns introduce volatility but tighter supply again likely in winter 2018. • JPM forecast coal & iron ore will experience greater downside than base metals & precious metals in 2017. • Miners are strategically well positioned & balance sheets restored due to strong 2017 commodity prices. Valuations are not expensive & share prices still reflect somewhat lower commodity prices than spot. Scope for continued re-rating should supportive macro backdrop extend. • Among European **Steel** we retain structural preference for **stainless** on stronger global demand & consolidated regional supply in EU & US. Aperam and Outokumpu are top picks in the stainless sub-sector.	**2018E EV/EBITDA of UK Diversifieds – share prices still discount lower commodity prices. Glencore Industrial assets offer cheap exposure to electrification theme.**  Source: J.P. Morgan forecasts. Spot as of 12th Dec'17.	pp.36

Section II: Sector themes

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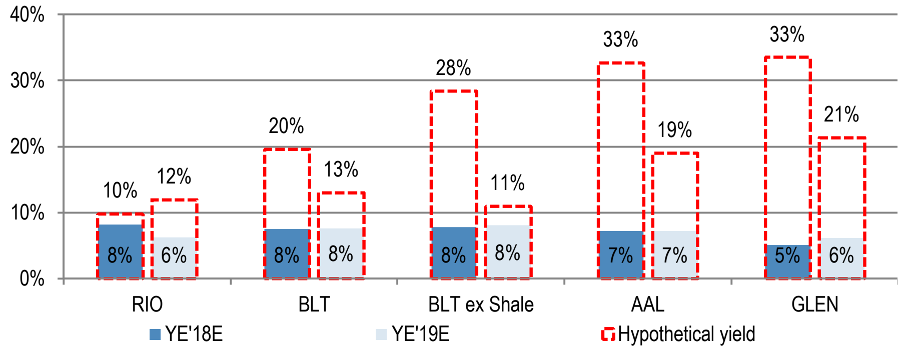
Miners' balance sheets are increasingly robust

- Scale of balance sheet repair over past two years stunning. Sector arguably now under-geared. JPM forecast Diversifieds' maximum ND/EBITDA 0.6x by YE'18 on JPMe prices, 0.3x on spot.
- Analysis since 1999 shows diversified peer group historically did not carry high debt - average ND/EBITDA in 1999 was 1.0x, 25% gearing.
- Commitment to more conservative capital structures remains in place. BHP, AAL, GLEN & RIO all now have explicit net debt and/or ND/EBITDA ceilings. GLEN <2.0x ND/EBITDA (<3.0x previously) and <$15bn ND, AAL targets <1.5x, RIO's YE'16 gearing will be ~14% vs a previous tolerance of 20-30%.
- Balance sheets are now resilient to lower commodity prices. Assuming return to Jan'16 prices, the low point for most commodities since 2009, RIO, BHP and AAL would have <2.5x YE'18 ND/EBITDA. We calculate RIO would have ~$8bn capital headroom, equivalent to 9% its mkt cap.

Base case & hypothetical dividend yields using 1.5x ND/EBITDA constraint – spot prices



Source: J.P. Morgan Commodity Research forecasts, JPMorgan forecasts, Bloomberg

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Capital availability - significant spares capital unless commodity prices collapse. All Diversified miner balance sheets generate capital surplus at spot prices less 20%

- Diversifed Miners generate substantial excess capital, even at lower commodity prices & assuming a 1.5x ND/EBITDA target. On JPM forecasts, by YE'18 AAL has capital headroom above 1.5x ND/EBITDA equivalent to 31% its current mkt cap, RIO's 26%, GLEN 22% and BHP's 20%.
- At spot commodity prices, Diversified Miners generate substantial excess capital. By YE'18 AAL would have "spare capital" above 1.5x ND/EBITDA equivalent to 58% its mkt cap, GLEN 37%, BHP 31%, RIO 31%.
- Even assuming spot prices fall 20% from current levels, the diversified miners still generate surplus capital. By YE'18, AAL generates 18%, and BHP, RIO & GLEN ~14%.
- RIO performs the best under stress tests. It remains the only diversified miner to retain a capital surplus under a scenario where commodity prices return to Jan'16 spot prices. To a 1.5x ND/EBITDA, RIO generates 9% surplus capital by YE'18 vs. BHP's -2% and AAL / GLEN at a 7-13% deficit.

Capital headroom / (shortfall). AAL generates ~31% surplus capital (reflected as % current market cap) by YE'18, although RIO retains the strongest BS under Jan'16 prices

	AAL		BHP		GLEN		RIO	
	YE18E	YE19E	YE18E	YE19E	YE18E	YE19E	YE18E	YE19E
JPM base case								
ND / EBITDA (x)	0.6x	0.4x	0.5x	0.3x	0.5x	0.2x	0.3x	0.0x
Cap surplus	7.4	8.3	21.6	25.3	14.8	18.8	22.3	27.1
- % mkt cap	**31%**	**35%**	**20%**	**24%**	**22%**	**28%**	**26%**	**32%**
Spot prices								
ND / EBITDA (x)	0.2x	0.0x	0.3x	0.1x	0.2x	-0.1x	0.2x	0.0x
Cap surplus	13.8	16.9	33.4	39.8	24.6	35.2	26.2	31.6
- % mkt cap	**58%**	**71%**	**31%**	**37%**	**37%**	**53%**	**31%**	**37%**
Spot prices -20%								
ND / EBITDA (x)	0.8x	0.6x	0.7x	0.5x	0.8x	0.4x	0.6x	0.4x
Cap surplus	4.3	5.7	15.2	19.2	9.1	15.7	11.5	14.4
- % mkt cap	**18%**	**24%**	**14%**	**18%**	**14%**	**24%**	**14%**	**17%**
Jan'16 spot prices								
ND / EBITDA (x)	2.0x	1.8x	1.7x	1.5x	3.3x	3.1x	0.8x	0.7x
Cap surplus	-1.6	-1.0	-2.3	-0.2	-8.7	-8.9	7.5	9.7
- % mkt cap	**-7%**	**-4%**	**-2%**	**0%**	**-13%**	**-13%**	**9%**	**11%**

Source: J.P. Morgan, Bloomberg (prices as at cob 12-Dec-17).

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Section II: Sector themes

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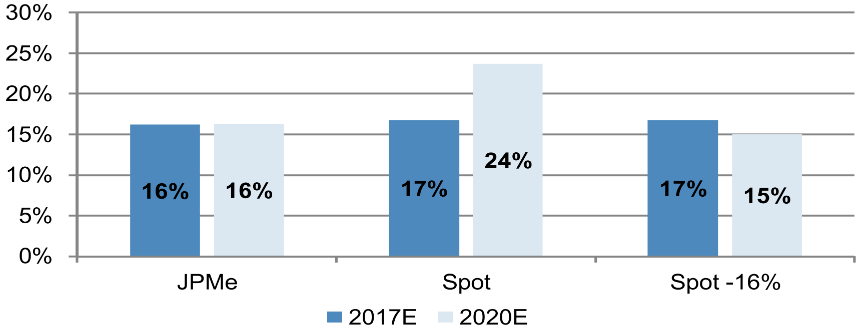
ROCE analysis – Sector returns have improved since 2015's cyclical lows but further improvement relies on elevated spot prices

- "Self-help" programmes and improved prices have created value for diversified miners after ROCE troughed in 2015 well below the typical cost of capital.
- ROCE improves markedly under spot prices but JPM base case forecasts imply 2020E returns will remain flat vs. 2017.
- Stock specific catalysts will be key differentiating factors amongst diversified miners. BHP has potential to benefit most if US Onshore is completed, while GLEN and BHP's ROCE remains the most defensive to materially lower commodity prices.

Average Diversified ROCE (post impairments) JPMe & spot– implies ROCE improves markedly under spot prices and could withstand ~16% reduction in prices



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

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Mining vs the Market – cross sector analysis

- If current commodity prices persist in 2018, valuations are cheap vs the European market, with capital allocation messaging still disciplined & superior payout potential.
- We calculate a 14% average 2018E FCF yield at current commodity prices for diversified miners vs 4% average for European equities; an average 2018E dividend yield of 7% vs 3% for Europe; and an average EV/EBITDA of 4.2x vs 10x for Europe.
- Market does not believe spot base metal and bulk commodity prices are sustainable through 2018. While downside is factored into the JPM base case, we note an average 9.5% FCF yield under the JPMe base case and 10.3% under a spot - 10% scenario.
- Matching market average FCF yield requires 27% fall in spot prices.
- Glencore and Anglo American (both OW) standout as generating particularly attractive FCF relative to the European market and against the broader sector.

UK Mining sector spot valuations & balance sheet metrics vs IBES consensus forecasts

	FCF yield (%)		Div yield (%)		EV/EBITDA (x)		ND/EBITDA (x)	
	2018	2019	2018	2019	2018	2019	2018	2019
BHP (spot)	12%	13%	8%	8%	4.4x	4.1x	0.3x	0.1x
RIO (spot)	11%	11%	6%	7%	4.7x	4.3x	0.1x	-0.1x
GLEN (spot)	12%	15%	5%	6%	4.6x	3.8x	0.2x	-0.1x
AAL (spot)	20%	20%	7%	7%	3.0x	2.8x	0.2x	0.0x
Diversified avg.	**14%**	**15%**	**7%**	**7%**	**4.2x**	**3.7x**	**0.2x**	**0.0x**
EMEA Mining	**8%**	**10%**	**4%**	**4%**	**6.6x**	**5.9x**	**0.3x**	**0.1x**
Materials ex.Mining	4%	6%	3%	3%	11.2x	10.3x	1.1x	0.9x
Industrials	5%	6%	3%	3%	10.3x	9.3x	0.9x	0.7x
Cons.Discretionary	2%	3%	3%	4%	9.0x	8.2x	0.5x	0.3x
Healthcare	5%	6%	2%	2%	13.7x	11.9x	0.9x	0.6x
Cons.Staples	5%	6%	3%	3%	11.7x	10.8x	1.2x	1.0x
IT	5%	6%	2%	2%	11.8x	10.6x	0.2x	-0.1x
Energy	5%	6%	4%	4%	7.0x	6.3x	1.5x	1.3x
Telecoms	0%	2%	5%	5%	6.8x	6.7x	2.0x	1.9x
Utilities	4%	5%	5%	5%	8.6x	8.4x	3.2x	3.1x
Avg. ex Mining	**4%**	**5%**	**3%**	**3%**	**10.0x**	**9.2x**	**1.3x**	**1.1x**

Source: J.P. Morgan estimates, Bloomberg spot as at cob 12-Dec-17, IBES data.

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We highlight key recommendation changes below, with details outlined later in this note. We also reiterate certain conviction calls, despite there being no change in our recommendation.

Section III: Key recommendation changes & reiteration

<table>
<tr><th>Theme</th><th>Our conclusions</th><th>Key Charts</th><th>Page</th></tr>
<tr>
<td>Diversified Miners – GLEN top pick, remain OW on AAL. Collapse RIO/BHP spread trade</td>
<td>

We believe H1'18 will continue to benefit from a solid global macroeconomic backdrop and positive, albeit volatile, impacts from Chinese winter shutdowns, before more uncertainty emerges in H2.
Upgrade Glencore to OW (from N): GLEN offers attractive FCF dynamics, with a balance sheet that is now arguably the strongest of the peer group, supporting further growth and shareholder returns. The company enjoys the highest exposure to structural growth trends such as EV. And while headline spot EV/EBITDAs of 4.8-4.2x are high, stripping out the Marketing business leaves the Industrial assets on 3.9-3.7x, now a ~10-20% discount vs RIO & BHP.
Upgrade BHP, downgrade RIO to N: Following >25% relative outperformance, the valuation anomaly in RIO's favour has now completely disappeared. BHP offers more attractive multiples & FCF has scope to improve perceptions through US Onshore sale.
Retain OW on Anglo American: AAL remains attractive, in our view. 4.4x EV/EBITDA 2018E on JPM base case, but just 3.0x on spot, with ongoing scope to beat low expectations on operational and financial performance. Market friendly South African political change would be positive; restructuring remains a wild card upside scenario.

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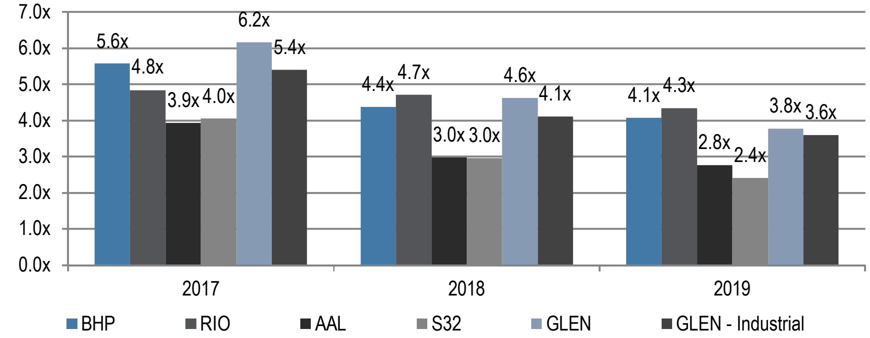
Diversified Mining spot EV/EBITDA – OW Anglo American & Glencore, N BHP Billiton, Rio Tinto & South32



Source: J.P. Morgan estimates.
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<tr>
<td>Base Metals – downgrade NHY & BOL on valuation, taking more cautious view on Precious Metals</td>
<td>

KAZ Minerals remains top pick: Having delivered its growth projects successfully KAZ should continue de-gearing and transferring value from debt to equity holders. Spot 2018E EV/EBITDA of 4.5x is the cheapest of the peer group, while FCF ramps up to >17% yield in 2019E.
Downgrade Norsk Hydro to N: We see modest upside to NHY's share price and remain positive on aluminium dynamics. However, we believe price momentum has peaked while costs continue to rise, creating downside risk to consensus.
Downgrade BOL to UW: Trading towards top end of historic valuation range relative to the sector, with a worsening FCF profile.
Negative on precious: Rising US rates create downside risk to gold prices. We downgrade RRS to N and identify FRES (N) as our top pick. Downgrade ACA to UW on Tanzanian political risk and with the majority of the current executive team leaving the company.

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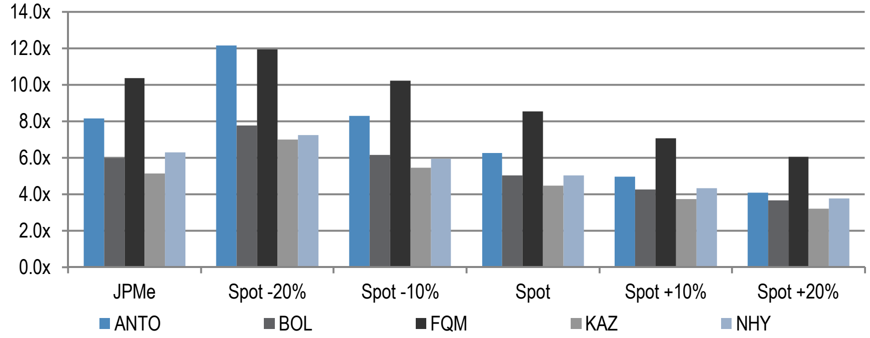
2017E base metals EV/EBITDA scenarios – downgrade NHY to N, BOL to UW



Source: J.P. Morgan estimates.
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Valuations: Spot commodity prices & FX

Table 1: Valuation summary – Spot prices

	Stock	Market	PER		EV/EBITDA		FCF Yield (%)		Divi yield (%)		Gearing (ND/ND+E)		ND / EBITDA (x)	
	Rec.	Cap ($m)	2018E	2019E	2018E	2019E	2018E	2019E	2018E	2019E	2018E	2019E	2018E	2019E
Diversifieds														
BHP Billiton	UW	106,335	8.6	8.5	4.4	4.1	12.5%	12.6%	8.1%	8.2%	10%	3%	0.3	0.1
Rio Tinto	OW	85,361	9.6	9.2	4.7	4.3	10.6%	11.4%	6.3%	6.5%	5%	-3%	0.1	-0.1
Glencore	N	66,694	7.7	6.5	4.6	3.8	12.5%	15.3%	5.0%	6.1%	8%	-5%	0.2	-0.1
Anglo American	OW	23,790	5.6	5.6	3.0	2.8	20.0%	20.4%	7.2%	7.2%	8%	-2%	0.2	0.0
South32	N	12,524	6.7	5.8	3.1	2.6	18.2%	20.3%	9.1%	10.4%	-28%	-38%	-0.7	-0.8
Vedanta	N	2,472	2.4	1.7	5.3	4.3	23.9%	43.1%	7.7%	6.5%	93%	81%	4.1	3.3
Average Sub-Sector			***6.8***	***6.2***	***4.2***	***3.6***	***16.3%***	***20.5%***	***7.2%***	***7.5%***	***16%***	***6%***	***0.7***	***0.4***
Single commodity														
Antofagasta	UW	11,970	13.6	11.4	6.2	5.2	5.6%	7.5%	2.6%	3.1%	2%	-4%	-0.1	-0.3
Boliden	N	8,703	9.6	10.5	5.1	5.3	7.8%	8.0%	3.5%	3.1%	0%	-8%	0.0	-0.3
KAZ Minerals	OW	4,508	6.6	5.8	4.5	3.7	7%	17%	0.0%	0%	52%	32%	1.4	0.8
KGHM	N	5,730	6.5	7.3	4.3	4.6	6.7%	4.8%	1.5%	1.5%	17%	14%	0.8	0.7
Aluminium Bahrain	OW	2,276	19.6	10.5	9.8	7.9	-23%	-19%	2.0%	4%	39%	44%	4.3	4.0
Hydro	OW	13,910	10.0	9.0	5.0	4.4	12.6%	12.9%	4.0%	4.5%	6%	-2%	0.2	-0.1
Norilsk	UW	28,888	9.3	9.6	6.6	7.0	9%	5%	11.5%	11%	62%	68%	1.3	1.7
Ferrexpo	N	2,054	4.4	4.0	3.2	2.4	21.3%	23.2%	3.8%	1.9%	3%	-32%	0.0	-0.5
Average Sub-Sector			***12.5***	***9.0***	***5.9***	***5.0***	***5.0%***	***7.7%***	***3.2%***	***3.3%***	***23%***	***15%***	***1.2***	***0.8***
Precious metals														
Acacia Mining	N	936	14.2	12.1	5.0	4.1	8.0%	11.8%	0.0%	0.0%	-4%	-10%	-0.5	-1.1
Fresnillo	N	12,647	31.1	26.2	11.5	10.1	1.6%	3.5%	1.8%	2.1%	0%	-8%	0.0	-0.2
Hochschild	UW	1,600	429.9	nm	5.9	6.4	5.8%	5.4%	0.9%	0.9%	5%	-4%	0.2	-0.1
Randgold	OW	8,461	26.0	25.1	9.5	9.0	7.3%	8.0%	3.6%	3.8%	-39%	-57%	-1.4	-1.9
Polyus	OW	10,520	11.0	8.3	8.3	6.0	4.5%	11.3%	5.3%	6.1%	92%	90%	1.9	1.2
Polymetal	N	4,801	12.1	13.1	7.6	7.8	4.3%	6.9%	4.1%	3.8%	41%	36%	1.8	1.5
Gem Diamonds	N	136	17.0	7.6	3.4	2.8	4.9%	14.3%	0.0%	0.0%	4%	1%	0.2	0.0
Petra Diamonds	OW	485	7.2	4.8	3.9	2.8	14.5%	31.5%	0.0%	6.6%	43%	32%	1.9	1.1
Average Sub-Sector			***50.3***	***12.4***	***5.8***	***5.1***	***-1.0%***	***1.0%***	***2.6%***	***3.1%***	***19%***	***15%***	***0.4***	***0.0***

Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Valuations: J.P. Morgan base case commodity prices & FX

Table 2: Valuation summary – JPMe commodity and FX price forecasts

	Stock	Market	PER		EV/EBITDA		FCF Yield (%)		Divi yield (%)		Gearing (ND/ND+E)		ND / EBITDA (x)	
	Rec.	Cap ($m)	2018E	2019E	2018E	2019E	2018E	2019E	2018E	2019E	2018E	2019E	2018E	2019E
Diversifieds														
BHP Billiton	UW	106,335	12.4	13.2	5.6	5.5	8.4%	8.6%	5.6%	5.3%	15%	10%	0.5	0.3
Rio Tinto	OW	85,361	11.1	10.7	5.2	4.9	9.0%	10.0%	5.4%	5.6%	7%	0%	0.2	0.0
Glencore	N	66,694	12.1	12.5	6.1	5.8	10.2%	9.5%	4.3%	3.9%	14%	7%	0.5	0.2
Anglo American	OW	23,790	9.4	10.3	4.3	4.4	10.7%	10.4%	4.3%	3.9%	14%	9%	0.6	0.4
South32	N	12,524	9.5	11.9	4.3	4.7	13.5%	11.5%	6.2%	5.0%	-22%	-28%	-0.7	-1.0
Vedanta	N	2,472	3.4	2.4	6.3	5.2	12.7%	28.3%	7.9%	6.8%	95%	88%	4.8	4.0
Average Sub-Sector			***9.7***	***10.2***	***5.3***	***5.1***	***10.8%***	***13.1%***	***5.6%***	***5.1%***	***20%***	***14%***	***1.0***	***0.7***
Single commodity														
Antofagasta	UW	11,970	19.7	14.6	8.1	6.3	2.9%	5.7%	1.8%	2.4%	5%	0%	0.1	-0.2
Boliden	N	8,703	11.8	18.8	6.0	8.0	6.8%	4.3%	2.8%	1.8%	4%	1%	0.1	0.0
KAZ Minerals	OW	4,508	7.9	7.0	5.1	4.4	5%	14%	0.0%	0%	55%	38%	1.6	1.1
KGHM	N	5,730	5.9	6.3	4.2	4.3	7.2%	7.0%	1.5%	1.5%	20%	14%	0.8	0.7
Aluminium Bahrain	OW	2,276	11.2	6.8	7.8	6.3	-17%	-16%	3.6%	6%	37%	42%	3.3	3.1
Hydro	OW	13,910	13.4	16.8	6.3	7.1	9.9%	7.0%	3.1%	2.2%	9%	6%	0.4	0.4
Norilsk	UW	28,888	10.5	11.4	7.3	8.0	7.6%	3.1%	10.5%	7.6%	65%	72%	1.5	2.0
Ferrexpo	N	2,054	7.9	7.7	5.6	5.2	12.2%	11.0%	3.8%	1.9%	19%	5%	0.5	0.1
Average Sub-Sector			***19.2***	***12.7***	***6.7***	***6.2***	***3.6%***	***4.7%***	***3.0%***	***2.6%***	***27%***	***23%***	***1.3***	***1.0***
Precious metals														
Acacia Mining	N	936	11.6	12.3	4.4	4.0	9.7%	12.0%	0.0%	0.0%	-5%	-11%	-0.5	-1.1
Fresnillo	N	12,647	26.5	24.1	10.4	9.4	1.9%	4.1%	2.1%	2.3%	-1%	-10%	0.0	-0.2
Hochschild	UW	1,600	34.8	72.7	4.6	4.9	7.8%	8.2%	0.9%	0.9%	2%	-14%	0.0	-0.3
Randgold	OW	8,461	23.6	26.2	8.9	9.1	7.3%	9.4%	4.0%	3.6%	-38%	-62%	-1.3	-2.0
Polyus	OW	10,520	9.4	7.9	6.8	5.7	7.3%	12.1%	5.7%	6.2%	92%	89%	1.5	1.0
Polymetal	N	4,801	9.1	10.1	6.5	6.4	7.0%	9.5%	5.5%	4.9%	37%	32%	1.3	1.2
Gem Diamonds	N	136	12.5	6.3	3.1	2.4	9.4%	20.3%	0.0%	1.6%	2%	-3%	0.1	-0.1
Petra Diamonds	OW	485	6.6	4.3	3.7	2.6	16.3%	34.9%	0.0%	6.6%	42%	30%	1.8	1.0
Average Sub-Sector			***26.7***	***19.4***	***5.2***	***4.8***	***2.7%***	***6.2%***	***2.7%***	***3.1%***	***18%***	***11%***	***0.3***	***-0.3***

Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Summary updated stock views

Table 3: Summary stock view – Mining

Company	Rating (prior)	Stock View
Diversifieds		
BHP Billiton	N	Following several years of unclear strategy and poor capital allocation and, which led to material underperformance, we believe BHP's valuation is now more attractive. Risks of executing the proposed US Onshore divestment process remain; however, successful delivery could support capital returns and the growth pipeline. The shares trade at a small discount to our price target, hence we upgrade from UW to Neutral.
Rio Tinto	N (OW)	RIO has outperformed for several years, is now the most expensive of the diversified peer group and trades near our NPV based price target. While we continue to value the strong balance sheet, coherent strategy and best-in-class shareholder returns profile, we believe this is now priced in and we downgrade to Neutral.
Glencore	OW (N)	GLEN now has arguably the strongest balance sheet in the sector and will continue to take a more balanced approach to deploying capital between returns and growth than the peer group. Valuation has de-rated by 20% over the past year and the Industrial assets are now trading at a 10-20% discount to BHP and RIO, while also offering the strongest exposure to structural growth trends such as electrification.
Anglo American	OW	We maintain our Overweight recommendation on AAL. While we remain cautious on the South African operating & political environment, we believe valuation remains compelling, balance sheet risk is low and the company still has potential to exceed low expectations on operational and financial performance. South African restructuring is not imminent, but remains a positive potential wild card in the medium term.
South32	N	S32 is Neutral rated, with the stock trading close to our fair value estimate (NPV).
Vedanta	N	We have a Neutral recommendation on Vedanta. While valuation multiples, particularly cash flow yields, appear attractive and the company offers a strong growth profile with limited additional capital requirements, we believe the complex corporate structure and high levels of debt throughout the group warrant caution. Investment levels are also beginning to rise again, which suggests the scope for large returns of capital is low.
Base Metals and Bulk Materials		
Antofagasta	UW	We forecast just 2% CAGR copper growth 2016-20, with FCF generation low and concerns over the economics of future growth projects. As a result, we forecast ANTO will have limited capacity to boost capital returns in 2017. Despite these risks, the shares look expensive on 2017/18E PER and EV/EBITDA multiples, whilst NPV remains at a significant discount to the share price.
Boliden	UW (N)	Boliden delivers strong FCF from well-established and well-operated mines, predominantly in Scandinavia. The company also benefits from a relatively low-beta smelting business and boasts a strong balance sheet. However, the shares lack any clear stock-specific positive catalysts over the next 6-12 months, while we believe focus is likely to turn towards a worsening FCF profile in 2019 as grade profiles deteriorate at several mines.
KAZ Minerals	OW	KAZ Minerals' positive investment thesis is underpinned by: (i) compelling production growth, with two major projects contributing to an annual production CAGR ~26% pa, 2019E vs. 2016; (ii) sector leading FCF generation given the combination of higher production, better margins and lower capex which will increase strategic flexibility; and (iii) valuation metrics which remain unchallenging vs. peers.
KGHM	N	We rate KGHM Neutral. KGHM shares are strongly correlated to PLN-denominated copper prices. A 10% increase / decline in the copper price would increase / lower our adjusted 18E EBITDA by 16%. Our model is based on spot copper prices from mid-October which are at 3-year highs reflecting the supportive global macroeconomic picture.
Alum. Bahrain	OW	We retain our Overweight recommendation on ALBA based on the value-accretive Line 6 project, successful delivery of cost improvement programme "Titan" and attractive valuation.
Hydro	N (OW)	Hydro is essentially a commodity story, with few stock-specific catalysts in our view. While aluminium remains the best supported of the base metals, positive price momentum is likely to have peaked and consensus forecasts have now caught up with fundamentals, with potential for cost-driven disappointments in 2018.
Ferrexpo	N	Ferrexpo benefits from high pellet premiums and as a result has managed to significantly de-gear its balance sheet over the past 12-18 months. However, we have a Neutral recommendation based on (i) limited valuation upside, (ii) no clear catalysts and (iii) concerns over the sustainability of iron ore pellet premiums.
Norilsk	UW	Norilsk's copper equivalent volume growth of just <1% CAGR in 2016-21 compares unfavourably to global mining peers. We believe Norilsk's ~12% dividend yield is indicative of its "at risk" dividend policy to payout 60% of EBITDA. This reflects our expectation of subdued nickel prices in 2018 and capex that in Nov'17 was guided $2.0bn higher than our previous forecasts. At current prices we forecast Norilsk does not cover its dividend from FCF and ND/EBITDA will rise to ~2x by 2020. Norilsk's spot 2018E EV/EBITDA of 6.5x is at a ~55% premium to the average of the UK diversifieds, which we view as excessively expensive.
Precious Metals and Diamonds		
Acacia Mining	UW (N)	We acknowledge ACA remains cheap on a number of metrics, including P/NPV and FCF yield, EV/EBITDA etc. However, we continue to believe there are potential negative implications surrounding the proposed framework agreement between Barrick (covered by JPM Analyst John Bridges) and the Government of Tanzania and as such we downgrade our recommendation to UW.
Fresnillo	N	Despite recent operational difficulties at the Fresnillo mine, FRES remains a quality precious metal exposure that now trades favourably relative to large-cap peer RRS. FRES's valuation also trades at a 5yr lows relative to large-cap precious peer RRS despite a superior growth profile. However, we forecast generally weaker precious metal prices in H1'18 and retain a Neutral, although it is our favoured large-cap precious metal exposure.
Hochschild	UW	We rate the stock Underweight on valuation grounds. On spot prices, HOC trades at a premium to its long-run average, which becomes more onerous under weaker precious metal prices, and on JPM base case trades at a premium (P/NPV basis) relative to UK precious metal peers, which we do not believe is warranted.
Randgold	N (OW)	Despite an unquestionably strong track-record in value creation, we downgrade our recommendation to Neutral. RRS now trades in-line with its historical multiple relative to the sector & at 5yr highs on a 1yr forward valuation multiple vs. FRES, which we do not believe is warranted in the context of its inferior growth profile & higher jurisdictional risk.
Polyus	OW	Polyus is our only UK listed Overweight in gold – this reflects its 40% production growth and forecast 37% EBITDA growth by 2020. Polyus' valuation is attractive in our view, with a 4%/11% FCF yield in 2018/19, EV/EBITDA of 8.5/6.2x, PER of 11.0/8.2x. Yet we highlight the risk of a potential overhang on the shares – Polyus' 82% shareholder has agreed to sell 15% to a consortium led by Fosun – this transaction expires at the end of Feb'18 and has yet to receive Chinese regulatory approvals, which may present a near term overhang on Polyus' share price.
Polymetal	N	Polymetal's low cost assets in Russia & Kazakhstan are guided to expand gold production by ~40% (vs 2016) to 1.8Moz by 2020. However POLY is fairly valued, in our view – it's current 2018/19E EV/EBITDA of ~7.7x is trading at a premium to its 6 year average of 7.0x and is at a ~30% premium to Polyus' 2019E EV/EBITDA of 6.0x.
Gem Diamonds	N	We retain our Neutral recommendation. We acknowledge the quality of GEMD's premier asset, Letšeng, which has an average reserve price of >$2,000/ct and has a track record of solid operational performance. However, a lower frequency of +100ct stones over the last 12-18 months has materially impacted the average achieved price, and we expect this will remain an issue over the medium term.
Petra Diamonds	OW	We remain Overweight on PDL, given: (i) expansion projects will drive revenue growth through higher production & mix shift in diamond quality; (ii) margin expansion given the higher proportion of undiluted grades; and (iii) declining capex as major expansions are commissioned. The net impact is an increasing cash generation profile, which will increase strategic flexibility, which could have positive implications for shareholders.

Source: J.P. Morgan.

Price Forecasts

Table 4: J.P. Morgan commodity price forecasts & changes vs. previous forecasts

			Q4'17E	2017E	Q1'18E	Q2'18E	Q3'18E	Q4'18E	2018E	2019E	LT	Spot
Base Metals												
Aluminium	**US$/t**	**New**	**2,150**	**1,985**	**2,150**	**2,050**	**1,950**	**1,850**	**2,000**	**1,920**	**1,874**	**2,016**
		Prev	2,150	1,985	2,050	2,050	1,950	1,850	1,975	1,920	1,874	
		Change	0%	0%	5%	0%	0%	0%	1%	0%	0%	
Copper	**US$/t**	**New**	**6,660**	**6,143**	**6,500**	**6,300**	**6,100**	**5,700**	**6,150**	**6,100**	**6,300**	**6,663**
		Prev	5,600	5,878	5,300	5,400	5,400	5,100	5,300	6,100	6,300	
		Change	19%	5%	23%	17%	13%	12%	16%	0%	0%	
Nickel	**US$/t**	**New**	**11,300**	**10,354**	**11,100**	**11,000**	**10,500**	**10,000**	**10,650**	**10,000**	**18,000**	**11,070**
		Prev	9,700	9,954	9,000	8,700	8,400	8,700	8,700	10,000	18,000	
		Change	16%	4%	23%	26%	25%	15%	22%	0%	0%	
Zinc	**US$/t**	**New**	**3,230**	**2,893**	**3,250**	**3,100**	**2,900**	**2,800**	**3,013**	**2,600**	**2,000**	**3,157**
		Prev	2,567	2,727	2,400	2,450	2,300	2,300	2,363	2,300	2,000	
		Change	26%	6%	35%	27%	26%	22%	28%	13%	0%	
Precious Metals												
Gold	**US$/oz**	**New**	**1,260**	**1,254**	**1,240**	**1,260**	**1,330**	**1,350**	**1,295**	**1,250**	**1,400**	**1,241**
		Prev	1,230	1,247	1,240	1,260	1,330	1,350	1,295	1,250	1,400	
		Change	2%	1%	0%	0%	0%	0%	0%	0%	0%	
Silver	**US$/oz**	**New**	**16.64**	**17.05**	**16.32**	**16.80**	**18.73**	**19.57**	**17.86**	**18.38**	**24.00**	**15.68**
		Prev	16.08	16.91	16.32	16.80	18.73	19.57	17.86	18.38	24.00	
		Change	3%	1%	0%	0%	0%	0%	0%	0%	0%	
Platinum	**US$/oz**	**New**	**920**	**948**	**910**	**930**	**985**	**1,015**	**960**	**990**	**1,200**	**879**
		Prev	930	951	910	930	985	1,015	960	990	1,200	
		Change	-1%	0%	0%	0%	0%	0%	0%	0%	0%	
Palladium	**US$/oz**	**New**	**960**	**864**	**1,010**	**980**	**930**	**925**	**961**	**950**	**850**	**1,007**
		Prev	870	842	840	850	850	860	850	950	850	
		Change	10%	3%	20%	15%	9%	8%	13%	0%	0%	
Rhodium	**US$/oz**	**New**	**1,151**	**1,026**	**1,209**	**1,268**	**1,327**	**1,387**	**1,257**	**1,460**	**2,000**	**1,540**
		Prev	1,151	1,030	1,209	1,268	1,327	1,387	1,298	1,541	2,000	
		Change	0%	0%	0%	0%	0%	0%	-3%	-5%	0%	
Bulk Commodities												
Iron ore - 62%	**US$/t CFR**	**New**	**60**	**70**	**58**	**65**	**65**	**60**	**62**	**65**	**50**	**68**
		Prev	68	72	64	65	65	66	65	65	50	
		Change	-12%	-3%	-10%	0%	0%	-9%	-5%	0%	0%	
Th. Coal Newcastle	**US$/t FOB**	**New**	**88**	**86**	**84**	**81**	**76**	**73**	**79**	**72**	**67**	**98**
		Prev	88	86	84	81	76	73	79	72	67	
		Change	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Th. Coal Richards Bay	**US$/t FOB**	**New**	**84**	**81**	**81**	**77**	**74**	**72**	**76**	**71**	**65**	**96**
		Prev	84	81	81	77	74	72	76	71	65	
		Change	0%	0%	0%	0%	0%	0%	0%	0%	0%	
HCC	**US$/t FOB**	**New**	**180**	**206**	**160**	**150**	**150**	**145**	**151**	**133**	**110**	**236**
		Prev	170	204	160	150	150	145	151	133	110	
		Change	6%	1%	0%	0%	0%	0%	0%	0%	0%	
SS coking	**US$/t FOB**	**New**	**115**	**133**	**110**	**105**	**100**	**100**	**104**	**97**	**80**	**177**
		Prev	115	133	110	105	100	100	104	97	80	
		Change	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PCI	**US$/t FOB**	**New**	**110**	**138**	**105**	**105**	**105**	**100**	**104**	**95**	**83**	**201**
		Prev	110	138	105	105	105	100	104	95	83	
		Change	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Energy												
Oil - WTI	**US$/bbl**	**New**	**50**	**50**	**51**	**51**	**51**	**51**	**51**	**51**	**54**	**57**
		Prev	47	49	47	47	47	47	47	47	54	
		Change	6%	1%	8%	8%	8%	8%	8%	8%	0%	
Oil - Brent	**US$/bbl**	**New**	**55**	**54**	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**63**
		Prev	50	52	50	50	50	50	50	50	55	
		Change	10%	2%	10%	10%	10%	10%	10%	10%	0%	
HH Gas	**US$/mcf**	**New**	**3.30**	**3.15**	**3.00**	**3.00**	**3.00**	**3.00**	**3.00**	**2.80**	**3.00**	**2.70**
		Prev	3.30	3.15	3.00	3.00	3.00	3.00	3.00	2.80	3.00	
		Change	0%	0%	0%	0%	0%	0%	0%	0%	0%	

Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Table 5: J.P. Morgan carbon & stainless steel price forecasts & changes vs. previous forecasts

			CY16A	CY17E	CY18E	CY19E	Q1'17A	Q2'17A	Q3'17E	Q4'17E	Q1'18E	Q2'18E	Q3'18E	Q4'18E	Spot
Carbon Steel															
EU HRC	**€/mt**	**New**	**411**	**536**	**522**	**490**	**562**	**531**	**515**	**535**	**532**	**530**	**515**	**509**	**536**
		Prev.		511	469	488			479	471	469	467	469	470	
		% ch.		*5%*	*11%*	*0%*			*8%*	*14%*	*13%*	*13%*	*10%*	*8%*	
EU CRC	€/mt	New	499	641	613	582	668	653	614	628	624	623	606	600	615
		Prev.		624	575	588			593	581	577	574	574	574	
		% ch.		*3%*	*7%*	*-1%*			*4%*	*8%*	*8%*	*9%*	*6%*	*5%*	
EU HDG	€/mt	New	553	710	655	622	739	752	680	671	667	665	647	641	649
		Prev.		709	646	628			681	661	654	647	644	640	
		% ch.		*0%*	*1%*	*-1%*			*0%*	*2%*	*2%*	*3%*	*1%*	*0%*	
EU Plates	€/mt	New	465	575	582	560	575	577	575	573	591	589	576	572	574
		Prev.		555	538	592			533	534	535	535	539	543	
		% ch.		*4%*	*8%*	*-5%*			*8%*	*7%*	*10%*	*10%*	*7%*	*5%*	
US HRC	**$/st**	**New**	**521**	**620**	**616**	**585**	**625**	**621**	**619**	**614**	**618**	**621**	**617**	**609**	**641**
		Prev.		625	617	590			625	629	622	619	615	612	
		% ch.		*-1%*	*0%*	*-1%*			*-1%*	*-2%*	*-1%*	*0%*	*0%*	*-1%*	
US CRC	$/st	New	707	822	808	756	825	827	817	820	820	815	805	792	815
		Prev.		830	819	776			832	837	827	822	817	812	
		% ch.		*-1%*	*-1%*	*-3%*			*-2%*	*-2%*	*-1%*	*-1%*	*-1%*	*-2%*	
US HDG	$/st	New	756	882	852	802	888	904	850	885	871	856	847	836	870
		Prev.		904	898	866			909	915	905	901	896	891	
		% ch.		*-2%*	*-5%*	*-7%*			*-7%*	*-3%*	*-4%*	*-5%*	*-5%*	*-6%*	
US Plates	$/st	New	556	695	701	686	658	730	699	694	699	703	703	699	689
		Prev.		716	733	739			735	740	734	733	732	731	
		% ch.		*-3%*	*-4%*	*-7%*			*-5%*	*-6%*	*-5%*	*-4%*	*-4%*	*-4%*	
Stainless Steel															
US 300-series cold rolled base price	$/t	New	1,176	1,280	1,276	1,301	1,271	1,356	1,234	1,258	1,266	1,273	1,280	1,286	1,302
		Prev.		1,298	1,303	1,459			1,278	1,286	1,292	1,299	1,306	1,313	
		% ch.		*-1%*	*-2%*	*-11%*			*-3%*	*-2%*	*-2%*	*-2%*	*-2%*	*-2%*	
US 300-series stainless alloy surcharge	$/t	New	825	1,162	820	908	1,336	1,257	1,007	1,049	876	811	785	808	1,294
		Prev.		1,189	983	2,027			1,085	1,080	1,004	982	961	987	
		% ch.		*-2%*	*-17%*	*-55%*			*-7%*	*-3%*	*-13%*	*-17%*	*-18%*	*-18%*	
US 300-series stainless CR transaction price	**$/t**	**New**	**2,003**				**2,609**	**2,612**	**2,237**	**2,302**	**2,137**	**2,079**	**2,060**	**2,089**	*2,593*
		Prev.		2,487	2,286	3,485			2,362	2,366	2,296	2,281	2,267	2,300	
		% ch.		*-100%*	*-100%*	*-100%*			*-5%*	*-3%*	*-7%*	*-9%*	*-9%*	*-9%*	
EU 300-series cold rolled base price	EUR/t	New	1,088	1,114	1,113	1,133	1,143	1,132	1,073	1,107	1,114	1,121	1,105	1,113	1,070
		Prev.		1,113	1,113	1,230			1,087	1,089	1,103	1,108	1,117	1,126	
		% ch.		*0%*	*0%*	*-8%*			*-1%*	*2%*	*1%*	*1%*	*-1%*	*-1%*	
EU 300-series stainless alloy surcharge	EUR/t	New	934	1,232	920	995	1,387	1,299	1,108	1,136	979	919	881	903	1,222
		Prev.		1,222	1,009	1,887			1,105	1,098	1,032	1,007	987	1,009	
		% ch.		*1%*	*-9%*	*-47%*			*0%*	*3%*	*-5%*	*-9%*	*-11%*	*-10%*	
EU 300-series stainless CR transaction price	**EUR/t**	**New**	**2,023**	**2,346**	**2,034**	**2,128**	**2,530**	**2,431**	**2,181**	**2,242**	**2,093**	**2,039**	**1,986**	**2,016**	*2,292*
		Prev.		2,335	2,122	3,116			2,192	2,186	2,135	2,115	2,104	2,135	
		% ch.		*0%*	*-4%*	*-32%*			*0%*	*3%*	*-2%*	*-4%*	*-6%*	*-6%*	

Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

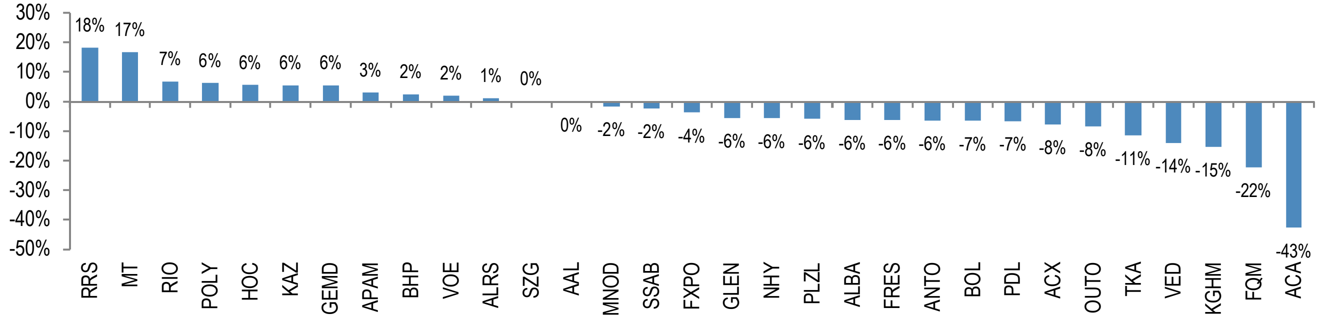
Earnings Changes

Table 6: J.P. Morgan earnings forecasts & changes vs. previous forecasts (CY-basis)

	Dec '18 NPV	EBITDA (US$m)			Net Income (US$m)			EPS (US¢)		
	(£ps)	2017E	2018E	2019E	2017E	2018E	2019E	2017E	2018E	2019E
Anglo American	15.04	8,774	8,000	7,596	3,038	2,539	2,320	235	196	179
vs prev	*-2%*	*4%*	*9%*	*-1%*	*5%*	*15%*	*-3%*	*5%*	*14%*	*-3%*
BHP Billiton (CY)	13.98	21,854	21,766	21,622	7,884	7,892	7,429	148	148	140
vs prev	*0%*	*2%*	*9%*	*4%*	*4%*	*14%*	*9%*	*19%*	*14%*	*9%*
Glencore	4.14	14,989	14,869	14,943	5,807	5,580	5,389	40	38	37
vs prev	*31%*	*7%*	*32%*	*20%*	*13%*	*90%*	*44%*	*13%*	*90%*	*44%*
Rio Tinto	38.67	19,388	17,875	18,501	8,740	7,387	7,603	495	427	440
vs prev	*-6%*	*-1%*	*-1%*	*2%*	*-1%*	*0%*	*5%*	*-1%*	*0%*	*5%*
Vedanta (CY)	0.09	1,465	1,712	2,059	237	735	1,035	86	266	374
vs prev	*-22%*	*-9%*	*3%*	*5%*	*n/a*	*n/a*	*735%*	*n/a*	*n/a*	*739%*
Antofagasta	5.62	2,630	2,217	2,784	823	605	817	84	61	83
vs prev	*3%*	*18%*	*32%*	*-4%*	*31%*	*65%*	*-6%*	*67%*	*65%*	*-6%*
Boliden	SEK 197	SEK 13.0bn	SEK 12.4bn	SEK 9.2bn	SEK 6.6bn	SEK 6.2bn	SEK 3.9bn	SEK 24.3	SEK 22.7	SEK 14.2
vs prev	*6%*	*7%*	*32%*	*8%*	*11%*	*62%*	*28%*	*11%*	*62%*	*28%*
KAZ Minerals	4.72	1,031	1,285	1,363	445	571	645	100	128	144
vs prev	*10%*	*8%*	*29%*	*1%*	*13%*	*55%*	*1%*	*13%*	*55%*	*1%*
KGHM	PLN 104.0	PLN 4,069m	PLN 5,430m	PLN 4,882m	PLN 2,296m	PLN 2,842m	PLN 2,437m	PLN 11.5	PLN 14.2	PLN 12.2
vs prev	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
ALBA	BHD 1.25	BHD 186m	BHD 190m	BHD 268m	BHD 108m	BHD 75m	BHD 122m	BHD 0.08	BHD 0.05	BHD 0.09
vs prev	*-2%*	*0%*	*-6%*	*-5%*	*-2%*	*-14%*	*-10%*	*0%*	*-14%*	*-10%*
Hydro	NOK 58.06	NOK 16.8bn	NOK 20.6bn	NOK 18.0bn	NOK 7.7bn	NOK 8.9bn	NOK 7.1bn	NOK 3.6	NOK 4.2	NOK 3.3
vs prev	*5%*	*2%*	*6%*	*4%*	*3%*	*7%*	*2%*	*3%*	*7%*	*2%*
Norilsk	$205.38	4,373	5,038	4,879	2,426	2,744	2,526	153	173	160
vs prev	*0%*	*0%*	*0%*	*0%*	*0%*	*4%*	*4%*	*0%*	*4%*	*4%*
Ferrexpo	2.02	526	405	401	377	259	266	64	44	45
vs prev	*46%*	*-1%*	*-12%*	*21%*	*-1%*	*-15%*	*26%*	*-1%*	*-15%*	*26%*
Acacia Mining	2.25	275	192	182	107	80	76	26	20	19
vs prev	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
Fresnillo	9.72	1,067	1,218	1,313	460	478	524	62	65	71
vs prev	*1%*	*2%*	*2%*	*-2%*	*4%*	*4%*	*-2%*	*4%*	*4%*	*-2%*
Hochschild	1.43	257	366	320	17	46	22	3	9	4
vs prev	*0%*	*2%*	*0%*	*0%*	*25%*	*-8%*	*-4%*	*25%*	*-8%*	*-4%*
Randgold	43.04	782	861	802	285	358	323	303	380	343
vs prev	*-4%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
Polyus	RUB 7,281	1,655	1,744	2,177	1,037	1,076	1,339	799	805	999
vs prev	0%	3%	-8%	0%	4%	-3%	0%	4%	-3%	0%
Polymetal	9.20	774	934	919	429	527	473	100	123	110
vs prev	*1%*	*1%*	*1%*	*1%*	*1%*	*2%*	*3%*	*1%*	*2%*	*3%*
Gem Diamonds	1.77	40	76	99	3	11	22	2	8	16
vs prev	*-7%*	*5%*	*3%*	*-3%*	*43%*	*12%*	*-6%*	*43%*	*12%*	*-6%*
Petra Diamonds (CY)	1.57	160	305	387	-17	73	112	-3	14	21
vs prev	*1%*	*2%*	*1%*	*0%*	*-9%*	*3%*	*1%*	*-9%*	*3%*	*1%*

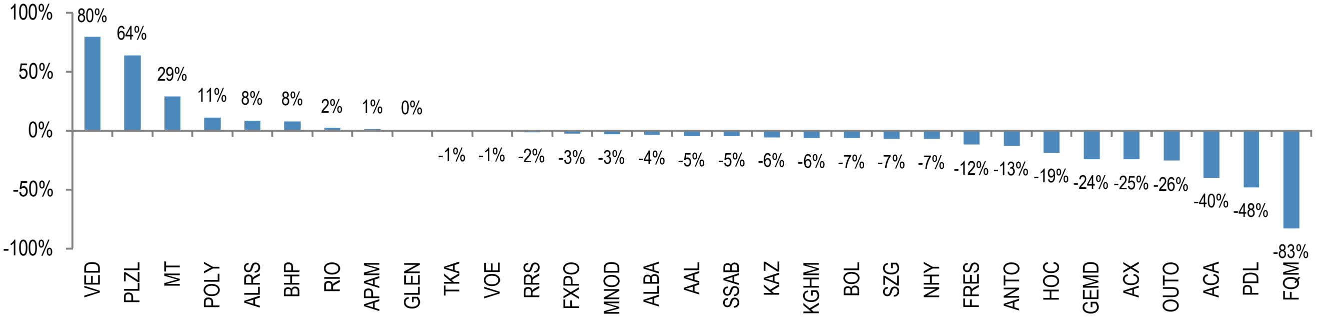
Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Figure 1: JPMe vs consensus – EBITDA CY'18E



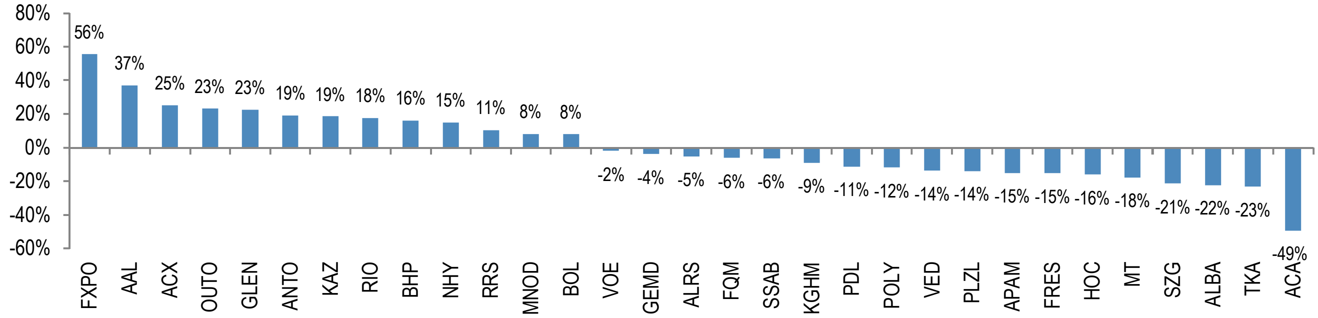
Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Figure 2: JPMe vs consensus – EPS CY'18E



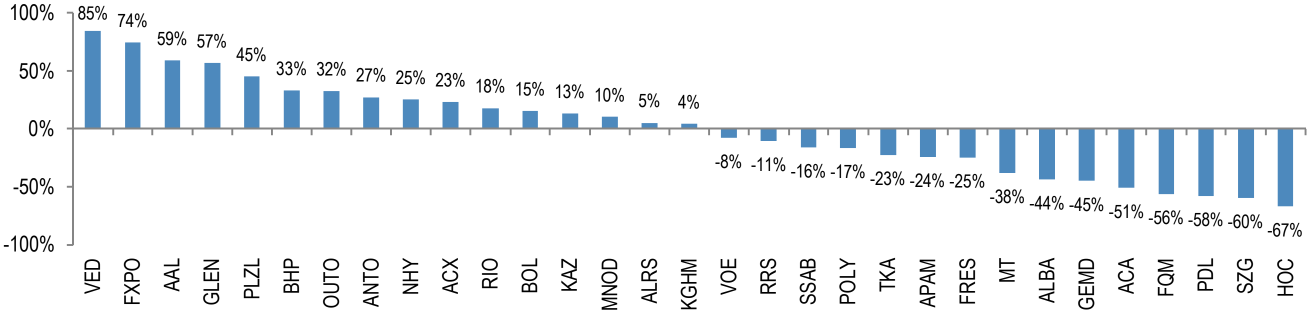
Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Figure 3: Spot vs consensus – EBITDA CY'18E



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Figure 4: Spot vs consensus – EPS CY'18E



Source: J.P. Morgan estimates, Bloomberg (prices as at cob GMT 12-Dec-17).

Table 7: Earnings & valuation change summary

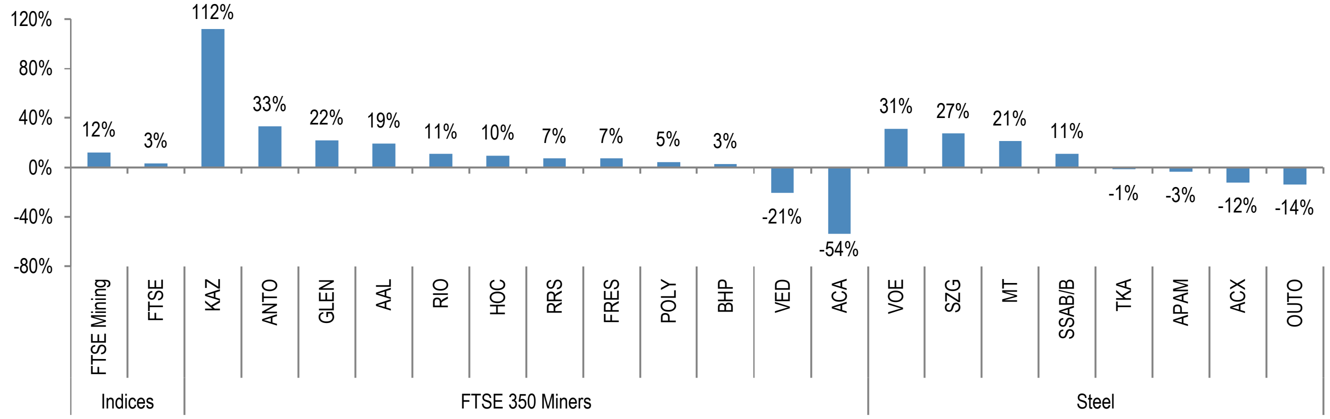
Company	Rating	Stock View
Diversifieds		
BHP Billiton	N	Earnings changes primarily reflect higher base metal & oil price forecasts for 2018. We also capture the revised, lengthened & expanded, mine plan at the Olympic Dam copper/gold operation. Our Dec'18 PT rises 13% to £14.00/sh due to these changes, with no change to our NPV & EV/EBITDA-based price target methodology. Our ZAR price target rises 17% to R255/sh due to a weaker ZAR:GBP FX rate since our last update.
Rio Tinto	N	Earnings changes primarily reflect higher base metals price forecasts for 2018. We also capture the revised capex profile and higher unit cost outlook in the Aluminium division. Our Dec'18 PT falls 8% to £37.50/sh due to these changes, with no change to our NPV & EV/EBITDA-based price target methodology.
Glencore	OW	Earnings changes primarily reflect higher base metals and oil price forecasts for 2018. We also capture assumed higher capex and small adjustments to our Copper and Zinc production assumptions. Our Dec'18 PT rises 41% to £4.50/sh due to these changes, with no change to our NPV & EV/EBITDA-based price target methodology. Our ZAR price target rises 52% to R82.00/sh due to a weaker ZAR:GBP FX rate since our last update.
Anglo American	OW	Earnings changes primarily reflect higher base metals price forecasts for 2018. We also capture assumed higher capex & small adjustments to our Copper, Coal, Diamonds and Platinum division assumptions. Our Dec'18 PT falls 1% to £16.20/sh due to these changes, with no change to our NPV & EV/EBITDA-based price target methodology. Our ZAR price target rises 8% to R318/sh due to a weaker ZAR:GBP FX rate since our last update.
South32	N	No changes.
Vedanta	N	Earnings changes primarily reflect higher base metals & oil price forecasts for 2018. We also capture higher capex & adjusted production guidance. Our Dec'18 PT is unchanged at £6.50/sh, with no change to our NPV & EV/EBITDA-based price target methodology.
Base Metals and Bulk Materials		
Antofagasta	UW	Changes reflect materially higher copper prices in 2018, with modest reduction from 2019 reflecting stronger local FX (which reduces US$ margins). The JPM Dec'18 NPV increases to reflect stronger FCF generation thus reducing net debt by YE'18. We have also adjusted our target FY'19 multiple to 6.0x (prev 5.5x) which is in-line with ANTO's 5yr average.
Boliden	UW	Changes reflect higher JPM prices although this is partially offset by lower medium-term production (grades at Aitik, Garpenberg & Kevitsa; delayed ramp-up schedule at Aitik & Kevitsa) outlined as part of the 2017 CMD. NPV gains are also offset by higher 2018/19 capex (~SEK 5/6bn) to reflect Aitik & Kevitsa stripping, Boliden Area TSF extension & Ravliden drift. Our PT increases to reflect a stronger cash-balance over 2018, although we have reduced our NPV multiple (50% weighting) to 1.1x vs. 1.2x previously.
KAZ Minerals	OW	Earnings changes reflect higher base metal prices in 2018. We make no changes to our operational assumptions. The JPM Dec'18 NPV increases to reflect stronger FCF generation thus reducing net debt by YE'18. We have also adjusted our NPV target multiple to 1.0x (prev. 0.9x) to reflect diminishing financial risk & adjust our PT to include a 50% spot NPV weighting to capture KAZ's compelling near-term growth profile.
KGHM	N	No changes.
Aluminium Bahrain	OW	Earnings changes primarily reflect higher alumina price forecasts for 2018. Our Dec'18 PT falls 3% to BHD0.83/sh, with no change to our NPV & EV/EBITDA-based price target methodology.
Hydro	N	Earnings changes primarily reflect higher alumina price forecasts for 2018. We also capture higher capex and operating costs, adjusted production guidance, and the revised Alunorte alumina refinery development plan which will see production rise to 7.0Mtpa by 2020 from a previous plan of 6.6Mtpa from 2018. Our Dec'18 PT falls 7% to NOK57.00/sh, with no change to our NPV & EV/EBITDA-based price target methodology.
Ferrexpo	N	Earnings changes primarily reflect higher iron ore pellet premium forecasts for 2018. We also capture higher operating costs. Our Dec'18 PT rises 37% to £2.40/sh, with no change to our NPV & EV/EBITDA-based price target methodology.
Norilsk	UW	Earnings changes primarily reflect higher base metals & PGM price forecasts for 2018. Our Dec'18 PT is essentially unchanged at US$16.32/sh, with no change to our NPV & EV/EBITDA-based price target methodology.
Precious Metals and Diamonds		
Acacia Mining	UW	We make limited changes to forecast given precious metal prices are unch in 2018/19. JPM Dec'18 PT has fallen to reflect a reduction in the target NPV multiple to 0.7x vs. 1.0x previously, to reflect heightened risks around the proposed framework agreement with the Government of Tanzania & the implications this may have on: (i) ACA's balance sheet; and (ii) the outcomes for minority shareholders.
Fresnillo	N	2018 earnings increase modestly (<3%) reflecting improved revenues from base metal forecasts. However, 2019/20E EBITDA reduces ~2% given lower output from Fresnillo mine (delayed ramp-up of optimisation project). The JPM Dec'18 NPV & PT remain largely unchanged.
Hochschild	UW	Updated operational metrics around Pallancata (to reflect Pablo approval), increased AISC to account for larger brownfield spend & adjusted for early redemption of bond (as per 6th Dec announcement)
Randgold	N	We make limited changes to forecast given precious metal prices are unch in 2018/19. Our NPV reduces modestly reflecting increased capex at Gounkoto (higher Super pit stripping). JPM Dec'18 PT has fallen >10% given a reduction in our assumed NPV multiple to 1.6x vs. 1.8x previously, reflecting (i) an increase in our perceived risk-profile of African-generated cash-flow; and (ii) limited growth.
Polyus	OW	We incorporate revised gold & FX prices. However the key driver of an 8% reduction to 2018E EBITDA is our revised assumption that new mine Natalka is capitalized until YE'18 (previously H1'18) in line with management's guidance at Q3 results, plus higher forecast capex in 2018. Our PT reduces to $49/GDR on account of these changes.
Polymetal	N	We incorporate revised gold & FX prices and the result is minimal changes to our forecasts and Dec'18 PT.
Gem Diamonds	N	We make limited changes to 2018 operational assumptions, with EBITDA +2% reflecting a weaker local FX. However, we lower out medium-term average realised price by 2-3%, which is in-line with the reserve price of $2,048/ct; this reduces our 2019/20 EBITDA by 3-6% & the JPM Dec'18 NPV / PT.
Petra Diamonds	OW	We make no changes to our operational forecasts, with a modest improvement in FY'18 EBITDA reflecting a 3% weaker ZAR which boosts PDL's margins in US$ terms. However, our Dec'18 PT falls ~8% to reflect a reduction in our target NPV multiple to 0.75x (prev. 0.85x) given a more nuanced view on the medium-term equity re-rating in the context of operational, financial & geo-political risks.

Source: J.P. Morgan.

2017: Year in review

After a stellar 2016, the performance of the EMEA mining sector moderated in 2017, although it still outperformed the broader FTSE 350 by ~**9**%.

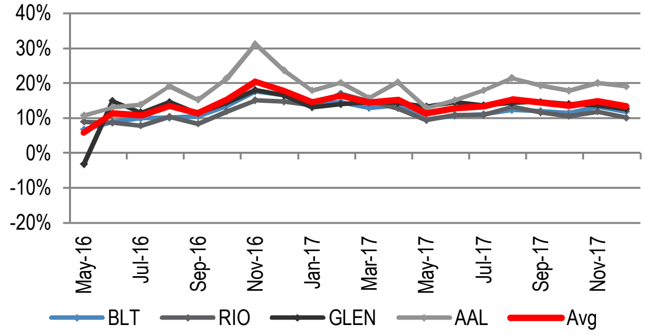
Figure 5: Sector performance – UK mining index outperformed the wider FTSE 350by ~9%; wide dispersion in steel



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Note: equities not included in the FTSE 350 Mining Index have been omitted.

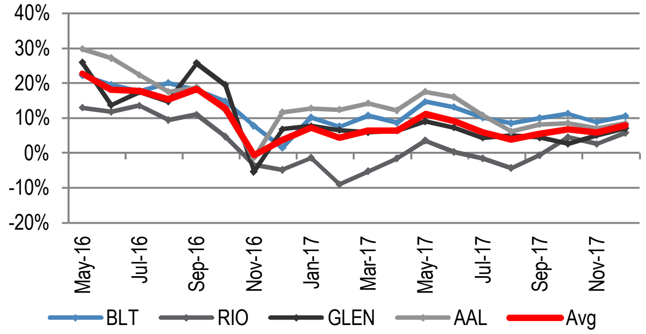
Higher commodity prices supported ongoing stabilisation in earnings across the sector which, combined with modestly lower y/y capex and subdued M&A activity, translated into FCF that remained strong across the sector. We now forecast an average 2018E FCF yield for the UK diversified miners of ~13% vs 18% at the start of 2017, and gearing at ~8% vs. ~4% at YE'16.

Figure 6: Spot 2018 FCF yields have remained stable



Source: J.P. Morgan estimates, Bloomberg.

Figure 7: YE'18 gearing on spot prices remains <10%



Source: J.P. Morgan estimates, Bloomberg.

Table 8 below shows a monthly breakdown of Total Shareholder Returns for the EMEA metals, mining & steel universe over CY'17. Miners with the highest operational and financial leverage materially outperformed lower geared peers. European steel producers benefitted from continued protectionist regional policy and impositions of import duties.

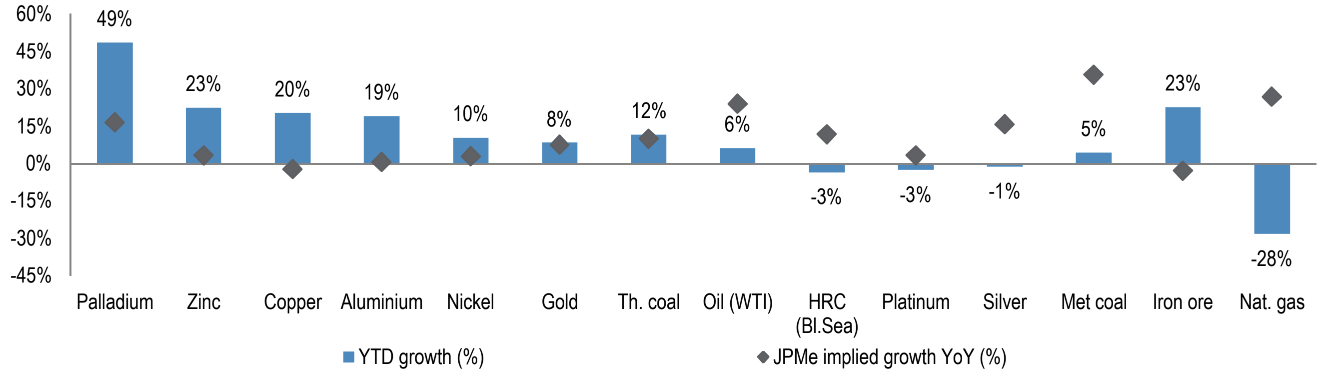
Table 8: EMEA Metals, Mining & Steel Sector– total shareholder returns in 2017 (%)

	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEPT	OCT	NOV	DEC	2017	2017 US$ TSR
Aluminium (US$/t)	**1,787**	**1,871**	**1,912**	**1,933**	**1,917**	**1,892**	**1,921**	**2,036**	**2,123**	**2,151**	**2,115**	**2,034**	**1,973**	
Copper (US$/t)	**5,774**	**5,953**	**5,845**	**5,713**	**5,621**	**5,743**	**6,013**	**6,515**	**6,616**	**6,843**	**6,858**	**6,653**	**6,162**	
Zinc (US$/t)	**2,730**	**2,847**	**2,793**	**2,633**	**2,599**	**2,584**	**2,792**	**2,991**	**3,099**	**3,206**	**3,195**	**3,135**	**2,874**	
Iron Ore (US$/t)	**61**	**69**	**67**	**59**	**56**	**53**	**62**	**69**	**66**	**60**	**64**	**68**	**63**	
Coking Coal (US$/t)	**185**	**161**	**157**	**263**	**173**	**147**	**166**	**197**	**205**	**182**	**190**	**229**	**185**	
Thermal Coal (US$/t)	**85**	**81**	**81**	**86**	**75**	**80**	**85**	**96**	**98**	**97**	**97**	**97**	**88**	
Gold (US$/oz)	**1,192**	**1,235**	**1,231**	**1,271**	**1,245**	**1,260**	**1,238**	**1,284**	**1,315**	**1,281**	**1,282**	**1,257**	**1,258**	
Silver (US$/oz)	**16.8**	**17.9**	**17.6**	**18.1**	**16.8**	**16.9**	**16.2**	**17.0**	**17.5**	**16.9**	**17.0**	**15.9**	**17.1**	
Metals & Mining														
KAZ Minerals (£)	31.7	8.0	(18.9)	10.7	(3.6)	6.1	38.7	19.6	(11.0)	5.1	(10.4)	0.1	112.3	129.6
Ferrexpo (£)	13.0	0.0	4.1	(6.1)	10.5	17.6	14.9	24.2	(7.2)	(13.1)	(3.9)	0.1	97.2	113.2
ALBA (BHD)	(14.4)	4.3	47.7	3.0	1.9	8.1	10.7	0.0	(0.4)	11.4	7.9	(1.6)	100.0	99.8
Antofagasta (£)	23.7	(2.8)	(0.4)	1.9	(4.4)	(2.2)	18.3	9.6	(9.6)	0.6	(6.2)	1.4	38.0	49.3
Hydro (NOK)	13.8	(1.1)	1.8	(1.7)	(4.6)	1.4	9.7	12.9	1.8	9.1	(11.8)	0.6	40.8	45.0
Glencore (£)	17.7	(1.4)	(7.3)	(3.0)	(5.2)	0.4	16.3	6.9	(6.1)	6.1	(9.6)	3.1	28.1	38.5
Anglo American (£)	17.1	(7.4)	(6.9)	(9.3)	(6.8)	(1.0)	22.3	16.8	(5.7)	6.0	(7.5)	(0.3)	22.5	32.4
KGHM PLN)	34.0	1.8	(11.9)	6.3	(14.1)	1.5	11.5	4.2	(7.6)	4.7	(13.1)	(5.1)	12.3	30.6
Rio Tinto (£)	10.5	(3.6)	(5.8)	(4.6)	1.3	3.1	8.6	9.5	(7.6)	2.2	(4.1)	0.9	18.0	27.6
South32 (£)	3.4	(9.6)	5.1	(3.3)	(6.5)	6.7	11.2	2.5	9.6	2.1	(13.0)	(0.3)	17.9	27.5
First Quantum (CAD)	22.9	(18.0)	(5.5)	(7.9)	(13.0)	(2.8)	27.2	13.4	(8.0)	3.0	2.2	7.7	21.1	26.5
Boliden (SEK)	7.2	6.6	(5.5)	(3.2)	(6.0)	(4.2)	10.3	9.4	(2.4)	6.3	(11.8)	1.1	14.0	22.6
BHP Billiton (£)	10.0	(10.1)	(6.4)	(4.8)	(0.2)	(0.8)	17.2	8.4	(9.4)	3.7	(4.4)	2.5	10.9	19.9
Hochschild (£)	16.5	10.5	7.0	(8.2)	12.7	(6.5)	15.4	(9.5)	(19.5)	(4.0)	(1.5)	(0.4)	10.1	19.1
Norilsk (US$)	(3.7)	(2.7)	(1.8)	(2.1)	(9.9)	6.5	7.5	11.1	1.7	9.0	(10.1)	4.0	16.4	16.4
Fresnillo (£)	19.0	1.4	5.6	(5.6)	8.5	(6.6)	3.4	8.6	(13.1)	(7.3)	(2.3)	(2.1)	6.7	15.4
Randgold (£)	5.3	13.5	(5.1)	(2.3)	8.2	(7.5)	3.7	12.4	(7.5)	1.1	(9.3)	(2.5)	5.8	14.4
Polyus (RUB)	4.9	(3.0)	(0.4)	(1.0)	0.5	(10.2)	2.3	16.1	(1.2)	8.0	1.7	(10.3)	5.8	9.7
Polymetal (£)	7.9	2.4	4.5	2.4	1.0	(13.7)	7.2	(3.4)	(1.6)	3.9	(1.8)	(7.2)	(0.4)	7.7
Vedanta (£)	18.9	(19.8)	(11.3)	(14.6)	(11.6)	3.4	24.3	11.4	(0.6)	1.8	(23.2)	(3.0)	(18.4)	(11.8)
Alrosa (RUB)	8.5	(12.7)	(3.7)	7.8	(9.9)	(1.4)	6.3	(4.4)	4.2	(8.6)	(0.5)	(4.1)	(16.0)	(12.9)
Gem Diamonds (£)	11.4	0.2	(22.8)	(6.4)	4.8	1.1	(10.3)	(1.5)	(0.8)	(0.3)	2.6	(11.5)	(35.5)	(30.2)
Acacia Mining (£)	15.2	27.5	(16.8)	(12.0)	(26.1)	5.1	(41.5)	15.2	(6.2)	(7.2)	(5.2)	(2.2)	(54.0)	(50.2)
Petra Diamonds (£)	(3.5)	(10.1)	(6.8)	(2.7)	0.0	(14.7)	(12.5)	(1.3)	(9.1)	(8.3)	(12.9)	(2.1)	(56.3)	(52.7)
Steel														
Salzgitter (€)	5.5	(4.3)	(5.0)	(7.1)	7.6	5.5	6.0	(0.2)	1.3	7.6	1.3	4.2	34.6	49.7
voestalpine (€)	5.1	0.4	(8.3)	3.9	5.1	3.8	7.8	1.8	(0.4)	9.5	3.3	(1.2)	33.1	48.1
ArcelorMittal (€)	2.5	13.2	(9.8)	(8.2)	(11.2)	1.9	11.8	2.0	(5.1)	12.8	0.2	5.8	28.2	42.7
SSAB (SEK)	3.9	(2.3)	(5.0)	8.9	(8.2)	7.6	6.1	(0.9)	(4.1)	4.7	(7.7)	8.3	22.1	31.3
ThyssenKrupp (€)	3.9	0.2	(4.2)	(4.8)	8.2	7.5	0.2	(1.3)	(1.4)	(8.1)	(1.8)	5.8	5.4	17.3
Aperam (€)	0.5	8.4	(4.4)	(1.3)	(6.9)	(5.6)	0.9	8.8	(1.1)	4.2	(8.0)	2.5	2.2	13.7
Acerinox (€)	0.7	4.6	(5.5)	(2.3)	(6.2)	(1.6)	(5.8)	10.4	0.4	1.1	(10.7)	6.2	(3.1)	7.8
Outokumpu (€)	(2.7)	11.1	(4.7)	(3.6)	(19.7)	(2.6)	1.7	22.3	0.2	(7.6)	(14.9)	3.8	(9.9)	0.2

Source: Bloomberg. (prices as at cob 12-Dec-17).

As a group, base metals performed strongly, led by zinc, copper & aluminium >23% as global growth & tighter supply tightened balances. Conversely, bulks underperformed, with met coal (-5%) and iron ore (-11%) leading declines.

Figure 8: Commodity performance – base metals and PGMs have outperformed bulks and steel YTD and exceeded JPMe expectations



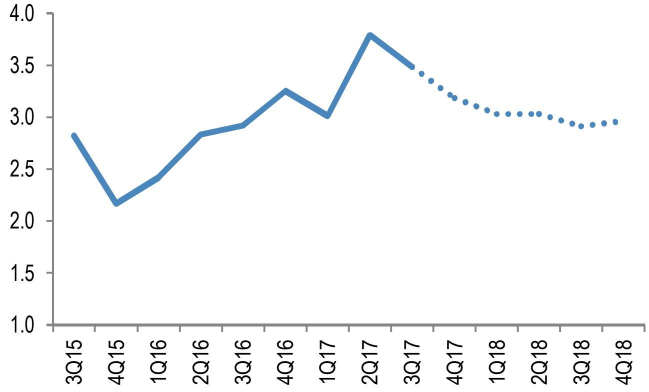
Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Global macro-economic backdrop was supportive

Three themes drove commodities and equities higher over 2017: (i) robust global growth; (ii) reflation; (iii) US$ weakness; and (iv) positive China growth momentum.

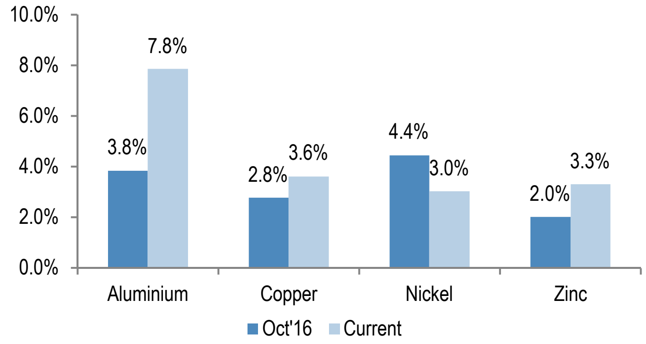
- **Global growth has been solid, synchronised across key economies:** The global economy completes a year in which GDP growth is tracking close to 1% above JPM estimates & the growth mode appears to be globally synchronised. JPM Economists do not see visible signs of overheating yet, even in the US, where the expansion is much further advanced, as higher growth did not come with higher inflation and faster monetary tightening.
- **Inflation expectations normalised:** Headline global inflation is moving higher into year-end as a result of rising energy and food prices, and JPM Economists project sequential inflation to reach a 3% QoQ saar in Q4'17, twice its 1H'17 rate. Disinflationary drags have faded this year, boosting nominal activity across EM, Europe and US, and the positive feedback loop linking growth, sentiment, and supportive financial conditions remains powerful.
- **Dovish Fed stance continued to drive US$ weakness:** While the Fed did not dramatically reassess its strategy this year, persistently low US inflation and an uncertain macro-economic outlook led to cautiously dovish positioning. The Fed remains on track to raise the benchmark rate three times in 2018 (~70% priced in by market), but now plans only two more hikes in 2019 instead of three previously. The bank also lowered its long term target rate to 2.8%, below the 3.0% threshold. As a result, while YTD DXY averaged ~96.8, essentially flattish vs. the 2016 average, it has fallen almost 8% YTD. Since commodities are priced in US$, the weakening dollar across 2017 has provided additional support.
- **China economic momentum continued:** Chinese economic momentum also turned out more robust than expected. At the end of 2016 JPM Economists forecast a slowdown to +6.4% 2017 GDP growth, however YTD has averaged close to +6.9%. Supported by expansionary monetary policy, better industrial activity supported commodity demand. As shown in Figure 10, the JPM Commodities Research team's 2016 Metals Quarterly (in Oct'16) forecast +2.8% China copper demand growth in 2017 vs actual +4.3% YTD and +3.8% for aluminium vs +8.1% YTD.

Figure 9: Global Real GDP growth and estimates (% q/q, saar)



Source: J.P. Morgan Commodities Research.

Figure 10: JPM 2017 China demand forecasts have been revised higher through the year



Source: J.P. Morgan estimates.

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SECTION I: KEY THEMES

Section I: Key themes for 2018

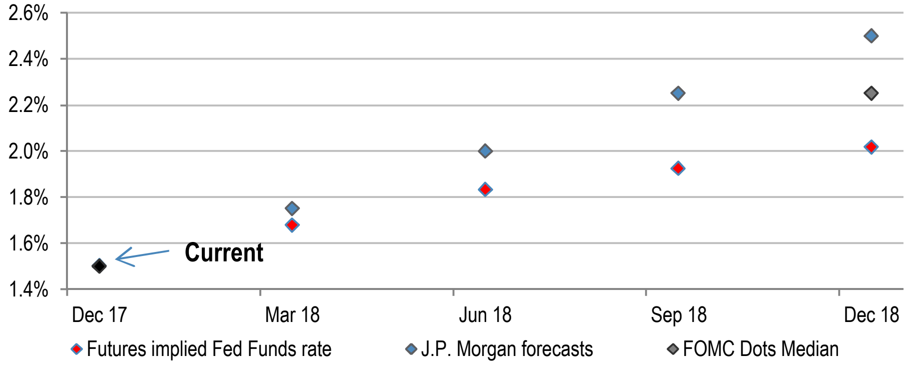
We see six key themes for 2018:

- **Theme #1:** Macro – base case view constructive, but complacency could be main risk
- **Theme #2:** ROCE analysis
- **Theme #3:** Balance sheets imply significant levels of excess capital generation
- **Theme #4:** Capex will increase…but concerns over a "tidal wave" are misplaced
- **Theme #5:** Cross-sector analysis indicates Mining screens favourably vs other sectors
- **Theme #6:** Electric vehicles offer promising demand growth but sustained supply shortages unlikely

Theme #1: Macro – base case view is constructive, but beware complacency

Our base case view for 2018 as a whole is constructive. We believe consensus expectations are too cautious on Chinese & growth and structural reforms on the supply side and this is reflected in equity valuations despite most key commodity price forward curves being in contango/flat. Nonetheless, we expect volatility. H1 will be impacted by Chinese winter capacity shutdowns/restarts and Fed rate rises, while the direction of the US$ will also influence performance.

Figure 11: JPMe vs Fed & consensus expectations for Fed rate rises – consensus expects two-three 2018 rate rises



Source: J.P. Morgan estimates, Bloomberg.

Arguably the most disconcerting aspect of the outlook for 2018 is that there appears to be little to worry about, with consensus firmly anticipating a continuation of the synchronised global economic expansion seen through most of 2017. Our base case broadly reflects that consensus view; however, we would highlight three key risks that are arguably not reflected in market valuations and could be negative catalysts: 1) Geopolitical shocks, with North Korea probably the most easily identifiable risk; 2) Fed policy, with JPM's expectation for a further 100bps of rate increases by the end of 2018 well above the 2-3 increases expected by consensus; and 3) The potential for a global economic slowdown, possibly triggered by China or the maturing US economic cycle. Although we highlight value support for the sector, Metals & Mining remains a high beta component of the index and would be vulnerable in any broader market sell-off.

2017 growth surprised to the upside – base case JPM view calls for continuation of synchronised global expansion

As outlined in the previous section, global growth surprised to the upside in 2017, with both DM and EM coming in ~0.5% ahead of our house forecasts a year ago. Our economists retain a broadly constructive view on the 2018 growth picture, with global, DM & EM growth all expected to be essentially flat YoY, with global growth at an above trend 3.2%.

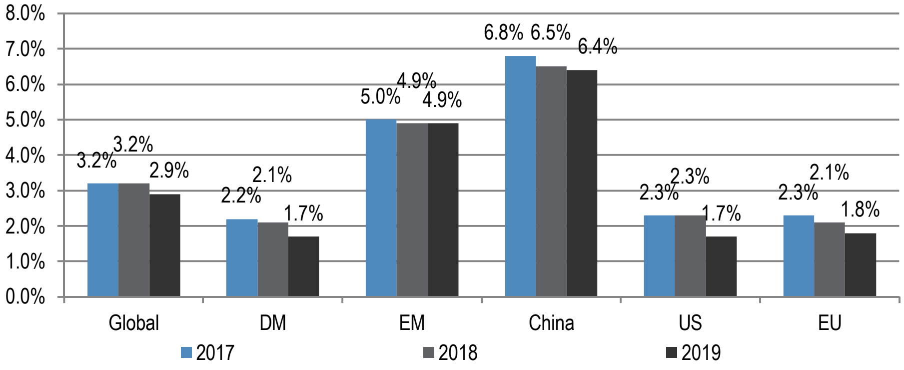
Table 9: Summary global PMI time series

	Apr -16	May -16	Jun -16	Jul -16	Aug -16	Sep -16	Oct -16	Nov -16	Dec -16	Jan -17	Feb -17	Mar -17	Apr -17	May -17	Jun -17	Jul -17	Aug -17	Sep -17	Oct -17	Nov -17
Developed Markets	50.5	50.4	51.2	51.5	51.2	51.5	52.6	53.0	53.8	54.2	54.1	53.9	54.1	54.1	53.9	54.0	54.2	54.6	55.2	55.8
Emerging Markets	49.5	49.5	49.3	50.3	50.1	50.4	51.0	50.8	51.1	50.8	51.3	51.6	50.9	50.6	50.8	51.0	51.7	51.4	51.2	51.7
European Union	51.4	51.4	52.8	51.4	51.8	53.0	53.4	53.5	54.9	55.2	55.3	55.9	56.7	56.8	56.8	56.2	57.1	57.7	58.1	59.6
Eurozone	51.7	51.5	52.8	52.0	51.7	52.6	53.5	53.7	54.9	55.2	55.4	56.2	56.7	57.0	57.4	56.6	57.4	58.1	58.5	60.1
JP Morgan Global	50.2	50.1	50.4	51.0	50.8	51.1	52.0	52.1	52.7	52.8	53.0	53.0	52.7	52.6	52.6	52.8	53.2	53.3	53.5	54.0
China (Caixin/Markit)	49.4	49.2	48.6	50.6	50.0	50.1	51.2	50.9	51.9	51.0	51.7	51.2	50.3	49.6	50.4	51.1	51.6	51.0	51.0	50.8
China (Official)	50.1	50.1	50.0	49.9	50.4	50.4	51.2	51.7	51.4	51.3	51.6	51.8	51.2	51.2	51.7	51.4	51.7	52.4	51.6	51.8
United States	50.8	50.7	51.3	52.9	52.0	51.5	53.4	54.1	54.3	55.0	54.2	53.3	52.8	52.7	52.0	53.3	52.8	53.1	54.6	53.9
US ISM	50.7	51.0	52.8	52.3	49.4	51.7	52.0	53.5	54.5	56.0	57.7	57.2	54.8	54.9	57.8	56.3	58.8	60.8	58.7	58.2

Source: Bloomberg.

Of the key commodity demand regions, Chinese growth is expected to moderate from +6.8% in 2017 to 6.5%, and +6.4% in 2019. The US is expected to stay at +2.2% in 2018, with tax reform offsetting rising interest rates, before falling to 1.7% in 2019 as policy tightening and slowing employment and corporate investment growth impact demand. The European outlook is also stable, with the Euro area expected to decelerate modestly from +2.3% to +2.1%, within which Western Europe moves from 2.2% to 2.1% YoY.

Figure 12: Global GDP growth summary 2017-19



Source: J.P. Morgan estimates.

J.P. Morgan 2018 view on key commodity macro drivers is mixed

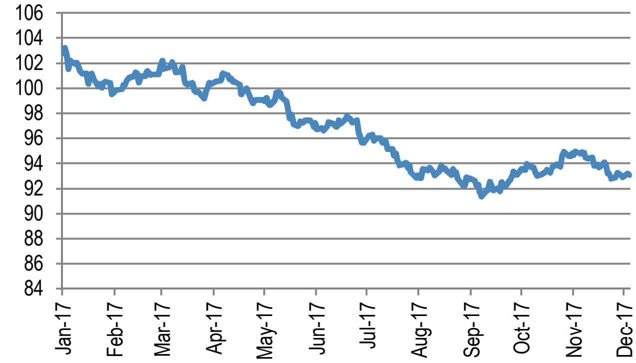
J.P. Morgan's forecasts generally point towards a continuation of the broadly supportive macroeconomic backdrop witnessed through 2017, although US rate hikes could be a headwind.

1. **Flat US$ despite 5x rate rises:** Arguably the most challenging aspect is the combination of our house forecasts of five rate rises (totalling 125bps) by end 2018, with a USD exchange rate profile that is essentially flat for the $ index, weakening against the €, A$, BRL and flat against CNY, £. Fed tightening and increasing policy divergence, with the ECB and BoJ expected to be on hold all year, would typically be associated with USD strength that is not reflected in our forecasts. However, it is also worth highlighting that three rate rises through 2017 have been associated with the DXY index falling ~8% YTD;
2. **Rising real yields should continue to be supportive:** JPM forecasts a ~30-60bps increase in real yields across major global economies through 2018.
3. **Little to choose between DM & EM growth momentum, although China expected to slow:** JPM Economists expect both DM and EM growth to fall by 10bps YoY, to 2.1% and 4.9% respectively. Within EM, China is expected to see a modestly larger contraction, from 6.8% in 2017 to 6.5% in 2018. Looking a further year out, however, EM growth is expected to remain at 4.9% in 2019 vs a DM deceleration to 1.7%;
4. **Chinese momentum expected to fade, but risk of hard landing low:** China began loosening monetary policy and regulations for key industries (autos and property) in H2'15, which combined with an unprecedented surge in credit in early 2016, led to a boost in activity that lasted well into 2017. We believe momentum will slow in 2018, although this is likely to be most evident in Q2/3. JPM Economists forecast 6.5% 2018 GDP growth vs 6.8% in 2017. However, the risk of a hard landing, a key concern at various points in recent years, remains low;
5. **Supply-side reform:** The commodity outlook in China is supported by supply side reform which was a key upside surprise for prices in 2016/17. We believe many of the capacity reductions witnessed over the past 12-18 months are more structural. Further supporting the commodity price outlook is consolidation on the horizon in the European steel industry, and potential extension and expansion of protectionist measures, particularly in the US;
6. **Electric vehicles offer promising demand growth for metals but sustained supply shortages unlikely:** Interest in the electrification trend took off in 2017, leading to significant price increases for those commodities seen as having the greatest role to play in battery technology. We have a more cautious view than some observers, however, GLEN & MNOD offer the greatest exposure amongst the European diversified miners.

1. Flat US$ profile despite assuming five rate rises

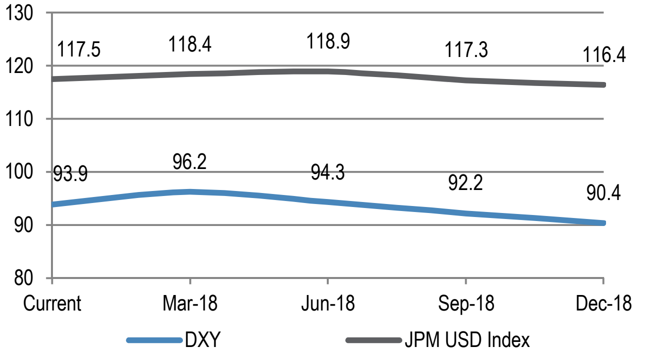
Contrary to market expectations for a stronger USD, at least in the first half of 2017, the DXY index is down by almost 9% YTD, driven by stronger-than-expected global growth and weaker than anticipated rate divergence. The dollar has found some support since reaching its nadir in September, with progress on tax reform and growing consensus on a December rate rise key to the improvement.

Figure 13: DXY index down almost 9% YTD due to US policy deadlock, strong global growth



Source: Bloomberg.

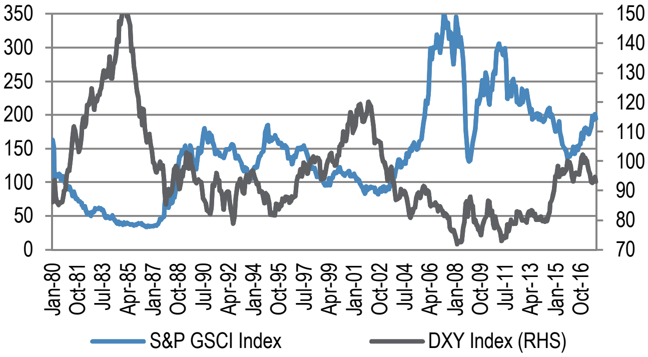
Figure 14: DXY & JPM USD index forecasts – flat profile in H1, ending the year weaker



Source: J.P. Morgan estimates.

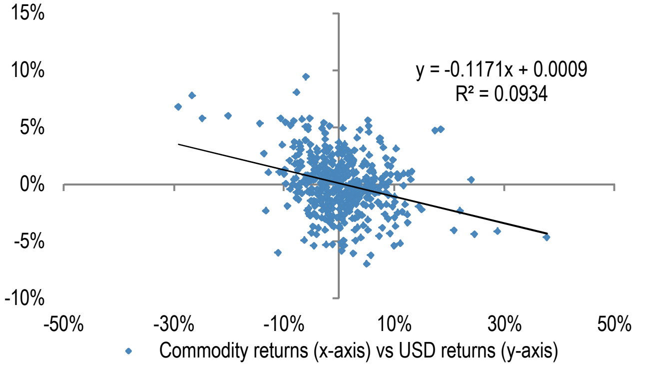
Looking forward, J.P. Morgan's strategists forecast five US Fed Funds rate increases before the end of 2018 (including Dec'17), taking the rate to 2.50% from the current 1.25% by Dec'18, in response to both inflation and employment appearing close to mandated levels. We note the market is now essentially pricing a 100% probability of a December rate rise, but then forecasts only a further two-three increases through 2018. Five rate hikes next year would almost certainly lead to increased policy divergence between the US and the rest of the world, including Europe and China, which could put pressure on our assumption of flat/weaker dollar indices, flat against CNY, £ and weakening against the €, A$, BRL.

Figure 15: Commodity prices vs DXY – inverse relationship has been weaker recently



Source: Bloomberg.

Figure 16: Commodity prices vs USD – monthly performance 1980-present shows inverse correlation, albeit weak

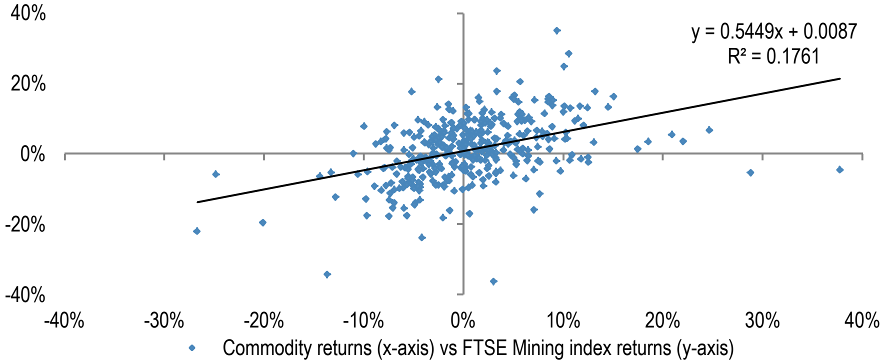


Source: Bloomberg. Note: Data Jan'80-Nov'17

The inverse correlation between commodity prices and the dollar has been weaker over the past couple of years relative to the trend witnessed through most of the preceding decade, although it shows signs of being re-established through 2017. We believe the breakdown in 2015/16 reflected the impact of supply side reform on commodity markets which provided a powerful alternative narrative for investors. Heading into 2018, we believe supply side reform can continue to support commodity prices, although the effect is likely to be less powerful given much of the heavy lifting has been completed, hence a reasonable negative correlation to the USD appears a sensible assumption, in our view.

Monthly performance data also shows an unsurprisingly strong positive correlation between commodity price and mining equity returns over the past ~30 years, with an R^2 of 0.18 almost double the strength of the relationship between commodities and the USD outlined above.

Figure 17: Commodity prices vs mining equities - monthly performance 1986-present shows positive correlation

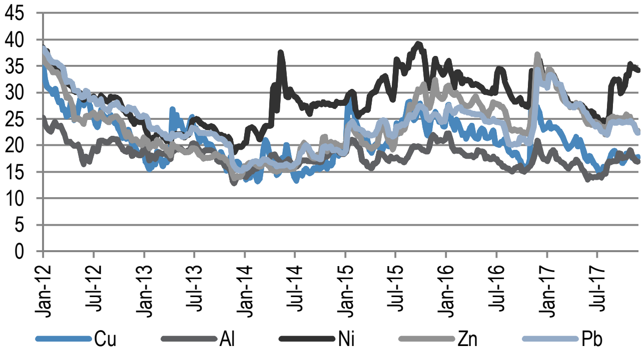


Source: Bloomberg. Note: Data Jan'86-Nov'17.

Commodity price volatility has moderated again

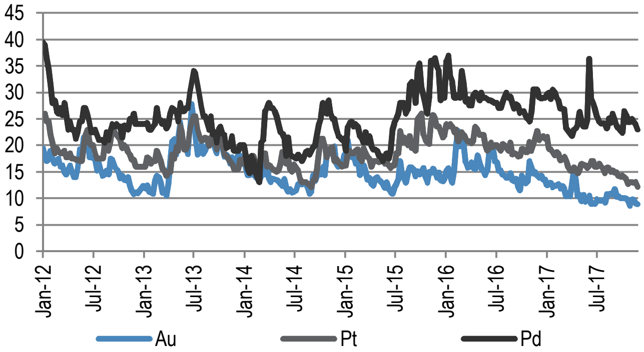
Commodity price volatility picked up in H2'15, peaking in late 2015 and then declining through most of 2016 until a post-Presidential election spike late in the year. Volatility has again been falling through 2017 for most commodities, although palladium saw a notable mid-year spike due to growing perceptions of larger long-term market deficits and Norilsk announcing plans to build a strategic stockpile, while nickel volatility has been rising, we believe, due to excitement over the electric vehicle outlook.

Figure 18: Base metal volatility up by ~20-70% since US election, back to levels not seen since 2012



Source: Bloomberg.

Figure 19: Precious metals volatility mixed – Pt/Pd up, gold down since election



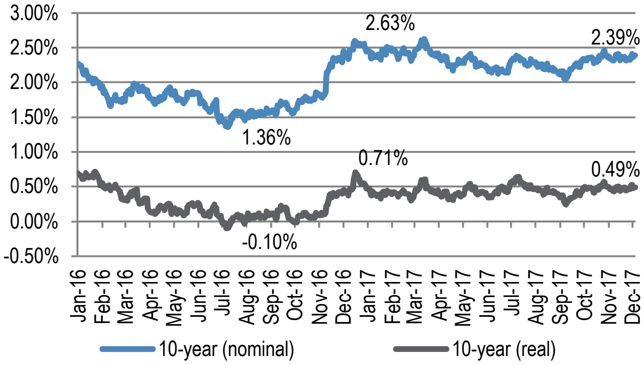
Source: Bloomberg.

2. Rising real yields should continue to be supportive

Rising real yields were a key support for commodities and related equities for several months following the Trump election victory in late-2016. However, 2017 has seen a stagnation in the so-called "reflation trade", with real 10/30-year yields having fallen ~20-50bps from their late-2016 peaks as policy deadlock on issues such as healthcare, infrastructure spending and tax reform resulted in inflation failing to accelerate as the market had anticipated. JPM assume stimulus worth a total of

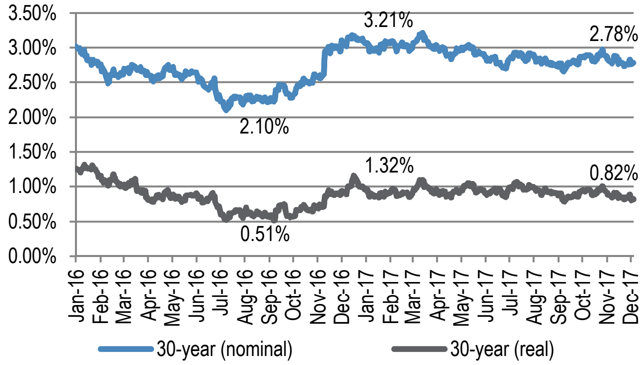
~$1trn over a decade is implemented, or ~$100bn pa (see "Tax reform clears another hurdle" by John Normand for further details) which equates to a modest ~0.25% annualised impact on US GDP.

Figure 20: 10-yr yields down ~20-30bps since late-2016 peaks



Source: Bloomberg.

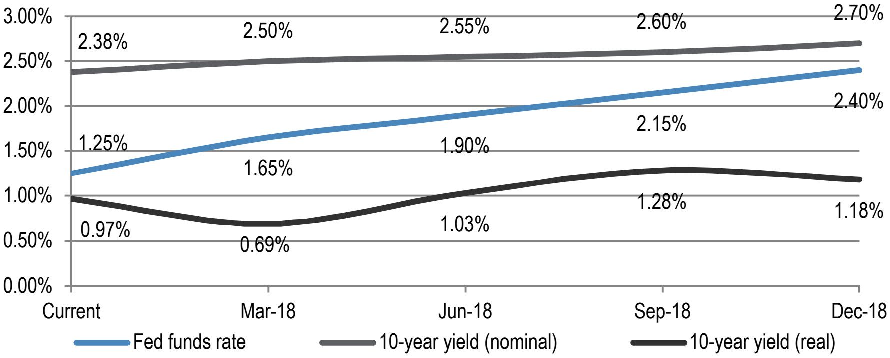
Figure 21: 30-yr yields down ~40-50bps since late-2016 peaks



Source: Bloomberg.

Heading into 2018, we anticipate the reflation trade picking up pace again, aided by tax reform and possibly a breakthrough on infrastructure investment. We expect five further Fed interest rate rises through to the end of 2018, taking the Fed Funds rate up 125bps to 2.50%. We forecast the US Core PCE deflator increasing to 1.8% from 1.5% YoY, resulting in the implied 10-year real yield rising modestly from its current level of ~1.0% to a peak of ~1.3% in Q3 and ~1.2% by the year end.

Figure 22: JPM Fed funds & 10-yr yield forecasts imply modest increase in yields

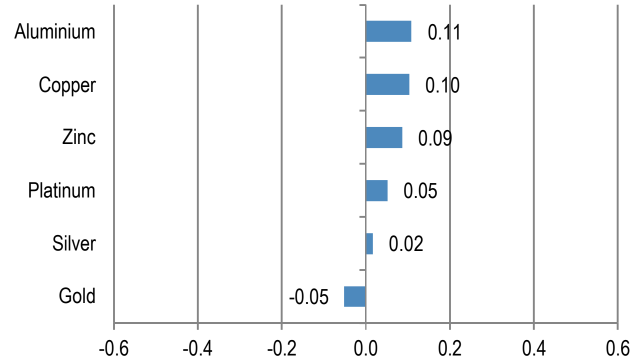


Source: J.P. Morgan estimates. Note: Real yield calculated using JPM's quarterly Core PCE deflator forecasts.

Industrial commodities & steel benefit from higher yields, precious metals show negative correlation

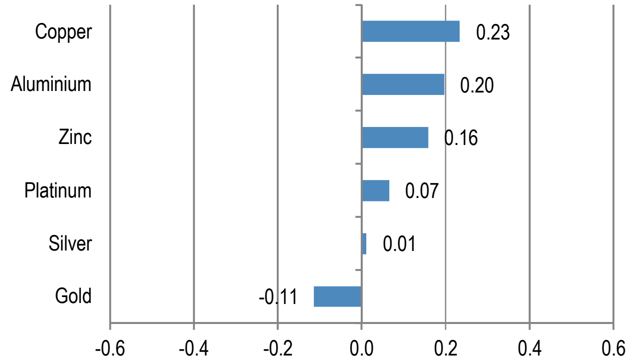
At a high level, the correlation between the 10-year Treasury yield and commodities shown below follows established relationships across a variety of time horizons. Industrial metals demonstrate a positive relationship, reflecting an expectation that higher yields indicate improved growth prospects, while gold shows a negative correlation as the growth implications of rising yields outweigh the threat of higher inflation. Notably, however, correlations have been less powerful in the recent past than historically (5-10-yr horizon). We view this as a broadly positive development, highlighting that improving industry dynamics have helped commodities decouple to an extent from macro drivers.

Figure 23: Correlation since 1990 – base metals have the highest positive correlation, gold is negative



Source: J.P. Morgan estimates, Bloomberg.

Figure 24: 10-yr correlation – copper and aluminium the strongest positive relationship, gold negative again

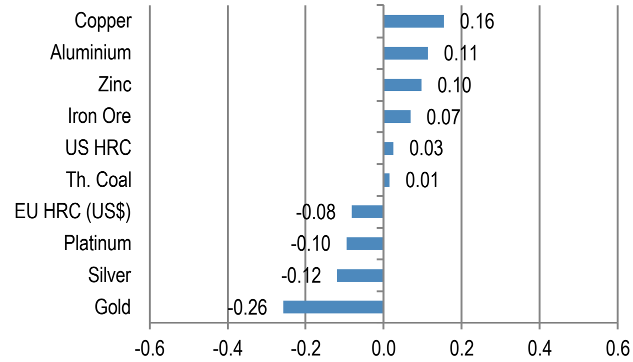


Source: J.P. Morgan estimates, Bloomberg.

The positive correlation of aluminium and copper, which is notably strong over a ten-year history, has declined over more recent periods, in our view probably reflecting the impact of supply side reforms on commodity prices in 2016 and particularly 2017. On the other hand, negative precious metal correlations have been strengthening which likely reflects the inflection from an extended period of non-traditional, ultra-low rate monetary policy.

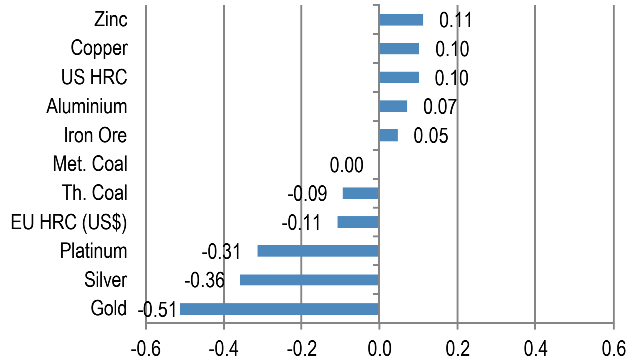
Steel prices typically correlate well with their raw material costs (iron ore and coking coal) as well as global GDP growth. Therefore, intuitively, steel prices should also correlate positively with Treasury yields. However, the data shows that, while US HRC does have a modest positive correlation, EU HRC (in US$ or € terms) shows a negative correlation. In our view this suggests steel prices have decoupled from yields, being primarily driven by sentiment on trade protection measures and the broader growth momentum in respective geographies.

Figure 25: 5-yr correlation – negative relationship between gold & 10-yr Treasury has been pronounced over the five years



Source: J.P. Morgan estimates, Bloomberg.

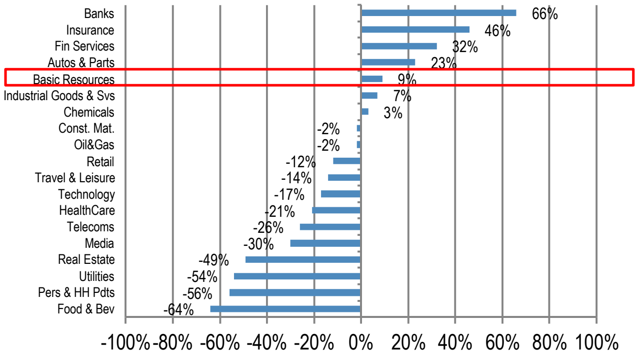
Figure 26: YTD correlation – positive correlations have been diluted, negative precious metals correlations strengthening



Source: J.P. Morgan estimates, Bloomberg.

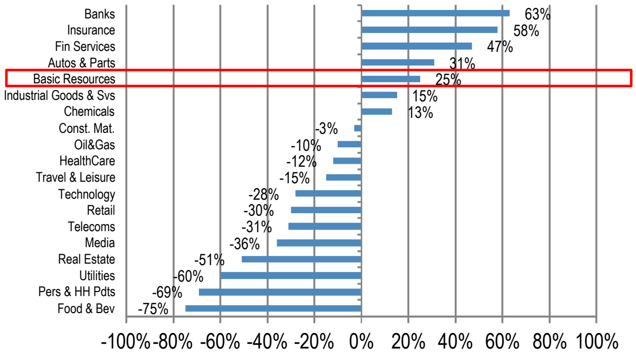
The positive correlation shown by most industrial commodities transmits to related equities, with the Mining & Steel sector demonstrating the strongest correlation to rising yields outside of Financials and Autos. Our data, based on a two-year rolling historic correlation shows a significantly weaker correlation this year than last, reflecting the elimination of 2015 from the dataset when commodities and, in turn, equities were essentially an "anti-dollar" trade.

Figure 27: Sector (SXXP) correlation to 10-year US bond yield (weekly correlation, 2016-17)



Source: Bloomberg. Note: data over past two years.

Figure 28: Sector (SXXP) correlation to 10-year US bond yield (weekly correlation, 2015-16)



Source: Bloomberg. Note: data over past two years.

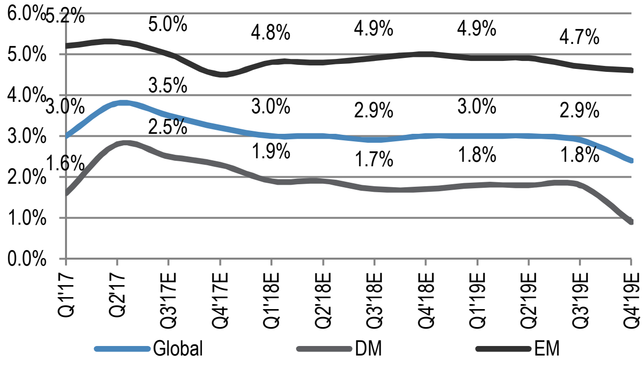
How to play the reflation trade through equities

Having emerged from a period where commodities were extremely sensitive to USD/yield moves due to oversupplied markets and strained balance sheets in turn left companies extremely sensitive to moves in commodity prices, we believe the importance of yields and the direction of the USD will remain modest in 2018. A strong view on real yields would most successfully be traded expressed through precious metals, in our view. Our least preferred European precious metals' exposures are Acacia and Hochschild (both UW).

3. Little to choose between DM & EM growth momentum, although China expected to slow

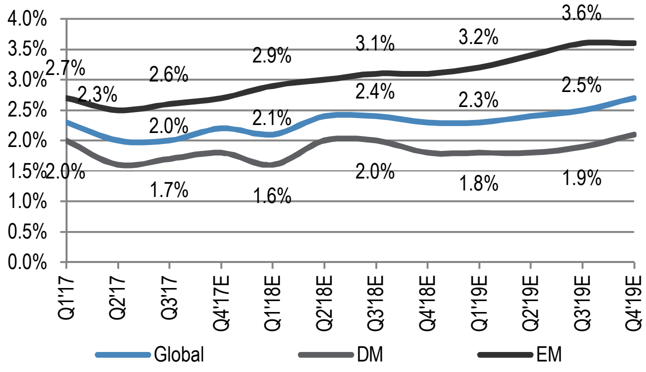
Our house forecasts show above trend global GDP growth of 3.2% in 2017 which we anticipate staying elevated in 2018. Within that, we anticipate both DM and EM growth staying essentially flat YoY. Looking a further year out, however, EM growth is expected to remain at 4.9% in 2019 vs a DM deceleration to 1.7%.

Figure 29: Quarterly GDP forecasts split by DM & EM



Source: J.P. Morgan estimates.

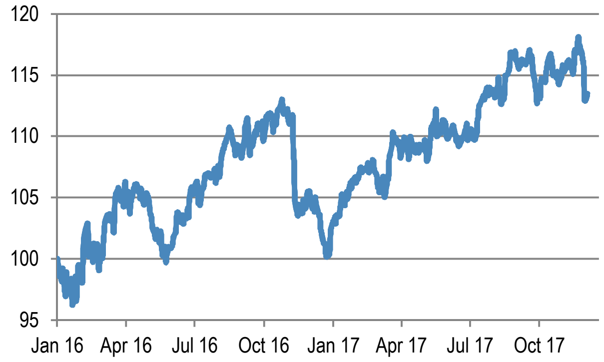
Figure 30: Quarterly CPI forecasts split by DM & EM



Source: J.P. Morgan estimates.

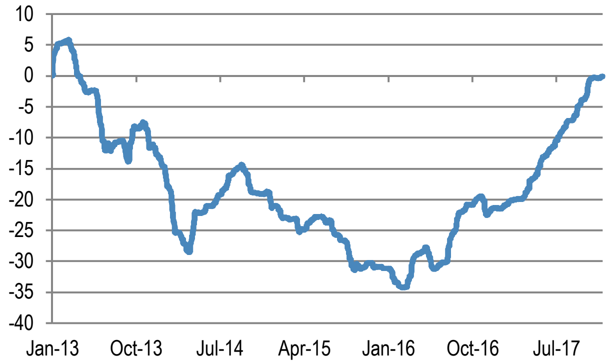
Having been overweight EM for 18 months, our equity strategists downgraded to neutral in September, noting the benefits of strong flows into EM ETFs and FX trends, with the potential for FX reversal and US rate hikes to put pressure on the EM equities trade. With commodities and Metals & Mining seen as an EM proxy, any weakness in EM flows and outlook would likely weigh on sector performance.

Figure 31: EM vs DM – Jan'16-present (rebased)



Source: J.P. Morgan estimates. Saved in separate file "

Figure 32: Cumulative flows into EM equity ETFs (US$bn)

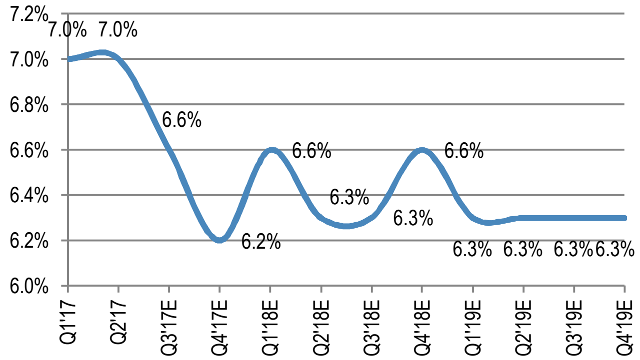


Source: J.P. Morgan data.

4. Chinese momentum expected to fade, but risk of hard landing low

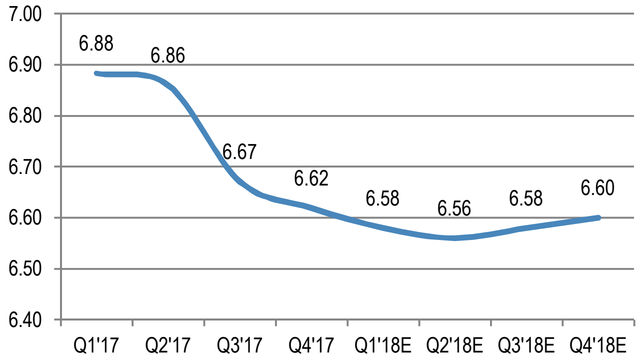
China began loosening monetary policy and regulations for key industries including autos and property in H2'15 which, combined with an unprecedented surge in credit in early 2016, led to a boost in activity that lasted well into 2017. We believe momentum will slow in 2018, although this is likely to be most evident in Q2/3. JPM Economists forecast 6.5% 2018 GDP growth vs 6.8% in 2017 although Q1 is expected to accelerate from 6.2% QoQ to 6.5%. We anticipate global CPI to pick up from the current 2.0% level to 2.7% by the end of next year.

Figure 33: China quarterly GDP forecasts



Source: J.P. Morgan estimates.

Figure 34: China quarterly CNY:USD forecasts



Source: J.P. Morgan estimates.

We believe the risk of a hard landing, a key concern at various points in recent years, remains low. As outlined by our Chinese Economist, Haibin Zhu in several notes (including "Why the 19th Party Congress is a watershed moment for China" from 27th Oct), the 19th CPC Party Congress laid out long-term development plans and emphasised a shift in focus from pace to quality of growth. Preventing major risks, poverty reduction and environmental protection are three priority tasks in 2018-2020 and supply-side adjustments (overcapacity reduction, deleveraging, anti-pollution measures) will continue. We expect a modest growth slowdown to 6.5% in 2018 (vs. 6.8% in 2017), but downside risk is limited and nominal GDP growth remains decent at 9-10%. Supply-side reform will lead to improving credit quality, while industrial consolidation supports industry winners despite the expected slowdown in overall activity.

Table 10: China forecasts

	%share 2016	2016 %oya	2017f %oya	2018f %oya
Nominal FAI (yearly)				
Total	100.0	8.1	7.4	7.5
Primary Industry	3.2	21.1	11.0	10.0
Manufacturing	31.5	4.1	4.2	5.0
Textile and related industry	2.3	8.2	5.0	4.5
Metal and commodities	9.1	1.3	-1.0	0.0
Machinery & electronic equipment	8.4	5.0	8.0	9.0
Transportation equipment	2.5	1.4	9.0	7.0
Electricity, gas and water production	5.0	11.7	1.5	2.0
Real estate	22.7	6.9	7.0	4.0
Infrastructure	21.3	15.8	17.0	14.0
Transportation infrastructure & construction	9.8	8.1	11.0	10.0
Water conservation, environment manag.	11.5	23.3	22.0	18.0
Healthcare, social security, equcation, etc	4.9	19.0	17.0	15.0
Key China forecasts				
Real GDP, %-ch over a year ago		6.7	6.8	6.5
Consumer prices, %oya, average		2.0	1.6	2.5
RRR, EOP		17.0	17.0	17.0
Policy rate, EOP		4.4	4.4	4.4
Exchange rate, EOP		6.9	6.6	

Source: NBS, China customs, PB OC, SAFE, Markit, J.P. M o rgan forecasts.

Positive momentum has stalled recently, with MoM indicators across a broad range of indicators showing a negative sequential trend in both October and November. Monthly YoY comparisons have also turned negative, although YTD YoY indicators continue to look positive and have comfortably surpassed expectations from the beginning of the year.

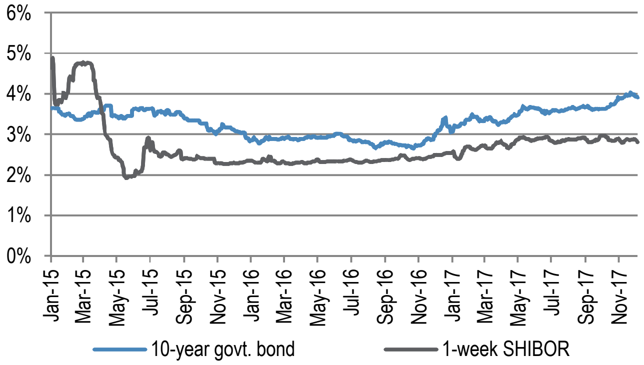
Table 11: China economic data summary

	Unit	Nov-17 Quant.	Oct-17 Quant.	Nov vs Oct %	Sep-17 Quant.	Oct vs Sep %	Nov-16 Quant.	Nov-17 YoY	2017 YTD Quant.	2016 YTD Quant.	2017 YTD YoY	FY 2016 YoY
China lead indicators												
Floor space started	Mn Sq m	166	141	17.4%	160	-12.1%	139	18.8%	1,617	1,513	6.9%	8.1%
Residential	Mn Sq m	120	100	19.5%	120	-16.4%	98	22.3%	1,161	1,048	10.8%	8.7%
Non-Residential	Mn Sq m	46	41	12.4%	41	0.7%	41	10.6%	456	465	-2.0%	6.7%
FAI – New Projects	Rmb Bn	5,202	5,019	3.6%	4,623	8.6%	4,164	24.9%	47,856	45,255	5.7%	20.9%
PMI Manufacturing - NBS	Index	51.8	51.6	0.2pp	52.4	-0.8pp	51.7	0.1pp	51.6	50.2	1.4pp	0.4pp
PMI Manufacturing - Caixin	Index	50.8	51.0	-0.2pp	51.0	0.0pp	50.9	-0.1pp	50.9	49.6	1.2pp	1.1pp
PMI Steel	Index		52.3	n/a	53.7	-1.4pp	51.0	n/a	52.8	49.9	2.9pp	7.5pp
PMI Machinery	Index	54.6	53.7	0.9pp	59.0	-5.3pp	58.5	-3.9pp	52.8	50.7	2.1pp	7.8pp
Fixed asset investment	Rmb Bn	5,724	5,934	-3.5%	6,433	-7.8%	5,412	5.8%	57,506	53,855	6.8%	8.1%
China construction indicators												
Floor space under construction	Mn Sq m	161	143	12.9%	163	-12.3%	141	13.9%	162	157	2.8%	-6.1%
Residential	Mn Sq m	116	101	15.6%	121	-16.5%	100	16.9%	115	108	7.3%	-6.2%
Non-Residential	Mn Sq m	45	42	6.4%	42	-0.5%	42	6.9%	46	50	-7.0%	-6.1%
Floor space completed	Mn Sq m	106	79	34.3%	54	46.9%	118	-10.1%	763	770	-1.0%	6.1%
Residential	Mn Sq m	75	53	41.5%	39	37.7%	85	-12.3%	541	564	-4.1%	4.6%
Non-Residential	Mn Sq m	31	26	19.8%	15	70.1%	33	-4.3%	222	207	7.4%	10.2%
Floor space sold	Mn Sq m	163	142	14.6%	175	-18.5%	155	5.4%	1,466	1,358	7.9%	22.5%
Real estate investment	Rmb Bn	984	990	-0.6%	1,115	-11.2%	941	4.6%	10,039	9,339	7.5%	6.9%
Real estate climate index	Index	102	101	0.1pp	101	0.0pp	101	0.8ppts	101	100	0.9pp	n/a
Land Area Purchased	Mn Sq m	31	23	34.1%	25	-7.2%	22	42.7%	222	191	16.3%	-3.4%
China cement production	Mt	221	220	0.3%	221	-0.7%	214	3.3%	2,155	2,203	-2.2%	2.3%
FAI – Infrastructure (ex. Elec.)	RMBbn	136	135	1.2%	149	-9.7%	110	23.7%	1,267	1,059	19.6%	17.4%
Power sector indicators												
Grid investment	RMBbn		40	n/a	48	-17.9%	67	n/a	413	410	0.6%	17.9%
Power plant investment	RMBbn		25	n/a	27	-6.7%	30	n/a	198	239	-17.2%	-16.2%
FAI: Electric Machinery	RMBbn	114	121	-5.2%	128	-5.6%	121	-5.6%	1,231	1,160	6.1%	13.0%
FAI: Electricity & Heating	RMBbn	178	192	-7.4%	228	-15.7%	195	-8.8%	2,025	2,064	-1.9%	12.2%
Total energy consumption	Kwh bn		513	n/a	532	-3.5%	507	n/a	5,202	4,878	6.6%	6.7%
Th. power electricity prod.	Kwh bn	373	347	7.7%	363	-4.5%	381	-2.0%	4,173	3,968	5.2%	4.4%
Machinery indicators												
FAI – Manufacturing	RMBbn	1,744	1,804	-3.3%	1,914	-5.8%	1,708	2.1%	17,630	17,015	3.6%	4.1%
FAI – Metal products	RMBbn	97	96	0.9%	106	-8.9%	95	2.0%	946	919	3.0%	6.5%
Transport indicators												
Motor vehicles production	K units	3,110	2,600	19.6%	2,920	-11.0%	3,000	3.7%	22,170	20,960	5.8%	14.1%
Auto production	K units	3,049	2,575	18.4%	2,641	-2.5%	2,976	2.5%	25,718	24,694	4.1%	14.6%
Auto sales	K units	2,958	2,704	9.4%	2,709	-0.2%	2,939	0.6%	25,881	24,882	4.0%	13.7%
Passenger vehicles reg.	K units	2,589	2,352	10.1%	2,343	0.4%	2,590	0.0%	22,091	21,620	2.2%	15.1%
Commercial vehicle reg.	K units	368	351	4.9%	367	-4.2%	348	5.6%	3,790	3,262	16.2%	5.6%
Broader economy indicators												
Total Social Financing	RMBbn	1,600	1,039	54.0%	1,833	-43.3%	1,833	-12.7%	18,310	16,103	13.7%	15.5%
IP	%	6.1	6.2	-0.1pp	6.6	-0.4pp	6.2	-0.1pp	6.6	6.0	0.6pp	-0.1pp
FAI (YoY)	%	7.2	7.3	-0.1pp	7.5	-0.2pp	8.3	-1.1pp	8.2	9.1	-0.9pp	-2.4pp
CPI (YoY)	%	1.7	1.9	-0.2pp	1.6	0.3pp	2.3	-0.6pp	1.5	2.0	-0.5pp	0.6pp
PPI (YoY)	%	5.8	6.9	-1.1pp	6.9	0.0pp	3.3	2.5pp	6.5	-1.9	8.4pp	3.9pp
70 cities price index (YoY)	%		5.6	n/a	6.4	-0.8pp	10.5	n/a	8.8	5.3	3.5pp	10.0pp

Source: Bloomberg.

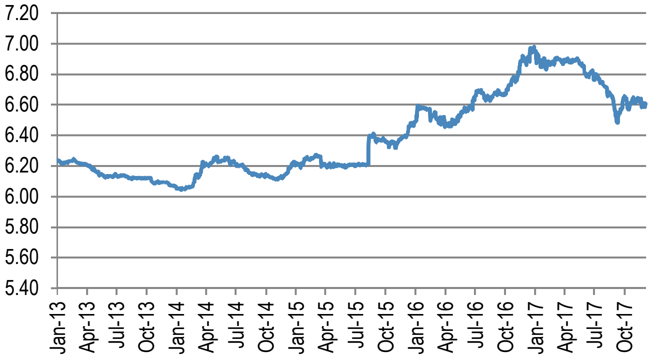
We believe weaker momentum reflects a combination of winter capacity closures across several basic industries, notably steel and aluminium, and tighter liquidity conditions. Chinese bond yields have risen by >20bps since mid-October, with most other major government bonds seeing double digit declines over the same period. However, policy rates, as approximated in the chart below by 1-week SHIBOR, have remained broadly flat in H2’17, in marked contrast to the tightening episodes in H1’17 and mid-2015 which caused concern over the Chinese growth outlook.

Figure 35: Chinese 1-week SHIBOR stable despite rising government bond yields



Source: Bloomberg.

Figure 36: CNY has appreciated by 5% YTD



Source: Bloomberg.

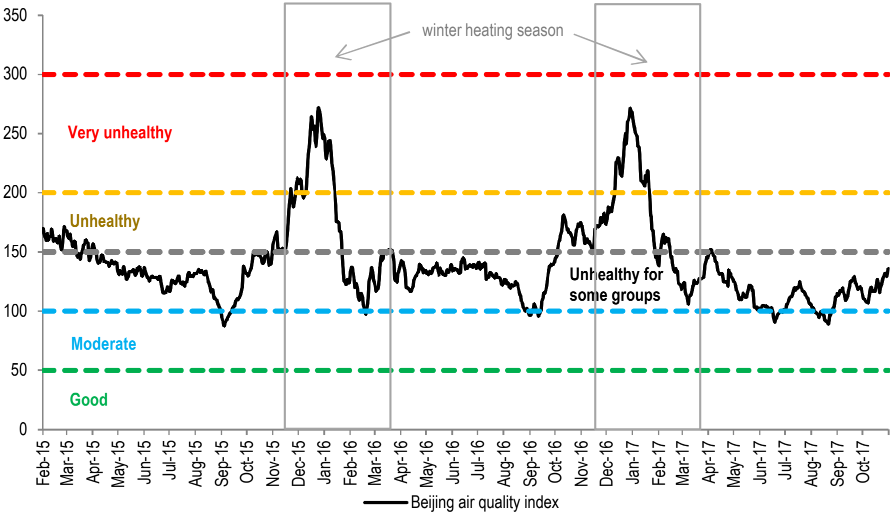
While a near-term slowdown associated with winter capacity closures and targeted credit tightening measures is underway, we believe any dip is likely to be shallow and relatively short-lived.

5. Supply-side reform should remain a support in 2018

Supply side reform has been the major surprise factor in commodities market in 2017 (and 2016), with steel and aluminium particularly benefitting from the Chinese authorities' attempts to restructure "old economy" industries. We believe the rationale for this restructuring, and winter capacity shutdowns, is more complex than a simple environmental story and in fact spans three interconnected elements – environmental, economic and geopolitical. As a result, we believe it is likely to be more structural and long-lived than consensus believes.

- **Environmental:** As shown below, air quality in the Beijing area has been "unhealthy for some groups" for most of the past three years according to US Department of State data published vis Bloomberg, with notable spikes in the winter heating season each year. As per capita incomes improve, citizens increasingly demand better quality of life, with air quality an obvious area of focus;

Figure 37: Beijing air pollution



Source: Bloomberg, US Department of State.

- **Economic:** Restructuring overcapacity industries has helped to improve profitability and reduce the risk of non-performing loans which could in turn impact the banking sector. This dynamic was a key area of concern for markets in late-15/early'16;
- **Geopolitical:** China is hoping to achieve market economy status within the WTO in 2018. Unfair trade practices, particularly alleged subsidies supporting steel and aluminium exports have been an area of dispute between China and some its major trading partners, with the EU and US both formally opposing market economy status being granted. Addressing concerns over some of these industries could therefore be helpful in improving China's international standing.

Summary of steel restructuring and winter capacity cuts

China has targeted total curtailments of 150Mtpa crude steel capacity over 2016-2020 as part of its wider supply-side structural reforms. Following aggressive action in 2016/17, these targets have already largely been met according to the National Development & Reform Commission:

- **2016:** 65Mtpa removed;
- **2017:** ~42Mtpa removed in H1, 50Mtpa target expected to be met;
- **2018:** SBB has reported no specific target will be set in 2018. The focus will shift to improving the quality of output according to the CISA Vice Chairman;
- **Induction furnaces:** WoodMac estimates ~144Mtpa of IF capacity has been curtailed since the start of 2016, running ahead of the government's 120Mtpa target. The capacity cuts equate to ~60-70Mtpa of crude steel output, although ~30Mtpa of this was already captured in official data, implying re-classification of shadow production may have contributed ~2-3% of YTD growth of ~6%.

In addition, we expect around 55Mt of iron ore demand to be impacted by winter heating season closures (15th Nov – 15th Mar). In total, the measures capture ~260Mtpa of crude output. However, we estimate the overall impact over four months is ~30-35Mt. The restrictions limit steel makers to 50% utilisation across impacted regions and appear to have been enforced strictly since the heating season began on 15th November. Please see Iron Ore monthly (link here) for further details.

Table 12: Winter heating season impact 15 Nov 2017 to 15 Mar 2018

2 + 26 cities	2016	2017
Annual capacity (Mt)	310	310
Monthly capacity (Mt)	26	26
Heating season utilisation (%)	84%	50%
Monthly production (Mt)	22	13
4 month output (Mt)	87	52
Change (Mt)		-35

Source: WoodMac

45 days (38%) of the 120-day winter heating season falls in 2017, which equates to around 13Mt of 'lost' steel output. The remaining ~22Mt occurs in Q1'18. Assuming a typical ratio of 1.6t iron ore per tonne steel implies an iron ore impact of ~21Mt in 2017 & 35Mt in 2018.

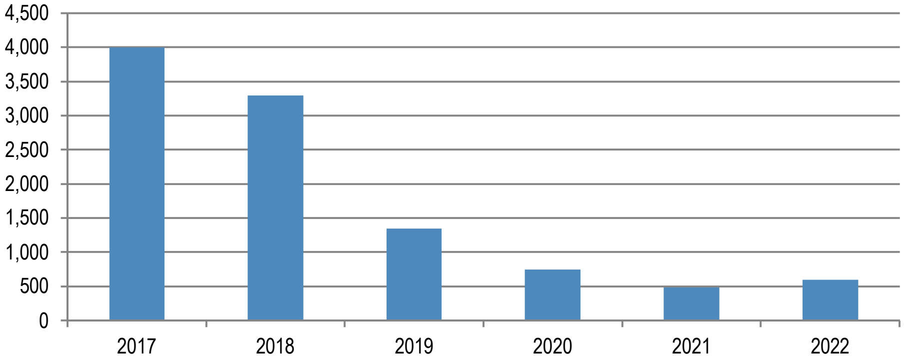
Consolidation can also help prices, although protectionism has failed to deliver on initial goals

Consolidation in the European steel industry is another potential source of support for (steel making raw material) commodity prices, with two deals currently at different stages of execution. These have the potential to improve the industry structure in Europe from <1,000 to >1,400 (or "moderately concentrated") under a Herfindahl framework and, over time, lead to higher capacity utilisation rates.

Summary of aluminium restructuring and winter capacity cuts

We assume winter production restrictions will be trivial for S&D balances as only about 600 kmt of primary aluminium production will be removed from the market as a result of winter closures in Q4'17-Q1'18.

Figure 38: Chinese aluminium smelting capacity additions



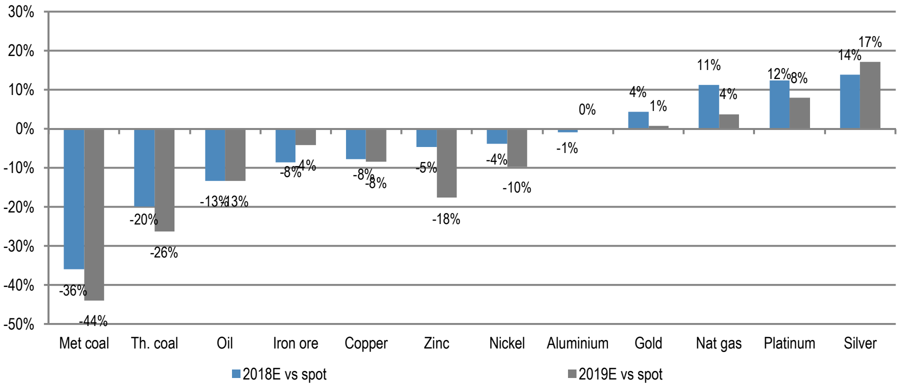
Source: CRU, J.P. Morgan Commodities Research

Overall, we see Chinese aluminium production reaching 36.0Mt in FY'17, growth of 12% YoY. The full impact of supply reform and winter production closures will be felt in 2018, causing output to grow by only 4%, or 1.6Mt, to 37.6Mt as over 3.0Mt of new capacity ramps up. Capacity additions beyond 2018 are limited hence, we see production growth rates also slowing somewhat.

Commodities preferences – base metals carry less downside risk than bulk; precious metal upside emerging

Our average 2018 commodity price assumptions are conservative relative to spot, with slowing growth in China and US rate rises the key drivers. As was the case last year, we believe the outlook for base metals is more supportive than for bulk commodities. We anticipate average met and thermal coal prices ~20-30% below spot and 15% downside to iron ore. Chinese winter capacity shutdowns in steel are currently supporting steel margins, in turn supporting raw material prices, but will dissipate early next year.

Figure 39: JPMe vs spot – bulk materials most exposed to downside risk

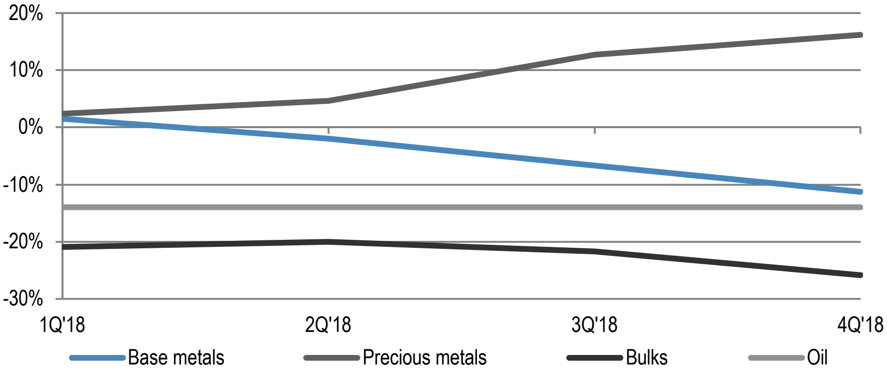


Source: J.P. Morgan estimates, Bloomberg.

Of the base metals, we are most positive on aluminium over the aggregate 2018-19 period, due to the expected positive impact of ongoing industry restructuring efforts coupled with strong demand growth. We see zinc and nickel markets remaining reasonably tight in 2018 but with more downside risk in 2019 as supply side tightness dissipates. Despite significant upgrades to our near-term copper price profile, we continue to believe it is most vulnerable to a correction given limited cost curve support and a final year of strong supply growth in 2018 outpacing demand.

We have a bearish view on oil prices given risks to OPEC supply discipline, but see some upside for natural gas. We see gold prices essentially flat over the next couple of years, but upside to silver and platinum prices given improving industrial demand.

Figure 40: J.P. Morgan 2018E quarterly commodity price forecasts vs spot



Source: J.P. Morgan estimates.

Risks to base case macro view in 2018

Our core view heading into 2018 is that commodity prices will come under modest downward pressure, particularly in H2, from a combination of softening Chinese growth momentum and US rate rises. Supply side discipline and rising real yields are an offsetting force that provide a solid floor and mean the risk of a hard landing is absent. We identify a range of risks to that base case view below.

This section includes excerpts from our *Strategists' 2018 Outlook* report.

DOWNSIDE RISKS

- **Complacency:** The market appears to be extremely relaxed over the outlook for 2018, largely ignoring the risk of geopolitical shocks (North Korea news barely moves the needle currently), elections, a maturing US business cycle and Fed tightening. A range of economic indicators are at or near 25-year highs, including the German IFO, Japan's Tankan survey, and the US Manufacturing ISM;
- **US expansion getting long in the tooth:** In the US, unemployment, cumulative unit labor cost inflation, cumulative fixed investment, financial leverage among corporates, corporate profits, equity valuations, house prices, and equity indices are all already at levels that have historically signaled a cycle peak (the Russell 2000 is 75% above its 2007 peak);
- **Election-heavy 2018:** 2018 will see general elections in Italy, six countries in EM Asia, 12 in EM EMEA, and four in LatAm**,** including Brazil and Mexico.

UPSIDE RISKS

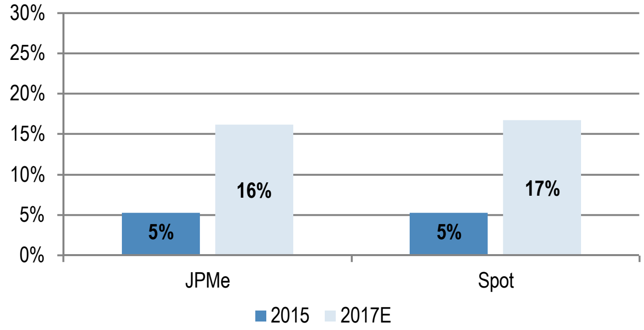
- **Stronger Chinese growth:** We entered 2017 forecasting a slowdown in Chinese growth from 6.7% in 2016 to 6.4% in 2017 but noting that the government may look to support growth ahead of the 19th National Congress. 2017 now looks like delivering slightly higher YoY growth of 6.8% and we again forecast a decline to 6.4% for 2018. It is plausible that the authorities continue to support growth following a significant change in top rank leadership of the Party in 2017;
- **Increase in real yields:** Bond yields stalled/fell in 2017 after enjoying a boost following the US Presidential elections in late-2016. A continuation of the synchronised global expansion could prompt rotation out of bonds and into other asset classes including commodities and equities. This, in turn, could overwhelm softening Chinese fundamentals, at least in the near term;
- **Further supply side discipline:** A more disciplined supply side has been a feature of the landscape across a range of commodities in 2016-17. Higher prices have left the market anticipating a return of at least some latent capacity; however, further supply side discipline could help sustain prices at higher levels.

Theme #2: ROCE analysis

Returns have improved markedly since 2015's lows…

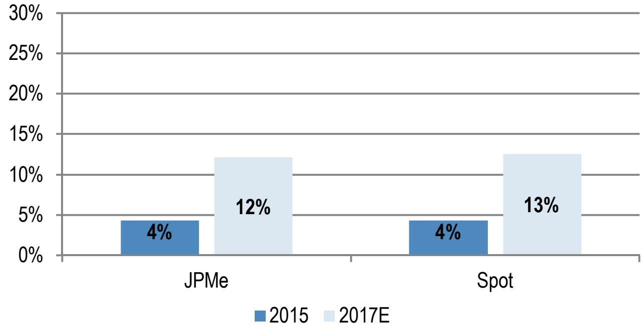
Return on capital employed (ROCE) for the diversifieds troughed in 2015 at an average ~5%, well below the typical cost of capital. Since then, prices have improved and "self-help" programmes have helped create value. As a result, we estimate the average 2017 ROCE will increase to 17% on spot (16% on JPM), c.10-12%-pt higher vs. 2015 levels. The data is, however, skewed by the impact of write-downs which boost headline returns. Repeating the analysis on an adjusted capital employed basis, adding back cumulative impairments, lowers 2017 average ROCE to 13% on spot (12% JPM), still a commendable ~8%-pt higher vs. 2015 levels.

Figure 41: Avg Diversified ROCE (post impairments) – JPMe & spot



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Capital employed includes provisions within-long-term liabilities but excludes tax from operating earnings. Calculated as a trailing 1yr avg. Average sector ROCE weighted by total capital base, includes BHP ex US Onshore and includes historical write-downs

Figure 42: Avg Diversified ROCE (pre impairments) – JPMe & spot



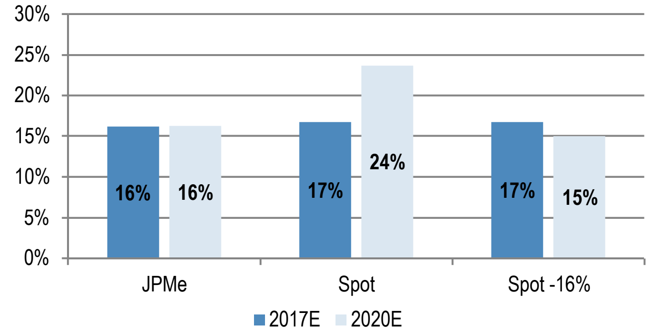
Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Capital employed includes provisions within-long-term liabilities but excludes tax from operating earnings. Calculated as a trailing 1yr avg. Average sector ROCE weighted by total capital base, includes BHP ex US Onshore, but excludes historical write-downs.

…but future improvement relies on elevated spot prices

JPM base case forecasts imply 2020E returns will remain flat vs. 2017 (16%, 16% in 2017), which we believe is an acceptable level relative to the sector's cost of capital. ROCE improves markedly under spot prices, with a forecast 2020 ROCE of 23% and we calculate the group could withstand a ~16% reduction in spot prices while still delivering 15% ROCE.

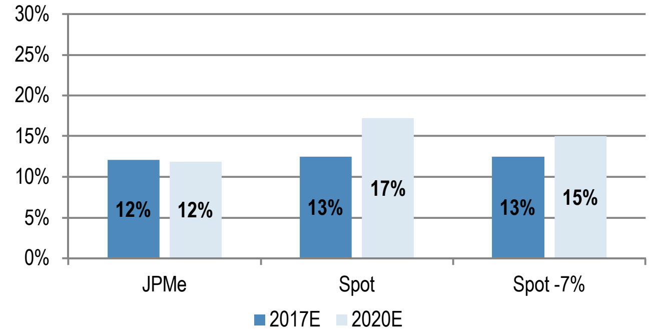
Adjusting for historical write-downs (Figure 43), we calculate the average diversified spot ROCE in 2020 at 17%. However, this falls to 12% under JPMe and we forecast the sector could withstand only a relatively modest 7% reduction in prices from spot to maintain a 15% ROCE, which may continue to raise questions about the ability of the sector to sustainably create value through the cycle.

Figure 43: Avg diversified ROCE (post impairments) – JPMe & spot



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Capital employed includes provisions within-long-term liabilities but excludes tax from operating earnings. Calculated as a trailing 1yr avg. Average sector ROCE weighted by total capital base, includes BHP ex US Onshore and includes historical write-downs

Figure 44: Avg diversified ROCE (pre impairments) – JPMe & spot

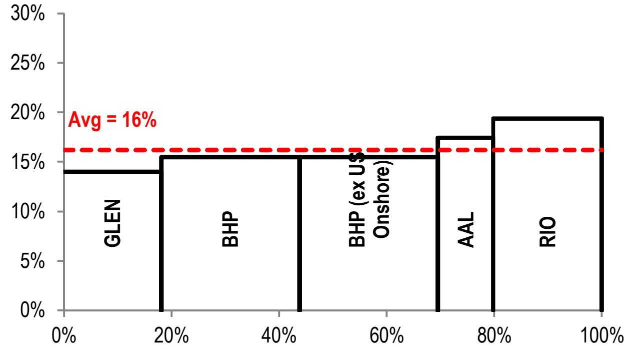


Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Capital employed includes provisions within-long-term liabilities but excludes tax from operating earnings. Calculated as a trailing 1yr avg. Average sector ROCE weighted by total capital base, includes BHP ex US Onshore, but excludes historical write-downs.

Stock specific catalysts will be a key differentiating factor amongst the diversified miners…and this favours BHP

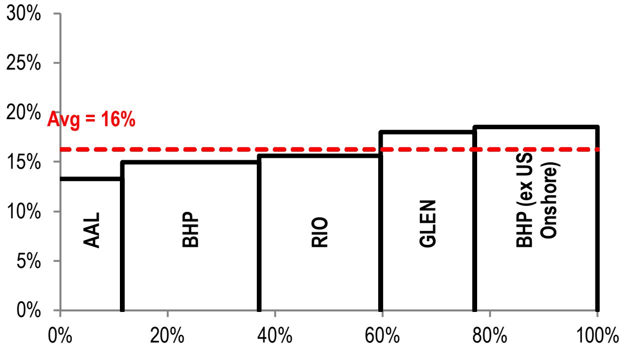
Despite sector-level returns on JPM base case showing limited improvement over the next three years, our estimates highlight a high level of dispersion on a stock-specific level. On JPM base case, we calculate GLEN will have the highest 2020 ROCE at 18%. However, if BHP completes a successful exit from US Onshore then its ROCE would be best-in-class (19%), highlighting the value that could be unlocked by selling the shale assets.

Figure 45: 2017E ROCE (post impairments) cost curve – JPMe
%,y-axis; % cumulative capital employed, x-axis



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Capital employed includes provisions within-long-term liabilities but excludes tax from operating earnings. Calculated as a trailing 1yr avg. Average sector ROCE weighted by total capital base, includes BHP ex US Onshore and includes historical write-downs

Figure 46: 2020E ROCE (post impairments) cost curve – JPMe
%,y-axis; % cumulative capital employed, x-axis

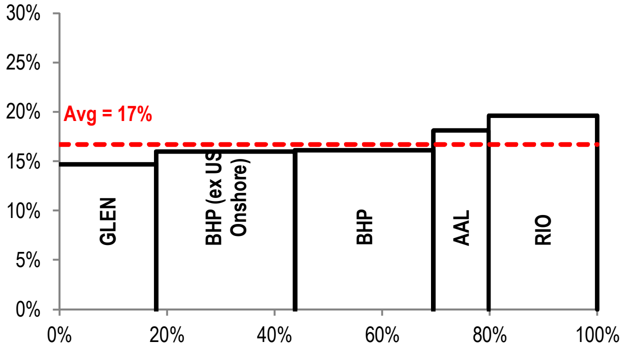


Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Capital employed includes provisions within-long-term liabilities but excludes tax from operating earnings. Calculated as a trailing 1yr avg. Average sector ROCE weighted by total capital base, includes BHP ex US Onshore and includes historical write-downs

Using spot prices, all of the group's returns improve, but GLEN would deliver the best at 30% reflecting its skew towards base metal and thermal coal prices, and lack of exposure to iron ore. As with JPM base case prices, BHP's returns would improve markedly if the US Onshore assets are removed (~26%). Under that scenario, RIO would have the lowest ROCE (18%) reflecting its large iron ore exposure.

Figure 47: 2017E ROCE (post impairments) cost curve – spot

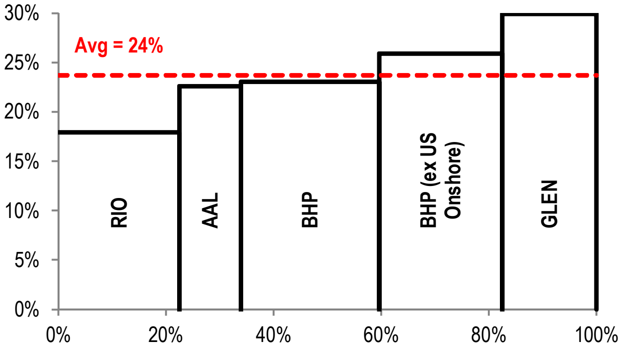
%,y-axis; % cumulative capital employed, x-axis



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Capital employed includes provisions within-long-term liabilities but excludes tax from operating earnings. Calculated as a trailing 1yr avg. Average sector ROCE weighted by total capital base, includes BHP ex US Onshore and includes historical write-downs

Figure 48: 2020E ROCE (post impairments) cost curve – spot

%,y-axis; % cumulative capital employed, x-axis

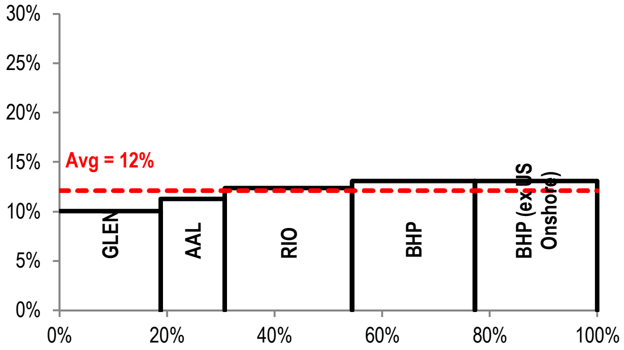


Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Capital employed includes provisions within-long-term liabilities but excludes tax from operating earnings. Calculated as a trailing 1yr avg. Average sector ROCE weighted by total capital base, includes BHP ex US Onshore and includes historical write-downs.

Making adjustments for historical write-downs indicates that GLEN would generate the highest ROCE under JPM base case at 12%. However, the removal of US Onshore would boost BHP's returns by ~3%-pt from 23% to ~26% which would be the highest amongst peers.

Figure 49: 2017E ROCE (pre impairments) cost curve – JPMe

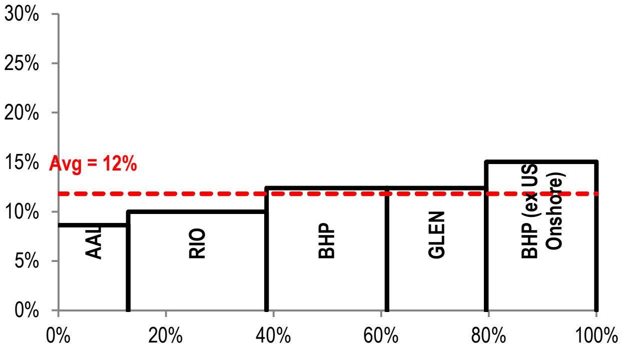
%,y-axis; % cumulative capital employed, x-axis



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Capital employed includes provisions within-long-term liabilities but excludes tax from operating earnings. Calculated as a trailing 1yr avg. Average sector ROCE weighted by total capital base, includes BHP ex US Onshore, but excludes historical write-downs.

Figure 50: 2020E ROCE (pre impairments) cost curve – JPMe

%,y-axis; % cumulative capital employed, x-axis

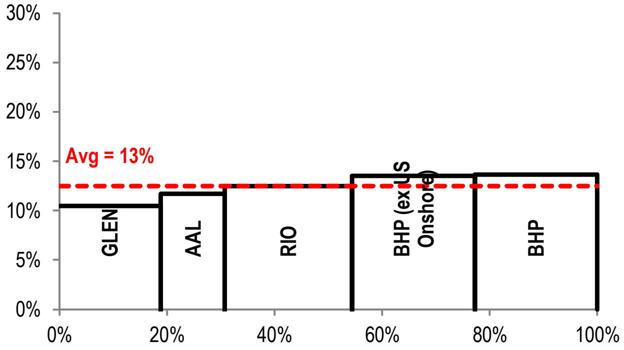


Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Capital employed includes provisions within-long-term liabilities but excludes tax from operating earnings. Calculated as a trailing 1yr avg. Average sector ROCE weighted by total capital base, includes BHP ex US Onshore, but excludes historical write-downs.

The conclusions remain the same using spot prices, where on our forecasts GLEN generates a 2020E ROCE of 21%. However, BHP's returns excluding US Onshore would be comparable at 21%, again highlighting the potential value that can be generated by the proposed sale process.

Figure 51: 2017E ROCE (pre impairments) cost curve – spot

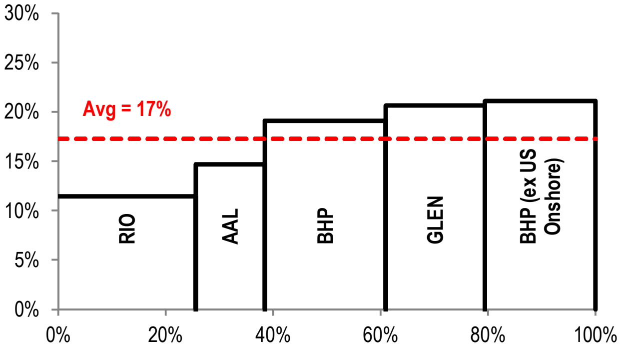
%,y-axis; % cumulative capital employed, x-axis



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Capital employed includes provisions within-long-term liabilities but excludes tax from operating earnings. Calculated as a trailing 1yr avg. Average sector ROCE weighted by total capital base, includes BHP ex US Onshore, but excludes historical write-downs.

Figure 52: 2020E ROCE (pre impairments) cost curve – spot

%,y-axis; % cumulative capital employed, x-axis

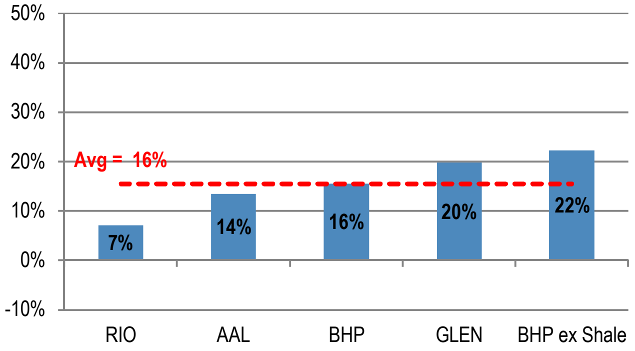


Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Capital employed includes provisions within-long-term liabilities but excludes tax from operating earnings. Calculated as a trailing 1yr avg. Average sector ROCE weighted by total capital base, includes BHP ex US Onshore, but excludes historical write-downs.

BHP's return on capital is the most defensive to materially lower commodity prices

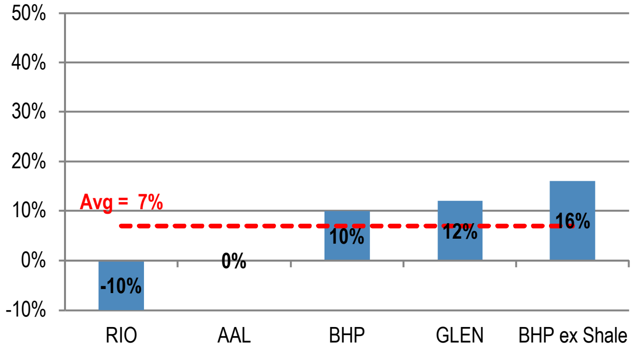
We believe a 15% ROCE is a broadly acceptable hurdle-rate across the sector. In Figure 53 below, we calculate how resistant each company's returns are by estimating how far commodity prices could fall while still achieving a ROCE of 15% in 2020. In that context, GLEN is the most defensive, able to withstand a 20% fall in spot prices, reflecting generally strong margins, a resilient Marketing business & elevated cobalt prices. We note that BHP's defensiveness increases if the US Shale assets are removed; in that scenario, we calculate it could withstand spot prices ~22% lower and still generate an "acceptable" return. Even once adjusting for impairments, GLEN could withstand the largest reduction to spot prices (12%), although BHP ex Shale could withstand prices 16% lower. Interestingly, RIO looks the least defensive on an adjusted basis reflecting ~$40bn of cumulative impairments, mostly related to Alcan.

Figure 53: Discount / (premium) to spot prices to achieve 2020E ROCE of 15% (post impairments)



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Capital employed includes provisions within-long-term liabilities but excludes tax from operating earnings. Calculated as a trailing 1yr avg. Average sector ROCE weighted by total capital base, includes BHP ex US Onshore and includes historical write-downs

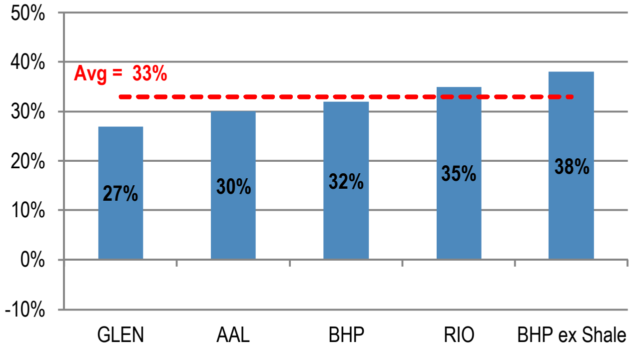
Figure 54: Discount / (premium) to spot prices to achieve 2020E ROCE of 15% (pre impairments)



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Capital employed includes provisions within-long-term liabilities but excludes tax from operating earnings. Calculated as a trailing 1yr avg. Average sector ROCE weighted by total capital base, includes BHP ex US Onshore and excludes historical write-downs

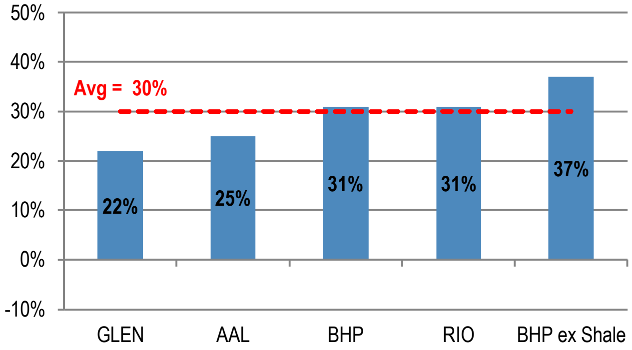
We run the same exercise, but with a target ROCE of 5%, which is in-line with the cyclical lows reached in 2015. RIO is best placed to withstand a downturn in prices, able to tolerate a 35% fall from spot (or 31% adjusting for historic impairments); to put this in context, this would require iron ore falling to <$50/t, copper ~$4,500/t and met coal ~$150/t. As previously, BHP ex Shale compares favourably, where it could withstand a 38% discount (37% post impairments). GLEN shows the least protection post impairments (27% discount), trailing AAL & BHP at 25-31%.

Figure 55: Discount / (premium) to spot prices to achieve 2020E ROCE of 5% (post impairments)



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Figure 56: Discount / (premium) to spot prices to achieve 2020E ROCE of 5% (pre impairments)



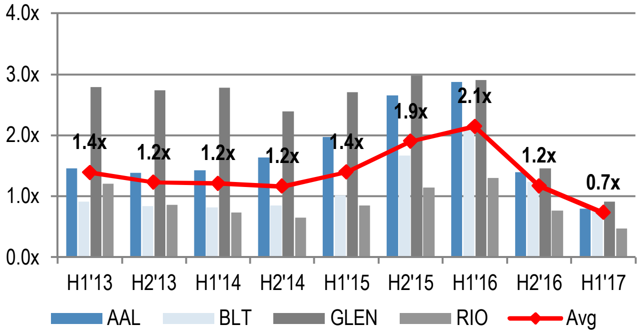
Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Theme #3: Balance sheets imply significant levels of excess capital generation

Diversified balance sheets now repaired

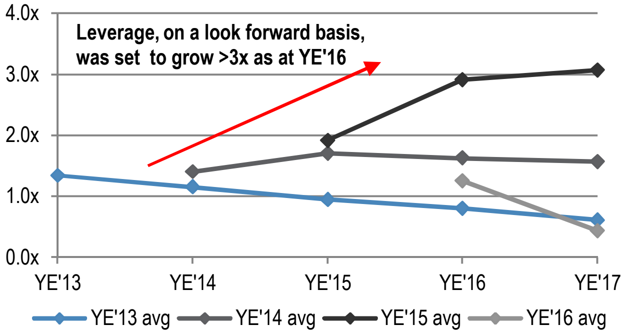
Cyclically low commodity prices coupled with the hangover from questionable capital allocation resulted in the diversifieds balance sheets (and indeed, the wider sector) deteriorating over H2'15 / H1'16. At the nadir in prices, average leverage was >2x (trailing 12mth) although both AAL & GLEN were ~3x. Forward-looking balance sheet health, however, was more precarious & on spot prices as at YE'15 we expected the sector average leverage to grow to >3x by YE'17; with the exception of RIO, all the diversifieds were forecast to have ~3x or higher leverage.

Figure 57: Historical ND/EBITDA (LTM) progression, highlighting the material de-leveraging of the diversified miners since early 2016



Source: J.P. Morgan estimates, Bloomberg.

Figure 58: Balance sheet health deteriorated through 2015, with the diversified avg leverage expected to grow >3x by YE'17



Source: J.P. Morgan estimates, Bloomberg.
Pro-forma estimates use spot prices as at specific year-end date.

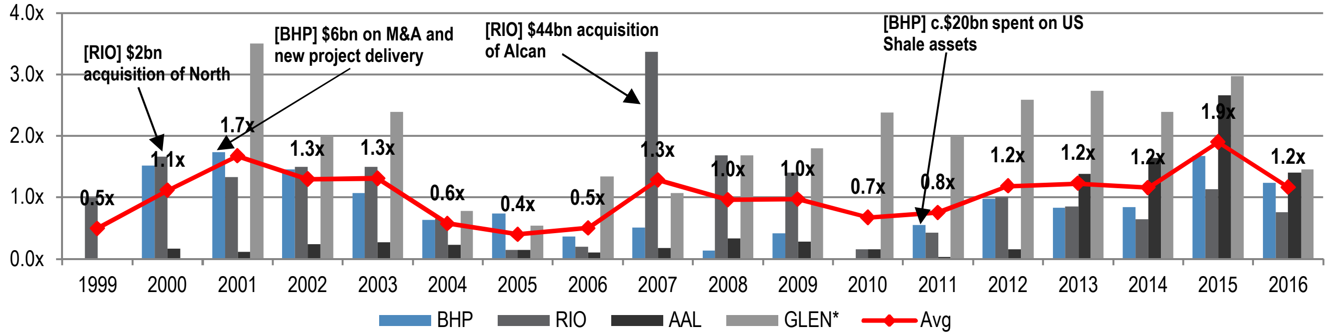
Since this point, balance sheets have improved materially, driven by a combination of: (i) stronger commodity prices; (ii) improved productivity; and (iii) a re-assessment of capital allocation priorities, which generally resulted in a change in dividend policies and a significant reduction in capex.

Miners likely to carry lower debt through next phase of the cycle

It may come as a surprise that high leverage is not the norm for the sector. In the late 1990s and early 2000s, sector average leverage was <1.0x (BHP was the highest at ~1.1x), peaking at ~1.7x in 2001.

The sectors balance sheet evolution over the past two decades should be framed in the context of the commodity cycle. The "pre-2006" period represented a more normalised environment for commodity supply and demand. In the intervening years, and particularly post-2007, China's expansion delivered high levels of demand growth and commodity price appreciation, and provided a strong incentive for producers to expand capacity or pursue M&A, with the cost of growth exacerbated by capex inflation.

Figure 59: Historical ND/EBITDA, 1999 to present (CY basis)



Source: J.P. Morgan estimates, Company data.
* GLEN data represents combined standalone GLEN pre 2013 merger & XTA standalone pre 2010

Our first conclusion of the historical context is that the market should expect the sector to carry lower levels of debt through the next phase of the cycle, with 1.0-1.5x ND/EBITDA certainly plausible given the volatility of earnings. This is in-line with recent commentary from management teams, which appears to indicate a willingness to favour further gross debt reductions.

Furthermore, despite the health of the sector and the large amount of excess capital being generated (see pp.45 below), we do not necessarily believe we are at the threshold of the re-emergence of large-scale M&A and / or project expansions. For example, at each point in the last two decades where the sector's average leverage has fallen to <1x, it has remained below that level (i.e. <1x) for at least the following three years (2004-'06; 2008-'11). Extrapolating to the current setting, this would imply we are only one year into a three year cycle of lean balance sheets.

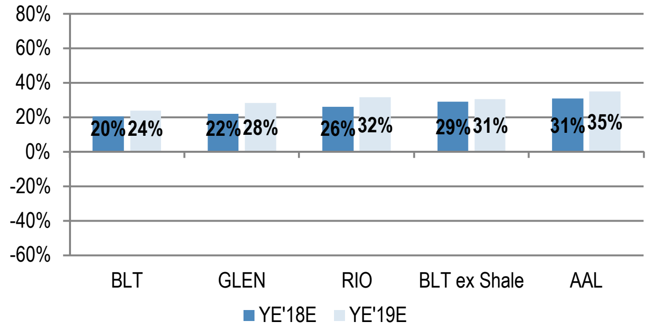
Significant levels of excess capital are being generated now, and this can be sustained even at lower prices

With the diversified miners' balance sheets repaired, the sector is now generating significant levels of excess capital. Assuming 1.5x ND/EBITDA as a target leverage (and one which would maintain an investment grade rating), then on JPM base case the **diversified miners generate 20-31% surplus capital as a proportion of market cap by YE'18, increasing to 24-35% by YE'19**. As shown in Figure 60, AAL generates the highest surplus capital reflecting a combination of: (i) valuation discount to peers; and (ii) commodity mix, with exposure to base metals and "higher value" iron ore. We calculate BHP generates the lowest surplus capital, in part reflecting its exposure to US Shale where we do not expect the asset to return to positive cash generation until 2020; removing this unit would increase the capital surplus by c.7-9%-pt.

Unsurprisingly, surplus capital is even more compelling under spot prices. We estimate the group generates 31-58% / 37-71% as at YE'18/19. AAL again generates the highest level of excess capital (58% / 71% at YE'18/19) and RIO the lowest, albeit still at over c.1/3 of its current market cap.

Figure 60: Diversified capital surplus / (deficit) to 1.5x ND/EBITDA, under JPM base case

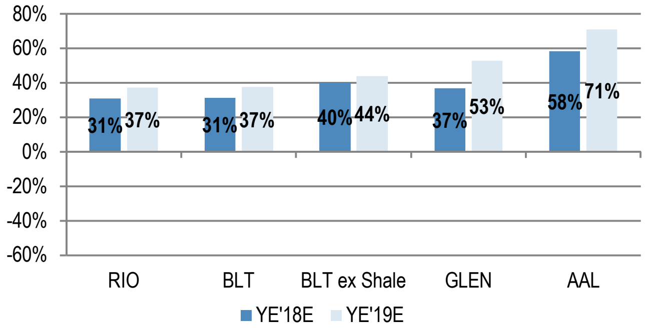
% market cap



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Figure 61: Diversified capital surplus / (deficit) to 1.5x ND/EBITDA, under spot prices

% market cap



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

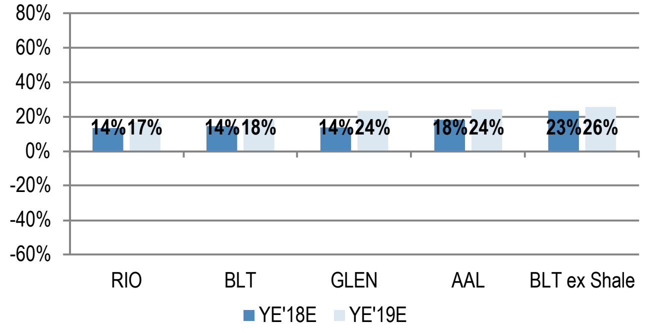
Excess capital generation remains strong even with spot prices 20% lower…but only RIO is "watertight" if prices return to Jan'16 levels

Furthermore, the strong starting point for balance sheets coupled with cost reductions means that pro-forma leverage would remain <1.5x even if spot prices fell 20% from current levels. As shown in Figure 62 below, the miners would have 14-23% excess capital as at YE'18, growing to 17-26% by YE'19. In this scenario, AAL would continue to generate best in class surplus capital, while BHP would generate the lowest. However, if BHP were able to divest US Onshore it would leapfrog to become best placed.

Admittedly, the outlook would shift significantly under a reversion to Jan'16 prices. This was a point where prices were trading deep into cost curves. For example, it would imply copper, zinc & iron ore at the ~70-90th percentile of the cost curve using 2018 Wood Mac data; nickel would be below the 50th percentile. In this scenario, only RIO (9-11%) stays within the confines of a 1.5x leverage target over 2018/19; BHP is essentially < ±2% (although improves ex US Shale), whilst both AAL & GLEN would move to >1.5x and require further de-gearing.

Figure 62: Diversified capital surplus / (deficit) to 1.5x ND/EBITDA, under spot prices less 20%

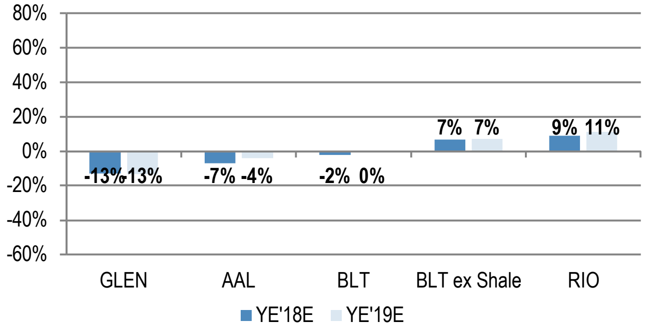
% market cap



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Figure 63: Diversified capital surplus / (deficit) to 1.5x ND/EBITDA, under Jan'16 spot prices

% market cap



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Table 13: AAL balance sheet progression & capital surplus / (deficit) to 1.5x ND/EBITDA under various price scenarios

		YE'17E	YE'18E	YE'19E
JPM base case				
YE net debt	$bn	6.0	4.6	3.1
EBITDA	$bn	8.8	8.0	7.6
ND / EBITDA	**x**	**0.7x**	**0.6x**	**0.4x**
Cap surplus / (deficit)	**$bn**	**7.1**	**7.4**	**8.3**
- as % market cap	**%**	**30%**	**31%**	**35%**
Spot prices				
YE net debt	$bn	5.9	2.6	-0.5
EBITDA	$bn	9.0	11.0	10.9
ND / EBITDA	**x**	**0.7x**	**0.2x**	**0.0x**
Cap surplus / (deficit)	**$bn**	**7.6**	**13.8**	**16.9**
- as % market cap	**%**	**32%**	**58%**	**71%**
Spot prices -20%				
YE net debt	$bn	6.1	5.4	4.2
EBITDA	$bn	8.8	6.5	6.6
ND / EBITDA	**x**	**0.7x**	**0.8x**	**0.6x**
Cap surplus / (deficit)	**$bn**	**7.1**	**4.3**	**5.7**
- as % market cap	**%**	**30%**	**18%**	**24%**
Jan'16 spot prices				
YE net debt	$bn	5.9	6.9	6.8
EBITDA	$bn	9.0	3.5	3.9
ND / EBITDA	**x**	**0.7x**	**2.0x**	**1.8x**
Cap surplus / (deficit)	**$bn**	**7.6**	**-1.6**	**-1.0**
- as % market cap	**%**	**32%**	**-7%**	**-4%**

Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Assumes base case dividend payout ratio of 40%.

Table 14: BHP balance sheet progression & capital surplus / (deficit) to 1.5x ND/EBITDA under various price scenarios

		YE'17E	YE'18E	YE'19E
JPM base case				
YE net debt	$bn	14.0	11.0	7.1
EBITDA	$bn	21.9	21.8	21.6
ND / EBITDA	**x**	**0.6x**	**0.5x**	**0.3x**
Cap surplus / (deficit)	**$bn**	**18.7**	**21.6**	**25.3**
- as % market cap	**%**	**18%**	**20%**	**24%**
Spot prices				
YE net debt	$bn	13.5	7.5	2.1
EBITDA	$bn	22.5	27.3	27.9
ND / EBITDA	**x**	**0.6x**	**0.3x**	**0.1x**
Cap surplus / (deficit)	**$bn**	**20.2**	**33.4**	**39.8**
- as % market cap	**%**	**19%**	**31%**	**37%**
Spot prices -20%				
YE net debt	$bn	14.1	12.6	9.1
EBITDA	$bn	21.8	18.6	18.8
ND / EBITDA	**x**	**0.6x**	**0.7x**	**0.5x**
Cap surplus / (deficit)	**$bn**	**18.5**	**15.2**	**19.2**
- as % market cap	**%**	**17%**	**14%**	**18%**
Jan'16 spot prices				
YE net debt	$bn	13.5	17.4	15.5
EBITDA	$bn	22.5	10.1	10.2
ND / EBITDA	**x**	**0.6x**	**1.7x**	**1.5x**
Cap surplus / (deficit)	**$bn**	**20.2**	**-2.3**	**-0.2**
- as % market cap	**%**	**19%**	**-2%**	**0%**

Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Assumes base case dividend payout ratio of 70%.

Table 15: GLEN balance sheet progression & capital surplus / (deficit) to 1.5x ND/EBITDA under various price scenarios

		YE'17E	YE'18E	YE'19E
JPM base case				
YE net debt	$bn	10.8	7.5	3.6
EBITDA	$bn	15.0	14.9	14.9
ND / EBITDA	**x**	**0.7x**	**0.5x**	**0.2x**
Cap surplus / (deficit)	**$bn**	**11.6**	**14.8**	**18.8**
- as % market cap	**%**	**17%**	**22%**	**28%**
Spot prices				
YE net debt	$bn	10.4	4.3	-2.6
EBITDA	$bn	15.4	19.3	21.8
ND / EBITDA	**x**	**0.7x**	**0.2x**	**-0.1x**
Cap surplus / (deficit)	**$bn**	**12.7**	**24.6**	**35.2**
- as % market cap	**%**	**19%**	**37%**	**53%**
Spot prices -20%				
YE net debt	$bn	10.4	9.5	5.7
EBITDA	$bn	15.4	12.4	14.2
ND / EBITDA	**x**	**0.7x**	**0.8x**	**0.4x**
Cap surplus / (deficit)	**$bn**	**12.6**	**9.1**	**15.7**
- as % market cap	**%**	**19%**	**14%**	**24%**
Jan'16 spot prices				
YE net debt	$bn	10.4	15.9	17.3
EBITDA	$bn	15.4	4.8	5.6
ND / EBITDA	**x**	**0.7x**	**3.3x**	**3.1x**
Cap surplus / (deficit)	**$bn**	**12.7**	**-8.7**	**-8.9**
- as % market cap	**%**	**19%**	**-13%**	**-13%**

Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Assumes base case dividend of $1bn pa with 25% of Industrial FCF.

Table 16: RIO balance sheet progression & capital surplus / (deficit) to 1.5x ND/EBITDA under various price scenarios

		YE'17E	YE'18E	YE'19E
JPM base case				
YE net debt	$bn	5.1	4.5	0.7
EBITDA	$bn	19.4	17.9	18.5
ND / EBITDA	**x**	**0.3x**	**0.3x**	**0.0x**
Cap surplus / (deficit)	**$bn**	**24.0**	**22.3**	**27.1**
- as % market cap	**%**	**28%**	**26%**	**32%**
Spot prices				
YE net debt	$bn	5.0	3.3	-0.9
EBITDA	$bn	19.5	19.7	20.5
ND / EBITDA	**x**	**0.3x**	**0.2x**	**0.0x**
Cap surplus / (deficit)	**$bn**	**24.3**	**26.2**	**31.6**
- as % market cap	**%**	**29%**	**31%**	**37%**
Spot prices -20%				
YE net debt	$bn	5.9	7.8	5.5
EBITDA	$bn	18.4	12.9	13.3
ND / EBITDA	**x**	**0.3x**	**0.6x**	**0.4x**
Cap surplus / (deficit)	**$bn**	**21.7**	**11.5**	**14.4**
- as % market cap	**%**	**25%**	**14%**	**17%**
Jan'16 spot prices				
YE net debt	$bn	5.3	9.1	7.5
EBITDA	$bn	19.1	11.0	11.5
ND / EBITDA	**x**	**0.3x**	**0.8x**	**0.7x**
Cap surplus / (deficit)	**$bn**	**23.4**	**7.5**	**9.7**
- as % market cap	**%**	**27%**	**9%**	**11%**

Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Assumes base case dividend payout ratio of 60%.

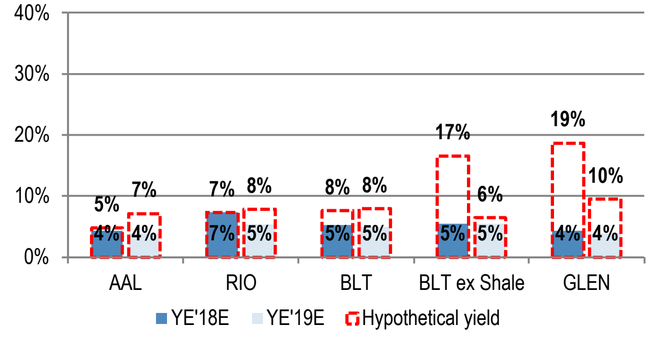
Improved capital availability has positive implications for enhanced shareholder returns

We believe the outlook for surplus capital generation & management rhetoric on capital allocation (see pp.49, "*M&A risk is increasing…but large-scale M&A unlikely in* 2018") bodes well for incremental shareholder returns. The diversifieds' base case dividend policies are generally connected to a payout on net profit, with GLEN the notable exception with a base $1bn dividend to reflect the predictable cash generation from Marketing, topped up by a percentage of Industrial FCF.

- **AAL:** "*The Board's target is to distribute 40% of underlying earnings. This dividend policy will result in variability of dividend payments in respect of each six month period.*" **JPMe 40% payout ratio**
- **BHP:** "*Minimum 50% payout of underlying attributable profit at every reporting period.*" **JPMe 70% payout ratio**
- **GLEN:** "*Fixed $1bn component reflecting the resilience, predictability & stability of marketing cash flows & a variable element, representing a min 25% of free cash flows from industrial assets.*" **JPMe $1bn & 25% of Ind. FCF**
- **RIO:** "*Total cash returns to shareholders over the longer term to be in a range of 40 to 60 per cent of underlying earnings in aggregate through the cycle.*" **JPMe 60% payout ratio**

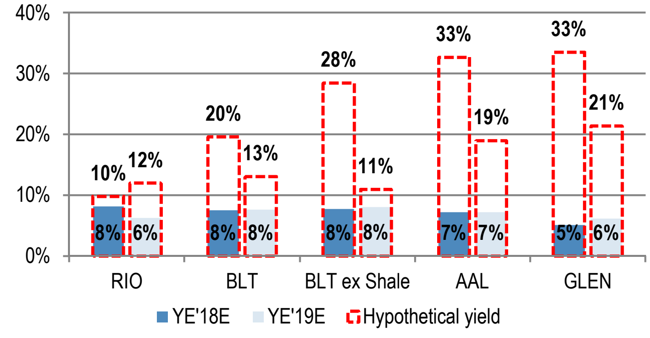
On JPM base case, we forecast a 2018/19E dividend yield across the diversified miners ranging between 4-7% (ex-special returns). RIO offers a peer-leading 5-7% yield, whilst AAL & GLEN have the lowest (~4%). However, re-setting the balance sheet to 1.5x leverage at YE & assuming surplus capital built through the following year "tops up" the base dividend, GLEN would have the highest hypothetical yield at 19%/10% in 2018/19E, although this would take ND ex RMI through the self-imposed $16bn cap. BLT's yield would increase ~3%-pt, whilst AAL would increase the least (0-3%). The narrative changes considerably under spot prices. BLT & RIO have the highest average base yields (~7.4%) but GLEN & AAL deliver the largest potential upside, conceivably contributing an incremental 12-28% of effective yield, reflecting their operational leverage to stronger prices.

Figure 64: Base case & hypothetical dividend yield using a 1.5x ND/EBITDA leverage constraint, under JPM base case



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

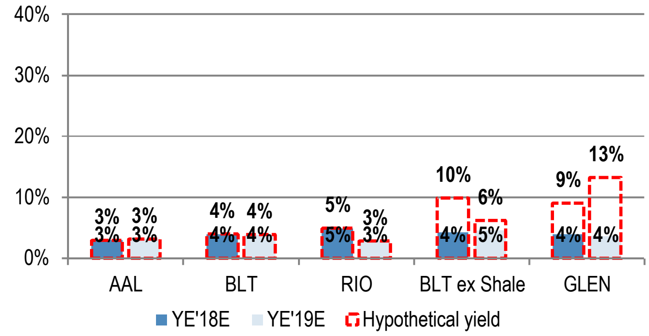
Figure 65: Base case & hypothetical dividend yield using a 1.5x ND/EBITDA leverage constraint, under spot prices



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

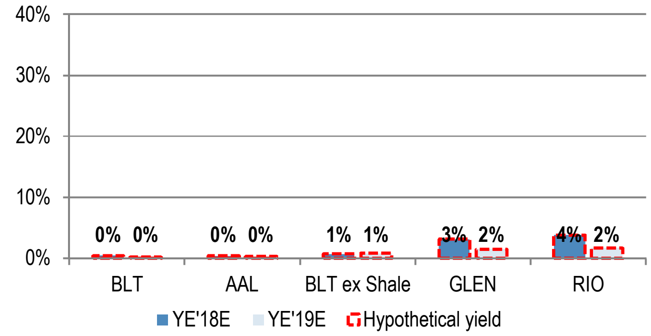
Interestingly, under this analysis we still calculate GLEN would be in a position to top up the base dividend even with spot prices 20% lower than current prices. In this scenario, we calculate GLEN could theoretically pay out an incremental 5-10% taking the total yield ~11%. although again ND ex RMI would be >$16bn. BLT, under a scenario where it disposed US Shale, could add 2-6%-pt. There would be no additional capacity for higher dividends under Jan'16 prices.

Figure 66: Base case & hypothetical dividend yield using a 1.5x ND/EBITDA leverage constraint, under spot prices less 20%



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Figure 67: Base case & hypothetical dividend yield using a 1.5x ND/EBITDA leverage constraint, under Jan'16 spot prices



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Table 17: Hypothetical dividend yield to 1.5x ND/EBITDA

		AAL		BLT		BLT ex Shale		GLEN		RIO	
		YE'18E	YE'19E	YE'18E	YE'19E	YE'18E	YE'19E	YE'18E	YE'19E	YE'18E	YE'19E
JPM base case											
Hypothetical payout	$bn	0.1	0.8	2.5	3.2	11.8	1.0	9.5	3.7	0.0	2.1
Adj YE net debt	$bn	12.0	11.4	32.6	32.4	31.9	30.7	22.3	22.4	29.0	27.8
Base div declared	$bn	1.0	0.9	5.5	5.2	5.8	5.8	2.9	2.6	6.2	4.5
Hypothetical payout	$bn	0.1	0.8	2.5	3.2	11.8	1.0	9.5	3.7	0.0	2.1
ND / EBITDA	x	1.5x	1.5x	1.5x	1.5x	1.5x	1.5x	1.5x	1.5x	1.6x	1.5x
- Base div yld	%	**4%**	**4%**	**5%**	**5%**	**5%**	**5%**	**4%**	**4%**	**7%**	**5%**
- Hypothetical yld increment	%	**0%**	**3%**	**2%**	**3%**	**11%**	**1%**	**14%**	**6%**	**0%**	**3%**
Spot prices											
Hypothetical payout	$bn	6.1	2.8	12.8	5.7	22.0	3.0	18.9	10.1	1.4	4.9
Adj YE net debt	$bn	16.5	16.4	40.9	41.9	40.1	39.8	28.9	32.7	29.6	30.7
Base div declared	$bn	1.7	1.7	8.0	8.1	8.2	8.6	3.4	4.1	6.9	5.3
Hypothetical payout	$bn	6.1	2.8	12.8	5.7	22.0	3.0	18.9	10.1	1.4	4.9
ND / EBITDA	x	1.5x	1.5x	1.5x	1.5x	1.5x	1.5x	1.5x	1.5x	1.5x	1.5x
- Base div yld	%	**7%**	**7%**	**8%**	**8%**	**8%**	**8%**	**5%**	**6%**	**8%**	**6%**
- Hypothetical yld increment	%	**25%**	**12%**	**12%**	**5%**	**21%**	**3%**	**28%**	**15%**	**2%**	**6%**
Spot prices -20%											
Hypothetical payout	$bn	0.0	0.0	0.0	0.0	6.0	1.7	3.4	6.4	0.0	0.0
Adj YE net debt	$bn	12.6	11.5	31.5	28.3	27.4	27.0	18.6	21.4	29.9	28.1
Base div declared	$bn	0.7	0.8	4.2	4.1	4.5	4.8	2.6	2.4	4.2	2.5
Hypothetical payout	$bn	0.0	0.0	0.0	0.0	6.0	1.7	3.4	6.4	0.0	0.0
ND / EBITDA	x	2.0x	1.7x	1.7x	1.5x	1.5x	1.5x	1.5x	1.5x	2.3x	2.1x
- Base div yld	%	**3%**	**3%**	**4%**	**4%**	**4%**	**5%**	**4%**	**4%**	**5%**	**3%**
- Hypothetical yld increment	%	**0%**	**0%**	**0%**	**0%**	**6%**	**2%**	**5%**	**10%**	**0%**	**0%**
Jan'16 spot prices											
Hypothetical payout	$bn	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adj YE net debt	$bn	14.7	14.7	38.0	36.5	27.9	27.4	21.6	23.1	33.0	31.9
Base div declared	$bn	0.1	0.1	0.5	0.3	0.8	0.9	2.1	1.0	3.3	1.5
Hypothetical payout	$bn	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ND / EBITDA	x	4.2x	3.8x	3.8x	3.6x	2.9x	3.0x	4.5x	4.2x	3.0x	2.8x
- Base div yld	%	**0%**	**0%**	**0%**	**0%**	**1%**	**1%**	**3%**	**2%**	**4%**	**2%**
- Hypothetical yld increment	%	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**

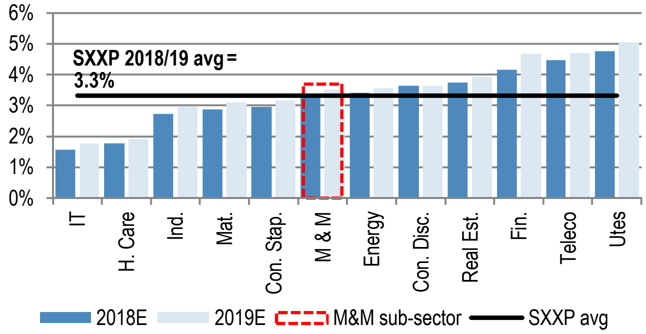
Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17). Base dividends as per JPMe outlined on pp.47. GLEN ND net of RMI.

Cross sector analysis implies the diversified miners' yields could be "best-in-class"

We outline consensus dividend yield expectations for the Stoxx 600 (SXXP), grouped by sector (GICS basis), in Figure 68. The "Materials" sector is expected to yield 2.9%/3.1% in 2018/19E vs. the SXXP avg ~3.3%. However, this is a broad group that includes Building Materials, Paper & Packaging and Chemicals. Narrowing the definition to "Metals & Mining" only increases the consensus expectation by ~40bp to 3.3%/3.5%, or essentially in-line with the wider index average.

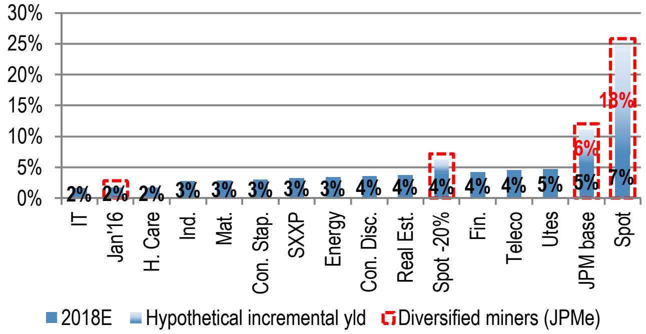
We do not believe consensus expectations appropriately reflect the potential upside in returns from the diversified miners, given: (i) consensus forecasts assume limited upside from additional pay-outs above the base-case policy, in our opinion; and (ii) the index includes ex-Diversified companies whose ability / propensity to pay higher dividends is lower. In Figure 69 we strip out our 2018E forecasts for the diversifieds & superimpose the hypothetical dividend yields under various price scenarios. Even in a scenario of 20% lower spot prices the group could yield 4%, which would be superior to the SXXP average.

Figure 68: Consensus 2018/19E div yield forecasts for Stoxx 600 sub-sectors, highlighting a metals & mining yield of c.3.3%



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Figure 69: Consensus 2018 div yield forecasts for Stoxx 600 sub-sectors with JPM diversified yield at different price scenarios

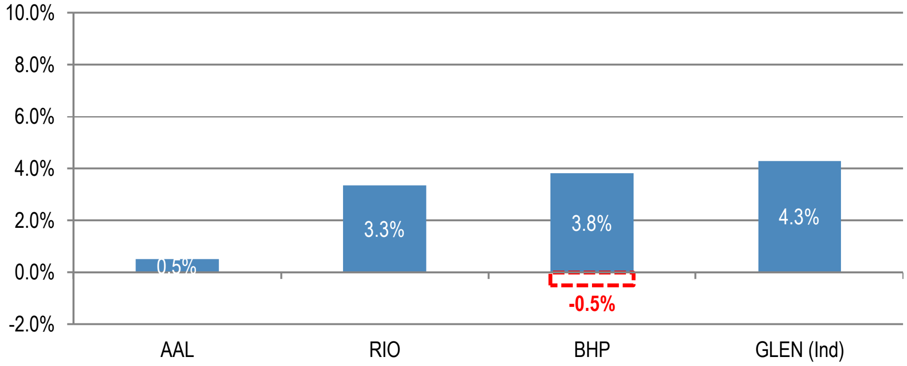


Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

M&A risk is increasing…but large-scale M&A unlikely in 2018

Restricted capital availability has generally forced the sector to prioritise debt reduction & productivity, with spending reduced to sustaining levels, as highlighted in the prior section. With few large-scale growth projects in the pipeline (RIO's OT, Amrun & Silvergrass are exceptions), the production growth outlook across the sector has fallen.

Figure 70: Diversified Cu equiv. volume growth, 2022E vs. 2017



Source: J.P. Morgan estimates.
Note: copper equivalent growth based on J.P. Morgan real long-term prices. Iron ore $50/t CFR, Thermal coal (Newcastle & Richards Bay) $67/t FOB, HCC (QLD) $110/t FOB, Copper $6,300/t, nickel $18,000/t, diamonds ~$195/ct.

As shown above, the group still has moderate volume growth over the next few years (other than BHP if US Onshore is sold) and markets are not yet focussed on growth. We do not view this as a 2018 risk, with longer-term growth less certain and balance sheet capacity increasing, it is plausible M&A risks rises. This has been a feature of previous cycles and will be incrementally more difficult for management teams to ignore over time in the context of: (i) excess capital generation that can continue even with commodity prices significantly lower than current levels (see pp.46); and (ii) higher trading multiples ascribed to companies with accretive growth. For now, management commentary continues to show resolve around capital discipline.

- "*I doubt there is going to be huge amounts of things that we would add to that for this foreseeable future. If there are opportunities in M&A that come our way for value, and they would fit our portfolio, of course we continue to look at those things, but…that's very hard to actually effect, and we don't need to do anything about that…we're biased towards further reductions*." [Peter Beavan, BHP CFO, H1 FY'17 conference call, 21st Feb]
- "*…we have a watching brief on M&A, but we will pursue M&A only if it creates value for our shareholders…So, today, when we look at different options, I couldn't see a way forward to create value for our shareholders because the valuation were fantastic for the sellers, I'm not quite sure for the buyers*." [JS Jacques, RIO CEO, H1'17 conference call, 2nd Aug]
- [On further M&A in coal]: "*[If] someone wishes to sell assets and we can purchase them at the right price and we believe at the right IRRs and that comes…before an opportunity in nickel, or zinc, or somewhere else, we will look at it. And that's the way we operate in this company.*" [Ivan Glasenberg, GLEN CEO, H1'17 conference call, 20th Aug]
- "*So, we work opportunistically around the situation and that's how we look at M&A. Then, you talk about balancing M&A with dividends*." [Ivan Glasenberg, GLEN CEO, H1'17 conference call, 20th Aug]
- "*But let's be clear for us. First priority was get the debt down. Second priority is pay a dividend. If…we don't have great options inside the portfolio, then we'll give that cash back to shareholders…And from our point of view, assessing how good those opportunities are will depend on the market and how we see things at the time.*" [Mark Cutifani, AAL CEO, FY'16 conference call, 21st Feb]

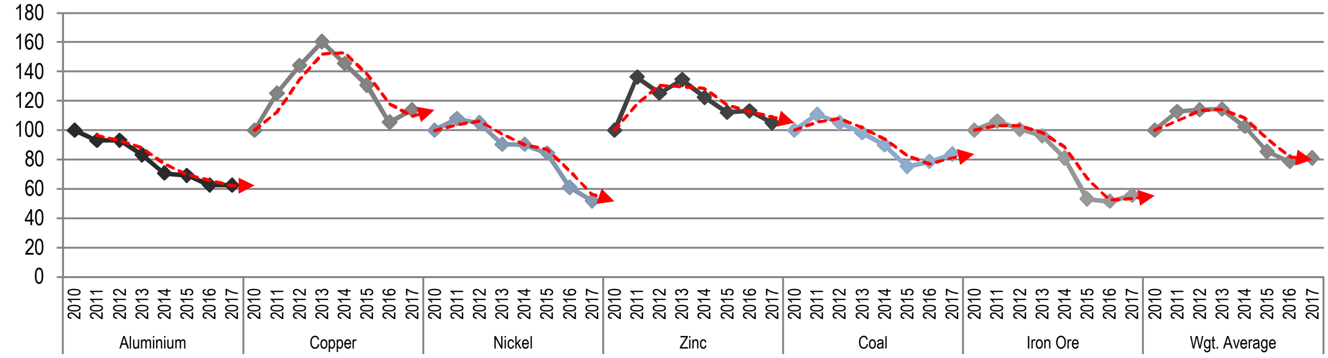
We also note that the diversified miners now outline formal capital allocation frameworks which, at a high level, prioritise debt reduction, essential capex and base dividends with surplus cash to be used on project spend, additional returns & M&A. Notably, rhetoric around discretionary spend is that it will be made in the context of the highest returning initiatives. In this respect, M&A for now will continue to be at a disadvantage, particularly vs. brownfield / debottlenecking projects given the generally higher returns on offer and the likelihood of numerous opportunities given capital cuts over recent years. We outline commentary & targets below.

- **BHP**: Capital is allocated around an iterative framework of investing in sustaining capital, maintaining a strong balance sheet and paying the minimum dividend ("50% of underlying attributable profit"), with surplus capital directed towards debt reduction, additional shareholder payouts, buy-backs, organic growth and acquisitions. Latent capacity options equate to 380kt CuEq (~6% of BHP's current production base) at a capital cost of $1.2bn & average IRR >70% while brownfield options could add ~240kt CuEq for total capex of $2.3bn (average IRR ~25%). Greenfield growth includes Mad Dog Phase 2, Wards Well, Goonyella 2nd longwall (QLD Coal) & the Olympic Dam expansion ("ODEP").
- **RIO**: Disciplined capital allocation based on essential SIB capex, ordinary dividends ("40-60% of underling earnings through the cycle") and a cycle of debt management, additional shareholder returns and "compelling" growth. RIO has multiple growth options, including the greenfield Koodaideri project in the Pilbara (~$55/t capex intensity), and completion of Amrun bauxite (~25% complete). Longer-dated options include Resolution copper (unlikely until late next decade) and further UG expansions at Oyu Tolgoi (e.g., Hugo South and Heruga). We also note that Pilbara production is running below system capacity of ~360Mtpa (vs. guided sales 330Mt in 2017) which therefore provides an opportunity for brownfield mine expansions. M&A is less likely, and we note recent commentary from management highlighting that M&A would be pursued only if it creates value for shareholders.
- **GLEN**: Capital allocation is based on a circular framework of optimal capital structure (BBB/Baa rating), strong cash flow generation & a combination of fixed and variable shareholder distributions ($1bn fixed in 2018 and minimum 25% payout of Industrial FCF). Management aims to continue brownfield expansions and releasing latent capacity, although on both accounts additional volumes would only be brought into the market at the right time and where the incremental tonnes would not negatively impact pricing (zinc is the obvious candidate for a restart given 500kt was curtailed in Oct'15). Greenfield projects are unlikely, and any M&A must have an unlevered IRR >15% with near-term paybacks, synergistic with the marketing platform and within its existing commodities.
- **AAL**: Stated goal of "*Disciplined capital planning to achieve our balance sheet objectives whilst maximising the value of the business*", where balance sheet objectives are an investment grade rating. Within this framework, critical SIB capex and a base dividend (40% of underlying earnings) are priorities. Thereafter the goal is to re-focus its portfolio, including disposals and discretionary capital, on core assets such as De Beers, Platinum and Copper. Future growth, including M&A, would also be considered where management have no strict value criteria and would consider syndication on major projects.

Theme #4: Capex will increase…but concerns over a "tidal wave" are misplaced

A side-effect of the commodity downturn since 2012 has been a significant reduction in capital investment across the sector. This has helped to mitigate declining top-line revenue and reduce the cash flow squeeze. We track the decline of sustaining capital investment across the sector, which on average has fallen by 29% in 2017E vs the peak of capex in 2013.

Figure 71: Mining sector sustaining capital per tonne by commodity, 2010-present



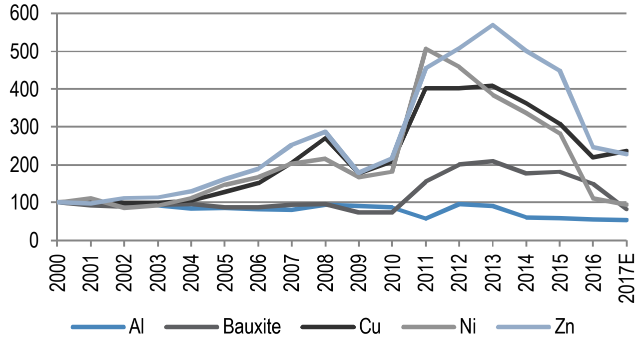
Source: J.P. Morgan estimates, Company data.
Red line equates to two-period moving average

Long-term history shows less evidence of under-capitalisation

While the relatively short history analysed above highlights significant falls in capex, a longer term analysis suggests less risk of capex having to accelerate materially in the future. Figure 72 shows sustaining capex back to 2000 across the key base metals on a real 2017 basis. Sustaining capex per tonne is higher for all of the commodities except aluminium, bauxite & nickel suggesting spending levels remain at realistic levels. Over time we would expect to see a broadly flat sustaining capex trend in real terms, with ageing operations & more technically challenging assets offset by technological advances. We believe the structural downward trend in aluminium reflects the emergence of China, and its lower cost base, as the dominant global production region. Furthermore, on a longer time horizon, it appears that total capital intensity is now in line with its long-run trend, as shown in Figure 73.

Figure 72: Mining sector sustaining capital per tonne by commodity, 2000-present

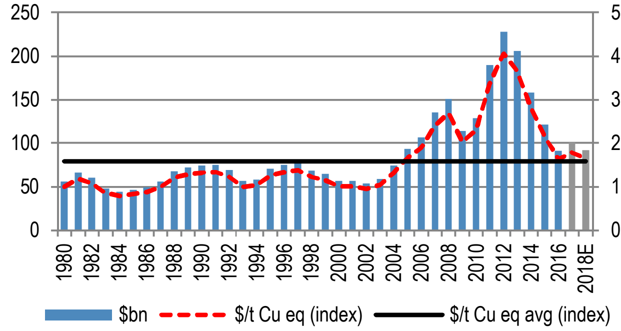
2017 real basis, indexed 2000 = 100



Source: J.P. Morgan estimates, Company data.

Figure 73: Mining sector TOTAL capex 1980-2017E indicates capex per tonne below long-term average

Capex US$bn 2017 real basis, LHS; capex per tonne indexed 1980 = 100



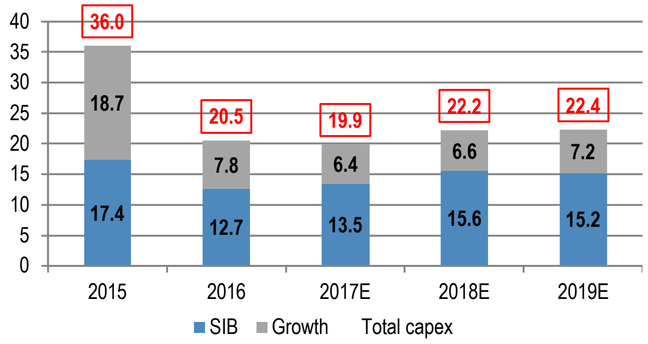
Source: MICA, Wood Mackenzie, Bloomberg, J.P. Morgan estimates.

Diversified miners' capex will increase 12% YoY in 2018…

We expect total capex for the diversified miners (inc. Vale) in 2017 will be $19.9bn. Assuming these forecasts materialise, it will imply -3% YoY with an increase in SIB (+6%) offset by a reduction in growth (-18%). It will also mark the cyclical low point in spend for the diversified group, circa 18-24mths post the trough in prices.

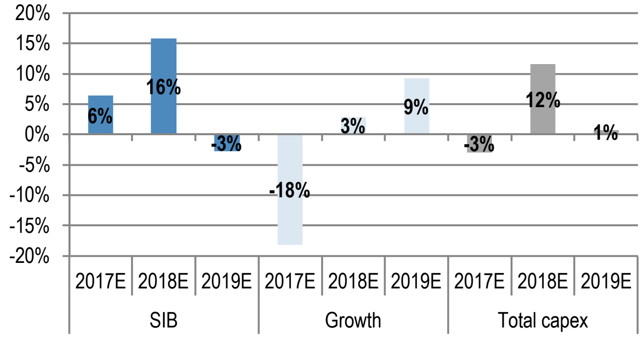
Looking into 2018, our forecasts imply total capex will increase 12% YoY to $22.2bn (again, this includes Vale). SIB capex is forecast to grow +16% YoY with increases broadly across all the miners. We believe this is in-line with recent updates that imply "catch-up" spend is required. For example, AAL has guided to a sequential increase in 2018 (~$2.5bn vs. ~$2.3bn in 2017) although CFO Stephen Pearce was equivocal about this increasing further at the H1 results: "*…are we spending enough, particularly in terms of the projects that are going to deliver that next round of innovation & change & efficiency in the business?*". BHP's recent site trip to Olympic Dam implied SIB capex would be ~$400m pa going forward (roughly double historical levels) & RIO's CMD pointed to inflationary pressures in iron ore & aluminium. Growth capex will progressively fall away over 2018/19 as the last stage of major project funding diminishes, particularly at RIO & Vale.

Figure 74: Diversified miners (inc. Vale) historical & forecast capex by SIB & growth, 2015-2019E



Source: J.P. Morgan estimates, Company reports.

Figure 75: Diversified miners (inc. Vale) y/y change in capital spend, broken out by SIB & growth spend



Source: J.P. Morgan estimates, Company reports.

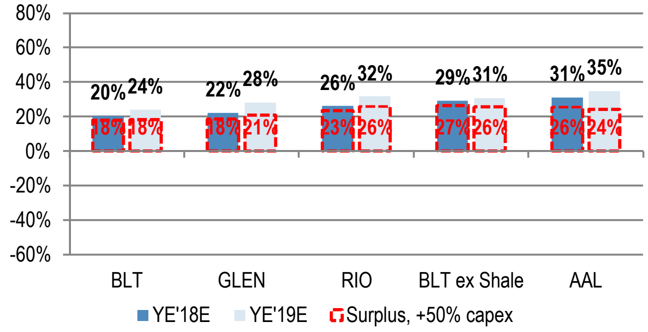
…but capital availability remains significant even with a near-term capex "tidal wave"

While we forecast group-level capex will indeed increase in 2018, the sector is able to offset its impact on capital availability through elevated EBITDA & FCF generation (see pp.44). However, we recognise the limitations to our analysis in the prior section on long-term capex, particularly given it makes no attempt to adjust for elements including technological development, a changing sample size over time, mined grade variation, and CPI and / or FX rate differentials. We therefore believe it still prudent to analyse the potential impact of rising capital budgets on potential surplus capital and shareholder distribution expectations.

As shown in the tables below, 50% higher capex would impact capital surpluses, on average, by 3-7% over 2018/2019. The diversified miners continue to generate compelling capital surpluses under three price scenarios (JPM base, spot & spot - 20%) and larger deficits under Jan'16 pricing.

Figure 76: Diversified capital surplus / (deficit) to 1.5x ND/EBITDA, under JPM base case, inc impact of 50% increase to capex

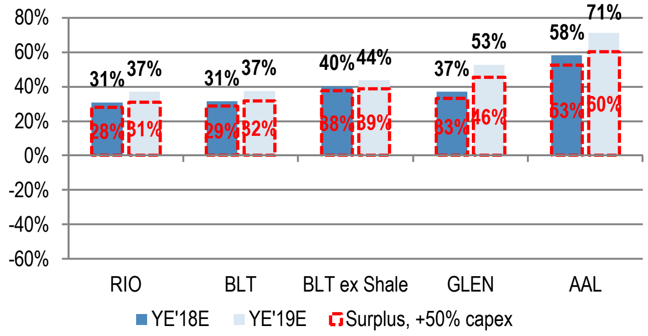
% market cap



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Figure 77: Diversified capital surplus / (deficit) to 1.5x ND/EBITDA, under spot prices, inc impact of 50% increase to capex

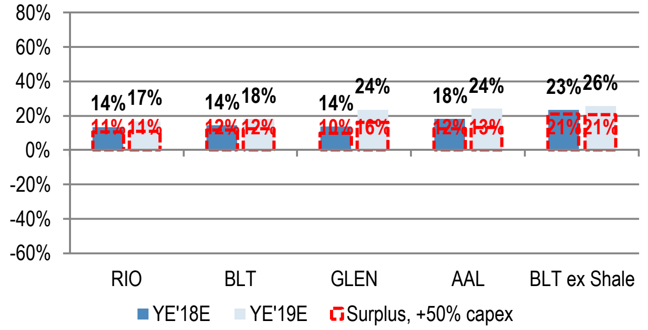
% market cap



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Figure 78: Diversified capital surplus / (deficit) to 1.5x ND/EBITDA, under spot prices less 20%, inc impact of 50% increase to capex

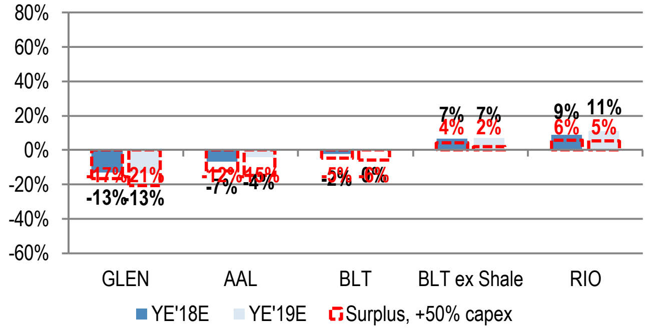
% market cap



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Figure 79: Diversified capital surplus / (deficit) to 1.5x ND/EBITDA, under Jan'16 spot prices, inc impact of 50% increase to capex

% market cap



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Table 18: AAL balance sheet progression & capital surplus / (deficit) to 1.5x ND/EBITDA under various price & capex scenarios

		Base case		Capex +50%	
		YE'18E	YE'19E	YE'18E	YE'19E
JPM base case					
YE net debt	$bn	4.6	3.1	5.9	5.7
EBITDA	$bn	8.0	7.6	8.0	7.6
ND / EBITDA	**x**	**0.6x**	**0.4x**	**0.7x**	**0.7x**
Cap surplus / (deficit)	**$bn**	**7.4**	**8.3**	**6.1**	**5.7**
- as % market cap	**%**	**31%**	**35%**	**26%**	**24%**
Spot prices					
YE net debt	$bn	2.6	-0.5	3.9	2.1
EBITDA	$bn	11.0	10.9	11.0	10.9
ND / EBITDA	**x**	**0.2x**	**0.0x**	**0.4x**	**0.2x**
Cap surplus / (deficit)	**$bn**	**13.8**	**16.9**	**12.5**	**14.3**
- as % market cap	**%**	**58%**	**71%**	**53%**	**60%**
Spot prices -20%					
YE net debt	$bn	5.4	4.2	6.7	6.7
EBITDA	$bn	6.5	6.6	6.5	6.6
ND / EBITDA	**x**	**0.8x**	**0.6x**	**1.0x**	**1.0x**
Cap surplus / (deficit)	**$bn**	**4.3**	**5.7**	**3.0**	**3.2**
- as % market cap	**%**	**18%**	**24%**	**12%**	**13%**
Jan'16 spot prices					
YE net debt	$bn	6.9	6.8	8.2	9.3
EBITDA	$bn	3.5	3.9	3.5	3.9
ND / EBITDA	**x**	**2.0x**	**1.8x**	**2.3x**	**2.4x**
Cap surplus / (deficit)	**$bn**	**-1.6**	**-1.0**	**-2.9**	**-3.5**
- as % market cap	**%**	**-7%**	**-4%**	**-12%**	**-15%**

Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Assumes base case dividend payout of 40% of underlying earnings.

Table 19: BHP balance sheet progression & capital surplus / (deficit) to 1.5x ND/EBITDA under various price & capex scenarios

		Base case		Capex +50%	
		YE'18E	YE'19E	YE'18E	YE'19E
JPM base case					
YE net debt	$bn	11.0	7.1	13.9	13.2
EBITDA	$bn	21.8	21.6	21.8	21.6
ND / EBITDA	**x**	**0.5x**	**0.3x**	**0.6x**	**0.6x**
Cap surplus / (deficit)	**$bn**	**21.6**	**25.3**	**18.7**	**19.2**
- as % market cap	**%**	**20%**	**24%**	**18%**	**18%**
Spot prices					
YE net debt	$bn	7.5	2.1	10.4	8.1
EBITDA	$bn	27.3	27.9	27.3	27.9
ND / EBITDA	**x**	**0.3x**	**0.1x**	**0.4x**	**0.3x**
Cap surplus / (deficit)	**$bn**	**33.4**	**39.8**	**30.5**	**33.8**
- as % market cap	**%**	**31%**	**37%**	**29%**	**32%**
Spot prices -20%					
YE net debt	$bn	12.6	9.1	15.5	15.1
EBITDA	$bn	18.6	18.8	18.6	18.8
ND / EBITDA	**x**	**0.7x**	**0.5x**	**0.8x**	**0.8x**
Cap surplus / (deficit)	**$bn**	**15.2**	**19.2**	**12.4**	**13.2**
- as % market cap	**%**	**14%**	**18%**	**12%**	**12%**
Jan'16 spot prices					
YE net debt	$bn	17.4	15.5	20.2	21.4
EBITDA	$bn	10.1	10.2	10.1	10.2
ND / EBITDA	**x**	**1.7x**	**1.5x**	**2.0x**	**2.1x**
Cap surplus / (deficit)	**$bn**	**-2.3**	**-0.2**	**-5.1**	**-6.1**
- as % market cap	**%**	**-2%**	**0%**	**-5%**	**-6%**

Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Assumes base case dividend payout ratio of 70%.

Table 20: GLEN balance sheet progression & capital surplus / (deficit) to 1.5x ND/EBITDA under various price & capex scenarios

		Base case		Capex +50%	
		YE'18E	YE'19E	YE'18E	YE'19E
JPM base case					
YE net debt	$bn	7.5	3.6	10.0	8.5
EBITDA	$bn	14.9	14.9	14.9	14.9
ND / EBITDA	**x**	**0.5x**	**0.2x**	**0.7x**	**0.6x**
Cap surplus / (deficit)	**$bn**	**14.8**	**18.8**	**12.3**	**13.9**
- as % market cap	**%**	**22%**	**28%**	**18%**	**21%**
Spot prices					
YE net debt	$bn	4.3	-2.6	6.7	2.3
EBITDA	$bn	19.3	21.8	19.3	21.8
ND / EBITDA	**x**	**0.2x**	**-0.1x**	**0.3x**	**0.1x**
Cap surplus / (deficit)	**$bn**	**24.6**	**35.2**	**22.2**	**30.4**
- as % market cap	**%**	**37%**	**53%**	**33%**	**46%**
Spot prices -20%					
YE net debt	$bn	9.5	5.7	12.0	10.5
EBITDA	$bn	12.4	14.2	12.4	14.2
ND / EBITDA	**x**	**0.8x**	**0.4x**	**1.0x**	**0.7x**
Cap surplus / (deficit)	**$bn**	**9.1**	**15.7**	**6.6**	**10.8**
- as % market cap	**%**	**14%**	**24%**	**10%**	**16%**
Jan'16 spot prices					
YE net debt	$bn	15.9	17.3	18.3	22.0
EBITDA	$bn	4.8	5.6	4.8	5.6
ND / EBITDA	**x**	**3.3x**	**3.1x**	**3.8x**	**4.0x**
Cap surplus / (deficit)	**$bn**	**-8.7**	**-8.9**	**-11.1**	**-13.7**
- as % market cap	**%**	**-13%**	**-13%**	**-17%**	**-21%**

Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Assumes base case dividend of $1bn pa with 25% of Industrial FCF.

Table 21: RIO balance sheet progression & capital surplus / (deficit) to 1.5x ND/EBITDA under various price & capex scenarios

		Base case		Capex +50%	
		YE'18E	YE'19E	YE'18E	YE'19E
JPM base case					
YE net debt	$bn	4.5	0.7	7.0	5.7
EBITDA	$bn	17.9	18.5	17.9	18.5
ND / EBITDA	**x**	**0.3x**	**0.0x**	**0.4x**	**0.3x**
Cap surplus / (deficit)	**$bn**	**22.3**	**27.1**	**19.8**	**22.0**
- as % market cap	**%**	**26%**	**32%**	**23%**	**26%**
Spot prices					
YE net debt	$bn	3.3	-0.9	5.8	4.2
EBITDA	$bn	19.7	20.5	19.7	20.5
ND / EBITDA	**x**	**0.2x**	**0.0x**	**0.3x**	**0.2x**
Cap surplus / (deficit)	**$bn**	**26.2**	**31.6**	**23.7**	**26.5**
- as % market cap	**%**	**31%**	**37%**	**28%**	**31%**
Spot prices -20%					
YE net debt	$bn	7.8	5.5	10.3	10.6
EBITDA	$bn	12.9	13.3	12.9	13.3
ND / EBITDA	**x**	**0.6x**	**0.4x**	**0.8x**	**0.8x**
Cap surplus / (deficit)	**$bn**	**11.5**	**14.4**	**9.0**	**9.3**
- as % market cap	**%**	**14%**	**17%**	**11%**	**11%**
Jan'16 spot prices					
YE net debt	$bn	9.1	7.5	11.5	12.5
EBITDA	$bn	11.0	11.5	11.0	11.5
ND / EBITDA	**x**	**0.8x**	**0.7x**	**1.0x**	**1.1x**
Cap surplus / (deficit)	**$bn**	**7.5**	**9.7**	**5.0**	**4.7**
- as % market cap	**%**	**9%**	**11%**	**6%**	**5%**

Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
Assumes base case dividend payout ratio of 60%.

Theme #5: Mining valuations vs Market

Cross-sector analysis indicates Mining screens favourably vs other sectors

On spot commodity prices, the UK diversified miners compare favourably vs other sectors on FCF yields, valuation (EV/EBITDA) and leverage (ND/EBITDA) metrics.

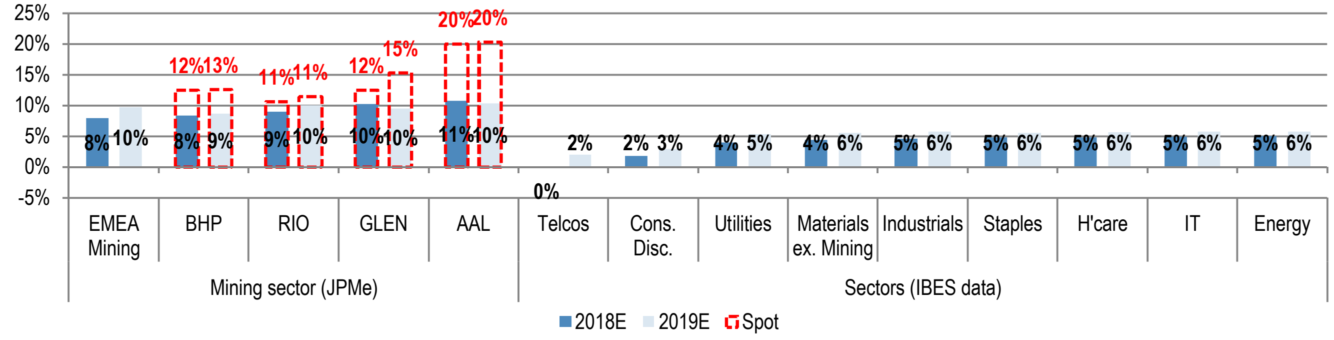
Table 22: Mining sector spot valuation and balance sheet metrics vs. IBES consensus forecasts

	FCF yield		Div yield		EV/EBITDA		ND/EBITDA	
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**	**2019**
BHP (spot)	12%	13%	8%	8%	4.4x	4.1x	0.3x	0.1x
RIO (spot)	11%	11%	6%	7%	4.7x	4.3x	0.1x	-0.1x
GLEN (spot)	12%	15%	5%	6%	4.6x	3.8x	0.2x	-0.1x
AAL (spot)	20%	20%	7%	7%	3.0x	2.8x	0.2x	0.0x
Diversifieds avg.	**14%**	**15%**	**7%**	**7%**	**4.2x**	**3.7x**	**0.2x**	**0.0x**
EMEA Mining (spot)*	**8%**	**10%**	**4%**	**4%**	**6.6x**	**5.9x**	**0.3x**	**0.1x**
Materials ex. Mining	4%	6%	3%	3%	11.2x	10.3x	1.1x	0.9x
Industrials	5%	6%	3%	3%	10.3x	9.3x	0.9x	0.7x
Cons. Disc.	2%	3%	3%	4%	9.0x	8.2x	0.5x	0.3x
H'care	5%	6%	2%	2%	13.7x	11.9x	0.9x	0.6x
Staples	5%	6%	3%	3%	11.7x	10.8x	1.2x	1.0x
IT	5%	6%	2%	2%	11.8x	10.6x	0.2x	-0.1x
Energy	5%	6%	4%	4%	7.0x	6.3x	1.5x	1.3x
Telcos	0%	2%	5%	5%	6.8x	6.7x	2.0x	1.9x
Utilities	4%	5%	5%	5%	8.6x	8.4x	3.2x	3.1x
Sector avg, excl. Mining	**4%**	**5%**	**3%**	**3%**	**10.0x**	**9.2x**	**1.3x**	**1.1x**

Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17), IBES data.
Note: IBES sector data reflects the simple average of the specific metric for each member company.
*EMEA mining data includes only those companies that are members of the Stoxx 600 Basic Materials Index.

Spot FCF yields across 2018/19E are best in-class, with the average for the diversified miners an impressive ~14%/15%, led by AAL at ~20%/20%. This compares to ~4/5% for the wider market (using IBES data, and excluding mining), where Energy & IT are the next highest sectors. Even on JPM base case commodity & FX forecasts, which sit below spot, the group's FCF is superior to peers.

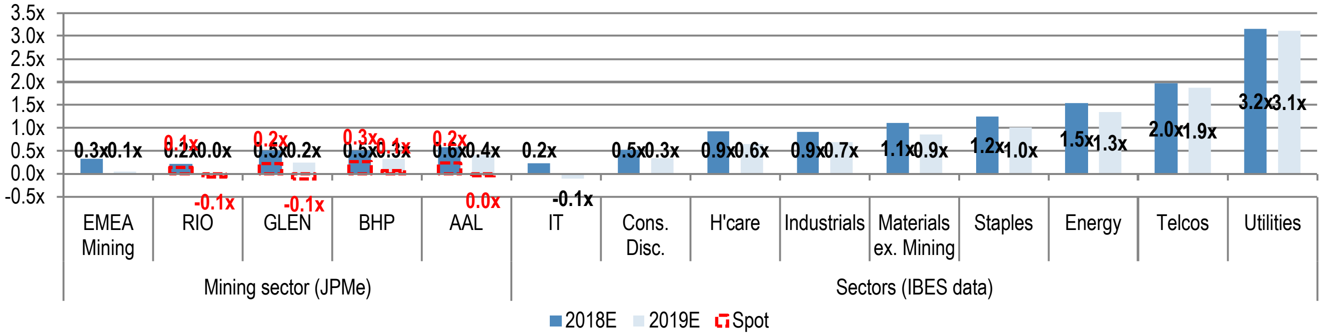
Figure 80: 2018/19E FCF yield, JPMe & spot basis for mining sector vs. IBES data – the mining sector generates best in class cash flow



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17). IBES data.
Note: EMEA mining data includes only those companies that are members of the MSCI Europe Index.

Balance sheets also appear conservative relative to other sectors on a ND/EBITDA basis. We calculate average leverage will be ~0.2x/0.0x as at YE'18/19E vs. the market (excluding Mining) at 1.3x/1.1x.

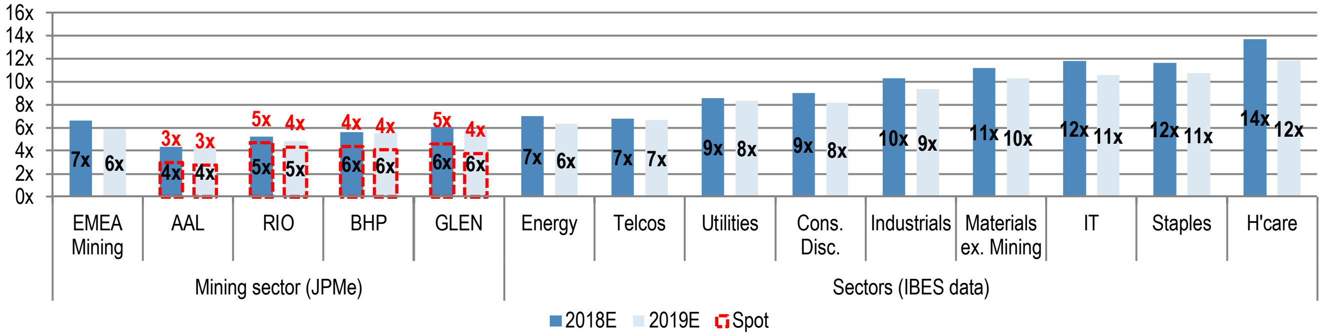
Figure 81: 2018/19E ND / EBITDA, spot basis for mining sector vs. IBES data



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17). IBES data.
Note: EMEA mining data includes only those companies that are members of the MSCI Europe Index.

We do not believe compelling FCF generation and solid balance sheets are being appropriately priced into the valuation metrics. We calculate the diversifieds trade on an average 2018/19E spot EV/EBITDA of ~4.0x, which is materially cheaper when compared to other sectors; energy & telcos are the next best, albeit still at a 60-80% premium to the diversifieds. Within the diversifieds, AAL's valuation remains the most compelling at ~3.0x on spot prices.

Figure 82: 2018/19E EV/EBITDA, spot basis for mining sector vs. IBES data

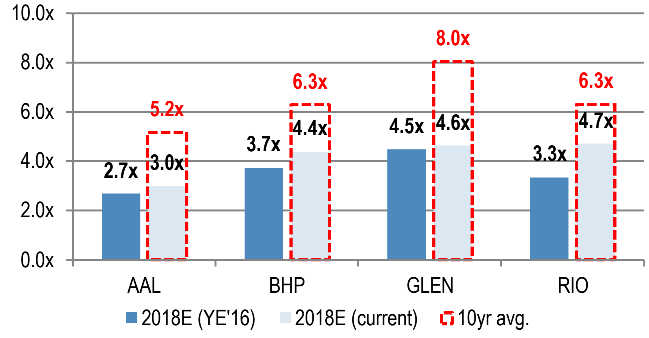


Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17). IBES data.
Note: EMEA mining data includes only those companies that are members of the MSCI Europe Index.

Diversified multiples are yet to re-rate meaningfully despite strong absolute performance

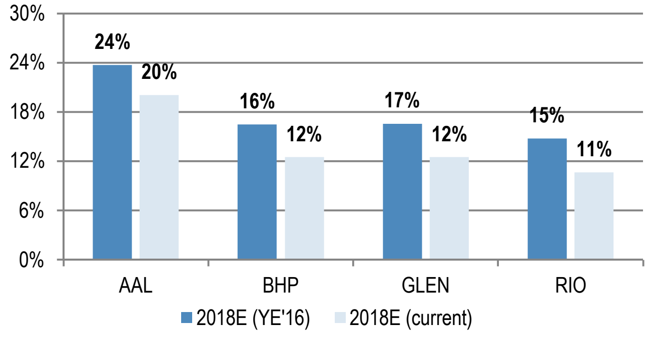
Despite strong YTD performance, where the diversifieds' equity value has increased (absolute basis, pre-dividends) by +6-25%, valuation multiples are yet to meaningfully re-rate. In Figure 83 below we compare spot 2018E EV/EBITDA multiples for the diversifieds vs. spot multiples at YE'16. On this basis, RIO has re-rated most, increasing by ~41% to 4.7x. BHP follows, albeit at a still modest +17% to 4.4x; AAL & GLEN multiples have re-rated <12%. FCF yields have admittedly narrowed by 4%-pt vs. 12mths ago, but balance sheets have improved over this time and the confidence around the sustainability of stronger commodity prices over the medium term has also increased.

Figure 83: 2018E spot EV/EBITDA, current vs. YE'16, showing modest re-rating, but multiples are still well below long-run averages



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17). IBES data.

Figure 84: 2018E spot FCF yield, current vs. YE'16, showing yields have narrowed by 4% over 2017

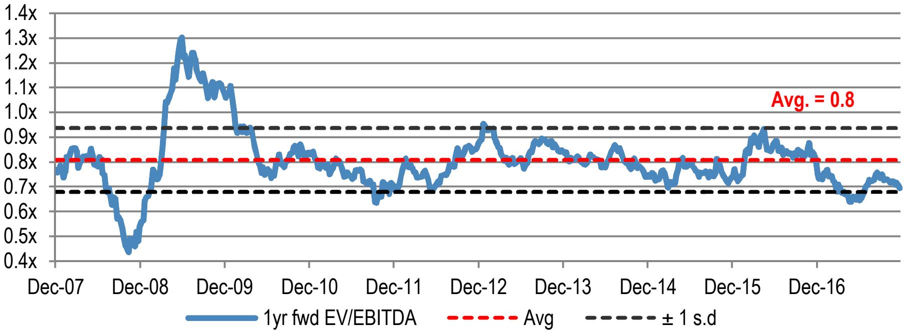


Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17). IBES data.

FCF analysis indicates the sector requires a ~30% fall in spot prices to trade in-line with the wider sector

Using Bloomberg consensus data, we calculate the Materials sector is currently trading at a ~30% discount to the wider market using 1yr fwd EV/EBITDA for the SXPP. This compares to a 20% average discount over the last decade and implies the current relative multiple is 1 standard deviation below the mean, which we believe is excessive and historically has tended to be a level from which valuation mean reverts. While this could be driven by lower earnings as much as higher share prices, we believe the H1 commodity outlook looks reasonably robust.

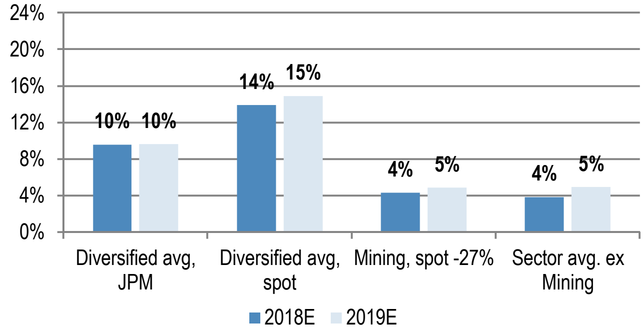
Figure 85: 1yr forward relative EV/EBITDA of SXPP (Basic Resources) to SXXP (Stoxx 600)



Source: J.P. Morgan estimates, Bloomberg (prices as at 7pm 12-Dec-17).

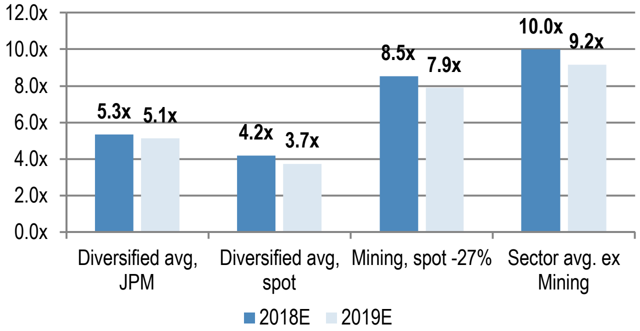
IBES consensus data ex-mining indicates a 2018/19E FCF yield of 4-5%. Assuming the market is discounting commodity prices to achieve a FCF yield in line with the broader market, we calculate the diversified miners are currently factoring in a ~27% discount to spot. On an EV/EBITDA basis this implies a 14-15% discount from 2018/19E to IBES consensus data for the wider market, which we believe is difficult to justify, particularly given the likelihood of best-in-class near-term shareholder returns.

Figure 86: FCF yield, mining sector vs. market 2018/19E – ~27% discount puts the sector on a similar FCF yield



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17). IBES data.

Figure 87: EV/EBITDA, the diversifieds' 2018E multiple is ~14-15% cheaper vs. market assuming a ~27% spot price discount



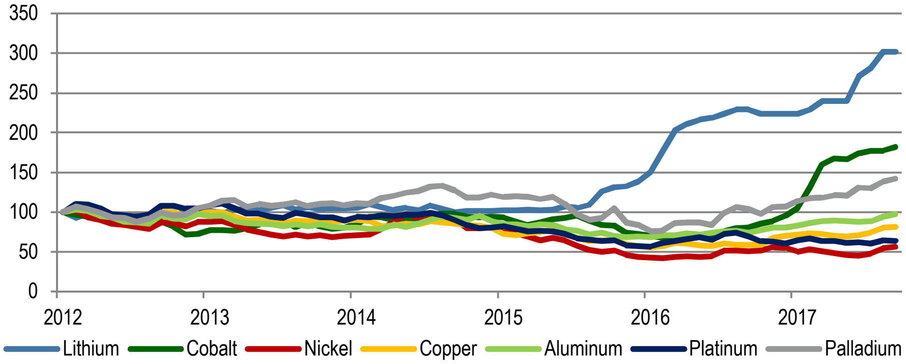
Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17). IBES data.

Theme #6: Electric vehicles offer promising demand growth but sustained supply shortages unlikely

This section contains extracts from a note published by our colleagues in J.P. Morgan Commodities Research on 27th October.

Interest in the electrification trend really took off in 2017, leading to significant price increases for those commodities seen as having the greatest role to play in battery technology, particularly lithium, cobalt, manganese, copper and nickel.

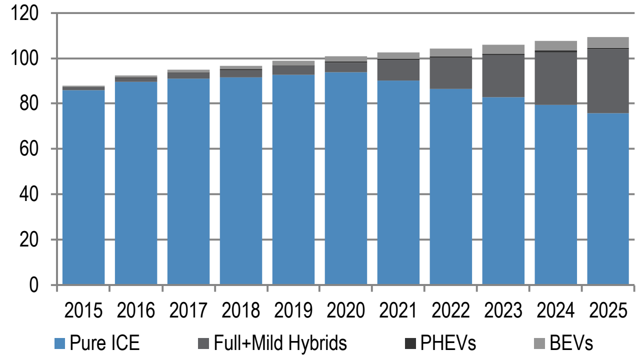
Figure 88: Metals price performance (rebased to 100)



Source: J.P. Morgan estimates.

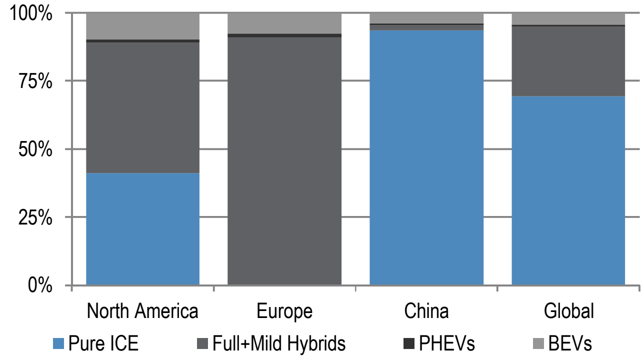
Our base case forecasts, published by our colleagues in Commodities Research, call for plug-in electric vehicles (BEVs and PHEVs) to grow from just 1% of global auto sales in 2016 to more than a 5% market share by 2025. The most robust growth should come from hybrid electric vehicles (HEVs), as Europe moves aggressively away from internal combustion engine vehicles. This sector is forecasted to grow from around a 2% market share last year to 26% globally by 2025.

Figure 89: Global light vehicle sales by powertrain



Source: J.P. Morgan estimates.

Figure 90: 2025 global light vehicle market share by powertrain

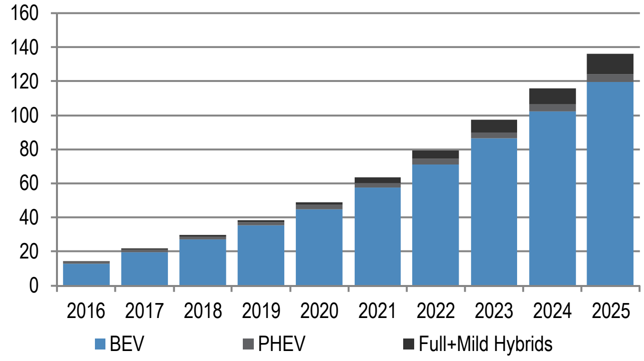


Source: J.P. Morgan estimates.

EV battery chemistries are expected to shift towards a higher share of nickel but lower cobalt intensities as manufacturers choose to move forward with higher energy-density nickel at the expense of cobalt given its problematic supply chain.

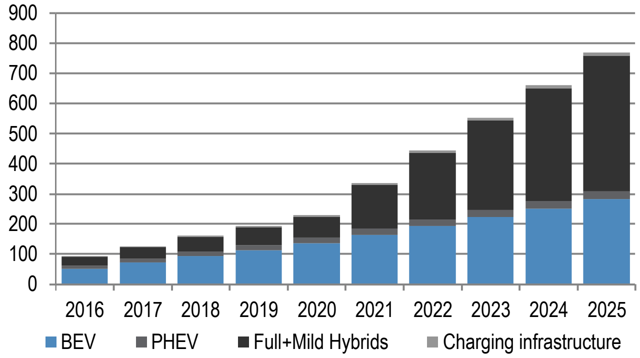
Glencore commissioned analysis by CRU which implies additional metal requirements of 1.4Mt copper (~6% of the current market), 370kt nickel (~20%) and 106kt cobalt (>100%) by 2025, helping to justify their decision to more than double cobalt output in the DRC to ~65kt by 2019.

Figure 91: Nickel contained in EV batteries by powertrain



Source: Bloomberg New Energy Finance, CRU, J.P. Morgan estimates.

Figure 92: Copper demand from EVs and charging infrastructure



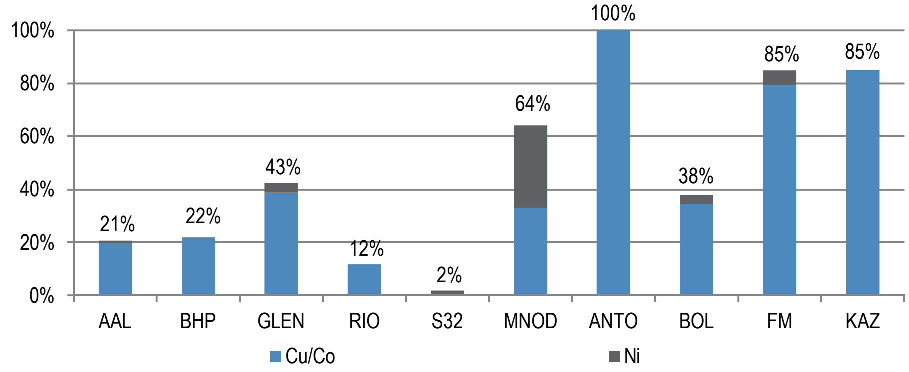
International Copper Association, CRU, Bloomberg New Energy Finance, U.S. Department of Energy, Norwegian EV Association, European Alternative Fuels Observatory, J.P. Morgan estimates.

We are more cautious, and estimate nickel demand in EV batteries should increase from 14.5kt in 2016 to 136kt in 2025, an almost ten-fold growth. Our model implies that by 2025, every one million BEV produced equals about 26kt of nickel consumed. We do not believe there will be serious sustained supply shortages in nickel, however, prices will likely need to average between $12,000/t and $15,000/t to incentivise the build out of nickel purification facilities as well as force some traditional demand to substitute to other materials.

Glencore offers strongest exposure across diversified peer group

Across the European listed diversified miners, Glencore offers the strongest exposure to battery technology commodities, with copper/cobalt and nickel accounting for 43% of group spot CY'19E EBITDA. Norilsk offers the most balanced exposure, with copper and nickel each ~30% of EBITDA, while the base metals companies have a high exposure, although almost exclusively through copper.

Figure 93: European miners' battery commodity exposure (% of EBITDA/revenue, CY'19E spot)



Source: J.P. Morgan estimates.

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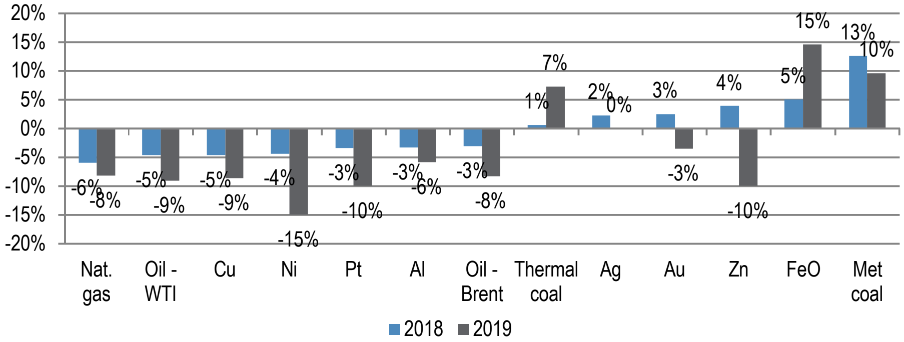
RECOMMENDATION CHANGES

Valuation analysis & key recommendation changes – U/G GLEN to OW, BHP to N; D/G RIO to N

We forecast base metals outperforming bulks which in turn outperform precious metals in 2018. Whereas in previous years we have argued that bearish iron ore expectations were already discounted in cheap valuations for exposed companies, we do not believe that is true to the same extent today. As a result, our recommendation structure broadly reflects our relative commodity preferences.

Figure 94: JPMe vs consensus commodity prices



Source: J.P. Morgan estimates, Bloomberg consensus.

We base our recommendations on a range of earnings, cash flow, and NPV metrics under a variety of pricing scenarios. We also examine current valuations in the context of historical ranges against both the sector and the broader market. The key conclusions we reach include:

DIVERSIFIEDS

- **GLEN – upgrade to Overweight:** Despite being the strongest performer YTD, GLEN has seen the most aggressive de-rating. Stripping out the Marketing division implies the Industrial business is trading on spot EV/EBITDAs of ~3.3-3.7x for CY'18-19E, the second cheapest of the peer group. With a portfolio more heavily weighted towards consumption-driven commodities (although we note coal still represents ~25% of spot EBITDA) and the EV trend, balance sheet concerns significantly reduced and scope for latent capacity to return through 2018-19, we believe the shares will continue to perform strongly;
- **RIO – downgrade to Neutral:** Having enjoyed >25% outperformance vs BHP over the past three years, the significant valuation discount has been eliminated, with RIO now trading at a premium vs BHP; in fact, it is now the most expensive stock of the peer group, although still only at the mid-point of its 10-year historic average against the market. While long-term shareholders will undoubtedly continue to value the sensible capital allocation message and strong capital returns, we now believe this is adequately priced into the shares and therefore downgrade to Neutral;
- **BHP – upgrade to Neutral:** BHP has underperformed over the past three years due to poor capital allocation and a confused strategic message. Valuation

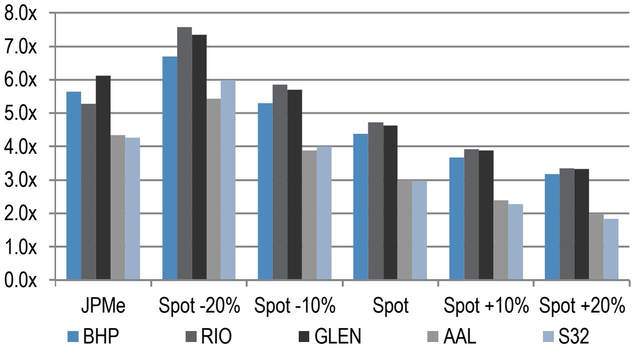
metrics, both absolute and relative, have improved over that period and BHP is now ~10% cheaper than RIO across a range of metrics. With the potential for a sale of the US Onshore business to support a more attractive capital allocation and returns message, we upgrade to Neutral;

- **AAL – Overweight:** We remain Overweight on AAL. We believe the market continues to underestimate the scope for operational improvements, with working capital a particular area of focus for management. Valuation remains at a significant discount to the peers, with spot FCF yields of ~20% for FY18-19E ~30-35% above the peer group average. While significant restructuring in South Africa appears a more distant prospect this year than last, we do not believe it is totally off the table, but is an essentially free option within the current valuation;
- **Other changes:** We downgrade NHY (OW to N) on valuation grounds and peaking momentum and sentiment on aluminium prices. We downgrade BOL (N to UW) on a worsening FCF profile. We downgrade RRS (OW to N) on a poor gold price outlook, and replace it with FRES as our preferred European gold exposure.

Diversifieds: Upgrade GLEN to OW (Dec'18 PT £4.50/sh prev. £3.20/sh) with AAL; BHP and RIO moved to N

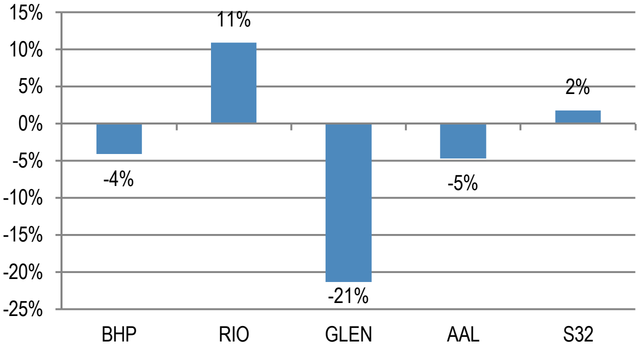
Across a range of commodity price scenarios, AAL (along with S32, covered from Sydney by J.P. Morgan analyst Lyndon Fagan) consistently screens as trading on the lowest EV/EBITDA multiples and delivering the most attractive FCF yields of the diversified peer group. This forms a key part of our Overweight thesis, which is also based on balance sheet improvement and the scope for low expectations around cost performance and, potentially, restructuring to be exceeded. GLEN has notably de-rated over the course of this year, with spot CY'18E EV/EBITDA falling by 18% over 12 months, leaving GLEN multiples looking much more comparable against the peers relative to the ~20-60% premium this time last year.

Figure 95: Commodity scenarios – 2018E EV/EBITDA. AAL continues to screen cheaply, GLEN now in-line with RIO at group level



Source: J.P. Morgan estimates. Bloomberg prices as at cob 12-Dec-17.

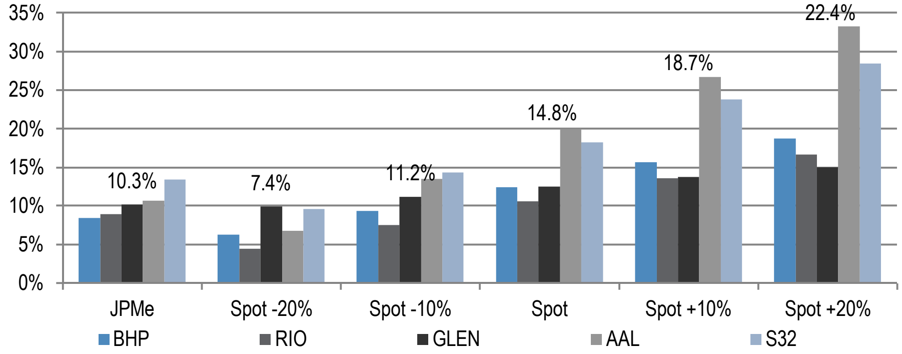
Figure 96: Spot EV/EBITDA 12-month re/(de)-rating – GLEN ~20% cheaper YoY, RIO 14% more expensive



Source: J.P. Morgan estimates, Bloomberg prices as at cob 12-Dec-17.

For the group as a whole, we continue to believe the market is pricing in commodities falling from spot, although only modestly, with a 10% fall from spot levels implying FCF yields in the 7-15% range. GLEN's more stable FCF profile, driven by Marketing, appears attractive in our view, while we believe the market is still too pessimistic on AAL's prospects and underestimates the resilience of the group's FCF which is helped by the structure of operating contracts at De Beers with the Botswanan and Namibian governments which result in a large proportion of earnings being driven by a pass-through margin, somewhat akin to GLEN's Marketing business.

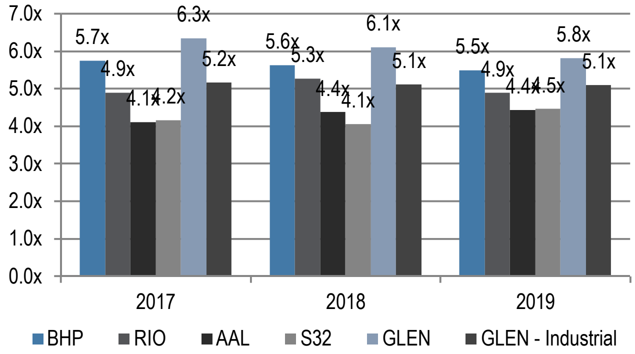
Figure 97: Commodity price scenarios – 2018E FCF yields. GLEN yields more attractive under most scenarios, AAL remains strongest ex-S32



Source: J.P. Morgan estimates.

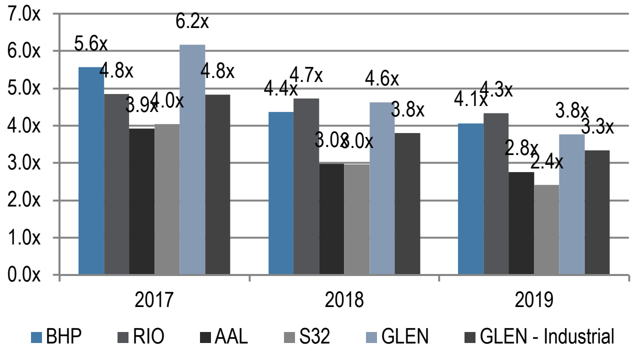
Despite a strong run in its share price, GLEN's multiples at a group level have come much more in line with the peer group due to strong base metals price performance through 2017. Although gearing and the dividend policy are less attractive than the peers, the gap has closed significantly and GLEN offers a more attractive volume outlook and exposure to future growth trends including electric vehicles.

Figure 98: JPMe EV/EBITDAs – GLEN Industrial now cheaper than RIO & BHP



Source: J.P. Morgan estimates.

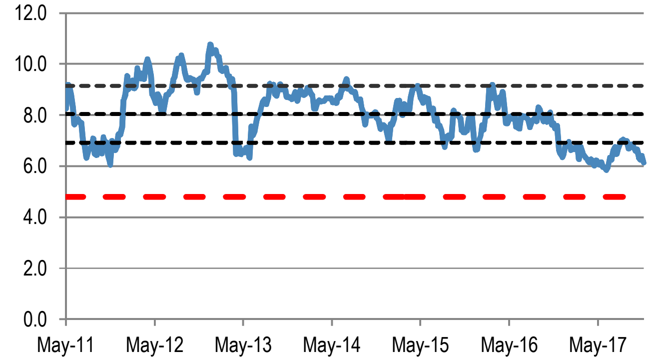
Figure 99: Spot EV/EBITDAs – GLEN Industrial now cheaper than RIO & BHP



Source: J.P. Morgan estimates, Bloomberg prices as at cob 12-Dec-17.

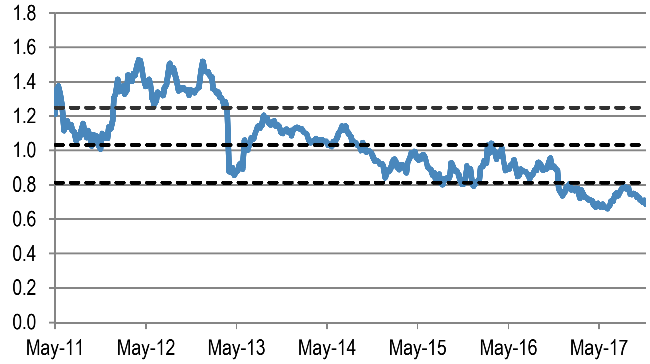
We also note that stripping out the Marketing business using a valuation of ~11-12x EBITDA, which is broadly in line with a broad trading/marketing peer group, GLEN's Industrial business is trading on <4x EV/EBITDA. Although this is still at a premium to AAL (and S32), it sits at a sizeable discount to both RIO and BHP. Finally, we note that GLEN is trading below the bottom of its historic trading range since listing on both an absolute basis and relative to the European market. It is close to the cheapest it has been on both metrics and we see scope for further outperformance over coming months.

Figure 100: GLEN 1-yr forward EV/EBITDA – trading below -1s.d. & spot multiple is lower



Source: Bloomberg data.

Figure 101: GLEN 1-yr forward EV/EBITDA vs SXXP – trading below -1s.d.

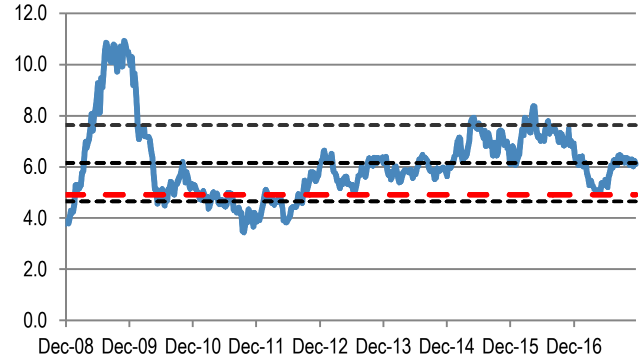


Source: Bloomberg data, Bloomberg prices as at cob 12-Dec-17.

RIO vs BHP

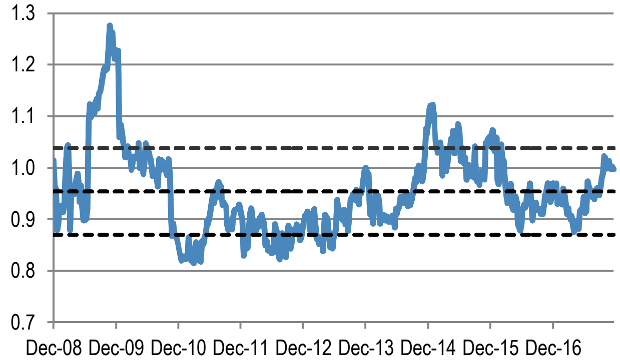
RIO's ~10% share price outperformance relative to BHP this year, coupled with iron ore prices underperforming oil over the course of the year, has led to RIO re-rating by ~11% on a spot EV/EBITDA multiple basis, while BHP has de-rated by ~4%. This leaves valuations now tilted in BHP's favour, with spot EV/EBITDAs at a ~5-10% discount, although we note RIO still shows more upside to our base case NPV due to our lower long-term oil price forecasts.

Figure 102: RIO trading in-line with historic average 1-yr forward EV/EBITDA, spot still towards bottom of range



Source: Bloomberg data.

Figure 103: RIO now trading towards top of historic range vs BHP – scope for modest unwind



Source: Bloomberg data, Bloomberg prices as at cob 12-Dec-17.

RIO has benefitted over an extended period from its coherent, value-focused strategy and strong focus on productivity and shareholder returns. Recent developments, including the appointment of Simon Thompson as Chairman to succeed Jan du Plessis, suggest reassuring continuity. However, the story is, in our view, well understood by the market and broadly discounted in the shares.

BHP, on the other hand, is coming off a period of poor capital allocation, including the failed investment in US Onshore. While we retain significant reservations over delivery of the disposal programme, we believe these risks are now broadly reflected in the valuation and there is balanced risk of positive or negative outcomes on the process. Assuming a successful sale could reduce BHP's multiples by ~5-10%, taking the shares to a ~10-15% discount against RIO's current multiples and could support further capital returns which are not priced into the shares in our view.

Table 23: Changes to BHP metrics assuming $10bn cash US Onshore disposal

BHP metrics	FY'19E Pre-disposal	FY'19E Post-disposal	Change 2019E
PE (Ltd)	15.2	13.7	-9%
PE (Plc)	13.4	12.1	-10%
EV/EBITDA (x)	5.7	5.5	-4%
FCF yield (Ltd)	9.6%	9.5%	-1%
FCF yield (Plc)	10.8%	10.8%	0%
ROE (Norm NPAT/Avg. Equity)	11%	13%	12%
ROA - EBIT / (assets - cash)	12%	15%	23%
ROIC (EBIT/Assets)	11%	12%	10%
ROCE	11%	14%	26%
EBITDA / net interest	34.3	43.6	27%
Net Debt / EBITDA	0.4	n/a	
Gearing - net debt/ (net debt + equity)	13%	(2%)	-115%
EBITDA margin	12%	(2%)	-117%

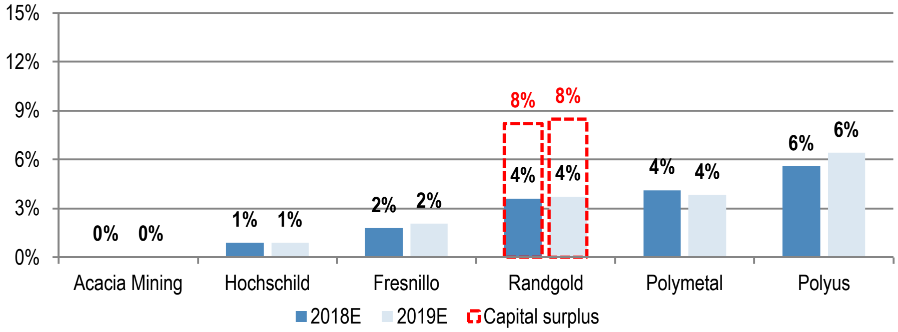
Source: J.P. Morgan estimates. Note: Originally published 24th Sep 2017, please click here for full details.

Precious Metals: Downgrade Randgold to Neutral; Fresnillo now our relative preference in large-cap UK gold

- Medium-term negative outlook (to H1'18) for precious metals as continued path for US Fed funds rate normalisation is priced into real yields;
- We **downgrade our recommendation on Randgold to Neutral** with a Dec'18 PT of £71.00/sh (prev. £83.00/sh);
- We **retain our Neutral recommendation on Fresnillo**, with an unchanged Dec'18 price target to £14.50/sh;
- Within the large-cap precious metal sector, we have a **relative preference for FRES over RRS** on valuation grounds and a more attractive growth outlook;
- We **downgrade our recommendation on Acacia** to UW (prev. Neutral) given near-term risks surrounding the proposed framework agreement;
- We **retain our UW recommendation on Hochschild**, which remains the most operationally leveraged exposure to silver prices.

We acknowledge the quality of Randgold management, operational quality & ability to generate shareholder value through the cycle. We also expect RRS could return up to ~4% of its market cap back to shareholders at the Q4 financial result (Monday, 5th Feb) and as much as ~8% in 2018/19 which would be one of the highest yielding stocks, outside of the diversified miners.

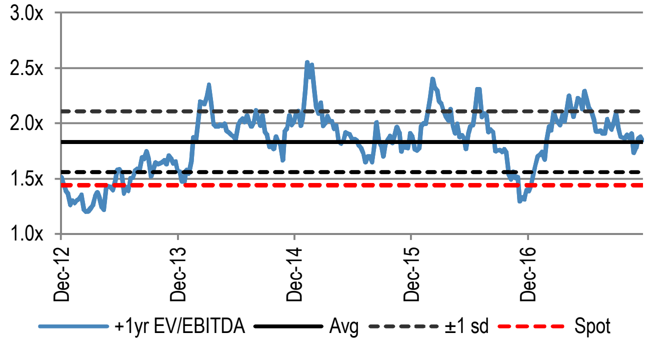
Figure 104: 2018/19E dividend yield at spot prices, superimposed with capital surplus to $0.5bn net cash target (as %market cap)



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).
2018/19 capital surplus calculations assume balance above $0.5bn as at YE'17 is returned to shareholders.

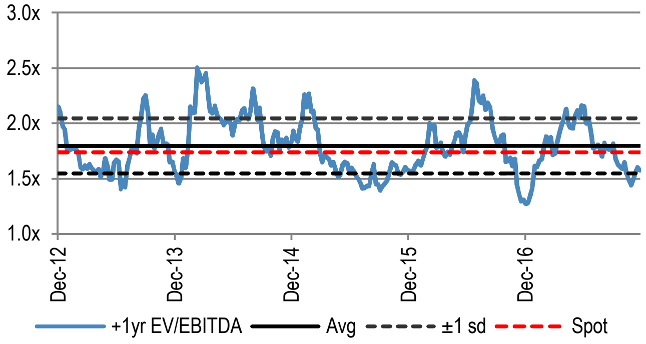
However, on consensus forecasts relative to mining peers (Stoxx 600 Basic Resources), RRS is now trading at a small premium to its 5yr average (~1.9x currently vs. average 1.8x). This compares to large-cap precious metal peer FRES which is currently trading on 1.6x, or >10% discount to its historical average.

Figure 105: Randgold 1yr forward cons EV/EBITDA vs. Stoxx 600 Basic Resources – 5yr avg of ~1.8x vs current ~1.9x



Source: J.P. Morgan estimates, Bloomberg.

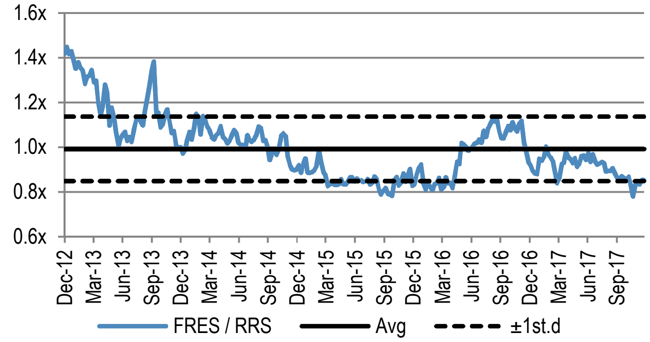
Figure 106: Fresnillo 1yr forward cons EV/EBITDA vs. Stoxx 600 Basic Resources – 5yr avg of ~1.8x vs current ~1.6x



Source: J.P. Morgan estimates, Bloomberg.

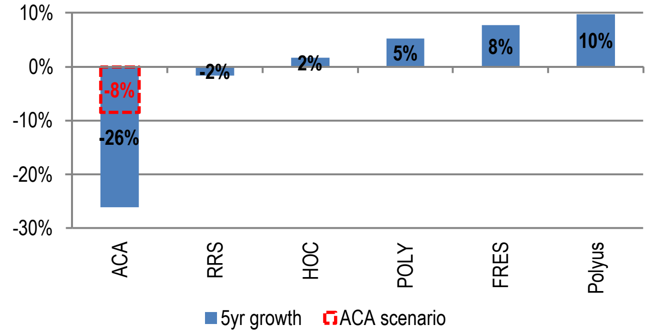
Furthermore, the ratio of FRES's consensus forward multiple vs. RRS is now towards five year lows and 1 st.dev from the mean. We feel this is excessive, particularly given FRES's superior growth outlook. We calculate FRES has a 5yr CAGR (2021 vs. 2016A) of ~8% pa vs. RRS's -2% pa.

Figure 107: FRES vs. RRS 1yr forward consensus valuation, showing that the ratio is now trading ~1st. dev from its 5yr average



Source: J.P. Morgan estimates, Bloomberg.

Figure 108: 5 year production growth outlook for the EMEA precious metal section (JPM base case forecasts)



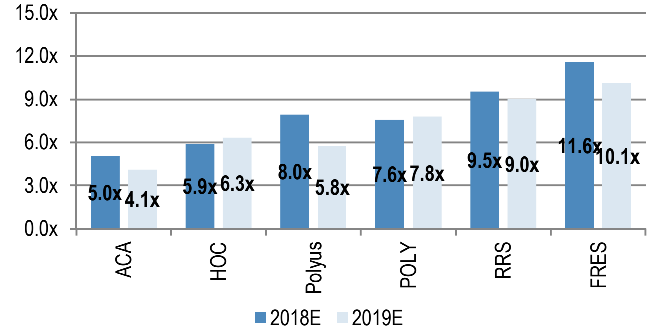
Source: J.P. Morgan estimates, Bloomberg.
ACA scenario assumes a restart of Bulyanhulu production in H2'19.

We also believe there is increased focus on the discount rates attached to cash flows based on region, where investors are increasingly willing to pay a premium for cash-flows from South American precious metal miners vs. South African peers. We believe this reflects: (i) heightened geo-political tension across Africa, as evidenced by the political impasse in the DRC, for example; (ii) uncertainty around fiscal arrangements in a number of key jurisdictions, such as the DRC, Mali & Tanzania; and (iii) the increasing importance of ESG issues in the mining sector, with all three factors generally more unfavourable in Africa countries vs. American counterparts.

Hochschild remains a leveraged exposure to precious metal prices; remain UW

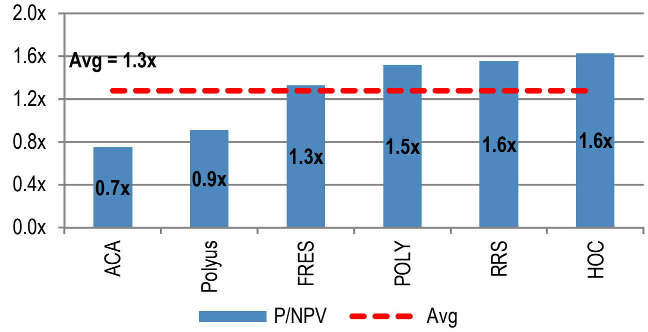
We retain our Underweight recommendation on HOC on valuation grounds. On spot prices, HOC trades at a modest discount to its five year 1yr forward consensus multiple. However, on a P/NPV basis, we calculate HOC trades on ~1.6x NPV, which is the most expensive in the EMEA coverage and a premium to bellwether UK peers RRS & FRES which we do not think is appropriate.

Figure 109: 2018/19E spot EV/EBITDA multiple for EMEA precious metals sector



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

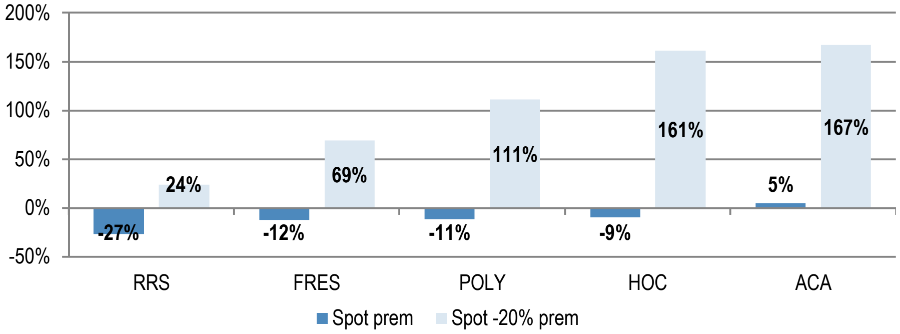
Figure 110: P/NPV for EMEA precious metal sector – HOC trades on ~1.6x which is a premium to peers



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Furthermore, HOC remains one of the most operationally leveraged miners in our coverage. We attribute this to its generally short mine-life & the high cost nature of its underground, narrow-vein mines. To put into context, a 20% reduction in spot prices results in a 2018 EV/EBITDA of 13.3x which is equivalent to a >160% premium vs. its 5yr 1yr forward consensus average, and considerably larger than the premium for its precious metal peers.

Figure 111: Discount / (premium) of spot and spot -20% EV/EBITDA multiple to 1yr forward consensus multiple



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

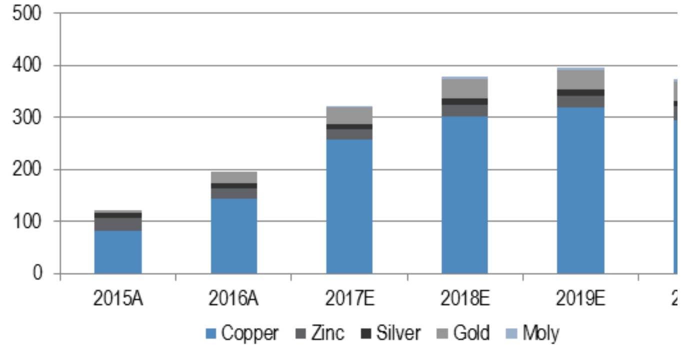
We also believe there are elevated operational risks associated with a HOC investment thesis. Whilst permitting issues appear to have been mitigated somewhat (see recent note here) we continue to believe the market under-estimates the risks involved in its five year brownfield exploration programme, which aims to have five years of ounces in reserves and an additional five years of production in resources resources (inferred) by 2020. The total cost for conversion to resources is estimated at $74-184m, and we expect further upside to increase confidence to reserve ounces. This program is an integral part in unlocking operational synergies given plant capacity utilisation across the group is currently running at ~70%.

Base Metals KAZ remains our top pick, with peer-leading growth & an attractive valuation

- We remain confident that the global expansion can be sustained through H1'18 which provides a supportive backdrop for industrial metals.
- We expect the more amenable supply / demand fundamentals should see base metals outperform bulks & precious metals.
- We **remain OW KAZ Minerals & it is our top-pick amongst base metal peers**, with a Dec'18 PT of £8.50/sh (prev. £7.00/sh);
- We **downgrade Hydro to N (prev OW)** with a Dec'18 PT of NOK57.00/sh (prev. NOK 61.50/sh);
- We **downgrade Boliden to UW (prev N)** with a Dec'18 PT of SEK 225/sh (prev. SEK 220/sh);
- We **retain our UW recommendation on ANTO** with a Dec'18 PT of £7.00/sh (prev. £6.60/sh);
- **Norilsk remains UW & our least preferred base metal exposure**. We have a Dec'18 PT of $16.32/sh (prev. $16.28/sh).

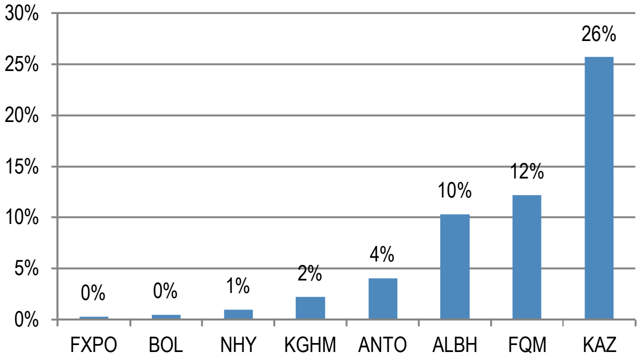
KAZ has the most compelling production growth amongst base metal peers. We forecast copper equivalent production increasing >2x from ~196kt in 2016 to ~395kt in 2019E which is equivalent to an annual production growth of ~26% pa and is best-in-class vs. base metal peers (avg. ~5% pa). Furthermore, growth is underpinned by new mines Bozshakol & Aktogay which are large (~100ktpa +), long-life (40yrs +), low cost assets, which are now progressing towards steady-state production.

Figure 112: Copper equivalent production will grow to ~395kt pa from 2019E vs. ~196kt in 2016



Source: J.P. Morgan estimates, Bloomberg.

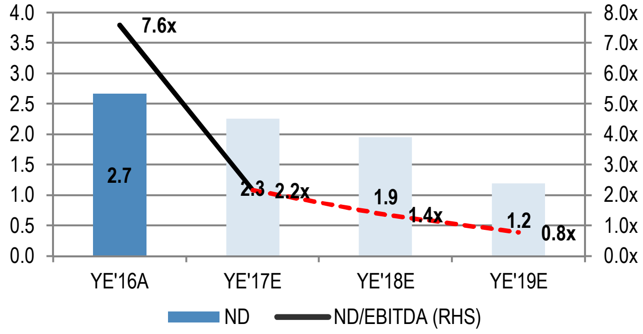
Figure 113: Copper eq production vs. peers – KAZ implies an enviable 3yr CAGR ~26% pa, well above base metal peers' ~4% pa



Source: J.P. Morgan estimates, Bloomberg.

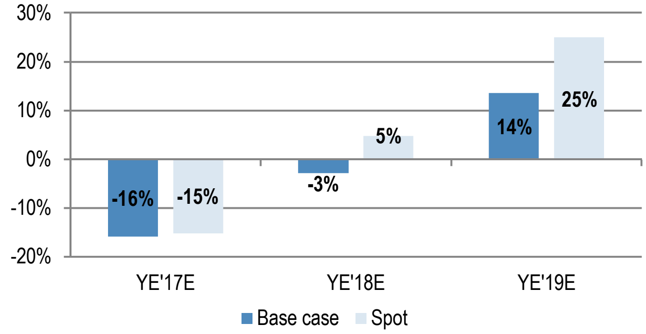
Increasing production will drive top-line growth & EBITDA margins should expand as low-cost mines reach steady state. Coupled with moderating capex, we expect this will result in positive FCF generation that will continue to de-risk the balance sheet, highlighted by pro-forma ND/EBITDA which we expect will reduce to 1.4x at YE'18E vs. ~2.2x at YE'17E. This should have positive implications for shareholders given the value transfer continues within EV from debt to equity. We also note that KAZ will have ~5/25% capital surplus to a 1.5x ND/EBITDA target by YE'18/19 on spot (-3%/+14% on JPM base case). Whilst we do not forecast a dividend within our base case, this could have potentially positive implications for shareholder returns and we note recent management commentary which has targeted a resumption of dividends.

Figure 114: KAZ spot net debt & ND / EBITDA progression, YE'16-YE'19E – leverage has now passed the inflection point



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Figure 115: YE capital surplus to 1.5x ND/EBITDA target, under JPM base case & spot prices

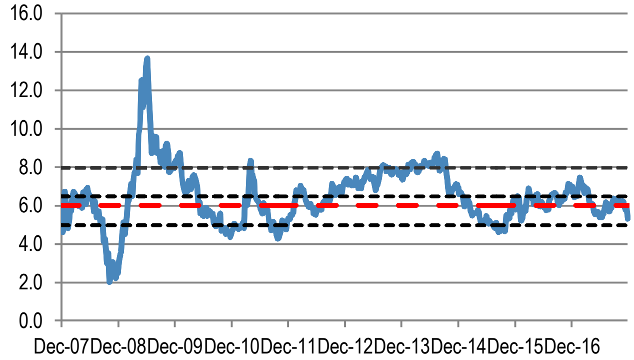


Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Hydro – downgrade to Neutral with cost inflation to outpace top line growth; Dec'18 PT NOK57.00/sh (prev. NOK61.50/sh)

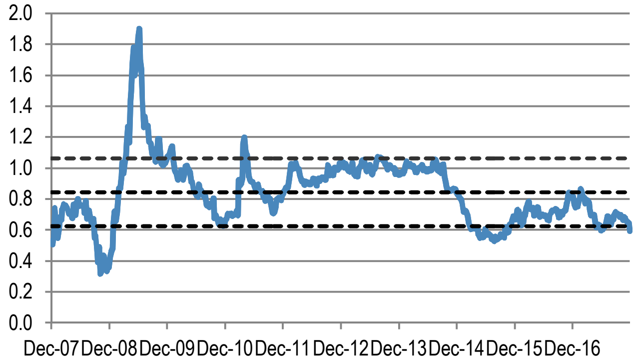
Hydro's valuation does not look stretched relative to its ten-year history. On spot, NHY is trading on EV/EBITDAs of 5.0x for FY'18E, a discount of ~20% against its long-term average. It is also trading towards the bottom of the range relative to the broader market.

Figure 116: EV/EBITDA absolute in the bottom half of the historic trading range



Source: Bloomberg.

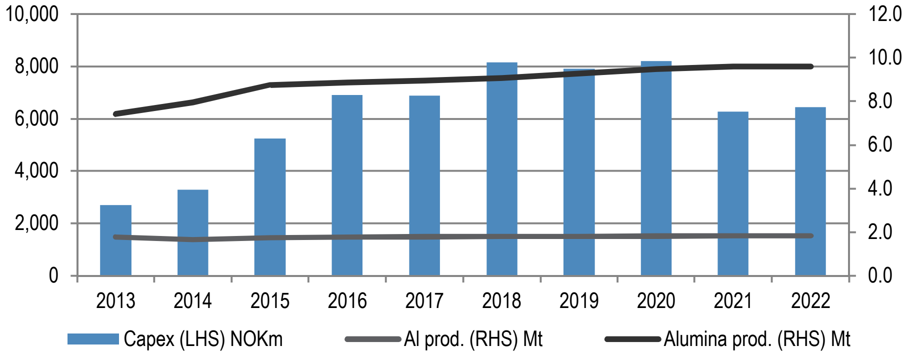
Figure 117: EV/EBITDA towards bottom of range vs sector over past decade



Source: Bloomberg.

Recent underperformance has been aggressive, with the shares down 16% in the past month as investors reacted to stalling aluminium price momentum and rising costs. In addition, the capital markets day highlighted modestly higher long-term capex than expected with only limited additional volumes (from alumina) coming through.

Figure 118: NHY's capex has increased materially since 2010 with limited volume uplift



Source: J.P. Morgan estimates, Company data.

We forecast aluminium prices remaining solid in 2018, with Chinese capacity cuts holding and demand growth solid. However, we expect input costs to continue rising with caustic soda and fuel oil prices, which account for ~20% of the cost base, more than doubling over the past 12 months. While we see scope for a near-term bounce, rising costs coupled with recent declines in alumina prices (down ~15% over the past month to $415/t), will put pressure on spot earnings and could lead to downgrades to consensus forecasts.

We cut our Dec'18 PT by 7% to NOK57.00/sh, implying 1% upside against the current share price and downgrade our recommendation to Neutral.

We remain UW Norilsk & it remains our least preferred base metal exposure

Norilsk trades at spot EV/EBITDAs of 6.1x/6.4x for 2018/19E respectively, a ~60-80% premium to the diversified peer group, or 5-25% vs European base metals peers, and delivers spot FCF yields of 10-6% for the same period vs ~12.5-13.5% for the diversified peers.

Norilsk is a low-cost producer of nickel, copper, palladium and in the long term is poised to benefit from growing demand for electric vehicles. However, FCF generation struggles to meet one of the highest dividend yields in the sector at 10.5% in 2018E.

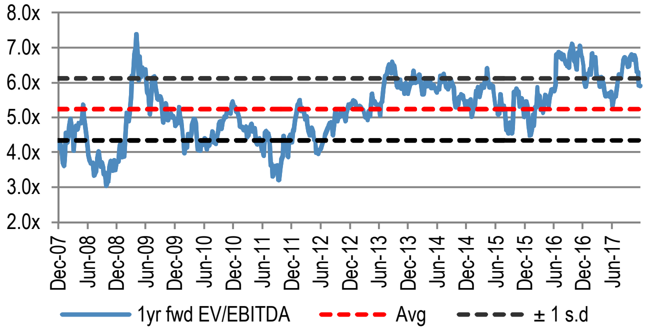
The current dividend policy is to pay out 60% of EBITDA if ND/EBITDA is <1.8x, declining linearly to 30% at 2.2x. At the recent capital markets' day management admitted that the dividend policy may be adjusted to reduce the top end of the leverage tolerance range from 2.2x ND/EBITDA to 2.0x. Even on spot commodity prices, we anticipate that level being reached by 2020, implying downside risk to consensus dividend forecasts.

New capex guidance to 2022 is $2.0bn higher than our previous forecasts. Much of this capex relates to upgrading mature facilities to improve environmental standards and, while admirable, will constrain the balance sheet in the medium term, in our view. Guidance excludes unapproved mine developments that could add a further ~$800m to 2018-2020 capex.

BOL is a premium-rated base metal exposure with inferior 2019E FCF vs peers. We downgrade to UW

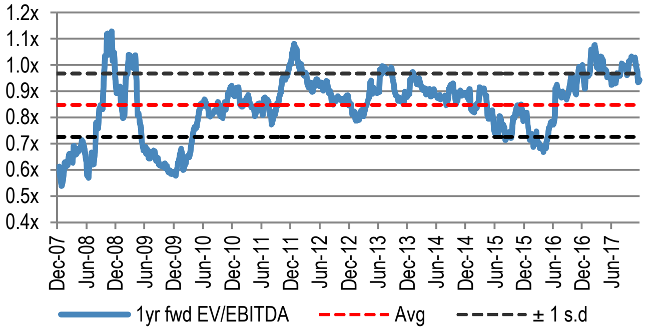
We downgrade our recommendation on BOL to UW from Neutral, largely on valuation grounds. We acknowledge BOL remains a premium exposure in the base metal space, which we attribute to: (i) the natural diversification offered by its asset mix (mines vs. smelters) & commodity mix (base vs. precious metals); (ii) sensible capital allocation framework that has been adhered to through the cycle; and (iii) attractive geo-political risk profile, given its western European (and largely Scandinavian) asset base. However, on consensus forecasts BOL trades on ~6x 1yr forward EV/EBITDA, which is approximately one standard deviation from its five year average of ~5x. Furthermore, relative to the Basic Resources sector (using SXPP as a proxy), BOL is trading on ~0.9x which is ~10% premium to its ten year average. We also believe the recent CMD implies weaker production in 2019 & increased medium-term capex which may act as a headwind to 2019/20 consensus earnings & valuations.

Figure 119: BOL 1yr forward consensus EV/EBITDA is trading c.1 st. dev above the ten year average



Source: J.P. Morgan estimates, Bloomberg.

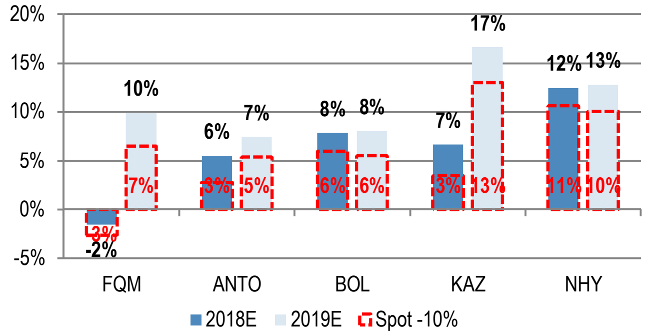
Figure 120: BOL consensus relative EV/EBITDA multiple vs. Stoxx 600 basic Resources



Source: J.P. Morgan estimates, Bloomberg.

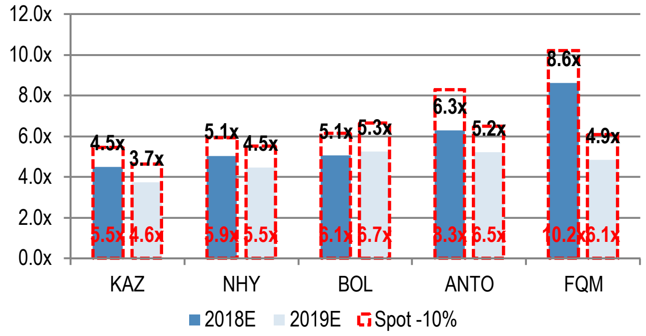
Furthermore, a reduction in spot prices under JPM forecasts exacerbates the valuation premium relative to peers. For example, a 10% reduction in spot prices equates to an average 2018/19 EV/EBITDA of 5.2x vs. KAZ at ~4.1x & NHY <5x despite FCF generation ~6%.

Figure 121: 2018/19 FCFyield, at spot and spot -10%



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

Figure 122: 2018/19 EV/EBITDA, at spot and spot -10%



Source: J.P. Morgan estimates, Bloomberg (prices as at cob 12-Dec-17).

ANTO still trades at a premium to KAZ despite inferior growth; remain UW

Antofagasta trades at spot EV/EBITDAs of 6.0x/5.0x for 2018/19E respectively, a ~5-15% premium to the peer group, and delivers spot FCF yields of 6.4-8.0% for the same period vs the peers on ~11%+ for FY'19E. We acknowledge ANTO has a solid balance sheet and does not appear egregiously expensive across most metrics while offering low-risk, pure-play exposure to copper. However, the combination of modest volume and earnings growth, and a dividend which we estimate at ~3%pa over the next couple of years, is not compelling in our view.

Furthermore, whilst operational performance has improved in 2017 following two years of disappointments, falling grades and hardening ore at Los Pelambres create risks going forward that will need to be managed carefully.

We also highlight the recent first round of Chilean Presidential elections which delivered a weaker than expected performance for the right of centre candidate, and previous President, Sebastian Pinera, with left-leaning parties performing more strongly than expected. Victory for a left-leaning candidate could create uncertainty around the operating, regulatory and fiscal environment and increase the risk premia applied to companies operating in Chile.

SECTION II: MACROECONOMIC & COMMODITIES OUTLOOK

Section I: 2018 Commodity & Macroeconomic outlook

Commodities Outlook

Solid global growth vs. slowing China industrial consumption presents tactical opportunities

We summarise below J.P. Morgan's outlook for commodities in 2018. Detailed analysis can be found in the following reports:

- *2018 Global Commodities Outlook: The most interesting opportunities will be tactical*
- *Metals Quarterly: Solid global growth but a softer China presents tactical opportunities in 2018*
- *Iron ore Market conditions buoyant but volatility likely to increase as winter heating season starts; downgrade 2018 to $62/t*
- *Coal 2018 outlook Positioning for 2018; we tweak coal prices and take profits on Cloud Peak*

The Commodities Research team is confident that the current phase of growth can be sustained into next year: *For now we are confident that the current phase of above-trend and regionally-aligned expansion could be sustained through next year despite our recent tilt in the risk bias from being decisively up towards neutral. The shape of the forecast calls for global growth to moderate slightly from the 3.6% pace during the middle quarters of 2017 to 3.1% run-rate between now and mid-2018.*

China's slowdown will start to bite: *Chinese growth has averaged close to 7% in 2017 but we believe it will moderate toward 6% as policymakers tap the brake. Officials are explicit they want to slow growth in the property market and in excess-capacity and high-polluting industries. Evidence is mounting that the growth is softening, as witnessed by: (i) a slowdown in FAI over the past six months which has been broad-based; (ii) credit impulse has been slowing; (iii) residential housing new starts growth has been declining since March, growth in completions turned negative mid-year & both residential and aggregate sales posted a second y/y contraction in October; and (iv) the official NBS PMI dipped after the Party Congress in October reflecting aforementioned housing slow-down but also intensified environmental protection & antipollution measures dragging near-term production activities, especially heading into the winter heating season.*

Industrial metals exhibit reasonably consistent late-cycle behaviour: *Despite the global expansion turning nine years old in 2018, the positive interplay between improving corporate profits and boosts to capex spending should maintain global growth at close to the current pace at least through 1H18. We note that base metals exhibit reasonably consistent late-cycle behaviour.*

Central banks normalisation could reduce liquidity which has been a key driver of metals' returns: *Central banks are moving slowly but surely towards* *normalisation. The path is tedious and the aggregate balance sheets should continue to expand in 2018 providing high liquidity but by 2019 we would expect to see the first contraction which could be potentially restrictive for base metals. While central bank tightening in the current cycle (Fed, BoC, BoE) have been responding to better growth, multi-factor models shows that both global growth and QE are drivers of industrial metals returns. Also, markets are forward-looking & with diminishing liquidity we would expect to see some of the recent dislocations in the market to slowly revert to the norm.*

Inflation is returning…but will its impact be positive for commodities? *Evidence confirms a renewed lift in inflation. Global CPI is now running at a 3% rate, up from about 1% at mid-2017. The recovery should translate into higher y/y rates in 1H18 but if inflation returns too aggressively the positive relationship with metals returns would flip negative as the market's focus shifts to the possibility of restrictive monetary policy & a substantial slowdown in global growth.*

Supply will remain a differentiating factor in 2018: *In this respect, the policy dimension of Chinese supply curbs over the past two years imposed to meet policy and environmental regulations will likely remain paramount. Chinese pollution policy should only impact aluminum, and supply should be rising next year in copper, nickel and zinc. Our preference hasn't changed. We still find it prudent to be exposed only to metals with supply tailwinds and continue to carry [?]*

Bulks

Iron ore: We expect the ramp up in steel production post March 2018 (end of winter heating season) to lead to a bounce in iron ore prices. Prices are then expected to remain elevated through Q2/Q3, the typical peak steel output periods, before declining again into the 2018/19 winter heating season. SBB has reported China will not set a specific steel capacity reduction target in 2018. The country removed 65Mt of capacity in 2016 and will remove 50Mt in 2017. This means it is well on track to achieve the upper end of its 100-150Mt target over 2016-2020. The focus will now be on improving the quality of output according to the CISA Vice Chairman. A slightly improved supply outlook from the majors, has led us to forecast a higher surplus in 2018 (now ~44Mt or ~2% of the global market). On the back of this, we lower our 2018 price forecast 5% to $62/t.

Table 24: Iron ore supply & demand summary

Demand 62% Fe (wMt 8% moisture)	2014	2015	2016	2017	2018	2019	2020	2021
Americas	127	117	110	113	116	121	123	121
CIS, Middle East & Africa	131	119	125	128	132	137	144	151
Europe	193	188	188	196	203	208	213	214
World direct reduction iron demand	130	117	106	121	123	124	126	127
AsiaPac ex-China	320	313	318	340	351	362	374	386
China	1,237	1,205	1,209	1,264	1,266	1,276	1,259	1,230
Growth	10	-33	5	54	2	11	-17	-30
Growth	0.8%	-2.6%	0.4%	4.5%	0.1%	0.9%	-1.3%	-2.4%
Total ex-China	901	855	847	898	925	953	979	1,000
Growth	24	-46	-7	51	26	28	27	21
Growth	2.7%	-5.1%	-0.9%	6.0%	2.9%	3.0%	2.8%	2.1%
Total (wmt, 62% Fe, 8% moisture)	**2,138**	**2,060**	**2,057**	**2,162**	**2,190**	**2,229**	**2,238**	**2,230**
Growth (Mwmt)	**33**	**-79**	**-3**	**105**	**28**	**39**	**9**	**-9**
Growth (%)	**1.6%**	**-3.7%**	**-0.1%**	**5.1%**	**1.3%**	**1.8%**	**0.4%**	**-0.4%**

Supply 62% Fe (wMt 8% moisture)	2014	2015	2016	2017	2018	2019	2020	2021
Australia	730	785	814	837	871	881	874	872
South America	443	466	460	459	484	502	533	543
North America	118	111	109	110	112	112	112	112
CIS	197	189	194	190	190	192	194	196
Middle East & Africa	152	129	125	116	116	116	116	116
China	295	201	158	231	200	208	191	169
Other Asia	155	135	152	177	176	176	178	179
Europe	49	43	44	42	42	42	42	42
Total (wmt, 62% Fe, 8% moisture)	**2,138**	**2,060**	**2,057**	**2,162**	**2,190**	**2,229**	**2,238**	**2,230**
Growth (Mwmt)	**33**	**-79**	**-3**	**105**	**28**	**39**	**9**	**-9**
Growth (%)	**1.6%**	**-3.7%**	**-0.1%**	**5.1%**	**1.3%**	**1.8%**	**0.4%**	**-0.4%**

Supply 62% Fe (wMt 8% moisture)	2014	2015	2016	2017	2018	2019	2020	2021
Vale	319	342	349	362	387	392	405	415
Rio Tinto (Pilbara)	283	313	321	321	338	345	345	347
BHP Billiton (Pilbara)	241	260	260	266	284	290	290	290
Fortescue	141	154	159	159	160	160	160	160
Roy Hill	0	0	22	41	50	54	54	54
Minas Rio	0	9	18	18	20	25	29	29
Kumba	50	48	43	45	45	45	45	45
Samarco	29	29	1	0	0	7	21	22
IOC	16	20	22	23	25	25	25	25
Major miners	1,081	1,174	1,195	1,236	1,308	1,344	1,374	1,385
Curtailments / growth	142	94	21	41	72	35	30	12
China domestic	295	201	158	231	200	208	191	169
Curtailments / growth	-76	-94	-43	73	-31	9	-18	-21
Other non-traditional supply	763	685	703	695	682	677	674	675
Curtailments / growth	-33	-78	18	-8	-13	-5	-3	1
Total (wmt, 62% Fe, 8% moisture)	**2,138**	**2,060**	**2,057**	**2,162**	**2,190**	**2,229**	**2,238**	**2,230**

Balance 62% Fe (wMt 8% moisture)	2014	2015	2016	2017	2018	2019	2020	2021
Global oversupply (required growth) (Mt)	109	172	24	-64	44	-4	21	21
Proportion of global market (%)	5.1%	8.4%	1.2%	-3.0%	2.0%	-0.2%	0.9%	0.9%

Source: J.P. Morgan estimates, Company data, Wood Mackenzie, World Steel Association Note: production data has been normalized for 62% Fe & 8% moisture and may differ to reported data for this reason (eg FMG grades ~58% Fe as reported)

Coal: Met coal is retreating from its third spike since very weak $80/t prices washed excess capacity from the market in 2015 and early 2016. For the third time, the met coal forward market is pointing to a pullback to the $140s in 2018 and $130 by the end of the decade. Likewise, Newcastle thermal coal is forecast (by the forward market) to fall back from the mid-$90s/t to $80 by late 2018 and stabilize around $75/t. The coal market continues to be driven by China's needs and policies. Even though the 276-day rule is no longer an issue, a greater focus on mine safety has cut into production and together with a hot summer has kept domestic coal prices high.

Table 25: J.P. Morgan seaborne thermal coal supply forecasts

Supply	2012	2013	2014	2015	2016	2017F	2018F	2019F	2020F
Australia	158.4	181.7	194.6	204.5	201.3	203.3	205.3	215.0	215.0
USA	49.6	45.9	32.9	24.4	16.5	34.1	32.7	29.0	25.4
Canada	4.0	4.1	3.4	2.5	2.5	2.5	2.5	2.5	2.5
Russia	114.7	112.3	118.6	116.9	123.7	120.0	115.0	110.0	110.0
Kazakhstan	7.5	5.5	5.3	5.5	3.5	4.3	2.5	2.3	2.2
Indonesia	345.0	402.0	382.0	345.0	370.0	355.7	356.4	356.3	351.9
China	8.0	6.4	5.4	4.4	7.0	7.0	7.0	7.0	7.0
South Africa	70.9	70.3	75.3	75.1	75.0	70.0	73.0	70.0	70.0
Colombia	79.8	76.1	76.5	82.6	90.2	93.0	95.0	97.0	100.0
Poland	5.5	8.6	7.0	7.0	6.3	6.3	6.3	6.3	6.3
Vietnam	19.2	14.7	8.7	1.9	0.9	0.9	0.9	0.9	0.9
Mongolia	2.7	1.9	4.5	1.7	2.8	5.0	5.0	5.0	5.0
Others	55.1	57.7	86.4	70.1	87.5	103.9	100.9	119.1	151.0
Total Exports	**920.4**	**987.2**	**1,000.6**	**941.6**	**987.2**	**1,006.0**	**1,002.5**	**1,020.4**	**1,047.2**

Source: J.P. Morgan estimates, Bloomberg, Woodmac, EIA, USITC and Eurostat.

Table 26: J.P. Morgan seaborne thermal coal demand forecasts

Demand	2012	2013	2014	2015	2016	2017F	2018F	2019F	2020F
Japan	125.3	129.5	130.0	134.0	130.2	137.0	135.0	135.0	135.0
USA	7.0	7.0	9.0	9.0	7.0	7.0	7.0	7.0	7.0
China	235.2	251.8	229.2	156.2	195.6	195.6	185.8	176.5	176.5
India	98.4	130.2	155.0	159.1	152.9	148.0	142.0	145.6	146.0
Europe	188.9	199.3	198.4	196.6	195.4	195.0	190.0	190.0	190.0
South Korea	96.6	95.0	95.9	96.7	97.0	98.9	100.9	102.9	105.0
Brazil	3.7	3.8	6.4	7.6	6.1	6.6	7.2	7.9	8.6
Russia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turkey	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Taiwan	57.8	58.8	57.8	56.0	59.3	61.7	64.2	66.7	69.4
Malaysia	23.0	23.6	21.8	20.4	24.6	27.1	29.8	32.6	34.0
Thailand	16.9	17.3	20.9	21.9	21.8	22.2	23.2	24.7	25.7
Philippines	11.9	14.0	14.6	14.7	20.8	21.7	23.4	25.8	28.2
Vietnam	0.1	0.4	2.6	5.3	9.8	14.3	18.0	23.6	32.1
Others	55.4	56.3	59.0	64.3	66.9	70.9	75.9	82.0	89.7
Total Imports	**920.2**	**987.0**	**1,000.6**	**941.8**	**987.4**	**1,006.0**	**1,002.4**	**1,020.3**	**1,047.2**

Source: J.P. Morgan estimates, Bloomberg, Woodmac, EIA, USITC and Eurostat.

Table 27: J.P. Morgan seaborne met coal supply forecasts

Supply	2012	2013	2014	2015	2016	2017F	2018F	2019F	2020F
Australia	142.4	154.2	180.5	187.7	188.0	190.0	191.0	190.0	194.0
USA	63.9	60.8	54.8	42.1	37.2	51.0	45.0	40.0	30.0
Canada	30.7	35.0	31.1	28.1	25.7	27.5	29.4	30.4	31.4
Russia	22.1	28.9	30.6	32.1	40.3	27.0	28.0	28.0	28.0
Kazakhstan	1.6	0.8	0.8	0.8	0.4	0.4	0.4	0.3	0.3
Indonesia	7.5	5.7	2.3	3.2	1.5	4.0	5.0	6.0	6.0
China	1.4	1.1	0.8	1.0	1.2	1.0	1.0	1.0	1.0
South Africa	1.9	1.8	2.0	1.3	2.1	2.0	2.0	2.0	2.0
Colombia	2.0	1.4	0.7	0.8	0.8	1.1	1.3	1.6	2.1
Poland	1.6	2.3	2.1	2.2	2.2	2.1	2.1	2.1	2.1
Mozambique	2.7	3.4	3.4	3.8	4.8	6.0	8.3	10.9	10.9
Mongolia	13.3	10.8	10.4	8.9	16.5	17.4	18.4	19.4	20.4
Others	8.0	6.7	6.6	4.1	3.9	3.9	5.1	4.9	5.1
Total Exports	**299.1**	**312.9**	**326.1**	**316.1**	**324.6**	**333.4**	**337.0**	**336.6**	**333.3**

Source: J.P. Morgan estimates, Bloomberg, Woodmac, EIA, USITC and Eurostat.

Table 28: J.P. Morgan seaborne met coal demand forecasts

Demand	2012	2013	2014	2015	2016	2017F	2018F	2019F	2020F
Japan	60.5	62.3	58.6	56.8	59.5	57.0	57.0	57.0	57.0
USA	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
China	53.6	75.4	62.4	48.0	60.1	70.0	66.5	66.5	66.5
India	34.6	36.1	37.5	46.3	48.0	50.0	53.0	56.0	59.9
Europe	57.1	50.9	56.8	46.5	45.0	42.0	44.0	45.0	45.0
South Korea	31.8	31.0	35.3	38.5	37.6	38.4	39.1	39.9	40.7
Brazil	15.8	14.8	15.3	16.8	16.0	16.3	16.6	17.0	17.3
Russia	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Turkey	5.4	6.2	6.6	6.7	6.5	6.8	7.0	7.3	7.6
Taiwan	8.2	8.9	9.1	9.3	9.7	9.9	10.1	10.3	10.5
Ukraine	11.7	11.3	11.0	11.5	12.7	11.7	11.2	11.1	11.6
Others	19.4	14.8	31.2	33.6	27.3	29.4	30.3	24.6	15.2
Total Imports	**299.1**	**312.7**	**325.8**	**316.0**	**324.4**	**333.5**	**336.8**	**336.7**	**333.3**

Source: J.P. Morgan estimates, Bloomberg, Woodmac, EIA, USITC and Eurostat.

Base & precious metals

Copper: We now expect global growth to be maintained at current pace through the 1H18, softening slightly into the second half of the year. As such, our previous assumption of roll over in global demand growth will likely not realize until at least 2019. We raise our average 2018 copper price forecast to $6,150/t with the increase almost entirely driven by these improved demand dynamics. Though as a risk, if global demand underwhelms, strong growth in mine supply next year should be sufficient to pull prices significantly lower towards the marginal cost of production, which is currently pegged at $5,140/t.

Table 29: J.P. Morgan copper supply and demand balance

'000 t

	2010	2011	2012	2013	2014	2015	2016	2017F	2018F	2019F	2020F
Mine Production	**16,097**	**16,252**	**16,744**	**18,222**	**18,651**	**19,233**	**20,191**	**19,735**	**20,612**	**20,992**	**21,563**
growth	26.7%	1.0%	3.0%	8.8%	2.4%	3.1%	5.0%	-2.3%	4.4%	1.8%	2.7%
Refined Production	**18,947**	**19,316**	**19,617**	**20,675**	**21,818**	**22,167**	**22,751**	**22,899**	**23,561**	**23,921**	**24,470**
growth	4.8%	2.0%	1.6%	5.4%	5.5%	1.6%	2.6%	0.7%	2.9%	1.5%	2.3%
Refined Use	**18,865**	**19,386**	**19,552**	**20,750**	**21,492**	**21,755**	**22,262**	**22,761**	**23,427**	**23,943**	**24,384**
growth	10.2%	2.8%	0.9%	6.1%	3.6%	1.2%	2.3%	2.2%	2.9%	2.2%	1.8%
Balance	**81**	**-70**	**65**	**-75**	**325**	**412**	**489**	**139**	**133**	**-21**	**86**
Global balance adjusted for gov't purchases	**131**	**-70**	**65**	**-325**	**-35**	**37**	**289**	**139**	**133**	**-21**	**86**

Source: Company Reports, Government and Industry data, USGS, Antaike, CRU, Wood Mackenzie, J.P. Morgan Commodities Research

Aluminium: In 2018, we see aluminium prices continuing to average $2,150/t in 1Q18 and $2,050/t through 2Q18. However, ramp-up in the new Chinese capacity and restarts outside of China will eventually push the global market into a surplus. Consequently, we see aluminium declining in 2H18 to average $1,950/t in 3Q18 and $1,850/t in 4Q18. Current M&A activity in the space is also indicative that $2,150/t is perceived as a peak price. According to unconfirmed reports Rio is in advanced talks to sell its Pacific Aluminium business to GFG Alliance while York Capital has reportedly completed the acquisition of the bankrupt Klesch Aluminium, operator of the Delfzijl (Adel) smelter in the Netherlands.

Table 30: J.P. Morgan aluminium supply and demand balance

'000 t

	2010	2011	2012	2013	2014	2015	2016	2017F	2018F	2019F	2020F
Refined Production	**42,037**	**46,047**	**47,954**	**50,640**	**54,212**	**57,055**	**58,969**	**63,113**	**66,080**	**69,508**	**71,524**
growth	11.4%	9.5%	4.1%	5.6%	7.1%	5.2%	3.4%	7.0%	4.7%	5.2%	2.9%
Refined Use	**41,039**	**44,974**	**47,520**	**50,784**	**54,548**	**56,510**	**59,915**	**63,238**	**66,434**	**69,097**	**71,175**
growth	19.5%	9.6%	5.7%	6.9%	7.4%	3.6%	6.0%	5.5%	5.1%	4.0%	3.0%
Balance	**998**	**1,073**	**434**	**-144**	**-337**	**545**	**-946**	**-125**	**-353**	**411**	**349**

Source: Company Reports, Government and Industry data, IAI, USGS, Exchanges, CRU, Wood Mackenzie, J.P. Morgan Commodities Research.

Zinc: Given that we believe both the concentrate and refined market now remain tight through the first half of next year, we see zinc prices continuing to largely range between $3,000/t and $3,300/t on a spot basis, averaging $3,250/t in 1Q18 and $3,100/t in 2Q18. In essence these new forecasts call for a continuation of the status quo for the next six months, meaning that amidst a macro environment that remains broadly supportive for base metals, the zinc concentrate market continues to remain constrained in the near term as new RoW projects and increases in Chinese mine supply are just beginning to ramp up. Looking into the second half of 2018, we see prices finally easing below the range maintained throughout the first half of the year to average $2,900/t and $2,800/t in 3Q18 and 4Q18, respectively.

Table 31: J.P. Morgan zinc supply and demand balance

'000 t

	2010	2011	2012	2013	2014	2015	2016	2017F	2018F	2019F	2020F
Mine Production	**12,107**	**12,547**	**12,708**	**12,824**	**12,959**	**13,161**	**12,376**	**13,069**	**13,674**	**14,439**	**14,986**
growth	7.3%	3.6%	1.3%	0.9%	1.1%	1.6%	-6.0%	5.6%	4.6%	5.6%	3.8%
Refined Production	**12,715**	**12,968**	**12,456**	**12,938**	**13,224**	**13,714**	**13,585**	**13,579**	**14,226**	**14,787**	**15,144**
growth	13.8%	2.0%	-3.9%	3.9%	2.2%	3.7%	-0.9%	0.0%	4.8%	3.9%	2.4%
Refined Use	**12,253**	**12,827**	**12,860**	**13,076**	**13,498**	**13,443**	**13,783**	**14,124**	**14,427**	**14,730**	**15,038**
growth	15.3%	4.7%	0.3%	1.7%	3.2%	-0.4%	2.5%	2.5%	2.1%	2.1%	2.1%
Balance	**462**	**141**	**-404**	**-139**	**-274**	**271**	**-198**	**-545**	**-201**	**57**	**105**

Source: Company Reports, Government and Industry data, ILZSG, USGS, Exchanges, CRU, Wood Mackenzie, J.P. Morgan Commodities Research.

Nickel: Overall, after two consecutive years of deficits we see nickel market moving back into surplus in 2018. We expect nickel prices to trade in the range of $10,000-12,000/t next year. At $10,000/t the lower bound of the range is about $1,000/t higher than our previous assumption of $9,000/t. For 2017, with Indonesian exports largely out of the market, our view has been that nickel prices had to be maintained above $9,000/t for Filipino exports to China to be economic. Now that Indonesia is exporting once again, its exports require higher prices to be profitable and we peg that level at between $10,000-12,000/t.

Table 32: J.P. Morgan nickel supply and demand balance

'000 t

	2010	2011	2012	2013	2014	2015	2016	2017F	2018F	2019F	2020F
Refined Production	**1,449**	**1,603**	**1,775**	**1,961**	**1,990**	**1,992**	**2,001**	**2,051**	**2,240**	**2,278**	**2,296**
growth	9.7%	10.7%	10.7%	10.5%	1.5%	0.1%	0.5%	2.5%	9.2%	1.7%	0.8%
Refined Use	**1,480**	**1,621**	**1,673**	**1,784**	**1,854**	**1,887**	**2,019**	**2,087**	**2,193**	**2,238**	**2,283**
growth	19.3%	9.5%	3.2%	6.6%	3.9%	1.8%	7.0%	3.4%	5.1%	2.1%	2.0%
Balance	**-31**	**-17**	**101**	**177**	**137**	**104**	**-18**	**-36**	**47**	**40**	**12**

Source: Company Reports, Government and Industry data, ISSF, USGS, Exchanges, CRU, Wood Mackenzie, J.P. Morgan Commodities Research.

Gold & Silver: The 2018 price forecast remains at $1,295/oz. Given solid economic growth, a possible bottoming out in inflation & the potential Fed repricing in 1H18 US real rates should rise in 1Q & 2Q, thus pushing gold prices lower. Gold should stabilise mid-year & move higher into 2H on the assumption that given the ageing US cycle, the economy might become increasingly vulnerable to further rate hikes ultimately pressuring real rates lower as the Fed become more dovish. We believe this could become the market's primary focus in 2H, when we see gold prices averaging $1,340/oz. Silver forecasts remain similarly unchanged, with an average ice of 17.85/oz for 2018. We forecast that silver will trade slightly lower in 1Q18 to average $16.32/oz with the gold-to-silver ratio largely staying within its recent band to average 76:1 over the quarter. While we forecast a slight rebound in 2Q18 to $16.80/oz, things get more interesting for silver in 2H18. As we believe gold rallies on the back of US real yields potentially stagnating in 2H18, we see even greater upside potential in silver given its historical tendency to outperform gold during outsized rallies. As such, we see silver prices averaging $18.73/oz in 3Q18 and $19.57/oz in 4Q18 as the gold-to-silver ratio averages around 70:1 in the second half of next year.

Table 33: J.P. Morgan gold supply and demand balance

'000 000 oz

	2010	2011	2012	2013	2014	2015	2016	2017F	2018F	2019F	2020F
Supply:											
Total Mine Production	**88**	**91**	**93**	**99**	**101**	**104**	**105**	**103**	**102**	**101**	**101**
Percentage growth YoY	5.0%	2.8%	3.0%	5.9%	2.4%	2.4%	1.3%	-1.7%	-1.2%	-0.9%	-0.5%
Official Sector Sales	1	0	0	0	0	0	0	0	0	0	0
Scrap	54	54	54	41	38	36	42	37	38	37	34
Total Supply	**143**	**144**	**148**	**139**	**139**	**140**	**147**	**141**	**140**	**138**	**134**
Demand:											
Jewelry	66	67	69	87	80	77	66	62	79	80	82
Other Fabrication	15	14	12	11	11	11	10	11	11	11	11
Official Sector Purchases	3	16	18	20	19	19	13	12	11	11	10
Bar and Coin Investment	39	48	42	55	34	34	34	32	37	37	38
Other Physical Investment	21	-1	7	-34	-4	-1	24	23	3	-1	-7
Total Demand	**143**	**144**	**148**	**139**	**139**	**140**	**147**	**141**	**140**	**138**	**134**

Source: Company reports, GFMS, WGC, CMX, J.P. Morgan Commodities Research

Table 34: J.P. Morgan silver supply and demand balance

'000 000 oz

	2010	2011	2012	2013	2014	2015	2016	2017F	2018F	2019F	2020F
Supply:											
Total Mine Production	**751**	**760**	**787**	**830**	**877**	**881**	**865**	**863**	**876**	**890**	**904**
Percentage growth YoY	4.8%	1.3%	3.5%	5.5%	5.6%	0.5%	-1.8%	-0.3%	1.5%	1.6%	1.6%
Net Government Sales	30	5	4	2	1	1	1	1	1	1	1
Old Silver Scrap	201	226	210	186	169	157	158	160	161	163	164
Total Supply	**981**	**991**	**1,001**	**1,017**	**1,047**	**1,040**	**1,024**	**1,024**	**1,038**	**1,053**	**1,069**
Demand:											
Industrial Applications	487	499	450	462	460	460	471	480	488	492	495
Jewelry	171	159	156	184	190	199	201	196	203	210	217
Coins and Medals	96	124	99	127	120	137	141	147	148	149	150
Photography	70	62	53	46	44	41	38	36	35	34	32
Silverware	42	40	38	44	50	55	55	54	54	55	55
Total Fabrication	**865**	**883**	**795**	**862**	**864**	**891**	**906**	**913**	**928**	**940**	**949**
Percentage growth YoY	8.8%	2.1%	-10.0%	8.4%	0.2%	3.2%	1.6%	0.8%	1.6%	1.3%	1.0%
Other Physical Investment	116	108	206	156	183	148	119	110	110	114	120
Total Use	**928**	**912**	**914**	**932**	**978**	**975**	**992**	**1,018**	**1,033**	**1,023**	**1,019**

Source: Company reports, GFMS, Silver Institute, Metals Focus, CMX, J.P. Morgan Commodities Research

Palladium & platinum: A supportive macro environment in 1H18 opens further upside in palladium in our opinion, but platinum will likely rally back in 2H18 on the back of constructive precious metals price drivers. In line with unchanged forecasts for gold, we have not made any changes to our platinum price forecasts in 2018 as we continue to believe it will largely trade in sync with gold throughout next year. Similar to gold and silver, 2H18 is where we see the greatest upside for platinum prices given that we believe the climate for precious metals allocations will improve as US real interest rates potentially remain constrained. As such, we see platinum prices increasing qoq by nearly 6% in 3Q18 to average $985/oz before increasing further to average $1,015/oz in the final quarter of 2018. Overall these forecasts imply a 1.35:1 gold-to-platinum ratio averaged throughout 2018, in line with the ratio's average over the last six months. In palladium, our more supportive macro view for industrial metals, particularly in 1H18, has prompted us to boost our 2018 price forecast by 13%. In essence, the previous weakness we had forecast for palladium was predominately based upon a weakening macro environment for industrial metals, particularly in China, and less so on its micro fundamentals which looked (and still look) quite tight. As we now believe that the current supportive macro environment can persist for the next six months at least, this previous headwind has been removed, driving our increase in 1H18 palladium price forecasts which we now see averaging $1,010/oz in 1Q18 and $980/oz in 2Q18. However, as we have discussed above, we believe 2H18 looks less supportive to industrial metals and we see palladium decreasing to average $930/oz in 3Q18 and $925/oz in 4Q18. Overall, we see both metals now averaging close to parity at $960/oz for the whole year, with palladium continuing to trade above platinum in 1H18 but ceding ground in 2H18 as platinum rises into year-end.

Table 35: J.P. Morgan zinc supply and demand balance

'000 t

	2010	2011	2012	2013	2014	2015	2016	2017F	2018F	2019F	2020F
Mine Production	12,372	12,623	12,887	13,078	13,367	13,408	12,686	13,204	14,044	14,418	15,264
growth	7.6%	2.0%	2.1%	1.5%	2.2%	0.3%	-5.4%	4.1%	6.4%	2.7%	5.9%
Refined Production	12,743	13,054	12,553	13,099	13,398	13,737	13,405	13,528	14,173	14,558	14,827
growth	14.0%	2.4%	-3.8%	4.4%	2.3%	2.5%	-2.4%	0.9%	4.8%	2.7%	1.9%
Refined Use	12,253	12,827	12,860	13,076	13,498	13,442	13,672	13,924	14,171	14,494	14,795
growth	15.3%	4.7%	0.3%	1.7%	3.2%	-0.4%	1.7%	1.8%	1.8%	2.3%	2.1%
Balance	**490**	**227**	**-307**	**23**	**-100**	**295**	**-267**	**-396**	**3**	**64**	**32**

Source: Company Reports, Government and Industry data, ILZSG, USGS, Exchanges, CRU, Wood Mackenzie, J.P. Morgan Commodities Research

Energy

Oil: We forecast 2018 oil demand will average 100.1 mbd, an increase of +1.5 mbd as compared to 2017. Finished product demand growth is even stronger, at +1.7 mbd, but this is offset by our assumption that China builds out its Strategic Petroleum Reserve at a slower pace than currently. Asia remains the dominant regional driver of 2018 demand growth, although China matters less next year relative to other parts of the region. Oil markets in 2018 will be balanced on the back of extended OPEC-NOPEC production cuts. Without it, markets will be in surplus. US shale will continue to react to oil prices in 2018 but so will demand if Brent were to stay above $60/bbl or below $50/bbl. US producers are well hedged for 2018 based on our analysis of 42 US E&P companies. We expect Brent to trade at the top of the $40-60/bbl range, with Brent averaging $55/bbl in 2018 whilst WTI is expected to average $51/bbl.

Natural Gas: The lack of increased storage capacity amid growing baseload demand in the US is a recipe for increased price volatility and seasonality. These are driving forces in assumptions for price formation for not only 2018, but also for the newly initiated 2019 price outlook. The J.P. Morgan Equities' base case 2018 price forecast remains unchanged at $3.00/MMBtu, stepping down modestly to $2.80/MMBtu in 2019. The long-term price remains unchanged at $3.00/MMBtu.

Table 36: J.P. Morgan global oil supply / demand balance

	2016				2017				2018				2016	2017	2018
	1Q	2Q	3Q	4Q	1Q	2Q	3QE	4QF	1QF	2QF	3QF	4QF			
Total Product Demand	96.1	96.4	97.6	97.5	96.9	98.8	98.8	100	98.4	99.7	100.6	101.6	96.9	98.6	100.1
OECD	46.7	46	47.3	47.4	46.9	46.9	47.5	48.1	47.3	47.3	48.1	48.5	46.9	47.4	47.8
Non-OECD	48.6	49.5	49.3	49.6	49.1	50.7	50.8	51.4	50.6	51.9	52	52.6	49.2	50.5	51.7
Other Demand	0.8	0.9	1	0.4	0.9	1.2	0.5	0.5	0.5	0.5	0.5	0.5	0.8	0.8	0.5
Total Oil Supply	96.3	96.1	96.6	98.1	96.7	96.9	97.9	98.8	98.6	99	99.8	100.6	96.8	97.6	99.5
OPEC Crude	32.2	32.4	33	33.5	32.2	32.4	32.8	32.8	32.7	32.8	32.9	32.8	32.8	32.5	32.8
OPEC Other Liquids	6.8	6.8	6.8	6.9	6.9	7.1	7.1	7.2	7.2	7.2	7.2	7.2	6.8	7.1	7.2
Non-OPEC Crude + Other	55	54.6	54.5	55.5	55.3	55.2	55.7	56.6	56.4	56.6	57.4	58.2	54.9	55.7	57.2
Processing Gain	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Other Supply															
Stock Change To Balance	0.2	-0.3	-1.0	0.7	-0.2	-1.9	-0.9	-1.2	+0.3	-0.8	-0.7	-1.0	-0.1	-1.1	-0.6
Observed Chg. In Stocks*	+0.4	+0.4	+0.1	-0.9	+0.5	-0.3							+0.0	+0.1	…
Call on OPEC Crude	32.0	32.7	33.9	32.8	32.5	34.2	33.7	33.9	32.5	33.6	33.6	33.8	32.9	33.6	33.4

Source: J.P. Morgan Commodities Research. E: Estimate. *Observed stock change in OECD only.

Macroeconomic outlook

We summarise below J.P Morgan global economic research 2018 outlook. Detailed analysis detail can be found in the following reports:

- ***Global outlook 2018: The return of the business cycle***
- ***JPM China View: Slower growth but better quality***

Global Economy

- The "long, dark shadow" cast by GFC aftershocks has receded & a traditional global business cycle is taking hold. A positive feedback loop linking growth to supportive financial conditions & rising sentiment provide fuel for a second year of synchronised above-trend global growth in 2018. Alongside strong growth, we expect inflation will rise and central bank rate normalization will gather steam.
- Demand is rotating toward business as 2017's profit bounce is delivering a long-awaited pickup in global capex. Our proxy points to momentum building and our models concur. We forecast a strong 6% gain (ex. China) in 2018.
- The expansion faces two near-term headwinds. First, the 30% energy price spike since mid-'17 should cool consumer spending gains. Second, China's policy-induced tightening is now biting as growth slows toward 6% in Q4'17. We expect global growth to moderate from its recent pace but remain well above-potential.
- Global CPI inflation should rise toward 2.5%. A rebound in food & energy prices is already pushing inflation higher. We also expect tight DM labour markets & a recovery in global goods pricing power to lift DM core inflation 0.4% next year.
- The DM economy is operating at full employment and solid growth should push unemployment rates lower. We expect the US unemployment rate to fall below 4% and the Euro area rate to slide to 8% next year. A forecast 5.4% DM rate would be the lowest since 1980.
- Experience suggests that positive feedback loops can be sustained but generally end with rising interest rates tightening financial conditions. The US will be the prime catalyst for higher interest rates next year as fiscal policy eases, the Fed tightens 125bp (between now and the end of 2018), and the Fed balance sheet falls by $400 billion.
- The rise in global long-term yields should be limited by a $700 billion increase in other G4 central bank balance sheets and the absence of rate hikes outside the US. We forecast 4bp of net rate hikes outside the US as the ECB and PBOC stay on hold and as other large EM CBs ease.
- While recognizing a turbulent global political backdrop, we do not anticipate elections or policy change will alter the contours of the global business cycle.
- Global productivity & labour force gains have picked up, but weak supply-side performance remains the largest threat to the life of the expansion. A case for a more substantial improvement can be made as capital spending continues to firm and as tight labour markets encourage workers to reenter the work force. Our enthusiasm on this front is tempered as an ageing workforce damps labour supply & tight labour markets deliver less productivity from incremental employment gains.

China

Policy-induced slowdown: Our forecasts look for modest growth slowdown from 6.8% in 2017 to 6.5% in 2018. Recent activity data started to show signs of growth moderation after strong performance in 1H17. 3Q GDP growth came in at 6.8%oya (vs. 6.9%oya in 2Q), or in q/q saar terms at 6.6% (vs. 7.0% in 2Q). October activity, including industrial production, PMI, trade activity, continued to point at near-term softness that is in line with our forecast of 6.2%q/q saar in 4Q17. Despite the weaker activity in the current quarter, we continue to take a constructive view on the economic slowdown. The slowdown is mainly due to the policy efforts to reduce overcapacity, contain leverage and reduce housing inventory, as well as stricter implementation of environmental protection standards, which will add to the resilience of the China economy in the long run.

Supply side reform: At the beginning of 2016, the Chinese government announced it planned to Steel production capacity reduce steel and coal capacity by 100-150 million ton and 1 billion ton, respectively in the next 3-5 years (the targets were revised to 140 million ton and 800 million ton at the beginning of 2017), vs. the total capacity of 1.2 billion and 5.7 billion ton (and actual output of 804 million and 3.7 billion ton), respectively in 2015. The central government also established a 100 billion yuan special fund to provide re-employment assistance resulting from the capacity reduction effort. In the 13th Five-Year-Plan released in March 2016, the government announced binding policy targets to improve air quality, reduce pollution emission (by 10-15%) and lower energy consumption per unit of GDP (by 15%) in 2016-2020.

Deleveraging and de-risking: The 19th Party Congress and the first meeting of the newly established State Council Financial Stability & Development Committee sent a clear signal that deleveraging will be a continuous theme to maintain financial stability in the coming years. China has made encouraging progress in the challenging task of deleveraging. Financial risk has come down since 2016.

Housing market: The housing market boom in 2016 and its resilient performance in 2017 despite the reintroduction of housing tightening policies in a number of cities since late 2016 are important contributors to the solid economic performance in 2017. We expect the housing market will gradually cool off in 2018. Housing transactions have slowed down in recent months and declined in yoy terms in September and October, similar for new home starts. Reduction in financial subsidy for affordable housing is a near-term risk.

2018 outlook: Investment growth (in real terms) will be relatively stable. In the breakdown, infrastructure investment tends to modestly softer (14% nominal growth vs. 17% in 2017), real estate investment growth will slow down to ~4% (vs. 7% in 2017), and manufacturing investment growth may bottom up marginally after weak capex in 2017. Our forecasts expect nominal GDP growth will slow down to around 9.5% in 2018, compared to 11% in 2017. The underlying driver is the narrowing gap between CPI and PPI dynamics. CPI continued to stay low in 2017, largely due to food price cycles which has bottomed out in recent months, hence we expect average CPI will move up from 1.6% in 2017 to 2.5% in 2018.

J.P. Morgan global economics forecasts

Table 37: J.P. Morgan global economic outlook

	Real GDP % over a year ago			Real GDP % over previous period, saar						Consumer prices % over a year ago			
	2017	2018	2019	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	2Q17	4Q17	2Q18	4Q18
United States	2.3	2.3	1.7	3.3	2.5	2.0	2.0	1.8	1.8	1.9	2.2	2.6	2.3
Canada	3.0	2.1	1.7	1.8	2.1	2.0	2.0	1.8	1.8	1.3	1.6	1.9	2.0
Latin America	1.7	2.8	2.8	1.6	2.6	2.2	2.5	2.9	2.9	4.3	3.8	3.1	3.6
Argentina	2.9	3.3	3.5	5.3	4.0	2.0	2.5	4.0	4.0	24.3	22.6	18.7	15.4
Brazil	0.9	2.8	2.5	1.1	1.4	1.8	2.4	3.0	2.9	3.6	2.8	3.1	4.0
Chile	1.5	2.9	3.0	6.0	1.4	3.0	2.5	2.8	3.2	2.3	1.9	2.1	2.8
Colombia	1.7	3.0	3.3	3.2	4.0	3.0	3.0	2.0	2.5	4.3	4.0	3.4	3.9
Ecuador	2.4	1.0	1.4	-2.0	2.0	0.0	1.0	1.5	2.0	0.8	0.1	0.2	1.4
Mexico	2.1	2.2	2.8	-1.2	3.2	2.2	2.4	2.5	2.2	6.1	6.2	3.4	3.2
Peru	2.6	4.4	4.1	4.0	6.0	4.2	4.0	3.0	4.5	3.2	2.0	2.2	2.8
Uruguay	3.2	3.3	3.9	2.5	6.0	3.3	3.0	3.5	4.0	5.8	6.0	6.5	6.8
Venezuela	-10.0	-5.0	…	0.0	-3.0	-2.0	0.0	1.0	2.0	645	1117	1807	1414
Asia/Pacific	4.9	4.8	4.7	5.2	4.6	4.9	4.7	4.6	4.7	1.4	1.8	2.3	2.3
Japan	1.6	1.4	1.2	1.4	1.8	1.3	1.3	1.0	1.0	0.4	0.9	0.8	0.9
Australia	2.3	2.8	2.6	3.2	2.5	3.0	3.0	2.4	2.0	1.9	2.1	1.8	2.0
New Zealand	2.6	2.7	2.3	3.4	2.2	2.2	2.7	3.7	2.2	1.7	1.7	1.4	1.8
EM Asia	6.1	5.9	5.8	6.5	5.6	6.0	5.8	5.7	5.9	1.7	2.1	2.7	2.7
China	6.8	6.5	6.4	6.6	6.2	6.6	6.3	6.3	6.6	1.4	1.6	2.4	2.5
India	6.7	7.1	7.3	7.5	7.8	7.2	6.8	7.0	7.2	2.2	4.4	5.4	4.7
Ex China/India	4.0	3.9	3.7	5.7	3.0	4.0	4.0	3.6	3.6	2.2	2.1	2.2	2.3
Hong Kong	3.7	3.0	2.7	2.0	2.5	3.2	3.2	3.0	3.0	2.0	2.5	2.5	2.5
Indonesia	5.0	5.1	5.2	5.8	4.9	5.5	5.4	5.0	5.0	4.3	3.5	2.4	2.4
Korea	3.2	2.9	2.7	5.8	1.6	2.8	3.0	2.8	2.4	1.9	1.8	2.3	2.4
Malaysia	5.8	5.3	5.2	7.3	2.0	6.0	5.5	5.5	5.4	4.0	4.2	3.4	2.7
Philippines	6.6	6.7	6.9	5.2	7.5	5.8	7.0	7.0	7.9	3.1	3.3	3.3	3.4
Singapore	3.3	3.4	2.5	8.8	2.4	3.6	2.6	1.8	1.8	0.8	0.6	1.0	1.6
Taiwan	2.8	2.6	2.2	6.8	2.0	2.3	2.5	2.0	1.8	0.6	0.0	1.3	1.8
Thailand	4.0	4.1	3.5	4.0	3.2	4.9	4.1	3.6	3.6	0.1	0.9	1.9	1.7
Western Europe	2.2	2.1	1.8	2.4	2.3	1.9	2.0	1.8	1.8	1.7	1.7	1.5	1.5
Euro area	2.3	2.1	1.8	2.5	2.5	2.0	2.0	1.8	1.8	1.4	1.4	1.2	1.2
Germany	2.6	2.2	1.8	3.3	2.5	2.0	2.0	1.8	1.8	1.6	1.4	1.7	1.6
France	1.8	1.9	1.8	2.2	2.0	1.8	1.8	1.8	1.8	0.9	1.2	1.4	1.3
Italy	1.6	1.5	1.5	1.9	1.8	1.3	1.5	1.5	1.5	1.6	1.1	0.6	1.0
Spain	3.1	2.5	2.3	3.1	2.4	2.0	2.5	2.5	2.5	2.1	1.5	1.6	1.4
Norway	1.8	2.1	2.1	2.3	2.2	2.0	2.0	2.0	2.0	2.1	1.3	1.5	1.5
Sweden	2.7	3.0	2.3	3.1	3.5	2.8	2.8	2.5	2.5	1.8	1.8	1.8	2.2
United Kingdom	1.5	1.6	1.7	1.6	1.3	1.5	1.8	2.0	2.0	2.8	3.0	2.7	2.4
EMEA EM	3.4	2.6	2.8	2.2	1.6	2.3	3.0	3.2	3.2	4.9	4.6	4.3	4.6
Czech Republic	4.5	3.4	3.0	2.0	3.0	3.5	3.3	3.0	3.0	2.2	2.6	2.7	2.3
Hungary	3.8	3.6	3.3	3.2	4.0	3.5	3.5	3.5	3.5	2.1	2.2	2.6	2.3
Israel	3.2	3.3	3.4	4.1	4.1	2.8	3.2	3.9	4.1	0.4	0.1	0.2	1.3
Poland	4.2	3.7	3.4	4.9	4.0	3.5	3.5	3.5	3.5	1.8	2.0	2.3	2.0
Romania	7.1	4.6	2.9	10.8	3.2	4.5	2.4	3.6	2.8	0.7	3.0	4.8	3.8
Russia	1.7	1.7	1.5	-0.2	2.0	1.5	2.0	1.8	1.5	4.1	2.8	3.2	4.2
South Africa	0.6	1.0	1.5	2.0	0.0	0.9	0.9	0.9	1.2	5.3	4.8	5.0	5.7
Turkey	5.3	3.1	4.5	1.6	-1.6	2.0	4.9	5.8	6.1	11.5	11.5	8.7	8.6
Global	3.2	3.2	2.9	3.6	3.2	3.0	3.0	2.9	3.0	2.0	2.1	2.4	2.3
Developed markets	2.2	2.1	1.7	2.7	2.3	1.9	1.9	1.7	1.7	1.6	1.8	2.0	1.8
Emerging markets	5.0	4.9	4.9	5.0	4.5	4.8	4.8	4.9	5.0	2.5	2.7	3.0	3.1
Global — PPP weighted	3.8	3.8	3.6	4.0	3.8	3.6	3.6	3.5	3.5	2.2	2.4	2.7	2.6

Source: J.P. Morgan estimates. Note: For some emerging economies seasonally adjusted GDP data are estimated by J.P. Morgan. Bold denotes changes from last edition of Global Data Watch, with arrows showing the direction of changes. Underline indicates beginning of J.P. Morgan forecasts. Unless noted, concurrent nominal GDP weights calculated with current FX rates are used in computing our global and regional aggregates. Regional CPI aggregates exclude Argentina, Ecuador and Venezuela. Regional GDP aggregates exclude Venezuela. Forecasts for Argentina are based on JPMorgan's estimates of CPI.

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COMPANY PROFILES

Anglo American

Overweight

Company Data	
Price (p)	1,390
Date Of Price	13 Dec 17
Price Target (p)	1,620
Price Target End Date	31-Dec-18
52-week Range (p)	1,535-950
Market Cap (£ bn)	17.84
Shares O/S (mn)	1,284

Anglo American (AAL.L;AAL LN)

FYE Dec	2015A	2016A	2017E *(Prev)*	2017E *(Curr)*	2018E *(Prev)*	2018E *(Curr)*
Adj. EPS FY ($)	0.64	1.72	2.23	2.35	1.71	1.96
Bloomberg EPS FY ($)	0.63	1.40	-	2.45	-	2.07
EBITDA FY ($ mn)	4,854	6,075	8,431	8,774	7,292	8,000
EBITDA Margin FY	21.1%	26.3%	31.3%	32.0%	27.3%	29.2%
Adjusted P/E FY	28.9	11.0	8.4	7.9	10.9	9.5
EV/EBITDA (x) FY	7.7	5.6	3.7	3.7	4.1	4.0
Dividend Yield FY	1.7%	0.0%	4.9%	5.1%	3.7%	4.3%
Net Debt/EBITDA FY	228.1%	117.2%	66.3%	60.8%	61.3%	49.1%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Anglo American *(Overweight; Price Target: 1,620p)*

Investment Thesis

We retain our Overweight recommendation on AAL. While we remain cautious on commodity prices and the South African operating environment, we believe valuation is now compelling, while balance sheet risk has been diminished by asset sales and stronger-than-expected commodity prices in 2016.

Valuation

Our Dec-18 price target is set as an average of NPV valuation of 0.9x P/NPV (discount reflects operational and remaining balance sheet risk) and a multiple of 5.5x 2019E EBITDA. Our NPV is based on a sum-of-the-parts DCF valuation using a 10.9% discount rate, rounded to the nearest 10p. The 10.9% discount rate does not differ significantly from the peer group.

Risks to Rating and Price Target

Key downside risks relate to:

- Potential for commodity prices to surprise on the downside;
- Potential for adverse changes to legal, and tax environment and a deterioration in South Africa’s risk environment; and
- Potential for the disposal programme to disappoint.

Anglo American: Summary of Financials

Profit and Loss Statement

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
Revenues	23,142	27,411	27,353	27,403
% change Y/Y	0.6%	18.4%	(0.2%)	0.2%
Gross Margin (%)	-	-	-	-
EBITDA	6,075	8,774	8,000	7,596
% change Y/Y	25.2%	44.4%	(8.8%)	(5.1%)
EBITDA Margin (%)	26.3%	32.0%	29.2%	27.7%
EBIT	3,766	6,325	5,562	5,074
% change Y/Y	69.4%	67.9%	(12.1%)	(8.8%)
EBIT Margin (%)	16.3%	23.1%	20.3%	18.5%
Net Interest	(523)	(476)	(352)	(302)
Earnings before tax	2,624	5,456	4,972	4,573
% change Y/Y	(148.1%)	107.9%	(8.9%)	(8.0%)
Tax	(698)	(1,617)	(1,492)	(1,372)
as % of EBT	26.6%	29.6%	30.0%	30.0%
Net Income (Reported)	1,594	2,917	2,539	2,320
% change Y/Y	(128.3%)	83.0%	(13.0%)	(8.6%)
Shares Outstanding	1,284	1,293	1,293	1,293
Adj. EPS	1.72	2.35	1.96	1.79
% change Y/Y	168.3%	36.5%	(16.4%)	(8.6%)

Cash flow statement

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
EBIT	3,766	6,325	5,562	5,074
Depreciation & amortization	2,309	2,449	2,439	2,523
Change in working capital	339	(723)	132	(53)
Taxes	(611)	(1,149)	(1,788)	(1,457)
Cash flow from operations	4,729	6,048	5,731	5,535
Capex	(2,440)	(2,235)	(2,574)	(2,435)
Disposals/(purchase)	1,714	1	0	0
Net Interest	(670)	(495)	(387)	(334)
Free cash flow	2,673	4,149	3,404	3,312
Equity raised/repaid	(109)	0	0	0
Debt Raised/repaid	(4,519)	(2,381)	(922)	(1,175)
Other	(405)	199	(600)	(628)
Dividends paid	0	(621)	(1,151)	(944)
Beginning cash	6,889	6,044	7,064	7,549
Ending cash	6,044	7,064	7,549	7,902
DPS	0.00	0.94	0.79	0.71

Balance sheet

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	6,051	7,067	7,552	7,905
Accounts Receivable	2,232	2,544	2,449	2,481
Inventories	3,727	4,396	4,457	4,574
Others	109	85	85	85
Current assets	12,449	14,189	14,640	15,142
Net fixed assets	28,719	29,506	29,641	29,553
Other non-current assets	8,981	8,742	8,925	8,923
Total assets	50,149	52,437	53,206	53,618
ST loans	1,806	1,879	1,879	1,879
Payables	3,384	3,629	3,728	3,823
Others	1,335	1,412	1,412	1,412
Total current liabilities	6,525	6,920	7,019	7,114
Long term debt	11,363	10,522	9,600	8,425
Other liabilities	7,936	7,413	7,310	7,205
Total liabilities	25,824	24,855	23,929	22,744
Shareholders' equity	24,325	27,582	29,277	30,874
BVPS	14.81	16.90	17.94	18.98

Ratio Analysis

	FY16	FY17E	FY18E	FY19E
EBITDA margin	26.3%	32.0%	29.2%	27.7%
EBIT margin	16.3%	23.1%	20.3%	18.5%
Net Profit margin	9.5%	11.1%	9.3%	8.5%
SG&A/Sales	-	-	-	-
Sales per share growth	1.0%	17.6%	(0.2%)	0.2%
Sales growth	0.6%	18.4%	(0.2%)	0.2%
Net profit growth	(128.3%)	83.0%	(13.0%)	(8.6%)
Adj. EPS growth	168.3%	36.5%	(16.4%)	(8.6%)
Interest coverage (x)	11.6	18.4	22.7	25.2
Dividend Yield	0.0%	5.1%	4.3%	3.8%
Net debt to Total Capital	22.6%	16.2%	11.8%	7.2%
Net debt to equity	29.3%	19.3%	13.4%	7.8%
Sales/assets (x)	0.5	0.5	0.5	0.5
Assets/Equity	2.9	2.5	2.3	2.2
EV/EBITDA	5.6	3.7	4.0	4.0
P/E	10.8	7.9	9.4	10.3
P/BV	1.2	1.1	1.0	1.0
ROE	12.4%	14.9%	11.3%	9.7%
ROCE	8.3%	13.4%	11.3%	10.2%

Source: Company reports and J.P. Morgan estimates.

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Anglo American (AGLJ.J)

Overweight

Company Data	
Price (c)	25,041
Date Of Price	13 Dec 17
Price Target (c)	31,800
Price Target End Date	31-Dec-18
52-week Range (c)	28,586- 15,684
Market Cap (R bn)	321.52
Shares O/S (mn)	1,284

Anglo American (AGLJ.J) (AGLJ.J;AGL SJ)

FYE Dec	2015A	2016A	2017E *(Prev)*	2017E *(Curr)*	2018E *(Prev)*	2018E *(Curr)*
Adj. EPS FY ($)	0.64	1.72	2.23	2.35	1.71	1.96
Bloomberg EPS FY ($)	-	-	-	-	-	-
EBITDA FY ($ mn)	4,854	6,075	8,431	8,774	7,292	8,000
EBITDA Margin FY	21.1%	26.3%	31.3%	32.0%	27.3%	29.2%
Adjusted P/E FY	28.6	10.9	8.3	7.8	10.8	9.4
EV/EBITDA (x) FY	7.7	5.6	3.6	3.7	4.1	4.0
FCFF Yield FY	(4.9%)	11.1%	16.3%	17.4%	12.0%	14.3%
Dividend Yield FY	1.7%	0.0%	4.9%	5.1%	3.7%	4.3%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Anglo American (AGLJ.J) *(Overweight; Price Target: 31,800c)*

Investment Thesis

We maintain our Overweight recommendation on AAL. While we remain cautious on commodity prices and the South African operating environment, we believe valuation is now compelling, while balance sheet risk has been diminished by asset sales and stronger than expected commodity prices in 2016.

Valuation

Our Dec-18 price target is set as an average of NPV valuation of 0.9x P/NPV (discount reflects operational and remaining balance sheet risk) and a multiple of 5.5x 2019E EBITDA. Our NPV is based on a sum-of-the-parts DCF valuation using a 10.9% discount rate, rounded to the nearest ZARc50. The 10.9% discount rate does not differ significantly from the peer group.

Risks to Rating and Price Target

Key risks relate to:

- More favourable outcomes in commodities, currencies, production, unit costs and capex relative to our forecasts;
- Changes to tax, legislation and other operating conditions;
- Improvement in South African risks; and
- Fundamental change in group strategy that credibly addresses capital constraints.

Anglo American (AGLJ.J): Summary of Financials

Profit and Loss Statement

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
Revenues	23,142	27,411	27,353	27,403
% change Y/Y	0.6%	18.4%	(0.2%)	0.2%
Gross Margin (%)	-	-	-	-
EBITDA	6,075	8,774	8,000	7,596
% change Y/Y	25.2%	44.4%	(8.8%)	(5.1%)
EBITDA Margin (%)	26.3%	32.0%	29.2%	27.7%
EBIT	3,766	6,325	5,562	5,074
% change Y/Y	69.4%	67.9%	(12.1%)	(8.8%)
EBIT Margin (%)	16.3%	23.1%	20.3%	18.5%
Net Interest	(523)	(476)	(352)	(302)
Earnings before tax	2,624	5,456	4,972	4,573
% change Y/Y	(148.1%)	107.9%	(8.9%)	(8.0%)
Tax	(698)	(1,617)	(1,492)	(1,372)
as % of EBT	26.6%	29.6%	30.0%	30.0%
Net Income (Reported)	1,594	2,917	2,539	2,320
% change Y/Y	(128.3%)	83.0%	(13.0%)	(8.6%)
Shares Outstanding	1,284	1,293	1,293	1,293
Adj. EPS	1.72	2.35	1.96	1.79
% change Y/Y	168.3%	36.5%	(16.4%)	(8.6%)

Cash flow statement

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
EBIT	3,766	6,325	5,562	5,074
Depreciation & amortization	2,309	2,449	2,439	2,523
Change in working capital	339	(723)	132	(53)
Taxes	(611)	(1,149)	(1,788)	(1,457)
Cash flow from operations	4,729	6,048	5,731	5,535
Capex	(2,440)	(2,235)	(2,574)	(2,435)
Disposals/(purchase)	1,714	1	0	0
Net Interest	(670)	(495)	(387)	(334)
Free cash flow	2,673	4,149	3,404	3,312
Equity raised/repaid	(109)	0	0	0
Debt Raised/repaid	(4,519)	(2,381)	(922)	(1,175)
Other	(405)	199	(600)	(628)
Dividends paid	0	(621)	(1,151)	(944)
Beginning cash	6,889	6,044	7,064	7,549
Ending cash	6,044	7,064	7,549	7,902
DPS	0.00	0.94	0.79	0.71

Balance sheet

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	6,051	7,067	7,552	7,905
Accounts Receivable	2,232	2,544	2,449	2,481
Inventories	3,727	4,396	4,457	4,574
Others	109	85	85	85
Current assets	12,449	14,189	14,640	15,142
Net fixed assets	28,719	29,506	29,641	29,553
Other non-current assets	8,981	8,742	8,925	8,923
Total assets	50,149	52,437	53,206	53,618
ST loans	1,806	1,879	1,879	1,879
Payables	3,384	3,629	3,728	3,823
Others	1,335	1,412	1,412	1,412
Total current liabilities	6,525	6,920	7,019	7,114
Long term debt	11,363	10,522	9,600	8,425
Other liabilities	7,936	7,413	7,310	7,205
Total liabilities	25,824	24,855	23,929	22,744
Shareholders' equity	24,325	27,582	29,277	30,874
BVPS	18.95	21.33	22.64	23.88

Ratio Analysis

	FY16	FY17E	FY18E	FY19E
EBITDA margin	26.3%	32.0%	29.2%	27.7%
EBIT margin	16.3%	23.1%	20.3%	18.5%
Net Profit margin	9.5%	11.1%	9.3%	8.5%
SG&A/Sales	-	-	-	-
Sales per share growth	1.0%	17.6%	(0.2%)	0.2%
Sales growth	0.6%	18.4%	(0.2%)	0.2%
Net profit growth	(128.3%)	83.0%	(13.0%)	(8.6%)
Adj. EPS growth	168.3%	36.5%	(16.4%)	(8.6%)
Interest coverage (x)	11.6	18.4	22.7	25.2
Dividend Yield	0.0%	5.1%	4.3%	3.9%
Net debt to Total Capital	22.6%	16.2%	11.8%	7.2%
Net debt to equity	29.3%	19.3%	13.4%	7.8%
Sales/assets (x)	0.5	0.5	0.5	0.5
Assets/Equity	2.9	2.5	2.3	2.2
EV/EBITDA	5.6	3.7	4.0	4.0
P/E	10.6	7.8	9.3	10.2
P/BV	1.0	0.9	0.8	0.8
ROE	12.4%	14.9%	11.3%	9.7%
ROCE	8.3%	13.4%	11.3%	10.2%

Source: Company reports and J.P. Morgan estimates.

BHP Billiton

Neutral

Company Data	
Price (p)	1,384
Date Of Price	13 Dec 17
Price Target (p)	1,400
Price Target End Date	31-Dec-18
52-week Range (p)	1,519-1,103
Market Cap (£ bn)	73.86
Shares O/S (mn)	5,337

BHP Billiton (BLT.L;BLT LN)

FYE Jun	2016A	2017A	2018E	2018E	2019E	2019E
			(Prev)	*(Curr)*	*(Prev)*	*(Curr)*
Adj. EPS FY ($)	0.23	1.26	1.43	1.59	1.28	1.42
EBITDA FY ($ mn)	12,340	20,296	20,897	22,431	20,347	21,479
EBITDA margin FY	40.6%	51.6%	49.9%	52.1%	47.8%	49.5%
Adjusted P/E FY	80.8	14.6	12.9	11.6	14.4	13.0
EV/EBITDA (x) FY	9.9	5.5	5.4	4.8	5.4	4.9
FCFF Yield FY	3.6%	12.7%	9.1%	10.2%	10.2%	10.1%
Dividend Yield FY	1.6%	4.5%	5.4%	6.0%	4.8%	5.4%
ROE FY	1.9%	11.0%	12.1%	13.3%	10.8%	11.7%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

BHP Billiton *(Neutral; Price Target: 1,400p)*

Investment Thesis

We are Neutral on BHP since we believe the valuation is broadly in line with comparable peers. Following a period of poor capital allocation and unclear strategic direction, we believe both are improving. The potential sale of the US Onshore oil & gas operations offer scope to support future capital returns and the growth pipeline, notwithstanding practical challenges to disposal.

Valuation

Our Dec-18 price target is set at 1.00x P/NPV, rounded to the nearest 5p. Our NPV is based on sum-of-the-parts DCF valuation using a 10% discount rate. The discount does not differ significantly from the peer group.

Risks to Rating and Price Target

Key upside risks relate to:

- More favourable outcomes in commodities, currencies, production, unit costs and capex relative to our forecasts;
- Stronger relative performance of petroleum vs. mineral prices;
- Successful disposal of the US Onshore petroleum assets.

Key downside risks relate to:

- Less favourable outcomes in commodities, currencies, production, unit costs and capex relative to our forecasts;
- Weaker relative performance of petroleum vs. mineral prices;
- Failure to dispose of the US Onshore petroleum assets which could put pressure on capital returns and growth elsewhere in the portfolio;
- M&A risk, particularly in Conventional Petroleum.

BHP Billiton: Summary of Financials

Profit and Loss Statement

$ in millions, year end Jun	FY17	FY18E	FY19E	FY20E
Revenues	39,331	43,047	43,376	-
% change Y/Y	29.4%	9.4%	0.8%	-
Gross Margin (%)	-	-	-	-
EBITDA	20,296	22,431	21,479	-
% change Y/Y	64.5%	10.5%	(4.2%)	-
EBITDA Margin (%)	51.6%	52.1%	49.5%	-
EBIT	12,389	14,528	12,827	-
% change Y/Y	257.1%	17.3%	(11.7%)	-
EBIT Margin (%)	31.5%	33.7%	29.6%	-
Net Interest	(1,304)	(713)	(611)	-
Earnings before tax	11,085	13,815	12,216	-
% change Y/Y	353.4%	24.6%	(11.6%)	-
Tax	(3,857)	(4,359)	(3,828)	-
as % of EBT	34.8%	31.6%	31.3%	-
Net Income (Reported)	5,890	8,442	7,377	-
% change Y/Y	(192.2%)	43.3%	(12.6%)	-
Shares Outstanding	5,324	5,324	5,324	-
Adj. EPS	1.26	1.59	1.42	-
% change Y/Y	454.1%	25.4%	(10.6%)	-

Cash flow statement

$ in millions, year end Jun	FY17	FY18E	FY19E	FY20E
EBIT	12,389	14,528	12,827	-
Depreciation & amortization	7,907	7,903	8,652	-
Change in working capital	-	-	-	-
Taxes	(2,084)	(4,774)	(4,060)	-
Cash flow from operations	16,804	16,222	16,494	-
Capex	(5,220)	(6,718)	(6,986)	-
Disposals/(purchase)	447	0	0	-
Net Interest	(985)	(1,165)	(657)	-
Free cash flow	12,434	9,992	9,928	-
Equity raised/repaid	(108)	0	0	-
Debt Raised/repaid	(5,507)	(4,000)	(2,000)	-
Other	(597)	9,377	7,537	-
Dividends paid	(2,921)	(5,377)	(5,537)	-
Beginning cash	10,319	14,153	13,702	-
Ending cash	14,153	13,702	15,152	-
DPS	0.83	1.11	1.00	-

Balance sheet

$ in millions, year end Jun	FY17	FY18E	FY19E	FY20E
Cash and cash equivalents	14,153	13,702	15,152	-
Accounts Receivable	2,836	3,042	3,086	-
Inventories	3,673	3,939	3,997	-
Others	394	394	394	-
Current assets	21,056	21,077	22,629	-
Net fixed assets	80,497	78,222	75,466	-
Other non-current assets	15,453	15,591	15,620	-
Total assets	117,006	114,889	113,716	-
ST loans	1,241	1,241	1,241	-
Payables	5,551	6,129	6,462	-
Others	4,574	4,574	4,574	-
Total current liabilities	11,366	11,944	12,277	-
Long term debt	29,233	25,233	23,233	-
Other liabilities	13,681	13,682	13,682	-
Total liabilities	54,280	50,858	49,192	-
Shareholders' equity	62,726	64,031	64,524	-
BVPS	11.78	12.03	12.12	-

Ratio Analysis

	FY17	FY18E	FY19E	FY20E
EBITDA margin	51.6%	52.1%	49.5%	-
EBIT margin	31.5%	33.7%	29.6%	-
Net Profit margin	17.1%	19.6%	17.4%	-
SG&A/Sales	-	-	-	-
Sales per share growth	29.4%	9.4%	0.8%	-
Sales growth	29.4%	9.4%	0.8%	-
Net profit growth	(192.2%)	43.3%	(12.6%)	-
Adj. EPS growth	454.1%	25.4%	(10.6%)	-
Interest coverage (x)	15.6	31.5	35.1	-
Dividend Yield	4.5%	6.0%	5.4%	-
Net debt to Total Capital	20.6%	16.6%	12.6%	-
Net debt to equity	26.0%	19.9%	14.4%	-
Sales/assets (x)	0.3	0.4	0.4	-
Assets/Equity	1.9	1.8	1.8	1.8
EV/EBITDA	5.5	4.8	4.9	-
P/E	14.6	11.6	13.0	-
P/BV	1.6	1.5	1.5	-
ROE	11.0%	13.3%	11.7%	-
ROCE	8.5%	10.8%	9.8%	-

Source: Company reports and J.P. Morgan estimates.

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BHP Billiton (BILJ.J)

Neutral

Company Data	
Price (c)	24,985
Date Of Price	13 Dec 17
Price Target (c)	25,500
Price Target End Date	31-Dec-18
52-week Range (c)	27,684- 18,500
Market Cap (R bn)	527.70
Shares O/S (mn)	0

BHP Billiton (BILJ.J) (BILJ.J;BIL SJ)

FYE Jun	2016A	2017A	2018E *(Prev)*	2018E *(Curr)*	2019E *(Prev)*	2019E *(Curr)*
Adj. EPS FY ($)	0.23	1.26	1.43	1.59	1.28	1.42
Bloomberg EPS FY ($)	0.21	1.37	-	1.45	-	1.23
EBITDA FY ($ mn)	12,340	20,296	20,897	22,431	20,347	21,479
EBITDA margin FY	40.6%	51.6%	49.9%	52.1%	47.8%	49.5%
Adjusted P/E FY	80.1	14.4	12.8	11.5	14.3	12.9
EV/EBITDA (x) FY	9.9	5.5	5.4	4.8	5.4	4.9
FCFF Yield FY	3.6%	12.8%	9.1%	10.3%	10.3%	10.2%
Dividend Yield FY	1.6%	4.5%	5.5%	6.1%	4.9%	5.5%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

BHP Billiton (BILJ.J) *(Neutral; Price Target: 25,500c)*

Investment Thesis

We are Neutral on BHP since we believe the valuation is broadly in line with comparable peers. Following a period of poor capital allocation and unclear strategic direction, we believe both are improving. The potential sale of the US Onshore oil & gas operations offer scope to support future capital returns and the growth pipeline, notwithstanding practical challenges to disposal.

Valuation

Our Dec-18 price target is set at 1.00x P/NPV, rounded to the nearest 5p. Our NPV is based on sum-of-the-parts DCF valuation using a 10% discount rate. The discount does not differ significantly from the peer group.

Risks to Rating and Price Target

Key upside risks relate to:

- More favourable outcomes in commodities, currencies, production, unit costs and capex relative to our forecasts;
- Stronger relative performance of petroleum vs. mineral prices;
- Successful disposal of the US Onshore petroleum assets.

Key downside risks relate to:

- Less favourable outcomes in commodities, currencies, production, unit costs and capex relative to our forecasts;
- Weaker relative performance of petroleum vs. mineral prices;
- Failure to dispose of the US Onshore petroleum assets which could put pressure on capital returns and growth elsewhere in the portfolio;
- M&A risk, particularly in Conventional Petroleum.

BHP Billiton (BILJ.J): Summary of Financials

Profit and Loss Statement

$ in millions, year end Jun	FY17	FY18E	FY19E	FY20E
Revenues	39,331	43,047	43,376	-
% change Y/Y	29.4%	9.4%	0.8%	-
Gross Margin (%)	-	-	-	-
EBITDA	20,296	22,431	21,479	-
% change Y/Y	64.5%	10.5%	(4.2%)	-
EBITDA Margin (%)	51.6%	52.1%	49.5%	-
EBIT	12,389	14,528	12,827	-
% change Y/Y	257.1%	17.3%	(11.7%)	-
EBIT Margin (%)	31.5%	33.7%	29.6%	-
Net Interest	(1,304)	(713)	(611)	-
Earnings before tax	11,085	13,815	12,216	-
% change Y/Y	353.4%	24.6%	(11.6%)	-
Tax	(3,857)	(4,359)	(3,828)	-
as % of EBT	34.8%	31.6%	31.3%	-
Net Income (Reported)	5,890	8,442	7,377	-
% change Y/Y	(192.2%)	43.3%	(12.6%)	-
Shares Outstanding	5,324	5,324	5,324	-
Adj. EPS	1.26	1.59	1.42	-
% change Y/Y	454.1%	25.4%	(10.6%)	-

Cash flow statement

$ in millions, year end Jun	FY17	FY18E	FY19E	FY20E
EBIT	12,389	14,528	12,827	-
Depreciation & amortization	7,907	7,903	8,652	-
Change in working capital	-	-	-	-
Taxes	(2,084)	(4,774)	(4,060)	-
Cash flow from operations	16,804	16,222	16,494	-
Capex	(5,220)	(6,718)	(6,986)	-
Disposals/(purchase)	447	0	0	-
Net Interest	(985)	(1,165)	(657)	-
Free cash flow	12,434	9,992	9,928	-
Equity raised/repaid	(108)	0	0	-
Debt Raised/repaid	(5,507)	(4,000)	(2,000)	-
Other	(597)	9,377	7,537	-
Dividends paid	(2,921)	(5,377)	(5,537)	-
Beginning cash	10,319	14,153	13,702	-
Ending cash	14,153	13,702	15,152	-
DPS	0.83	1.11	1.00	-

Balance sheet

$ in millions, year end Jun	FY17	FY18E	FY19E	FY20E
Cash and cash equivalents	14,153	13,702	15,152	-
Accounts Receivable	2,836	3,042	3,086	-
Inventories	3,673	3,939	3,997	-
Others	394	394	394	-
Current assets	21,056	21,077	22,629	-
Net fixed assets	80,497	78,222	75,466	-
Other non-current assets	15,453	15,591	15,620	-
Total assets	117,006	114,889	113,716	-
ST loans	1,241	1,241	1,241	-
Payables	5,551	6,129	6,462	-
Others	4,574	4,574	4,574	-
Total current liabilities	11,366	11,944	12,277	-
Long term debt	29,233	25,233	23,233	-
Other liabilities	13,681	13,682	13,682	-
Total liabilities	54,280	50,858	49,192	-
Shareholders' equity	62,726	64,031	64,524	-
BVPS	11.78	12.03	12.12	-

Ratio Analysis

	FY17	FY18E	FY19E	FY20E
EBITDA margin	51.6%	52.1%	49.5%	-
EBIT margin	31.5%	33.7%	29.6%	-
Net Profit margin	17.1%	19.6%	17.4%	-
SG&A/Sales	0.0%	0.0%	0.0%	-
Sales per share growth	29.4%	9.4%	0.8%	-
Sales growth	29.4%	9.4%	0.8%	-
Net profit growth	(192.2%)	43.3%	(12.6%)	-
Adj. EPS growth	454.1%	25.4%	(10.6%)	-
Interest coverage (x)	15.6	31.5	35.1	-
Dividend Yield	4.5%	6.1%	5.5%	-
Net debt to Total Capital	20.6%	16.6%	12.6%	-
Net debt to equity	26.0%	19.9%	14.4%	-
Sales/assets (x)	0.3	0.4	0.4	-
Assets/Equity	1.9	1.8	1.8	1.8
EV/EBITDA	5.5	4.8	4.9	-
P/E	14.4	11.5	12.9	-
P/BV	1.6	1.5	1.5	-
ROE	11.0%	13.3%	11.7%	-
ROCE	8.5%	10.8%	9.8%	-

Source: Company reports and J.P. Morgan estimates.

Rio Tinto plc

Neutral

Company Data	
Price (p)	3,547
Date Of Price	13 Dec 17
Price Target (p)	3,750
Price Target End Date	31-Dec-18
52-week Range (p)	3,832-2,883
Market Cap (£ mn)	65,587.58
Shares O/S (mn)	1,849

Rio Tinto plc (RIO.L;RIO LN)

FYE Dec	2015A	2016A	2017E *(Prev)*	2017E *(Curr)*	2018E *(Prev)*	2018E *(Curr)*	2019E *(Prev)*	2019E *(Curr)*
Adj. EPS FY ($)	2.53	2.84	5.02	4.95	4.29	4.27	4.20	4.40
Bloomberg EPS FY ($)	2.47	2.68	-	4.72	-	4.18	-	3.93
Adj. EBITDA FY ($ mn)	11,595	12,526	17,902	17,575	15,930	15,503	15,921	16,190
EBITDA Margin FY	33.3%	37.1%	46.5%	46.2%	45.4%	45.4%	44.1%	45.1%
Adj. P/E FY	18.7	16.7	9.4	9.5	11.0	11.1	11.2	10.7
EV/EBITDA (x) FY	8.5	7.5	5.3	5.1	5.9	5.7	5.6	5.2
FCFF Yield FY	6.2%	7.4%	12.2%	11.7%	9.5%	9.5%	11.1%	10.4%
Dividend Yield FY	4.6%	3.6%	5.9%	5.8%	5.4%	5.4%	5.4%	5.6%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Rio Tinto plc *(Neutral; Price Target: 3,750p)*

Investment Thesis

We are Neutral on RIO. While the company continues to benefit from a best-in-class balance sheet and shareholder returns profile, we believe this is well understood by the market and priced into the shares. Relative valuation now sits at a premium to peers and leaves little scope for relative outperformance in our view.

Valuation

Our Dec-18 price target is set at 1.00x P/NPV, rounded to the nearest 50p. Our NPV is based on a sum-of-the-parts DCF valuation using a 10.4% discount rate. The discount rate does not differ significantly from the peer group.

Risks to Rating and Target Price

Key upside risks relate to:

- Positive outcomes in commodities, currencies, production, unit costs and capex relative to our forecasts;
- Positive changes to tax, legislation and other operating conditions; and
- Aluminium enjoys one of the most solid market outlooks across the commodity spectrum and RIO’s low-carbon asset base offers scope to improve relative returns over time.

Key downside risks relate to:

- Adverse outcomes in commodities, currencies, production, unit costs and capex relative to our forecasts;
- Adverse changes to tax, legislation and other operating conditions; and
- The relatively high exposure to iron ore and, therefore, Western Australia within the portfolio.

Rio Tinto plc: Summary of Financials

Profit and Loss Statement

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
Revenues	34,829	33,781	38,034	34,165	35,904
% Change Y/Y	(26.9%)	(3.0%)	12.6%	(10.2%)	5.1%
Gross Margin (%)	-	-	-	-	-
EBITDA	11,595	12,526	17,575	15,503	16,190
% Change Y/Y	(35.9%)	8.0%	40.3%	(11.8%)	4.4%
EBITDA Margin (%)	33.3%	37.1%	46.2%	45.4%	45.1%
EBIT	6,949	7,732	13,078	10,839	11,236
% Change Y/Y	(47.5%)	11.3%	69.1%	(17.1%)	3.7%
EBIT Margin	20.0%	22.9%	34.4%	31.7%	31.3%
Net Interest	(698)	(1,022)	(808)	(436)	(274)
Earnings before tax	6,234	6,693	12,605	11,045	11,539
% change Y/Y	(51.6%)	7.4%	88.3%	(12.4%)	4.5%
Tax	(1,560)	(1,412)	(3,760)	(3,280)	(3,436)
Tax as a % of BT	25.0%	21.1%	29.8%	29.7%	29.8%
Net Income (Reported)	4,540	5,100	8,740	7,387	7,603
% change Y/Y	(51.2%)	12.3%	71.4%	(15.5%)	2.9%
Shares Outstanding	1,793	1,798	1,765	1,730	1,730
Adj. EPS	2.53	2.84	4.95	4.27	4.40
% Change Y/Y	(49.7%)	12.0%	74.6%	(13.7%)	2.9%

Cash flow statement

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
EBIT	6,949	7,732	13,078	10,839	11,236
Depreciation & amortization	4,646	4,794	4,497	4,663	4,954
Change in working capital & Other	-	-	-	-	-
Taxes	(1,792)	(1,521)	(2,963)	(3,525)	(3,265)
Cash flow from operations	9,383	8,465	13,403	12,340	13,244
Capex	(4,685)	(3,012)	(4,182)	(4,873)	(4,933)
Disposals/(purchase)	(41)	761	2,535	0	0
Net Interest	(827)	(1,294)	(1,218)	(516)	(356)
Free cash flow	5,221	6,259	9,787	7,774	8,504
Equity raised/repaid	103	101	9	0	0
Debt Raised/repaid	(1,681)	(4,948)	(5,595)	(4,000)	(2,000)
Dividends paid	(4,076)	(2,725)	(4,219)	(5,091)	(4,462)
Other	(2,016)	81	(2,416)	(1,800)	0
Beginning cash	12,423	9,366	8,201	7,752	4,328
Ending cash	9,366	8,201	7,752	4,328	6,177
DPS	2.15	1.70	2.73	2.57	2.63

Balance sheet

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	9,366	8,201	7,752	4,328	6,177
Accounts Receivable	2,386	3,460	2,560	2,531	2,662
Inventories	3,168	2,937	3,609	3,380	3,542
Others	634	488	1,571	1,571	1,571
Current assets	15,554	15,086	15,492	11,811	13,951
LT investments	-	-	-	-	-
Net fixed assets	61,057	58,855	60,368	60,578	60,558
Other non-current assets	14,953	15,322	14,808	14,781	14,859
Total assets	91,564	89,263	90,668	87,170	89,368
ST loans	2,484	922	742	742	742
Payables	6,237	6,361	5,262	5,204	5,472
Others	1,325	2,079	2,400	2,400	2,400
Total current liabilities	10,046	9,362	8,404	8,346	8,614
Long term debt	21,140	17,470	12,106	8,106	6,106
Other liabilities	16,250	16,701	17,711	17,702	17,742
Total liabilities	47,436	43,533	38,221	34,154	32,462
Shareholders' equity	44,128	45,730	52,447	53,016	56,906
BVPS	24.61	25.43	29.72	30.65	32.90

Ratio Analysis

	FY15	FY16	FY17E	FY18E	FY19E
EBITDA Margin (%)	33.3%	37.1%	46.2%	45.4%	45.1%
EBIT margin (%)	20.0%	22.9%	34.4%	31.7%	31.3%
Net margin (%)	13.0%	15.1%	23.0%	21.6%	21.2%
SG&A/Sales	-	-	-	-	-
Sales per share growth	(24.7%)	(3.3%)	14.7%	(8.3%)	5.1%
Sales growth (%)	(26.9%)	(3.0%)	12.6%	(10.2%)	5.1%
Attributable net profit growth (%)	(51.2%)	12.3%	71.4%	(15.5%)	2.9%
EPS growth (%)	(49.7%)	12.0%	74.6%	(13.7%)	2.9%
Interest coverage (x)	16.6	12.3	21.7	35.5	59.0
Net debt to Total Capital	24.4%	18.2%	8.9%	7.9%	1.2%
Net debt to equity	32.3%	22.3%	9.7%	8.5%	1.2%
Sales/assets (x)	0.3	0.4	0.4	0.4	0.4
Assets/Equity	2.4	2.4	2.1	1.9	1.8
ROE	10.9%	13.3%	20.5%	16.0%	15.7%
ROCE	7.9%	10.3%	15.8%	13.4%	14.0%

Source: Company reports and J.P. Morgan estimates.

Glencore PLC

Overweight

Company Data	
Price (p)	354
Date Of Price	13 Dec 17
Price Target (p)	450
Price Target End Date	30-Dec-18
52-week Range (p)	388-256
Market Cap (£ mn)	51,635.15
Shares O/S (mn)	14,586

Glencore PLC (GLEN.L;GLEN LN)

FYE Dec	2015A	2016A	2017E *(Prev)*	2017E *(Curr)*	2018E *(Prev)*	2018E *(Curr)*
Adj. EPS FY ($)	(0.58)	0.09	0.35	0.40	0.20	0.38
Revenue FY ($ mn)	172,695	177,351	200,449	203,214	159,199	171,666
Adj. EBITDA FY ($ mn)	8,694	10,268	14,060	14,989	11,266	14,869
Adj. EBITDA Margin FY	5.0%	5.8%	7.0%	7.4%	7.1%	8.7%
EBIT FY ($ mn)	2,172	3,930	7,954	8,902	4,355	8,139
EV/EBITDA (x) FY	9.3	6.6	4.9	4.3	5.7	4.1
Net Debt/Equity FY	100.0%	70.1%	57.6%	58.0%	49.6%	47.5%
ROE FY	(17.3%)	3.2%	11.4%	12.8%	6.4%	11.7%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Glencore PLC *(Overweight; Price Target: 450p)*

Investment Thesis

We have an Overweight recommendation on GLEN. GLEN offers strong exposure to structural growth themes including EV and has latent capacity in both Copper and Zinc to feed back into tight markets. Relative valuation is now more attractive, with the Industrial division trading at a discount to both RIO and BHP. Arguably the strongest balance sheet in the sector leaves GLEN with strong scope to continue its growth through both organic and M&A opportunities.

Valuation

Our Dec-18 price target is based on an equally weighted blend of 1.00x P/NPV and 8.0x FY'19E EBITDA. Our NPV multiple is in line with the level we use across the peer group, while we apply a higher EBITDA multiple to reflect the stability of GLEN's Marketing division earnings. This multiple is in-line with GLEN's average level since listing. Our NPV uses an 11.0% discount rate (nominal) on Industrial assets and 9.0% on Marketing.

Risks to Rating and Price Target

Key downside risks relate to:

- Lower commodity prices, particularly for base metals and coal;
- Rising geopolitical risk, particularly in Central Africa;
- Global zinc restarts following strong price performance could pressure market prices and impact GLEN's ability to restart its own latent capacity
- Issues ramping up latent zinc and copper capacity could impact costs and earnings;
- GLEN remains acquisitive which creates the risk of overpaying for assets.

Glencore PLC: Summary of Financials

Income Statement	FY15A	FY16A	FY17E	FY18E	FY19E
Revenue	**172,695**	**177,351**	**203,214**	**171,666**	**169,643**
COGS	(164,001)	(167,083)	(188,224)	(156,797)	(154,699)
Gross profit	**8,694**	**10,268**	**14,989**	**14,869**	**14,943**
SG&A	-	-	-	-	-
Adj. EBITDA	**8,694**	**10,268**	**14,989**	**14,869**	**14,943**
D&A	(6,522)	(6,338)	(6,087)	(6,730)	(7,027)
Adj. EBIT	**2,172**	**3,930**	**8,902**	**8,139**	**7,916**
Net Interest	(1,394)	(1,533)	(1,227)	(985)	(1,016)
Adj. PBT	**619**	**1,932**	**7,424**	**7,154**	**6,900**
Tax	(98)	(638)	(1,831)	(1,871)	(1,804)
Minority Interest	361	422	241	297	292
Adj. Net Income	**(7,753)**	**1,358**	**5,806**	**5,580**	**5,389**
Reported EPS	(0.58)	0.09	0.40	0.38	0.37
Adj. EPS	**(0.58)**	**0.09**	**0.40**	**0.38**	**0.37**
DPS	**0.06**	**0.03**	**0.13**	**0.20**	**0.18**
Payout ratio	NM	36.8%	31.4%	52.0%	48.8%
Shares outstanding	13,318	14,586	14,586	14,586	14,586

Cash Flow Statement	FY15A	FY16A	FY17E	FY18E	FY19E
Cash flow from operating activities	**13,030**	**3,847**	**9,837**	**11,718**	**11,151**
o/w Depreciation & amortization	5,835	5,632	5,635	6,730	7,027
o/w Changes in working capital	7,525	(2,172)	(385)	827	(7)
Cash flow from investing activities	**(5,089)**	**3,612**	**(4,025)**	**(4,757)**	**(4,486)**
o/w Capital expenditure	(5,372)	(3,048)	(3,707)	(4,822)	(4,701)
as % of sales	*3.1%*	*1.7%*	*1.8%*	*2.8%*	*2.8%*
Cash flow from financing activities	**(8,058)**	**(7,658)**	**(4,482)**	**(2,322)**	**(2,683)**
o/w Dividends paid	(2,328)	0	(999)	(2,822)	(2,683)
o/w Shares issued/(repurchased)	2,172	3	0	0	0
o/w Net debt issued/(repaid)	(7,189)	(7,839)	(4,175)	500	0
Net change in cash	**(117)**	**(199)**	**1,329**	**4,639**	**3,982**
Adj. Free cash flow to firm	**8,831**	**1,826**	**7,054**	**7,624**	**7,200**
y/y Growth	*1580.2%*	*(79.3%)*	*286.4%*	*8.1%*	*(5.6%)*

Balance Sheet	FY15A	FY16A	FY17E	FY18E	FY19E
Cash and cash equivalents	2,707	2,508	3,818	8,458	12,440
Accounts receivable	17,001	20,066	16,767	16,082	16,125
Inventories	18,303	18,347	18,154	17,562	17,518
Other current assets	4,187	2,491	2,398	2,398	2,398
Current assets	**42,198**	**43,412**	**41,138**	**44,500**	**48,481**
PP&E	61,278	53,826	52,651	50,989	48,710
LT investments	4,310	5,236	5,111	5,111	2,400
Other non current assets	25,009	27,362	28,206	28,206	25,495
Total assets	**128,485**	**124,600**	**121,995**	**123,694**	**122,686**
Short term borrowings	11,117	10,030	7,403	7,403	7,403
Payables	24,088	26,176	25,101	24,650	24,643
Other short term liabilities	5,667	7,161	4,792	4,792	4,792
Current liabilities	**40,872**	**43,367**	**37,296**	**36,845**	**36,838**
Long-term debt	32,932	23,188	23,507	24,007	24,007
Other long term liabilities	13,338	14,264	14,505	14,505	14,505
Total liabilities	**87,142**	**80,819**	**75,308**	**75,357**	**75,350**
Shareholders' equity	41,254	44,243	46,688	48,337	47,336
Minority interests	89	(462)	0	0	0
Total liabilities & equity	**128,485**	**124,600**	**121,995**	**123,694**	**122,686**
BVPS	**3.10**	**3.03**	**3.20**	**3.31**	**3.25**
y/y Growth	*(16.4%)*	*(2.1%)*	*5.5%*	*3.5%*	*(2.1%)*
Net debt/(cash)	41,342	30,710	27,092	22,952	18,970

Ratio Analysis	FY15A	FY16A	FY17E	FY18E	FY19E
Gross margin	5.0%	5.8%	7.4%	8.7%	8.8%
EBITDA margin	5.0%	5.8%	7.4%	8.7%	8.8%
EBIT margin	1.3%	2.2%	4.4%	4.7%	4.7%
Net profit margin	(4.5%)	0.8%	2.9%	3.3%	3.2%
ROE	(17.3%)	3.2%	12.8%	11.7%	11.3%
ROA	(5.5%)	1.1%	4.7%	4.5%	4.4%
ROCE	2.0%	3.2%	8.7%	7.6%	7.4%
SG&A/Sales	-	-	-	-	-
Net debt/Equity	100.0%	70.1%	58.0%	47.5%	40.1%
Net debt/EBITDA	4.8	3.0	1.8	1.5	1.3
Sales/Assets (x)	1.2	1.4	1.6	1.4	1.4
Assets/Equity (x)	3.1	3.0	2.7	2.6	2.6
Interest cover (x)	6.2	6.7	12.2	15.1	14.7
Operating leverage	415.6%	3002.1%	867.6%	55.2%	232.5%
Tax rate	15.8%	33.0%	24.7%	26.1%	26.1%
Revenue y/y Growth	(16.3%)	2.7%	14.6%	(15.5%)	(1.2%)
EBITDA y/y Growth	(31.9%)	18.1%	46.0%	(0.8%)	0.5%
EPS y/y Growth	(433.0%)	(116.0%)	327.6%	(3.9%)	(3.4%)

Valuation	FY15A	FY16A	FY17E	FY18E	FY19E
P/E (x)	NM	50.6	11.8	12.3	12.8
P/BV (x)	1.5	1.6	1.5	1.4	1.5
EV/EBITDA (x)	9.3	6.6	4.3	4.1	3.8
Dividend Yield	1.3%	0.7%	2.7%	4.2%	3.8%

Source: Company reports and J.P. Morgan estimates.

Note: $ in millions (except per-share data).Fiscal year ends Dec. o/w - out of which

Glencore plc (GLN SJ)

Overweight

Company Data	
Price (c)	6,372
Date Of Price	13 Dec 17
Price Target (c)	8,200
Price Target End Date	30-Dec-18
52-week Range (c)	7,198-4,484
Market Cap (R mn)	929,432.70
Shares O/S (mn)	14,586

Glencore PLC (GLNJ.J;GLN SJ)

FYE Dec	2015A	2016A	2017E *(Prev)*	2017E *(Curr)*	2018E *(Prev)*	2018E *(Curr)*
Adj. EPS FY ($)	(0.58)	0.09	0.35	0.40	0.20	0.38
Adj. EBITDA FY ($ mn)	8,694	10,268	14,060	14,989	11,266	14,869
Adj. EBITDA Margin FY	5.0%	5.8%	7.0%	7.4%	7.1%	8.7%
EBIT FY ($ mn)	2,172	3,930	7,954	8,902	4,355	8,139
EV/EBITDA (x) FY	12.5	9.6	7.1	6.3	8.5	6.1
Net Debt/Equity FY	100.0%	70.1%	57.6%	58.0%	49.6%	47.5%
Total Production (mmboe) FY (mn)	-	-	-	-	-	-

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Glencore plc (GLN SJ) *(Overweight; Price Target: 8,200c)*

Investment Thesis

We have an Overweight recommendation on GLEN. GLEN offers strong exposure to structural growth themes including EV and has latent capacity in both Copper and Zinc to feed back into tight markets. Relative valuation is now more attractive, with the Industrial division trading at a discount to both RIO and BHP. Arguably the strongest balance sheet in the sector leaves GLEN with strong scope to continue its growth through both organic and M&A opportunities.

Valuation

Our Dec-18 price target is based on an equally weighted blend of 1.00x P/NPV and 8.0x FY’19E EBITDA. Our NPV multiple is in line with the level we use across the peer group, while we apply a higher EBITDA multiple to reflect the stability of GLEN’s Marketing division earnings. This multiple is in-line with GLEN’s average level since listing. Our NPV uses an 11.0% discount rate (nominal) on Industrial assets and 9.0% on Marketing.

Risks to Rating and Price Target

Key downside risks relate to:

- Lower commodity prices, particularly for base metals and coal;
- Rising geopolitical risk, particularly in Central Africa;
- Global zinc restarts following strong price performance could pressure market prices and impact GLEN’s ability to restart its own latent capacity
- Issues ramping up latent zinc and copper capacity could impact costs and earnings;
- GLEN remains acquisitive which creates the risk of overpaying for assets.

Glencore plc (GLN SJ): Summary of Financials

Profit and Loss Statement

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
Revenues	172,695	177,351	203,214	171,666	169,643
% Change Y/Y	(16.3%)	2.7%	14.6%	(15.5%)	(1.2%)
Gross Margin (%)	5.0%	5.8%	7.4%	8.7%	8.8%
EBITDA	8,694	10,268	14,989	14,869	14,943
% Change Y/Y	(31.9%)	18.1%	46.0%	(0.8%)	0.5%
EBITDA Margin (%)	5.0%	5.8%	7.4%	8.7%	8.8%
EBIT	2,172	3,930	8,902	8,139	7,916
% Change Y/Y	(67.6%)	80.9%	126.5%	(8.6%)	(2.7%)
EBIT Margin	1.3%	2.2%	4.4%	4.7%	4.7%
Net Interest	(1,394)	(1,533)	(1,227)	(985)	(1,016)
Earnings before tax	(8,016)	(549)	7,396	7,154	6,900
% change Y/Y	(288.5%)	(93.2%)	(1447.2%)	(3.3%)	(3.6%)
Tax	(98)	(638)	(1,831)	(1,871)	(1,804)
Tax as a % of BT	(1.2%)	(116.2%)	24.8%	26.1%	26.1%
Net Income (Reported)	(7,753)	1,358	5,806	5,580	5,389
% change Y/Y	(438.6%)	(117.5%)	327.6%	(3.9%)	(3.4%)
Shares Outstanding	13,318	14,586	14,586	14,586	14,586
EPS (Reported)	(0.58)	0.09	0.40	0.38	0.37
% Change Y/Y	(433.0%)	(116.0%)	327.6%	(3.9%)	(3.4%)

Cash flow statement

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
EBIT	2,172	3,930	8,902	8,139	7,916
Depreciation & amortization	5,835	5,632	5,635	6,730	7,027
Change in working capital & Other	7,525	(2,172)	(385)	827	(7)
Taxes	(865)	(584)	(1,886)	(2,400)	(2,260)
Cash flow from operations	13,030	3,847	9,837	11,718	11,151
Capex	(5,372)	(3,048)	(3,707)	(4,822)	(4,701)
Disposals/(purchase)	(186)	5,839	(955)	(246)	(48)
Net Interest	(1,084)	(1,265)	(1,192)	(985)	(1,016)
Free cash flow	8,831	1,826	7,054	7,624	7,200
Equity raised/repaid	2,172	3	0	0	0
Debt Raised/repaid	(7,189)	(7,839)	(4,175)	500	0
Dividends paid	(2,328)	0	(999)	(2,822)	(2,683)
Other	(713)	178	692	0	0
Beginning cash	2,824	2,707	2,508	3,818	8,458
Ending cash	2,707	2,508	3,837	8,458	12,440
DPS	0.06	0.03	0.13	0.20	0.18

Balance sheet

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	2,707	2,508	3,818	8,458	12,440
Accounts Receivable	17,001	20,066	16,767	16,082	16,125
Inventories	18,303	18,347	18,154	17,562	17,518
Others	4,187	2,491	2,398	2,398	2,398
Current assets	42,198	43,412	41,138	44,500	48,481
LT investments	4,310	5,236	5,111	5,111	2,400
Net fixed assets	61,278	53,826	52,651	50,989	48,710
Other non-current assets	25,009	27,362	28,206	28,206	25,495
Total assets	128,485	124,600	121,995	123,694	122,686
ST loans	11,117	10,030	7,403	7,403	7,403
Payables	24,088	26,176	25,101	24,650	24,643
Others	5,667	7,161	4,792	4,792	4,792
Total current liabilities	40,872	43,367	37,296	36,845	36,838
Long term debt	32,932	23,188	23,507	24,007	24,007
Other liabilities	13,338	14,264	14,505	14,505	14,505
Total liabilities	87,142	80,819	75,308	75,357	75,350
Shareholders' equity	41,343	43,781	46,688	48,337	47,336
BVPS	3.10	3.03	3.20	3.31	3.25

Ratio Analysis

	FY15	FY16	FY17E	FY18E	FY19E
EBITDA Margin (%)	5.0%	5.8%	7.4%	8.7%	8.8%
EBIT margin (%)	1.3%	2.2%	4.4%	4.7%	4.7%
Net margin (%)	(4.5%)	0.8%	2.9%	3.3%	3.2%
SG&A/Sales	0.0%	0.0%	0.0%	0.0%	0.0%
Sales per share growth	(17.6%)	(6.2%)	14.6%	(15.5%)	(1.2%)
Sales growth (%)	(16.3%)	2.7%	14.6%	(15.5%)	(1.2%)
Attributable net profit growth (%)	(438.6%)	(117.5%)	327.6%	(3.9%)	(3.4%)
EPS growth (%)	(433.0%)	(116.0%)	327.6%	(3.9%)	(3.4%)
Interest coverage (x)	6.2	6.7	12.2	15.1	14.7
Net debt to Total Capital	50.0%	41.2%	36.7%	32.2%	28.6%
Net debt to equity	100.0%	70.1%	58.0%	47.5%	40.1%
Sales/assets (x)	1.2	1.4	1.6	1.4	1.4
Assets/Equity	3.1	3.0	2.7	2.6	2.6
ROE	(17.3%)	3.2%	12.8%	11.7%	11.3%
ROCE	2.0%	3.2%	8.7%	7.6%	7.4%

Source: Company reports and J.P. Morgan estimates.

Vedanta Resources

Neutral

Company Data	
Price (p)	676
Date Of Price	13 Dec 17
Price Target (p)	650
Price Target End Date	31-Dec-18
52-week Range (p)	1,112-559
Market Cap (£ mn)	1,865.55
Shares O/S (mn)	276

Vedanta Resources (VED.L;VED LN)

FYE Mar	**2015A**	**2016A**	**2017A**	**2018E** *(Prev)*	**2018E** *(Curr)*	**2019E** *(Prev)*	**2019E** *(Curr)*
Adj. EPS FY ($)	(0.14)	(1.32)	0.01	(0.88)	1.42	0.09	2.97
Bloomberg EPS FY ($)	0.06	-1.35	0.62	-	0.79	-	1.07
Adjusted P/E FY	NM	NM	830.8	NM	6.3	95.6	3.0
EBITDA FY ($ mn)	3,741	2,336	3,191	3,779	3,710	4,235	4,314
EBITDA Margin FY	29.0%	21.8%	27.7%	27.3%	25.4%	28.6%	27.3%
EV/EBITDA (x) FY	5.3	7.1	5.2	4.8	4.5	4.2	3.7
FCFF Yield FY	39.6%	92.4%	43.3%	29.4%	67.9%	105.4%	86.1%
Dividend Yield FY	7.0%	3.3%	6.1%	6.2%	6.6%	6.4%	6.7%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Vedanta Resources *(Neutral; Price Target: 650p)*

Investment Thesis

We have a Neutral recommendation on Vedanta. While valuation multiples, particularly cash flow yields, appear attractive and the company offers a strong growth profile with limited additional capital investment required, we believe the complex corporate structure and high levels of debt throughout the group warrant caution.

Valuation

Our Mar'19 price target is set as an average of 0.8x our base case NPV valuation of (discount reflects operational and remaining balance sheet risk) and a multiple of 5.0x FY'19E EBITDA, which is in line with the 10-year historic trading average. Our NPV is based on a sum-of-the-parts DCF valuation using a 15.0% discount rate, rounded to the nearest 10p. The 15.0% discount rate is higher than the peer group to reflect the additional risk around project delivery and funding.

Risks to Rating and Price Target

Key upside risks relate to the potential for:

- commodity prices to surprise on the upside;
- favourable changes to legal and tax environment and an improvement in India's risk environment; and
- the ramp-up of latent capacity or the remaining restructuring programme to accelerate.

Key downside risks relate to the potential for:

- commodity prices to surprise on the downside;
- adverse changes to legal and tax environment and a deterioration in India's risk environment; and
- failure of the Cairn India merger or disappointments in the ramp-up of latent capacity.

Vedanta Resources: Summary of Financials

Profit and Loss Statement

$ in millions, year end Mar	FY16	FY17	FY18E	FY19E	FY20E
Revenues	10,738	11,520	14,582	15,820	-
% Change Y/Y	(16.6%)	7.3%	26.6%	8.5%	-
Gross Margin (%)	-	-	-	-	-
EBITDA	2,336	3,191	3,710	4,314	-
% Change Y/Y	(37.5%)	36.6%	16.3%	16.3%	-
EBITDA Margin (%)	21.8%	27.7%	25.4%	27.3%	-
EBIT	881	2,145	2,574	2,971	-
% Change Y/Y	(49.2%)	143.4%	20.0%	15.5%	-
EBIT Margin	(40.3%)	18.6%	18.0%	18.8%	-
Net Interest	(583)	(740)	(826)	(618)	-
Earnings before tax	(4,984)	1,380	1,784	2,354	-
% change Y/Y	(11.6%)	(127.7%)	29.3%	32.0%	-
Tax	1,482	(500)	(521)	(525)	-
Tax as a % of BT	(29.7%)	36.3%	29.2%	22.3%	-
Net Income (Reported)	(1,837)	(23)	302	823	-
% change Y/Y	2.2%	(98.8%)	(1428.5%)	173.0%	-
Shares Outstanding	276	277	277	277	-
Adj. EPS	(1.32)	0.01	1.42	2.97	-
% Change Y/Y	846.4%	(100.8%)	13008.9%	109.3%	-

Cash flow statement

$ in millions, year end Mar	FY16	FY17	FY18E	FY19E	FY20E
EBIT	881	2,145	2,574	2,971	-
Depreciation & amortization	1,455	1,031	1,112	1,343	-
Change in working capital & Other	1,164	274	131	(6)	-
Taxes	(355)	(779)	(446)	(563)	-
Cash flow from operations	2,402	1,458	2,270	2,962	-
Capex	(862)	(849)	(1,163)	(1,296)	-
Disposals/(purchase)	0	0	0	0	-
Net Interest	655	763	843	618	-
Free cash flow	2,295	1,080	1,692	2,147	-
Equity raised/repaid	(1)	(2)	(2)	0	-
Debt raised/repaid	1,425	1,941	1,678	(182)	-
Dividends paid					-
Other	(1,871)	(2,282)	(5,908)	(663)	-
Beginning cash	354	428	1,682	916	-
Ending cash	428	1,682	916	1,738	-
DPS	0.30	0.55	0.59	0.61	-

Balance sheet

$ in millions, year end Mar	FY16	FY17	FY18E	FY19E	FY20E
Cash and cash equivalents	428	1,682	916	1,738	-
Accounts Receivable	1,344	1,085	1,563	1,569	-
Inventories	1,366	1,670	2,053	2,054	-
Others	54	4	32	32	-
Current assets	11,700	12,484	10,396	11,225	-
LT investments	7	11	18	18	-
Net fixed assets	16,648	16,806	16,714	16,666	-
Other non-current assets	1,971	2,214	2,354	2,392	-
Total assets	30,319	31,503	29,464	30,283	-
ST loans	4,314	7,659	4,792	4,792	-
Payables	5,876	6,223	6,822	6,823	-
Others	222	190	163	163	-
Total current liabilities	10,412	14,072	11,777	11,778	-
Long term debt	11,950	10,570	9,714	9,714	-
Other liabilities	1,106	847	891	891	-
Total liabilities	23,467	25,489	22,382	22,383	-
Shareholders' equity	6,852	6,015	7,081	7,900	-
BVPS	(2.58)	(1.48)	0.13	1.85	-

Ratio Analysis

$ in millions, year end Mar	FY16	FY17	FY18E	FY19E	FY20E
EBITDA Margin (%)	21.8%	27.7%	25.4%	27.3%	-
Operating margin (%)	(40.3%)	18.6%	18.0%	18.8%	-
Net margin (%)	(3.4%)	0.0%	2.7%	5.2%	-
SG&A/Sales	6.7%	5.6%	4.4%	4.1%	-
Sales per share growth	(17.0%)	7.0%	26.6%	8.5%	-
Sales growth (%)	(16.6%)	7.3%	26.6%	8.5%	-
Attributable net profit growth (%)	2.2%	(98.8%)	(1428.5%)	173.0%	-
Adj. EPS growth (%)	846.4%	(100.8%)	13008.9%	109.3%	-
Interest coverage (x)	(7.4)	2.9	3.2	4.8	-
Net debt to Total Capital	51.7%	58.6%	52.3%	46.8%	-
Net debt to equity	106.9%	141.4%	109.6%	87.8%	-
Sales/assets (x)	0.3	0.4	0.5	0.5	-
Assets/Equity	75.6	NM	NM	109.2	59.2
ROE	(81.8%)	(0.5%)	(210.8%)	300.9%	-
ROCE	(153.9%)	(225.9%)	(225.8%)	253.6%	-

Source: Company reports and J.P. Morgan estimates.

Acacia Mining PLC

Underweight

Company Data	
Price (p)	171
Date Of Price	13 Dec 17
Price Target (p)	170
Price Target End Date	31-Dec-18
52-week Range (p)	546-153
Market Cap (£ mn)	702.14
Shares O/S (mn)	410

Acacia Mining PLC (ACAA.L;ACA LN)

FYE Dec	2015A	2016A	2017E	2018E
Adj. EPS FY ($)	0.03	0.37	0.26	0.20
Bloomberg EPS FY ($)	0.05	0.35	0.27	0.33
Adjusted P/E FY	74.0	6.2	8.8	11.7
Revenue FY ($ mn)	868	1,054	733	590
EBITDA FY ($ mn)	177	417	275	192
EBITDA Margin FY	20.4%	39.6%	37.5%	32.5%
EV/EBITDA FY	4.7	1.7	3.4	4.4
FCFF Yield FY	1.1%	19.8%	(15.9%)	14.1%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Acacia Mining PLC *(Underweight; Price Target: 170p)*

Investment Thesis

We have an Underweight recommendation on ACA. We acknowledge ACA remains cheap on a number of metrics, including P/NPV, FCF yield, EV/EBITDA etc. However, this is predicated on the Tanzanian political situation improving. With the majority of the executive management team announcing recently that they are leaving the company we feel it is difficult to advise any course of action other than to avoid the shares at this juncture.

Valuation

Our Dec'18 price target is set at 1.0x P/NPV, rounded to the nearest 10p. This reflects elevated Tanzanian risks, which we believe will remain a headwind to a near-term equity re-rating despite the inherent value in its operations, combined with prospective organic growth and exploration potential (e.g. West Kenya). Our NPV is based on a sum-of-the parts DCF valuation using a 7.6% nominal discount rate, which does not differ significantly from the peer group. We also include a 50% risk-weighted "upside" scenario for Bulyanhulu production returning to steady-state production over 2018 (i.e. an overturn of the concentrate export ban) and North Mara expanding to >300koz pa over a ten year mine life.

Risks to Rating and Price Target

Key upside risks relate to:

- Relaxation or removal of Tanzania's concentrate export ban, which would remove a key overhang on Acacia's outlook;
- Sustained improvement in operating performance – management have reported highly impressive operating results in recent quarters. Continued delivery of these very ambitious standards could drive an equity re-rating over the medium term;
- Improving gold prices.

Acacia Mining PLC: Summary of Financials

Profit and Loss Statement

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
Revenues	1,054	733	590	572
% Change Y/Y	21.4%	(30.4%)	(19.5%)	(3.1%)
Gross Margin (%)	-	-	-	-
EBITDA	417	275	192	182
% Change Y/Y	135.5%	(34.2%)	(30.1%)	(5.2%)
EBITDA Margin (%)	39.6%	37.5%	32.5%	31.8%
EBIT	253	163	121	109
% Change Y/Y	614.4%	(35.6%)	(26.0%)	(9.7%)
EBIT Margin	24.0%	22.3%	20.5%	19.1%
Net Interest	(10)	(7)	(6)	(0)
Earnings before tax	244	156	115	109
% change Y/Y	(299.9%)	(35.9%)	(26.4%)	(5.5%)
Tax	(91)	(49)	(35)	(33)
as % of EBT	37.4%	31.2%	30.0%	30.0%
Net Income (Reported)	97	102	81	76
% change Y/Y	(149.6%)	5.8%	(21.2%)	(5.5%)
Shares Outstanding	411	410	410	410
Adj. EPS	0.37	0.26	0.20	0.19
% Change Y/Y	1099.1%	(29.6%)	(25.0%)	(5.5%)

Cash flow statement

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
EBIT	253	163	121	109
Depreciation & amortization	164	111	71	73
Change in working capital & Other	(58)	(270)	1	2
Taxes	0	(18)	(27)	(25)
Cash flow from operations	366	10	198	184
Capex	(194)	(165)	(69)	(46)
Disposals/(purchase)	-	0	0	0
Net Interest	(7)	(5)	(6)	(0)
Free cash flow	187	(150)	133	139
Equity raised/repaid	0	0	0	0
Debt Raised/repaid	(28)	(28)	(28)	(28)
Dividends paid	(20)	(34)	0	0
Other	0	(3)	0	0
Beginning cash	287	284	176	88
Ending cash	318	76	139	223
DPS	0.10	0.00	0.00	0.00

Balance sheet

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	318	76	139	223
Accounts Receivable	19	16	12	11
Inventories	184	352	339	337
Others	151	195	195	195
Current assets	672	638	685	766
Net fixed assets	1,443	1,476	1,474	1,447
Other non-current assets	171	179	175	175
Total assets	2,503	2,510	2,550	2,604
ST loans	28	28	28	14
Payables	223	193	179	177
Others	8	13	13	27
Total current liabilities	259	235	220	219
Long term debt	71	43	14	0
Other liabilities	381	344	319	298
Total liabilities	640	579	539	516
Shareholders' equity	1,863	1,931	2,011	2,088
BVPS	4.54	4.70	4.90	5.09

Ratio Analysis

	FY16	FY17E	FY18E	FY19E
EBITDA Margin (%)	39.6%	37.5%	32.5%	31.8%
EBIT margin (%)	24.0%	22.3%	20.5%	19.1%
Net margin (%)	14.5%	14.7%	13.7%	13.3%
SG&A/Sales	2.1%	3.2%	2.5%	2.7%
Sales per share growth	21.4%	(30.4%)	(19.5%)	(3.1%)
Sales growth (%)	21.4%	(30.4%)	(19.5%)	(3.1%)
Net profit growth (%)	(149.6%)	5.8%	(21.2%)	(5.5%)
EPS growth (%)	1099.1%	(29.6%)	(25.0%)	(5.5%)
Interest coverage (x)	43.7	40.1	34.2	690.6
Net debt to Total Capital	(13.3%)	(0.3%)	(5.0%)	(11.1%)
Net debt to equity	(11.7%)	(0.3%)	(4.8%)	(10.0%)
Sales/assets (x)	0.4	0.3	0.2	0.2
Assets/Equity	1.3	1.3	1.3	1.3
ROE	8.4%	5.7%	4.1%	3.7%
ROCE	11.2%	5.9%	4.2%	3.7%

Source: Company reports and J.P. Morgan estimates.

Aluminium Bahrain

Overweight

Company Data	
Price (BD)	0.61
Date Of Price	14 Dec 17
Price Target (BD)	0.83
Price Target End Date	30-Dec-18
52-week Range (BD)	0.62-0.27
Market Cap (BD mn)	853.11
Shares O/S (mn)	1,410

Aluminium Bahrain BSC (ALBH.BH;ALBH BI)

FYE Dec	2015A	2016A	2017E	2018E *(Prev)*	2018E *(Curr)*
Adj. EPS FY (BD)	0.05	0.04	0.08	0.06	0.05
Bloomberg EPS FY (BD)	0.05	0.03	0.06	-	0.06
EBITDA FY (BD mn)	151	123	186	202	190
EBITDA Margin FY	19.7%	18.4%	22.5%	24.2%	22.5%
Adj P/E FY	11.5	17.3	7.8	9.8	11.4
EV/EBITDA FY	5.5	6.8	6.7	7.4	7.9
FCF Yield FY	15.1%	(0.3%)	(43.5%)	(11.6%)	(12.4%)
Dividend Yield FY	1.8%	3.5%	5.0%	4.1%	3.5%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Aluminium Bahrain *(Overweight; Price Target: BD0.83)*

Investment Thesis

We retain our Overweight recommendation on ALBA based on the value-accretive Line 6 project, successful delivery of cost improvement programme “Titan” and attractive valuation.

Valuation

Our Dec-18 price target is an equally weighted combination of 1) 4.5x 2019E EV/EBITDA; and 2) 0.9x base case 2018E NPV. Our NPV is based on a sum-of-the-parts DCF valuation using a 11.7% discount rate. Valuation methodology is in line with the base metal peers (combination of NPV and EV/EBITDA multiple).

Risks to Rating and Price Target

Key downside risks relate to:

- Adverse outcomes in aluminium, physical premiums, gas, production, unit costs and capex relative to our forecasts; and
- Delays and/or cost overruns on the proposed Line 6 project development.

Aluminium Bahrain: Summary of Financials

Profit and Loss Statement

BD in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
Revenues	767	670	829	844	1,063
% Change Y/Y	(6.7%)	(12.6%)	23.8%	1.7%	26.0%
Gross Margin (%)	-	-	-	-	-
EBITDA	151	123	186	190	268
% Change Y/Y	(13.8%)	(18.5%)	51.0%	1.8%	41.3%
EBITDA Margin (%)	19.7%	18.4%	22.5%	22.5%	25.2%
EBIT	77	52	117	112	164
% Change Y/Y	(19.3%)	(32.9%)	125.6%	(4.2%)	46.5%
EBIT Margin	10.1%	7.7%	14.1%	13.3%	15.4%
Net Interest	(3)	(3)	(7)	(37)	(42)
Earnings before tax	60	48	108	75	122
% change Y/Y	(37.8%)	(19.3%)	122.6%	(30.3%)	62.3%
Tax	0	(0)	0	0	0
Tax as a % of BT	0.0%	0.9%	0.0%	0.0%	0.0%
Net Income (Reported)	60	48	108	75	122
% change Y/Y	(37.8%)	(20.0%)	124.6%	(30.3%)	62.3%
Shares Outstanding	1,413	1,410	1,415	1,417	1,417
Adj. EPS	0.05	0.04	0.08	0.05	0.09
% Change Y/Y	(18.9%)	(33.3%)	121.6%	(31.7%)	62.3%

Cash flow statement

BD in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
EBIT	77	52	117	112	164
Depreciation & amortization	74	72	69	77	104
Change in working capital & Other	40	(20)	(77)	47	(97)
Taxes					
Cash flow from operations	174	103	104	237	170
Capex	(49)	(108)	(484)	(380)	(308)
Disposals/(purchase)	-	-	-	-	-
Net Interest	(3)	(2)	(2)	(37)	(42)
Free cash flow	129	(2)	(373)	(106)	(95)
Equity raised/repaid	(1)	(0)	1	0	0
Debt raised/repaid	(47)	(38)	855	302	0
Dividends paid	(29)	(8)	(30)	(66)	(29)
Other	1	1	(3)	(37)	(42)
Beginning cash	67	116	66	516	571
Ending cash	116	66	516	571	362
DPS	0.01	0.02	0.03	0.02	0.03

Balance sheet

BD in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	116	66	516	571	362
Accounts Receivable	104	92	157	138	200
Inventories	146	163	213	187	271
Others	0	0	0	0	0
Current assets	367	322	885	896	833
LT investments	-	-	-	-	-
Net fixed assets	811	848	1,262	1,564	1,769
Other non-current assets	5	4	4	4	4
Total assets	1,182	1,174	2,151	2,464	2,606
ST loans	56	45	45	45	187
Payables	144	132	169	171	220
Others	0	0	0	0	0
Total current liabilities	200	178	214	216	407
Long term debt	33	6	862	1,163	1,022
Other liabilities	1	2	3	3	3
Total liabilities	235	186	1,079	1,383	1,432
Shareholders' equity	948	988	1,072	1,081	1,174
BVPS	0.67	0.70	0.76	0.76	0.83

Ratio Analysis

BD in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
EBITDA Margin (%)	19.7%	18.4%	22.5%	22.5%	25.2%
Operating margin (%)	10.1%	7.7%	14.1%	13.3%	15.4%
Net margin (%)	7.8%	7.2%	13.0%	8.9%	11.5%
SG&A/Sales	-	-	-	-	-
Sales per share growth	(6.8%)	(12.5%)	23.4%	1.6%	26.0%
Sales growth (%)	(6.7%)	(12.6%)	23.8%	1.7%	26.0%
Attributable net profit growth (%)	(37.8%)	(20.0%)	124.6%	(30.3%)	62.3%
Adj. EPS growth (%)	(18.9%)	(33.3%)	121.6%	(31.7%)	62.3%
Interest coverage (x)	24.4	20.7	16.3	3.0	3.9
Net debt to Total Capital	(2.7%)	(1.3%)	26.9%	37.2%	42.0%
Net debt to equity	(2.7%)	(1.3%)	36.9%	59.3%	72.4%
Sales/assets (x)	0.7	0.6	0.5	0.4	0.4
Assets/Equity	1.3	1.2	1.6	2.1	2.2
ROE	8.0%	5.1%	10.7%	7.0%	10.8%
ROCE	7.4%	5.0%	7.8%	5.3%	7.0%

Source: Company reports and J.P. Morgan estimates.

Antofagasta

Underweight

Company Data	
Price (p)	920
Date Of Price	13 Dec 17
Price Target (p)	700
Price Target End Date	31-Dec-18
52-week Range (p)	1,071-648
Market Cap (£ bn)	9.06
Shares O/S (mn)	986

Antofagasta (ANTO.L;ANTO LN)

FYE Dec	**2015A**	**2016A**	**2017E** *(Prev)*	**2017E** *(Curr)*	**2018E** *(Prev)*	**2018E** *(Curr)*	**2019E** *(Prev)*	**2019E** *(Curr)*
Adj. EPS FY ($)	0.02	0.39	0.64	0.84	0.37	0.61	0.88	0.83
Bloomberg EPS FY ($)	0.09	0.36	-	0.71	-	0.70	-	0.81
EBITDA FY ($ mn)	891	1,621	2,231	2,630	1,686	2,217	2,903	2,784
EBITDA Margin FY	26.2%	42.4%	49.6%	53.8%	40.4%	47.0%	52.8%	51.8%
Adj P/E FY	774.7	32.0	19.3	14.8	33.2	20.1	13.9	14.9
EV/EBITDA (x) FY	15.4	8.6	6.7	5.1	9.0	6.2	5.1	4.8
FCFF Yield FY	3.5%	5.6%	11.3%	13.5%	5.8%	10.4%	13.7%	13.2%
Dividend Yield FY	0.3%	1.5%	1.8%	2.4%	1.1%	1.7%	2.5%	2.4%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Antofagasta *(Underweight; Price Target: 700p)*

Investment Thesis

We remain Underweight on ANTO. We forecast just 2% CAGR copper growth 2016-20, with FCF generation low and concerns over the economics of future growth projects. As a result, we forecast ANTO will have limited capacity to boost capital returns in 2017. Despite these risks, the shares look expensive on 2017/18E PER and EV/EBITDA multiples, whilst its NPV is now at significant discount to its share price.

Valuation

Our Dec-18 price target is an equally weighted combination of 1) 6.0x 2019E EV/EBITDA; and 2) 1.0x base case 2018E NPV. Our NPV is based on a sum-of-the-parts DCF valuation using a 10.5% discount rate. Valuation methodology is in line with the copper peers (combination of NPV and EV/EBITDA multiple).

Risks to Rating and Price Target

Key upside risks to our Underweight rating include:

- **Strong copper prices are sustained:** JPM’s forecasts are for copper to average <$5,000/t across 2017-18, with ANTO generating negligible FCF over the period. However if current copper prices are sustained into 2018, ANTO could modestly boost its dividend payout.
- **Improved production:** ANTO disappointed across multiple operations in 2016 and missed its original guidance. We expect ore hardness issues to continue at Los Pelambres and lower grades at Centinela, but if these issues are unexpectedly reversed in 2017-18, higher production and revenue would be a positive catalyst.
- **Changes to tax:** Improved legislation and other operating conditions in Chile, including a resolution of continued environmental concerns at Los Pelambres.

Antofagasta: Summary of Financials

Profit and Loss Statement

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
Revenues	3,626	4,628	4,416	5,113
% change Y/Y	6.8%	27.7%	(4.6%)	15.8%
Gross Margin (%)	44.7%	56.8%	50.2%	54.4%
EBITDA	1,536	2,489	2,075	2,649
% change Y/Y	72.4%	62.1%	(16.6%)	27.7%
EBITDA Margin (%)	42.4%	53.8%	47.0%	51.8%
EBIT	947	1,890	1,449	1,938
% change Y/Y	201.0%	99.6%	(23.4%)	33.8%
EBIT Margin (%)	26.1%	40.8%	32.8%	37.9%
Net Interest	(54)	(91)	(67)	(65)
Earnings before tax	285	1,865	1,443	1,929
% change Y/Y	9.7%	555.2%	(22.6%)	33.6%
Tax	(109)	(602)	(470)	(622)
as % of EBT	38.2%	32.3%	32.6%	32.3%
Net Income (Reported)	158	823	605	817
% change Y/Y	(74.0%)	421.1%	(26.5%)	35.1%
Shares Outstanding	986	986	986	986
Adj. EPS	0.39	0.84	0.61	0.83
% change Y/Y	2319.1%	116.8%	(26.5%)	35.1%

Cash flow statement

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
EBIT	947	1,890	1,449	1,938
Depreciation & amortization	578	587	627	711
Change in working capital	(64)	40	155	(112)
Taxes	(273)	(376)	(609)	(515)
Cash flow from operations	1,457	2,517	2,231	2,538
Capex	(795)	(934)	(1,011)	(974)
Disposals/(purchase)	23	0	0	0
Net Interest	(71)	(91)	(67)	(65)
Free cash flow	685	1,642	1,262	1,606
Equity raised/repaid	0	(17)	0	0
Debt Raised/repaid	214	(376)	(24)	0
Other	(260)	(299)	(257)	(360)
Dividends paid	(31)	(252)	(309)	(238)
Beginning cash	808	716	834	843
Ending cash	2,049	2,255	2,264	2,709
DPS	0.18	0.29	0.21	0.29

Balance sheet

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	2,049	2,255	2,264	2,709
Accounts Receivable	736	850	710	829
Inventories	393	402	430	444
Others	257	213	213	213
Current assets	3,435	3,720	3,616	4,195
Net fixed assets	8,738	9,095	9,480	9,743
Other non-current assets	1,401	1,355	1,355	1,356
Total assets	13,724	14,321	14,601	15,443
ST loans	837	823	823	823
Payables	596	623	665	687
Others	121	70	70	70
Total current liabilities	1,554	1,516	1,558	1,580
Long term debt	2,283	1,958	1,934	1,934
Other liabilities	3,268	3,191	3,029	3,135
Total liabilities	5,214	5,107	4,986	5,115
Shareholders' equity	8,510	9,214	9,615	10,329
BVPS	6.91	7.45	7.69	8.22

Ratio Analysis

	FY16	FY17E	FY18E	FY19E
EBITDA margin	42.4%	53.8%	47.0%	51.8%
EBIT margin	26.1%	40.8%	32.8%	37.9%
Net Profit margin	10.5%	17.8%	13.7%	16.0%
SG&A/Sales	-	-	-	-
Sales per share growth	6.8%	27.7%	(4.6%)	15.8%
Sales growth	6.8%	27.7%	(4.6%)	15.8%
Net profit growth	(74.0%)	421.1%	(26.5%)	35.1%
Adj. EPS growth	2319.1%	116.8%	(26.5%)	35.1%
Interest coverage (x)	28.5	27.4	31.0	40.7
Dividend Yield	1.5%	2.4%	1.7%	2.4%
Net debt to Total Capital	(3.2%)	(10.8%)	(10.7%)	(15.3%)
Net debt to equity	(3.1%)	(9.7%)	(9.7%)	(13.3%)
Sales/assets (x)	0.3	0.3	0.3	0.3
Assets/Equity	2.0	2.0	1.9	1.9
EV/EBITDA	8.6	5.1	6.2	4.8
P/E	32.0	14.8	20.1	14.9
P/BV	1.8	1.7	1.6	1.5
ROE	5.6%	11.6%	8.1%	10.4%
ROCE	4.2%	12.2%	9.0%	11.9%

Source: Company reports and J.P. Morgan estimates.

Boliden

Underweight

Company Data	
Price (Skr)	266.40
Date Of Price	13 Dec 17
Price Target (Skr)	225.00
Price Target End Date	30-Dec-18
52-week Range (Skr)	307.90-222.70
Market Cap (Skr mn)	72,863.38
Shares O/S (mn)	274

Boliden AB (BOL.ST;BOL SS)

FYE Dec	2015A	2016A	2017E	2017E	2018E	2018E	2019E	2019E
			(Prev)	*(Curr)*	*(Prev)*	*(Curr)*	*(Prev)*	*(Curr)*
Analyst Adjusted Basic EPS FY (Skr)	11.19	13.34	21.85	24.30	13.99	22.66	11.12	14.23
Bloomberg EPS FY (Skr)	10.51	13.65	-	23.45	-	24.26	-	22.42
Adjusted P/E FY	23.8	20.0	12.2	11.0	19.0	11.8	24.0	18.7
Revenue FY (Skr mn)	40,242	40,316	45,363	46,098	38,422	41,093	37,293	38,260
EBITDA FY (Skr mn)	7,112	9,881	12,079	12,945	9,401	12,387	8,523	9,202
EBITDA Margin FY	18.7%	23.1%	26.8%	28.2%	24.5%	30.1%	22.9%	24.1%
EV/EBITDA (x) FY	10.4	8.8	6.6	5.9	8.3	6.0	8.8	8.0
FCFF Yield FY	3.6%	4.1%	8.7%	8.8%	6.0%	6.8%	5.7%	4.3%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Boliden *(Underweight; Price Target: Skr225.00)*

Investment Thesis

We have an Underweight recommendation on Boliden. The company delivers strong FCF from well-established and well-operated mines, predominantly in Scandinavia. The company also benefits from a relatively low-beta smelting business and boasts a strong balance sheet. However, the shares lack any clear stock-specific positive catalysts over the next 6-12 months, while we believe focus is likely to turn towards a worsening FCF profile in 2019 as grade profiles deteriorate at several mines.

Valuation

Our Dec-18 price target is an equally weighted combination of 1) 7.0x 2019E EV/EBITDA; and 2) 1.1x base case 2018E P/NPV. Our NPV is based on a sum-of-the-parts DCF valuation using a 10% discount rate. Valuation methodology is in line with the copper peers (combination of NPV and EV/EBITDA multiple).

Risks to Rating and Price Target

Key upside risks relate to:

- Additional synergies from the Kevitsa acquisition;
- Resolving problems with crushers at Aitik;
- More favourable outcomes in commodities, currencies, production, unit costs and capex relative to our forecasts; and
- Changes to tax, legislation and other operating conditions.

Boliden: Summary of Financials

Profit and Loss Statement

Skr in millions, year end Dec	FY16	FY17E	FY18E	FY19E
Revenues	40,316	46,098	41,093	38,260
% change Y/Y	0.2%	14.3%	(10.9%)	(6.9%)
Gross Margin (%)	-	-	-	-
EBITDA	9,293	13,021	12,387	9,202
% change Y/Y	23.4%	40.1%	(4.9%)	(25.7%)
EBITDA Margin (%)	23.1%	28.2%	30.1%	24.1%
EBIT	5,094	8,575	8,153	5,188
% change Y/Y	27.0%	68.3%	(4.9%)	(36.4%)
EBIT Margin (%)	12.6%	18.6%	19.8%	13.6%
Net Interest	(307)	(273)	(207)	(196)
Earnings before tax	5,375	8,226	7,945	4,992
% change Y/Y	60.2%	53.0%	(3.4%)	(37.2%)
Tax	(1,135)	(1,654)	(1,748)	(1,098)
as % of EBT	21.1%	20.1%	22.0%	22.0%
Net Income (Reported)	4,237	6,571	6,197	3,893
% change Y/Y	60.5%	55.1%	(5.7%)	(37.2%)
Shares Outstanding	274	274	274	274
EPS (Reported)	15.49	24.02	22.66	14.23
% change Y/Y	60.5%	55.1%	(5.7%)	(37.2%)

Cash flow statement

Skr in millions, year end Dec	FY16	FY17E	FY18E	FY19E
EBIT	5,094	8,575	8,153	5,188
Depreciation & amortization	4,199	4,449	4,235	4,014
Change in working capital	(923)	738	552	269
Taxes	-	-	-	-
Cash flow from operations	6,994	11,932	10,984	8,177
Capex	(3,975)	(5,490)	(6,021)	(5,055)
Disposals/(purchase)	-	-	-	-
Net Interest	-	-	-	-
Free cash flow	3,019	6,442	4,963	3,122
Equity raised/repaid	-	-	-	-
Debt Raised/repaid	4,264	(3,519)	0	0
Other	0	0	0	0
Dividends paid	(889)	(1,436)	(2,188)	(2,051)
Beginning cash	923	1,503	3,150	5,925
Ending cash	1,501	3,148	5,925	6,996
DPS	5.25	8.00	7.50	4.75

Balance sheet

Skr in millions, year end Dec	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	1,503	3,150	5,925	6,996
Accounts Receivable	2,017	2,009	1,995	1,914
Inventories	10,077	8,372	8,311	7,976
Others	1,121	1,106	1,106	1,106
Current assets	15,016	14,805	17,503	18,160
Net fixed assets	34,850	35,879	37,665	38,706
Other non-current assets	504	332	332	332
Total assets	53,878	54,468	58,953	60,651
ST loans	1,907	1,308	1,308	1,308
Payables	4,239	3,126	3,601	3,456
Others	3,499	3,617	3,617	3,617
Total current liabilities	9,645	8,051	8,526	8,381
Long term debt	8,194	5,293	5,293	5,293
Other liabilities	11,256	8,308	8,308	8,308
Total liabilities	24,481	19,985	20,460	20,315
Shareholders' equity	29,394	34,484	38,493	40,335
BVPS	-	-	-	-

Ratio Analysis

	FY16	FY17E	FY18E	FY19E
EBITDA margin	23.1%	28.2%	30.1%	24.1%
EBIT margin	12.6%	18.6%	19.8%	13.6%
Net Profit margin	9.1%	14.4%	15.1%	10.2%
SG&A/Sales	-	-	-	-
Sales per share growth	0.2%	14.3%	(10.9%)	(6.9%)
Sales growth	0.2%	14.3%	(10.9%)	(6.9%)
Net profit growth	60.5%	55.1%	(5.7%)	(37.2%)
EPS growth	60.5%	55.1%	(5.7%)	(37.2%)
Interest coverage (x)	30.3	47.7	59.8	46.8
Dividend Yield	2.0%	3.0%	2.8%	1.8%
Net debt to Total Capital	22.6%	9.1%	1.7%	(1.0%)
Net debt to equity	29.3%	10.0%	1.8%	(1.0%)
Sales/assets (x)	0.8	0.9	0.7	0.6
Assets/Equity	1.8	1.7	1.6	1.5
EV/EBITDA	8.8	5.9	6.0	8.0
P/E	17.2	11.1	11.8	18.7
P/BV	-	-	-	-
ROE	13.2%	20.8%	17.0%	9.9%
ROCE	11.0%	17.0%	14.8%	8.8%

Source: Company reports and J.P. Morgan estimates.

Ferrexpo Plc

Neutral

Company Data	
Price (p)	262
Date Of Price	13 Dec 17
Price Target (p)	240
Price Target End Date	30-Dec-18
52-week Range (p)	327-121
Market Cap (£ mn)	1,533.96
Shares O/S (mn)	585

Ferrexpo Plc (FXPO.L;FXPO LN)

FYE Dec	2015A	2016A	2017E *(Prev)*	2017E *(Curr)*	2018E *(Prev)*	2018E *(Curr)*
Adj. EPS FY ($)	0.24	0.36	0.65	0.64	0.52	0.44
EBITDA FY ($ mn)	313	375	531	526	462	405
Adj EBITDA Margin FY	32.5%	38.0%	45.3%	45.0%	41.5%	36.0%
Adj P/E FY	14.6	9.8	5.3	5.4	6.7	7.9
EV/EBITDA (x) FY	8.5	7.0	5.4	4.5	5.7	5.4
Dividend Yield FY	0.9%	1.9%	3.8%	3.8%	3.8%	3.8%
FCF FY ($ mn)	131	347	315	311	332	280
Bloomberg EPS FY ($)	0.21	0.34	-	0.61	-	0.46

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Ferrexpo Plc *(Neutral; Price Target: 240p)*

Investment Thesis

Ferrexpo is an iron ore producer with operations in Ukraine. We have a Neutral recommendation based on (i) limited valuation upside, (ii) no clear catalysts and (iii) concerns about sustainability of iron ore price >$70/t.

Valuation

Our Dec'18 price target is calculated as an average of (i) DCF valuation and (WACC of 12.8%, terminal growth 0%) and (ii) multiples valuation (based on 2019E EBITDA and 7.0x EV/EBITDA multiple). We apply 20% discount to our valuation to reflect our generally bearish outlook for iron ore prices and elevated geopolitical risks with operations located in Ukraine.

Risks to Rating and Price Target

Key risks relate to:

- Better than expected or adverse outcomes in commodities, currencies, production, unit costs and capex relative to our forecasts;
- Adverse changes to tax, legislation and other operating conditions;
- Further tightness in the pellet market; and
- A deterioration of Ukraine's geopolitical situation.

Ferrexpo Plc: Summary of Financials

Profit and Loss Statement

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
Revenues	961	986	1,169	1,124	1,116
% Change Y/Y	(30.8%)	2.6%	18.5%	(3.8%)	(0.7%)
Gross Margin (%)	32.5%	38.0%	45.0%	36.0%	35.9%
EBITDA	313	375	526	405	401
% Change Y/Y	(36.9%)	20.0%	40.1%	(23.0%)	(1.1%)
EBITDA Margin (%)	32.5%	38.0%	45.0%	36.0%	35.9%
EBIT	256	324	481	356	350
% Change Y/Y	(38.2%)	26.8%	48.3%	(25.9%)	(1.9%)
EBIT Margin	26.6%	32.9%	41.1%	31.7%	31.3%
Net Interest	(87)	(77)	(47)	(38)	(23)
Earnings before tax	25	231	432	319	327
% change Y/Y	(90.0%)	812.8%	86.7%	(26.2%)	2.7%
Tax	6	(42)	(48)	(57)	(59)
Tax as a % of BT	24.1%	18.2%	11.2%	18.0%	18.0%
Net Income (Reported)	33	187	381	259	266
% change Y/Y	(81.5%)	467.1%	103.6%	(32.2%)	2.7%
Shares Outstanding	585	585	585	585	586
Adj. EPS	0.24	0.36	0.64	0.44	0.45
% Change Y/Y	(43.7%)	48.9%	81.0%	(31.5%)	2.7%

Cash flow statement

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
EBIT	256	324	481	356	350
Depreciation & amortization	57	51	44	48	50
Change in working capital & Other	(77)	9	(73)	29	(1)
Taxes	(11)	24	(28)	(57)	(59)
Cash flow from operations	130	332	371	331	310
Capex	(65)	(48)	(101)	(82)	(85)
Disposals/(purchase)	(143)	0	0	0	0
Net Interest	(63)	(65)	(52)	(38)	(23)
Free cash flow	131	347	311	280	244
Equity raised/repaid	0	0	0	0	0
Debt raised/repaid	(409)	(177)	(243)	(187)	(102)
Dividends paid	(78)	0	(58)	(77)	(77)
Other	(2)	(1)	(1)	(1)	(1)
Beginning cash	0	45	145	114	99
Ending cash	45	145	114	99	146
DPS	0.03	0.07	0.13	0.13	0.07

Balance sheet

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	45	145	114	99	146
Accounts Receivable	83	82	95	91	93
Inventories	96	79	123	106	104
Others	72	54	41	41	41
Current assets	296	359	373	336	384
LT investments	6	2	4	4	4
Net fixed assets	654	575	651	685	720
Other non-current assets	275	229	276	274	280
Total assets	1,226	1,163	1,300	1,295	1,383
ST loans	203	228	345	300	198
Payables	28	29	60	67	67
Others	32	60	46	46	46
Total current liabilities	263	317	451	413	312
Long term debt	700	506	149	0	0
Other liabilities	17	16	16	15	14
Total liabilities	982	840	618	429	326
Shareholders' equity	244	323	682	866	1,057
BVPS	0.42	0.55	1.16	1.48	1.80

Ratio Analysis

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
EBITDA Margin (%)	32.5%	38.0%	45.0%	36.0%	35.9%
Operating margin (%)	26.6%	32.9%	41.1%	31.7%	31.3%
Net margin (%)	14.6%	21.1%	32.3%	23.0%	23.8%
SG&A/Sales	-	-	-	-	-
Sales per share growth	(30.8%)	2.6%	18.5%	(3.8%)	(0.7%)
Sales growth (%)	(30.8%)	2.6%	18.5%	(3.8%)	(0.7%)
Attributable net profit growth (%)	(81.5%)	467.1%	103.6%	(32.2%)	2.7%
EPS growth (%)	(43.7%)	48.9%	81.0%	(31.5%)	2.7%
Interest coverage (x)	2.9	4.2	10.3	9.4	15.5
Net debt to Total Capital	77.9%	64.6%	35.8%	18.8%	4.7%
Net debt to equity	352.2%	182.2%	55.8%	23.2%	5.0%
Sales/assets (x)	0.6	0.8	0.9	0.9	0.8
Assets/Equity	3.5	4.2	2.5	1.7	1.4
ROE	29.4%	73.3%	75.2%	33.6%	27.8%
ROCE	12.3%	24.0%	38.3%	25.0%	23.8%

Source: Company reports and J.P. Morgan estimates.

Fresnillo Plc

Neutral

Company Data	
Price (p)	1,301
Date Of Price	13 Dec 17
Price Target (p)	1,450
Price Target End Date	31-Dec-18
52-week Range (p)	1,746-1,052
Market Cap (£ bn)	9.59
Shares O/S (mn)	737

Fresnillo Plc (FRES.L;FRES LN)

FYE Dec	2015A	2016A	2017E *(Prev)*	2017E *(Curr)*	2018E *(Prev)*	2018E *(Curr)*
Adj. EPS FY ($)	0.07	0.45	0.60	0.62	0.63	0.65
Bloomberg EPS FY ($)	0.15	0.43	-	0.67	-	0.74
Adj P/E FY	251.6	38.6	29.1	28.0	27.8	26.9
EV/EBITDA (x) FY	24.1	12.4	12.9	12.1	11.2	10.6
FCFF Yield FY	0.4%	3.6%	0.7%	0.7%	1.9%	2.1%
Dividend Yield FY	0.3%	1.7%	2.0%	2.0%	2.0%	2.0%
EBITA Margin FY	15.0%	36.0%	32.5%	33.4%	34.1%	34.9%
EBITDA Margin FY	38.0%	54.2%	50.4%	51.1%	51.7%	52.2%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Fresnillo Plc *(Neutral; Price Target: 1,450p)*

Investment Thesis

Our Neutral recommendation reflects that Fresnillo's valuation is fully up-to-speed with fundamentals and our view that its valuation is not compelling. FRES continues to have a strong operational track-record, high-quality volume growth, and strong management and should therefore maintain its position as the equity market's "bellwether" exposure for silver and gold.

Valuation

Our Dec'18 price target is set at 1.5x P/NPV, rounded to the nearest 50p. Our premium multiple assumption reflects FRES' strong management and history of project delivery, growth profile and a long-standing equity premium to peers. Our NPV is based on a sum-of-the parts DCF valuation using a 7.6% nominal discount rate, which does not differ significantly from the peer group.

Risks to Rating and Price Target

Key upside risks include:

- Upside to commodity prices;
- Favourable changes to tax, legislation and other operating conditions; and
- Stronger-than-expected delivery of growth projects.

Key downside risks relate to:

- Adverse outcomes in commodities, currencies, production, unit costs and capex relative to our forecasts;
- Adverse changes to tax, legislation and other operating conditions; and
- Failure to deliver the company's growth pipeline and any M&A activity within the industry.

Fresnillo Plc: Summary of Financials

Profit and Loss Statement

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
Revenues	1,905	2,089	2,333	2,489
% Change Y/Y	32.3%	9.6%	11.7%	6.7%
Gross Margin (%)	46.3%	44.7%	43.5%	43.9%
EBITDA	1,032	1,067	1,218	1,313
% Change Y/Y	88.5%	3.4%	14.1%	7.8%
EBITDA Margin (%)	54.2%	51.1%	52.2%	52.8%
EBIT	685	698	813	885
% Change Y/Y	216.9%	1.8%	16.6%	8.8%
EBIT Margin	36.0%	33.4%	34.9%	35.5%
Net Interest	(33)	(36)	(44)	(43)
Earnings before tax	718	709	769	842
% change Y/Y	238.2%	(1.3%)	8.5%	9.4%
Tax	(220)	(143)	(213)	(232)
Tax as a % of BT	30.6%	20.2%	27.7%	27.6%
Net Income (Reported)	427	498	478	524
% change Y/Y	505.5%	16.7%	(4.0%)	9.6%
Shares Outstanding	737	737	737	737
Adj. EPS	0.45	0.62	0.65	0.71
% Change Y/Y	552.4%	37.9%	4.0%	9.6%

Cash flow statement

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
EBIT	685	698	813	885
Depreciation & amortization	347	370	405	428
Change in working capital & Other	(11)	30	(22)	(10)
Taxes	(102)	(327)	(291)	(317)
Cash flow from operations	877	740	861	942
Capex	(434)	(670)	(622)	(429)
Disposals/(purchase)	(81)	(290)	0	0
Net Interest	(21)	(30)	(44)	(43)
Free cash flow	462	96	266	540
Equity raised/repaid	0	0	0	0
Debt raised/repaid	0	0	0	0
Dividends paid	(88)	(237)	(269)	(271)
Other	7	8	(7)	(8)
Beginning cash	381	711	329	338
Ending cash	711	329	338	621
DPS	0.30	0.35	0.36	0.39

Balance sheet

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	712	330	339	622
Accounts Receivable	287	264	301	308
Inventories	187	203	228	238
Others	38	104	104	104
Current assets	1,424	1,391	1,462	1,762
Net fixed assets	2,180	2,495	2,712	2,713
Other non-current assets	685	733	686	637
Total assets	4,290	4,619	4,859	5,112
ST loans	0	0	0	0
Payables	122	113	152	159
Others	32	9	9	9
Total current liabilities	154	121	161	167
Long term debt	798	798	798	798
Other liabilities	798	810	810	810
Total liabilities	1,573	1,618	1,658	1,664
Shareholders' equity	2,716	3,001	3,202	3,447
BVPS	3.64	4.01	4.28	4.61

Ratio Analysis

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
EBITDA Margin (%)	54.2%	51.1%	52.2%	52.8%
Operating margin (%)	36.0%	33.4%	34.9%	35.5%
Net margin (%)	17.5%	22.0%	20.5%	21.1%
SG&A/Sales	4.0%	3.7%	3.1%	3.0%
Sales per share growth	32.3%	9.6%	11.7%	6.7%
Sales growth (%)	32.3%	9.6%	11.7%	6.7%
Attributable net profit growth (%)	505.5%	16.7%	(4.0%)	9.6%
EPS growth (%)	552.4%	37.9%	4.0%	9.6%
Interest coverage (x)	20.7	19.3	18.5	20.5
Net debt to Total Capital	(4.4%)	(0.7%)	(0.9%)	(10.0%)
Net debt to equity	(4.2%)	(0.7%)	(0.9%)	(9.1%)
Sales/assets (x)	0.5	0.5	0.5	0.5
Assets/Equity	1.6	1.6	1.6	1.5
ROE	13.3%	16.3%	15.7%	16.0%
ROCE	12.3%	13.6%	13.1%	13.5%

Source: Company reports and J.P. Morgan estimates.

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Gem Diamonds Ltd

Neutral

Company Data	
Price (p)	72
Date Of Price	13 Dec 17
Price Target (p)	95
Price Target End Date	30-Dec-18
52-week Range (p)	125-69
Market Cap (£ mn)	99.49
Shares O/S (mn)	138

Gem Diamonds Ltd (GEMD.L;GEMD LN)

FYE Dec	2015A	2016A	2017E	2018E *(Prev)*	2018E *(Curr)*
Adj. EPS FY ($)	0.30	0.13	0.02	0.07	0.08
Bloomberg EPS FY ($)	0.21	0.12	0.02	-	0.10
EBITDA FY ($ mn)	104	63	40	74	76
EBITDA Margin FY	41.5%	33.1%	19.3%	30.0%	31.0%
Adj P/E FY	3.2	7.5	43.7	13.6	12.2
EV/EBITDA FY	0.9	2.0	4.0	2.1	2.0
FCFF Yield FY	(7.8%)	(27.5%)	(45.5%)	(20.0%)	(17.3%)
ROE FY	14.2%	8.5%	2.2%	6.6%	7.3%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Gem Diamonds Ltd *(Neutral; Price Target: 95p)*

Investment Thesis

We retain our Neutral recommendation. We acknowledge the quality of GEMD's premier asset, Letšeng, which has an average reserve price of >$2,000/ct and has a track record of solid operational performance. However, a lower frequency of +100ct stones over the last 12-18 months has materially impacted the average achieved price, and we expect this will remain an issue over 2017. The net impact will be an increase in net debt which will transfer value away from equity-holders over the near-term.

Valuation

We use an NPV-based approach to derive our price target for GEMD. We apply ~0.60x P/NPV to our Dec'18E NPV, using a ~13.0% nominal WACC (10% real) which is structured on the basis of the location of GEMD's assets, rounded to the nearest 5p.

Risks to Rating and Price Target

Key upside & downside risks relate to:

- Adverse or better-than-expected outcomes in commodities, currencies, production, unit costs and capex relative to our forecasts;
- Changes to tax, legislation and other operating conditions; and
- Project development, including receiving regulatory approvals, capital inflation (or deflation), delays, as well as the need of external funding.

Gem Diamonds Ltd: Summary of Financials

Profit and Loss Statement

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
Revenues	250	190	205	245	269
% Change Y/Y	(7.9%)	(23.9%)	8.3%	19.2%	9.6%
Gross Margin (%)	-	-	-	-	-
EBITDA	104	63	40	76	99
% Change Y/Y	(2.4%)	(39.3%)	(37.0%)	91.8%	29.8%
EBITDA Margin (%)	41.5%	33.1%	19.3%	31.0%	36.7%
EBIT	93	52	29	66	88
% Change Y/Y	2.1%	(43.7%)	(44.1%)	123.7%	34.3%
EBIT Margin	43.5%	(65.4%)	13.9%	25.9%	32.0%
Net Interest	0	(0)	(2)	(2)	(1)
Earnings before tax	109	(124)	27	61	85
% change Y/Y	17.1%	(214.4%)	(121.4%)	131.1%	37.7%
Tax	(32)	(20)	(12)	(28)	(35)
Tax as a % of BT	29.1%	(16.1%)	45.1%	45.1%	41.0%
Net Income (Reported)	52	(159)	3	11	22
% change Y/Y	55.6%	(408.9%)	(101.8%)	275.0%	100.8%
Shares Outstanding	138	138	138	138	138
EPS (Reported)	0.30	0.13	0.02	0.08	0.16
% Change Y/Y	17.1%	(57.7%)	(82.9%)	258.8%	100.8%

Cash flow statement

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
EBIT	109	(124)	29	63	86
Depreciation & amortization	10	10	10	10	11
Change in working capital & Other	(4)	(0)	(7)	(1)	(1)
Taxes	(34)	(22)	(2)	(16)	(24)
Cash flow from operations	100	62	33	75	98
Capex	(110)	(99)	(94)	(99)	(98)
Disposals/(purchase)	0	0	0	0	0
Net Interest	1	(1)	(1)	(2)	(1)
Free cash flow	(10)	(36)	(60)	(23)	1
Equity raised/repaid	0	0	0	0	0
Debt raised/repaid	(4)	(4)	4	(12)	(10)
Dividends paid	(7)	(12)	0	0	0
Other	0	0	0	0	0
Beginning cash	111	86	31	23	14
Ending cash	86	31	23	14	18
DPS	0.05	0.00	0.00	0.00	0.02

Balance sheet

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	86	31	23	14	18
Accounts Receivable	6	7	6	7	8
Inventories	30	31	35	34	34
Others	0	5	2	2	2
Current assets	122	73	66	58	62
LT investments	-	-	-	-	-
Net fixed assets	356	272	308	342	375
Other non-current assets	3	1	1	1	1
Total assets	478	345	374	400	437
ST loans	5	28	12	10	10
Payables	32	29	26	26	26
Others	7	0	0	0	0
Total current liabilities	45	57	38	36	36
Long term debt	25	0	20	10	0
Other liabilities	52	67	78	90	101
Total liabilities	134	141	154	154	155
Shareholders' equity	344	204	220	246	283
BVPS	2.49	1.47	1.59	1.78	2.04

Ratio Analysis

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
EBITDA Margin (%)	41.5%	33.1%	19.3%	31.0%	36.7%
Operating margin (%)	43.5%	(65.4%)	13.9%	25.9%	32.0%
Net margin (%)	16.8%	9.3%	1.5%	4.4%	8.1%
SG&A/Sales	-	-	-	-	-
Sales per share growth	(7.9%)	(23.9%)	8.2%	19.2%	9.6%
Sales growth (%)	(7.9%)	(23.9%)	8.3%	19.2%	9.6%
Attributable net profit growth (%)	55.6%	(408.9%)	(101.8%)	275.0%	100.8%
EPS growth (%)	17.1%	(57.7%)	(82.9%)	258.8%	100.8%
Interest coverage (x)	(931.0)	262.0	14.9	31.2	64.1
Net debt to Total Capital	(19.2%)	(1.5%)	3.9%	2.4%	(2.8%)
Net debt to equity	(16.1%)	(1.5%)	4.0%	2.4%	(2.8%)
Sales/assets (x)	0.5	0.5	0.6	0.6	0.6
Assets/Equity	1.7	2.0	2.6	2.6	2.5
ROE	14.2%	8.5%	2.2%	7.3%	13.0%
ROCE	24.7%	(55.7%)	9.1%	19.3%	27.2%

Source: Company reports and J.P. Morgan estimates.

Hochschild

Underweight

Company Data	
Price (p)	233
Date Of Price	13 Dec 17
Price Target (p)	205
Price Target End Date	31-Dec-18
52-week Range (p)	338-187
Market Cap (£ bn)	1.24
Shares O/S (mn)	532

Hochschild Mining Plc. (HOCM.L;HOC LN)

FYE Dec	2015A	2016A	2017E *(Prev)*	2017E *(Curr)*	2018E *(Prev)*	2018E *(Curr)*	2019E *(Prev)*	2019E *(Curr)*
Adj. EPS FY ($)	(0.12)	0.11	0.06	0.03	0.10	0.09	0.07	0.04
Bloomberg EPS FY ($)	-0.12	0.11	-	0.08	-	0.11	-	0.16
Adj EBITDA FY ($ mn)	139	329	293	272	373	369	343	324
EBITDA Margin FY	29.6%	47.8%	41.5%	38.7%	45.2%	44.7%	43.4%	41.7%
Adj P/E FY	NM	29.7	55.2	91.7	29.9	34.5	43.8	72.1
EV/EBITDA FY	14.6	5.7	5.7	6.6	4.2	4.6	4.1	4.8
FCFF Yield FY	(1.9%)	17.8%	11.4%	10.0%	14.7%	14.4%	13.9%	12.8%
Dividend Yield FY	0.0%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Hochschild *(Underweight; Price Target: 205p)*

Investment Thesis

We rate the stock Underweight on valuation grounds. On spot prices, HOC trades at a premium to its long-run average, which becomes more onerous under weaker precious metal prices, and on JPM base case trades at a premium (P/NPV basis) relative to UK precious metal peers, which we do not believe is warranted.

Valuation

Our Dec'18 PT price target is set at 1.4x P/NPV, rounded to the nearest 5p. We believe that potential mine life extensions beyond the current reserve position warrant the premium to NPV, which is also in-line with the peers. Our NPV is based on a sum-of-the parts DCF valuation using a 7.6% nominal discount rate, which does not differ significantly from the peer group.

Risks to Rating and Price Target

Upside risks to our recommendation and price target include:

- Precious metal prices outperforming industrial metals;
- Better-than-expected success with its brownfield exploration programme which could increase mine lives and / or reduce costs;
- Other risks include an acceleration of the delivery of organic growth or any M&A activity within the industry.

Hochschild: Summary of Financials

Profit and Loss Statement

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
Revenues	688	702	824	778
% Change Y/Y	46.7%	2.0%	17.4%	(5.6%)
Gross Margin (%)	29.1%	22.4%	27.6%	21.4%
EBITDA	329	272	369	324
% Change Y/Y	137.0%	(17.4%)	35.7%	(12.0%)
EBITDA Margin (%)	47.8%	38.7%	44.7%	41.7%
EBIT	148	69	140	86
% Change Y/Y	(1104.8%)	(53.2%)	101.3%	(38.6%)
EBIT Margin	21.5%	9.9%	16.9%	11.0%
Net Interest	(29)	(20)	(11)	2
Earnings before tax	107	58	127	86
% change Y/Y	(141.5%)	(45.7%)	117.2%	(32.3%)
Tax	(33)	(14)	(60)	(41)
Tax as a % of BT	30.7%	23.6%	47.5%	47.6%
Net Income (Reported)	46	26	44	20
% change Y/Y	(119.1%)	(43.9%)	71.7%	(54.8%)
Shares Outstanding	506	507	507	507
Adj. Eps	0.11	0.03	0.09	0.04
% Change Y/Y	(185.1%)	(67.6%)	166.2%	(52.2%)

Cash flow statement

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
EBIT	148	69	140	86
Depreciation & amortization	182	195	226	234
Change in working capital & Other	71	8	(14)	14
Taxes	(0)	(29)	(67)	(52)
Cash flow from operations	400	279	355	339
Capex	(130)	(130)	(127)	(132)
Disposals/(purchase)	3	2	0	0
Net Interest	(26)	(21)	(11)	2
Free cash flow	287	162	233	206
Equity raised/repaid	0	0	0	0
Debt raised/repaid	(107)	(19)	(106)	(100)
Dividends paid	(7)	(14)	(14)	(14)
Other	(18)	(8)	(21)	(19)
Beginning cash	84	140	183	187
Ending cash	140	183	187	204
DPS	0.03	0.03	0.03	0.03

Balance sheet

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents				
Accounts Receivable	68	80	99	86
Inventories	57	55	61	62
Others	21	19	19	19
Current assets	286	337	366	371
Net fixed assets	975	927	828	726
Other non-current assets	193	184	184	184
Total assets	1,455	1,449	1,379	1,281
ST loans	36	18	0	0
Payables	100	114	125	127
Others	35	17	17	17
Total current liabilities	172	148	141	144
Long term debt	291	291	203	103
Other liabilities	383	393	305	205
Total liabilities	661	646	551	454
Shareholders' equity	793	803	827	827
BVPS	1.39	1.41	1.47	1.48

Ratio Analysis

$ in millions, year end Dec	FY16	FY17E	FY18E	FY19E
EBITDA Margin (%)	47.8%	38.7%	44.7%	41.7%
Operating margin (%)	21.5%	9.9%	16.9%	11.0%
Net margin (%)	7.7%	2.5%	5.6%	2.8%
SG&A/Sales	5.0%	5.4%	3.6%	3.2%
Sales per share growth	54.3%	1.7%	17.4%	(5.6%)
Sales growth (%)	46.7%	2.0%	17.4%	(5.6%)
Attributable net profit growth (%)	(119.1%)	(43.9%)	71.7%	(54.8%)
Adj. EPS growth (%)	(185.1%)	(67.6%)	166.2%	(52.2%)
Interest coverage (x)	5.0	3.4	12.9	(40.9)
Net debt to Total Capital	19.1%	13.6%	1.9%	(13.9%)
Net debt to equity	23.6%	15.7%	1.9%	(12.2%)
Sales/assets (x)	0.5	0.5	0.6	0.6
Assets/Equity	2.2	2.0	1.9	1.8
ROE	7.7%	2.4%	6.3%	2.9%
ROCE	7.7%	4.1%	6.7%	3.7%

Source: Company reports and J.P. Morgan estimates.

Hydro

Neutral

Company Data	
Price (Nkr)	56.35
Date Of Price	13 Dec 17
Price Target (Nkr)	57.00
Price Target End Date	31-Dec-18
52-week Range (Nkr)	64.85-40.43
Market Cap (Nkr mn)	115,085.00
Shares O/S (mn)	2,042

Norsk Hydro (NHY.OL;NHY NO)

FYE Dec	**2015A**	**2016A**	**2017E** *(Prev)*	**2017E** *(Curr)*	**2018E** *(Prev)*	**2018E** *(Curr)*	**2019E** *(Prev)*	**2019E** *(Curr)*
Adj. EPS FY (Nkr)	2.98	1.84	3.53	3.62	3.91	4.17	3.27	3.34
Bloomberg EPS FY (Nkr)	2.64	1.96	-	3.69	-	4.48	-	4.56
Revenue FY (Nkr mn)	87,694	81,953	105,648	106,120	151,969	152,856	153,874	154,304
EBITDA FY (Nkr mn)	13,283	12,485	16,409	16,788	19,452	20,642	17,291	17,989
EBITDA Margin FY	16.7%	14.0%	15.5%	15.8%	12.8%	13.5%	11.2%	11.7%
Adjusted P/E FY	18.9	30.6	16.0	15.6	14.4	13.5	17.2	16.9
EV/EBITDA (x) FY	7.7	9.8	8.2	7.3	6.7	5.6	7.3	6.3
FCFF Yield FY	10.5%	1.9%	2.0%	1.8%	7.1%	8.3%	6.0%	5.6%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Hydro *(Neutral; Price Target: Nkr57.00)*

Investment Thesis

Hydro is essentially a commodity story, with few stock-specific catalysts in our view. Our Neutral recommendation reflects our view that, while aluminium remains the best supported of the base metals, positive price momentum is likely to have peaked and consensus forecasts have now caught up with fundamentals, With potential for cost-driven disappointments in 2018.

Valuation

Our Dec-18 price target is an equally weighted combination of 1) 6.7x 2018E EV/EBITDA; and 2) 1.0x base case 2017E NPV. Our NPV is based on a sum-of-the-parts DCF valuation using a 9.4% discount rate. Our valuation methodology is in line with that of the base metal peers (combination of NPV and EV/EBITDA multiple).

Risks to Rating and Price Target

Key risks relate to:

- We expect downside to NHY’s valuation would result from lower commodity prices, strengthening of NOK/US$ EUR/US$, and/or lower production or higher costs. The reverse would drive further upside to earnings and valuation;
- Changes to tax, legislation and other operating conditions; and
- Additional investments, particularly in bauxite mining assets in Brazil.

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Hydro: Summary of Financials

Profit and Loss Statement

Nkr in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
Revenues	87,694	81,953	106,120	152,856	154,304
% Change Y/Y	12.6%	(6.5%)	29.5%	44.0%	0.9%
Gross Margin (%)	-	-	-	-	-
EBITDA	14,680	11,474	16,770	20,642	17,989
% Change Y/Y	42.5%	(21.8%)	46.2%	23.1%	(12.9%)
EBITDA Margin (%)	16.7%	14.0%	15.8%	13.5%	11.7%
EBIT	9,656	6,425	10,786	13,387	10,679
% Change Y/Y	69.6%	(33.5%)	67.9%	24.1%	(20.2%)
EBIT Margin	11.0%	7.8%	10.2%	8.8%	6.9%
Net Interest	(4,834)	2,126	(389)	(705)	(537)
Earnings before tax	3,425	9,137	10,416	12,683	10,142
% change Y/Y	61.6%	166.8%	14.0%	21.8%	(20.0%)
Tax	(1,092)	(2,551)	(2,678)	(3,805)	(3,043)
Tax as a % of BT	31.9%	27.9%	25.7%	30.0%	30.0%
Net Income (Reported)	2,645	6,286	7,351	8,523	6,815
% change Y/Y	59.4%	137.7%	16.9%	15.9%	(20.0%)
Shares Outstanding	2,040	2,042	2,042	2,042	2,042
Adj. EPS	2.98	1.84	3.62	4.17	3.34
% Change Y/Y	92.3%	(38.3%)	96.9%	15.2%	(20.0%)

Cash flow statement

Nkr in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
EBIT	9,656	6,425	10,786	13,387	10,679
Depreciation & amortization	5,022	5,474	5,990	7,254	7,310
Change in working capital & Other	1,068	456	(6,434)	1,037	(417)
Taxes	-	-	-	-	-
Cash flow from operations	14,373	10,017	8,702	17,169	13,992
Capex	(5,254)	(6,913)	(6,887)	(8,145)	(7,920)
Disposals/(purchase)	0	0	(9,807)	0	0
Net Interest	-	-	-	-	-
Free cash flow	12,062	2,141	2,104	9,517	6,448
Equity raised/repaid	20	29	29	0	0
Debt raised/repaid	(4,702)	(2,317)	5,144	0	(1,500)
Dividends paid	(2,370)	(2,363)	(2,994)	(3,068)	(3,579)
Other	(329)	265	3,782	0	0
Beginning cash	9,372	7,952	17,853	12,741	13,758
Ending cash	7,041	9,070	18,975	18,697	14,752
DPS	1.00	1.25	1.50	1.75	1.25

Balance sheet

Nkr in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	6,917	8,037	9,158	15,115	16,108
Accounts Receivable	10,797	10,884	18,240	17,863	18,262
Inventories	12,192	12,381	18,259	18,353	18,834
Others	502	457	257	257	257
Current assets	36,160	36,372	47,900	53,573	55,447
LT investments	-	-	-	-	-
Net fixed assets	51,174	58,734	67,149	68,039	68,649
Other non-current assets	35,210	35,688	34,223	34,223	34,223
Total assets	122,544	130,794	149,271	155,835	158,319
ST loans	3,562	3,283	9,065	9,065	9,065
Payables	9,375	10,108	16,907	17,660	18,123
Others	4,462	3,716	3,542	3,542	3,542
Total current liabilities	17,399	17,106	29,514	30,267	30,730
Long term debt	3,969	3,397	6,077	6,077	4,577
Other liabilities	21,847	22,650	23,627	23,627	23,627
Total liabilities	43,215	43,153	59,218	59,971	58,934
Shareholders' equity	79,329	87,640	90,054	95,864	99,385
BVPS	38.88	42.91	44.09	46.94	48.66

Ratio Analysis

Nkr in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
EBITDA Margin (%)	16.7%	14.0%	15.8%	13.5%	11.7%
Operating margin (%)	11.0%	7.8%	10.2%	8.8%	6.9%
Net margin (%)	6.9%	4.6%	7.0%	5.6%	4.4%
SG&A/Sales	-	-	-	-	-
Sales per share growth	12.5%	(6.6%)	29.5%	44.0%	0.9%
Sales growth (%)	12.6%	(6.5%)	29.5%	44.0%	0.9%
Attributable net profit growth (%)	59.4%	137.7%	16.9%	15.9%	(20.0%)
Adj. EPS growth (%)	92.3%	(38.3%)	96.9%	15.2%	(20.0%)
Interest coverage (x)	2.0	(3.0)	27.7	19.0	19.9
Net debt to Total Capital	(6.9%)	(7.3%)	4.3%	(2.1%)	(4.7%)
Net debt to equity	(6.5%)	(6.8%)	4.4%	(2.0%)	(4.5%)
Sales/assets (x)	0.7	0.6	0.8	1.0	1.0
Assets/Equity	1.7	1.6	1.7	1.7	1.7
ROE	8.2%	4.8%	8.9%	9.7%	7.4%
ROCE	7.0%	3.4%	8.5%	9.1%	7.0%

Source: Company reports and J.P. Morgan estimates.

KAZ Minerals

Overweight

Company Data	
Price (p)	763
Date Of Price	13 Dec 17
Price Target (p)	850
Price Target End Date	31-Dec-18
52-week Range (p)	893-341
Market Cap (£ bn)	3.41
Shares O/S (mn)	447

KAZ Minerals (KAZ.L;KAZ LN)

FYE Dec	**2015A**	**2016A**	**2017E** *(Prev)*	**2017E** *(Curr)*	**2018E** *(Prev)*	**2018E** *(Curr)*	**2019E** *(Prev)*	**2019E** *(Curr)*
Adj. EPS FY ($)	0.10	0.32	0.88	1.00	0.83	1.28	1.43	1.44
Bloomberg EPS FY ($)	-0.01	0.29	-	1.05	-	1.36	-	1.51
Adjusted EBITDA FY ($ mn)	202	351	957	1,031	999	1,285	1,352	1,363
Adj P/E FY	99.4	32.2	11.6	10.3	12.4	8.0	7.2	7.1
EV/EBITDA (x) FY	26.9	16.7	6.3	5.3	6.0	4.1	4.0	3.4
FCFF Yield FY	(28.0%)	(8.3%)	10.5%	11.6%	3.2%	7.5%	15.7%	16.3%
Dividend Yield FY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
EBITDA Margin FY	30.4%	45.8%	59.3%	61.1%	51.8%	58.0%	59.7%	59.9%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

KAZ Minerals *(Overweight; Price Target: 850p)*

Investment Thesis

KAZ Minerals’ positive investment thesis is underpinned by: (i) compelling production growth, with two major projects contributing to an annual production CAGR ~26% pa, 2019E vs. 2016; (ii) sector leading FCF generation given the combination of higher production, better margins and lower capex which will increase strategic flexibility; and (iii) valuation metrics which remain unchallenging vs. peers.

Valuation

Our Dec-18 price target is an equally weighted combination of JPM base case & spot valuation assuming 6.0x FY’19E EBITDA and 1.0x our YE'18 NPV. Our NPV is based on a DCF valuation using a 12.6% discount rate, rounded to the nearest 5p.

Risks to Rating and Price Target

Key downside risks include:

- Adverse outcomes in commodities, currencies, production, unit costs and capex relative to our forecasts;
- KAZ is commissioning a large new mine at Aktogay. Delays or breakdowns could threaten KAZ’s cash flow and valuation;
- Changes to tax, legislation and other operating conditions.

KAZ Minerals: Summary of Financials

Profit and Loss Statement

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
Revenues	665	766	1,687	2,215	2,276
% Change Y/Y	(21.4%)	15.2%	120.3%	31.3%	2.7%
Gross Margin (%)	-	-	-	-	-
EBITDA	202	351	1,031	1,285	1,363
% Change Y/Y	(43.1%)	73.8%	193.6%	24.7%	6.1%
EBITDA Margin (%)	30.4%	45.8%	61.1%	58.0%	59.9%
EBIT	88	221	720	920	994
% Change Y/Y	(61.2%)	151.1%	226.0%	27.7%	8.1%
EBIT Margin	13.2%	28.9%	42.7%	41.5%	43.7%
Net Interest	(18)	(36)	(148)	(178)	(157)
Earnings before tax	(4)	220	584	741	837
% change Y/Y	(97.6%)	(5600.0%)	165.3%	27.0%	12.9%
Tax	(24)	(43)	(138)	(171)	(193)
Tax as a % of BT	(600.0%)	19.5%	23.6%	23.0%	23.0%
Net Income (Reported)	(28)	177	446	571	645
% change Y/Y	(98.8%)	(732.1%)	151.8%	28.1%	12.9%
Shares Outstanding	446	446	447	447	447
Adj. EPS	0.10	0.32	1.00	1.28	1.44
% Change Y/Y	(102.3%)	208.8%	213.1%	28.4%	12.9%

Cash flow statement

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
EBIT	88	221	720	920	994
Depreciation & amortization	52	60	160	179	180
Change in working capital & Other	(37)	(73)	164	3	(12)
Taxes	(40)	(39)	(130)	(171)	(193)
Cash flow from operations	(185)	(89)	794	753	812
Capex	(1,115)	(320)	(377)	(547)	(190)
Disposals/(purchase)	0	0	0	0	0
Net Interest	(140)	(170)	(206)	(178)	(157)
Free cash flow	(1,281)	(380)	529	343	743
Equity raised/repaid	0	0	0	0	0
Debt raised/repaid	409	273	(286)	(464)	(370)
Dividends paid	0	0	0	0	0
Other	0	0	0	0	0
Beginning cash	1,730	851	1,108	1,237	978
Ending cash	1,251	1,108	1,237	978	1,231
DPS	0.00	0.00	0.00	0.00	0.00

Balance sheet

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	1,251	1,108	1,237	978	1,231
Accounts Receivable	23	105	163	183	193
Inventories	113	247	217	278	272
Others	56	61	78	78	78
Current assets	1,443	1,521	1,695	1,517	1,774
LT investments	256	364	242	242	242
Net fixed assets	2,019	2,670	2,904	3,272	3,281
Other non-current assets	689	858	747	747	747
Total assets	4,158	5,057	5,352	5,543	5,809
ST loans	303	331	266	266	266
Payables	254	309	297	381	372
Others	16	15	256	256	256
Total current liabilities	573	655	819	903	894
Long term debt	3,201	3,446	3,234	2,769	2,399
Other liabilities	3,232	3,794	3,356	2,891	2,521
Total liabilities	3,836	4,521	4,252	3,871	3,493
Shareholders' equity	322	536	1,101	1,672	2,316
BVPS	0.71	1.19	2.46	3.74	5.18

Ratio Analysis

$ in millions, year end Dec	FY15	FY16	FY17E	FY18E	FY19E
EBITDA Margin (%)	30.4%	45.8%	61.1%	58.0%	59.9%
Operating margin (%)	13.2%	28.9%	42.7%	41.5%	43.7%
Net margin (%)	6.9%	18.5%	26.4%	25.8%	28.3%
SG&A/Sales	3.8%	3.1%	1.2%	1.0%	0.9%
Sales per share growth	(21.4%)	15.2%	120.2%	31.3%	2.7%
Sales growth (%)	(21.4%)	15.2%	120.3%	31.3%	2.7%
Attributable net profit growth (%)	(98.8%)	(732.1%)	151.8%	28.1%	12.9%
Adj. EPS growth (%)	(102.3%)	208.8%	213.1%	28.4%	12.9%
Interest coverage (x)	4.9	6.1	4.9	5.2	6.3
Net debt to Total Capital	87.5%	83.3%	67.3%	55.2%	38.2%
Net debt to equity	699.7%	497.9%	205.6%	123.0%	61.9%
Sales/assets (x)	0.1	0.2	0.3	0.4	0.4
Assets/Equity	4.1	10.8	6.4	3.9	2.9
ROE	3.8%	33.3%	54.5%	41.3%	32.4%
ROCE	1.3%	4.2%	12.3%	15.2%	15.8%

Source: Company reports and J.P. Morgan estimates.

Norilsk Nickel

Underweight

Company Data	
Price ($)	18.00
Date Of Price	13 Dec 17
Price Target ($)	16.32
Price Target End Date	31-Dec-18
52-week Range ($)	20.67-12.96
Market Cap ($ bn)	28.48
Shares O/S (mn)	1,582

MMC Norilsk Nickel PJSC (NKELyq.L;MNOD LI)

FYE Dec	2016A	2017E *(Prev)*	2017E *(Curr)*	2018E *(Prev)*	2018E *(Curr)*	2019E *(Prev)*	2019E *(Curr)*	2020E
EBITDA FY ($ mn)	3,899	4,365	4,373	5,045	5,038	4,880	4,879	5,816
EV/EBITDA FY	8.9	8.7	8.7	7.5	7.5	8.2	8.2	7.0
Adj. EPS FY ($)	1.44	1.53	1.53	1.67	1.73	1.53	1.60	1.97
Adj P/E FY	12.5	11.7	11.7	10.8	10.4	11.8	11.3	9.1
DPS FY ($)	0.78	1.87	1.87	1.28	1.28	1.91	1.91	1.37
Div Yield FY	4.4%	10.4%	10.4%	7.1%	7.1%	10.6%	10.6%	7.6%
Net Debt/EBITDA FY	116.7%	180.0%	179.6%	151.8%	152.1%	200.7%	200.7%	173.9%
FCFF Yield FY	5.2%	(0.6%)	(0.5%)	8.9%	8.9%	4.4%	4.3%	7.8%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Norilsk Nickel *(Underweight; Price Target: $16.32)*

Investment Thesis

Norilsk is the world's largest producer of nickel and palladium at ~12% and ~40% of global supply, respectively, plus significant output of copper and platinum from its polymetallic mining complexes in Russia. These substantial by-products mean Norislk's has negative nickel unit costs and it is firmly the world's lowest cost nickel producer. Norilsk's copper equivalent volume growth of just <1% CAGR in 2016-21 compares unfavourably to global mining peers. Norilsk has an aggressive dividend policy to pay out 60% of EBITDA if ND/EBITDA <1.8x, or 30% if >2.2x. However under JPM Commodity Research's metal price forecasts, we estimate Norilsk does not cover its dividend from FCF and that ND/EBITDA will rise to ~2x.

Valuation

Our Underweight recommendation reflects our view that Norilsk's premium valuation vs global diversified mining peers and European listed base metal producers does not adequately compensate for its higher credit, sovereign and stock specific risks. Despite its status as the world's lowest cost nickel producer, we forecast ND/EBITDA rising until 2019 under JPM's base case commodity price forecasts. Our Dec'18 Price Target is calculated as the equal weighting of: 1) 0.9x NPV under JPM Commodities Research's and FX Strategists' metal price and FX forecasts; and 1) 6.0x 2018E EV/EBITDA, in line with Norilsk's average historic traded multiple.

Risks to Rating and Price Target

Upside risks to our Underweight recommendation include:

- **Commodity prices:** The key sensitivity to Norilsk's earnings and cash flows are metal prices. JPM forecasts downside from current prices in 2018, where leverage rises and FCF does not cover targeted dividends. If metal prices exceed JPM forecasts, this could materially enhance Norilsk's cash flow, earnings, dividend cover and share price performance.
- **Weaker Ruble:** >90% of Norilsk's revenues are in US$ and >80% of costs are in RUB. A weaker RUB would be positive for earnings, cash flow and margins.
- **Russia:** Russian companies typically trade at a discount to international peers due to higher perceived sovereign risks. Although Norilsk's earnings have benefited from weaker economic conditions in Russia by virtue of a weaker Ruble, if the

severity or duration of Russia’s economic sanctions reduces, lower sovereign risk premia are likely to be positive for Norilsk’s share price.

- **Dividend:** Norilsk has one of the most aggressive dividend policies in the global mining sector at 60% of EBITDA targeted (subject to ND/EBITDA <1.8x). If Norilsk is able to cover dividends from FCF, contrary to our expectations, this could be a positive for its share price performance.
- **Shareholders & corporate governance:** Norilsk's key shareholders are Interros (V.Potanin) and UC Rusal (O.Deripaska). Shareholder lock-up expire in Dec’17. Ongoing stability between key shareholders and low related party transaction activity is likely to be regarded as positive for corporate governance risks.

Norilsk Nickel:Summary of Financials

Profit and Loss statement

USD in millions, year-end Dec	FY16	FY17E	FY18E	FY19E
Revenue	8,259	9,038	10,182	10,105
% change Y/Y	(3.3%)	9.4%	12.7%	(0.8%)
Gross Margin (%)	-	-	-	-
EBITDA	3,899	4,373	5,038	4,879
% change Y/Y	(9.2%)	12.2%	15.2%	(3.2%)
EBITDA Margin (%)	47.2%	48.4%	49.5%	48.3%
EBIT	3,342	3,738	4,296	4,046
% change Y/Y	(11.8%)	11.8%	14.9%	(5.8%)
EBIT Margin (%)	40.5%	41.4%	42.2%	40.0%
Net Interest	(403)	(517)	(586)	(619)
Earnings before tax	3,276	3,233	3,777	3,495
% change Y/Y	46.0%	(1.3%)	16.8%	(7.5%)
Tax	(745)	(807)	(944)	(874)
as % of EBT	22.7%	25.0%	25.0%	25.0%
Net Income (Reported)	2,269	2,426	2,744	2,526
% change Y/Y	(28.8%)	6.9%	13.1%	(7.9%)
Shares Outstanding	1,571	1,582	1,582	1,582
Adj. EPS	1.44	1.53	1.73	1.60
% change Y/Y	(28.4%)	6.1%	13.1%	(7.9%)

Cash flow statement

USD in millions, year-end Dec	FY16	FY17E	FY18E	FY19E
EBIT	3,276	3,233	3,777	3,495
Depreciation & amortisation	557	635	742	832
Change in working capital	64	(1,569)	647	(130)
Taxes				
Cash flow from operations	2,901	1,405	4,155	3,256
Capex	(1,691)	(1,900)	(2,012)	(2,431)
Disposals/(purchase)	(284)	(91)	0	0
Net Interest	(403)	(517)	(586)	(619)
Free cash flow	1,461	(148)	2,531	1,239
Equity raised/repaid	154	0	0	0
Debt Raised/repaid	(805)	1,577	729	1,340
Other	75	283	0	0
Dividends paid	(1,232)	(2,965)	(2,019)	(3,023)
Beginning cash	4,054	3,301	1,641	2,561
Ending cash	3,301	1,641	2,561	1,771
DPS	0.78	1.87	1.28	1.91

Balance sheet

USD in millions, year-end Dec	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	3,301	1,641	2,561	1,771
Accounts receivable	596	949	817	868
Inventories	1,895	2,502	2,453	2,679
Others	8	50	50	50
Current assets	5,800	5,141	5,881	5,367
LT investments				
Net fixed assets	9,006	10,762	12,033	13,631
Total assets	16,457	17,190	19,200	20,285
ST loans	578	699	753	851
Payables	2,914	2,187	2,642	2,764
Others	484	584	596	621
Total current liabilities	3,976	3,470	3,991	4,236
Long term debt	7,274	8,795	9,471	10,712
Other liabilities	876	1,041	1,041	1,041
Total liabilities	12,561	13,817	15,013	16,499
Shareholders' equity	3,896	3,373	4,187	3,786
BVPS	2.46	2.13	2.65	2.39

Ratio Analysis

USD in millions, year-end Dec	FY16	FY17E	FY18E	FY19E
EBITDA margin	47.2%	48.4%	49.5%	48.3%
Operating margin	40.5%	41.4%	42.2%	40.0%
Net Profit margin	27.5%	26.8%	26.9%	25.0%
SG&A/Sales	8.2%	8.4%	7.6%	8.3%
Sales per share growth	(2.9%)	8.6%	12.7%	(0.8%)
Sales growth	(3.3%)	9.4%	12.7%	(0.8%)
Net profit growth	(28.8%)	6.9%	13.1%	(7.9%)
EPS growth	(28.4%)	6.1%	13.1%	(7.9%)
Interest coverage (x)	-	-	-	-
Net debt to Total Capital	53.9%	70.0%	64.7%	72.1%
Net debt to equity	116.8%	232.8%	183.0%	258.7%
Sales/assets (x)	0.6	0.5	0.6	0.5
Assets/Equity	4.9	4.7	5.0	5.2
ROE	74.9%	68.2%	75.0%	67.0%
ROCE	23.3%	22.9%	23.8%	20.7%
ROA	15.2%	14.4%	15.1%	12.8%

Source: Company reports and J.P. Morgan estimates.

Petra Diamonds

Overweight

Company Data	
Price (p)	69
Date Of Price	13 Dec 17
Price Target (p)	120
Price Target End Date	30-Dec-18
52-week Range (p)	164-59
Market Cap (£ mn)	364.71
Shares O/S (mn)	529

Petra Diamonds Ltd (PDL.L;PDL LN)

FYE Jun	2015A	2016A	2017A	2018E *(Prev)*	2018E *(Curr)*	2019E
Adj. EPS FY ($)	0.09	0.10	0.03	0.07	0.08	0.20
Bloomberg EPS FY ($)	0.09	0.09	0.08	-	0.13	0.18
EBITDA FY ($ mn)	133	160	157	240	245	363
EBITDA Margin FY	31.2%	37.2%	33.0%	40.0%	40.8%	49.6%
Adj P/E FY	10.0	9.1	26.8	12.5	11.0	4.6
EV/EBITDA FY	5.1	5.6	6.9	5.3	4.8	2.9
ROE FY	8.2%	10.0%	3.3%	6.5%	7.4%	15.8%
Dividend Yield FY	3.3%	0.0%	0.0%	0.0%	0.0%	4.4%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Petra Diamonds *(Overweight; Price Target: 120p)*

Investment Thesis

We maintain an Overweight recommendation on PDL, which is premised on three key themes: (i) expansion projects under development drive revenue growth through higher production & mix shift that will improve achieved pricing; (ii) margin expansion given the higher proportion of undiluted grades; and (iii) declining capex as major expansions are commissioned. The net impact is an increasing cash generation profile, which will increase strategic flexibility, which could have positive implications for shareholders.

Valuation

Our Dec’18E price target is set at a 0.85x P/NPV. Our NPV is based on a sum-of-the-parts DCF valuation using a ~13% discount rate, rounded to the nearest 5p. The discount rate is calculated using a cost of debt and equity of 5% and 8%, respectively, which is in-line with the wider EMEA Mining universe, and an equity beta of 1.1x. Our reduction in PT to 130p reflects the 1% reduction to Dec'18 NPV due to modestly lower production forecasts, rounded to the nearest 5p.

Risks to Rating and Price Target

Key downside risks relate to:

- Adverse outcomes in commodities, currencies, production, unit costs and capex relative to JPMe, particularly given PDL’s high debt levels in the near-term;
- Adverse changes to tax, legislation, labour and other operating conditions, particularly given the assets’ location in South Africa and Tanzania;
- Operational risks associated with PDL’s four underground mines in South Africa, where underground mining typically carries a relatively higher degree of geotechnical and geological uncertainty than a standard open-pit operation.

Petra Diamonds: Summary of Financials

Profit and Loss Statement

$ in millions, year end Jun	FY16	FY17	FY18E	FY19E	FY20E
Revenues	431	477	600	733	779
% Change Y/Y	1.4%	10.7%	25.9%	22.1%	6.3%
Gross Margin (%)	-	-	-	-	-
EBITDA	160	157	245	363	421
% Change Y/Y	20.7%	(1.8%)	55.9%	48.1%	16.0%
EBITDA Margin (%)	37.2%	33.0%	40.8%	49.6%	54.1%
EBIT	108	78	142	266	325
% Change Y/Y	14.8%	(28.3%)	83.0%	87.3%	21.9%
EBIT Margin	25.2%	16.3%	23.7%	36.3%	41.7%
Net Interest	(36)	(45)	(38)	(38)	(52)
Earnings before tax	75	47	115	228	273
% change Y/Y	(11.3%)	(38.3%)	146.9%	98.9%	19.4%
Tax	(9)	(26)	(44)	(77)	(93)
Tax as a % of BT	11.4%	55.5%	38.3%	33.6%	34.2%
Net Income (Reported)	54	18	45	107	126
% change Y/Y	11.5%	(66.2%)	145.0%	138.9%	17.4%
Shares Outstanding	522	529	529	529	529
EPS (Reported)	0.10	0.03	0.08	0.20	0.24
% Change Y/Y	10.4%	(66.2%)	145.0%	138.9%	17.4%

Cash flow statement

$ in millions, year end Jun	FY16	FY17	FY18E	FY19E	FY20E
EBIT	108	78	142	266	325
Depreciation & amortization	52	80	103	97	96
Change in working capital & Other	14	4	(67)	(21)	(11)
Taxes	-	-	-	-	-
Cash flow from operations	154	153	129	293	335
Capex	(328)	(283)	(190)	(146)	(128)
Disposals/(purchase)	-	-	-	-	-
Net Interest	-	-	-	-	-
Free cash flow	(142)	(110)	(38)	172	240
Equity raised/repaid	1	1	0	0	0
Debt raised/repaid	97	290	0	(102)	0
Dividends paid	(15)	0	0	0	(32)
Other	0	0	0	0	0
Beginning cash	154	37	190	131	177
Ending cash	37	190	131	177	354
DPS	0.00	0.00	0.00	0.04	0.07

Balance sheet

$ in millions, year end Jun	FY16	FY17	FY18E	FY19E	FY20E
Cash and cash equivalents	37	190	131	177	354
Accounts Receivable	116	76	99	117	124
Inventories	58	76	85	85	85
Others	0	0	0	0	0
Current assets	223	355	328	392	576
LT investments	-	-	-	-	-
Net fixed assets	1,137	1,500	1,589	1,643	1,679
Other non-current assets	57	59	64	72	80
Total assets	1,359	1,855	1,917	2,035	2,255
ST loans	107	159	159	57	57
Payables	125	137	101	99	95
Others	0	0	0	0	0
Total current liabilities	233	295	260	156	152
Long term debt	317	599	599	599	599
Other liabilities	203	243	286	349	419
Total liabilities	812	1,208	1,217	1,176	1,241
Shareholders' equity	547	646	700	859	1,014
BVPS	-	-	-	-	-

Ratio Analysis

$ in millions, year end Jun	FY16	FY17	FY18E	FY19E	FY20E
EBITDA Margin (%)	37.2%	33.0%	40.8%	49.6%	54.1%
Operating margin (%)	25.2%	16.3%	23.7%	36.3%	41.7%
Net margin (%)	12.6%	3.8%	7.5%	14.6%	16.1%
SG&A/Sales	2.1%	2.2%	1.7%	1.5%	1.4%
Sales per share growth	(0.1%)	9.3%	25.9%	22.1%	6.3%
Sales growth (%)	1.4%	10.7%	25.9%	22.1%	6.3%
Attributable net profit growth (%)	11.5%	(66.2%)	145.0%	138.9%	17.4%
EPS growth (%)	10.4%	(66.2%)	145.0%	138.9%	17.4%
Interest coverage (x)	3.0	1.7	3.7	6.9	6.2
Net debt to Total Capital	41.5%	46.7%	47.2%	35.8%	22.9%
Net debt to equity	70.9%	87.7%	89.4%	55.8%	29.7%
Sales/assets (x)	0.3	0.3	0.3	0.4	0.4
Assets/Equity	2.5	2.9	3.1	2.9	2.7
ROE	10.0%	3.3%	7.4%	15.8%	16.0%
ROCE	10.4%	3.0%	6.4%	12.8%	14.8%

Source: Company reports and J.P. Morgan estimates.

Polymetal International

Neutral

Company Data	
Price (p)	843
Date Of Price	13 Dec 17
Price Target (p)	920
Price Target End Date	31-Dec-18
52-week Range (p)	1,100-726
Market Cap (£ mn)	3,625.88
Shares O/S (mn)	430

Polymetal International plc (POLYP.L;POLY LN)

FYE Dec	2015A	2016A	2017E *(Prev)*	2017E *(Curr)*	2018E *(Prev)*	2018E *(Curr)*
Adj. EPS FY ($)	0.69	0.90	0.99	1.00	1.21	1.23
EBITDA FY ($ mn)	633	743	768	776	925	934
EBITDA Margin FY	44.9%	47.9%	42.8%	42.8%	44.6%	44.9%
FCF Yield FY	6.6%	6.1%	4.3%	4.2%	7.6%	8.0%
Div Yield FY	2.9%	1.9%	2.8%	2.8%	5.0%	5.1%
Adj P/E FY	16.4	12.6	11.4	11.3	9.4	9.2
EV/EBITDA FY	7.6	6.5	6.8	6.4	5.5	5.2
Revenue FY ($ mn)	1,441	1,583	1,794	1,809	2,074	2,078

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Polymetal International *(Neutral; Price Target: 920p)*

Investment thesis

We have high regard for Polymetal's management, low cost assets and pipeline of emerging growth projects, which management guide will expand production by ~40% (vs 2016) to 1.8Moz by 2020. Polymetal's valuation multiples are neither unduly expensive nor cheap, in our view. We believe Polymetal's valuation adequately factors negative risks posed by Ruble strengthening on future earnings and cash flow. Polymetal's 2018E EV/EBITDA is trading in line with its 6 year average of 7.0x.

Valuation

Our Neutral recommendation reflects our view that Polymetal's valuation is adequately priced on a standalone basis and vs peers, and the shares fairly price execution risks relating to multiple mine and processing plant expansions. Our Dec-18 Price Target is calculated as the equal weighting of: i) 1.5x NPV under JPM Commodity Research's and FX Strategists' forecasts and ii) 7.0x 2019E EV/EBITDA, in line with Polymetal's average traded consensus multiple since listing in 2011.

Risks to Rating and Price Target

Upside and downside risks to our Neutral recommendation include:

1. **Gold prices:** JPM's base case forecasts are for stable gold prices across 2017-18; however, rising/falling gold prices would be a material positive/negative for Polymetal's investment appeal. We calculate a 10% rise in gold prices impacts EBITDA +20%.
2. **Ruble:** Polymetal's costs are largely denominated in Rubles and its revenues in US$. Its earnings and cash flow benefit / weaken as the Ruble/$ weakens / strengthens. We believe Polymetal's ability to meet consensus forecasts and its own cost guidance requires the Ruble/$ to remain close to the current range of 55-65.
3. **Russia:** since Polymetal's revenues are denominated in US$ and its costs in Roubles, we regard its earnings and cash flows to be a beneficiary of weaker economic conditions in Russia. If Russia's economic conditions remain strained and economic sanctions are protracted, this may continue to be

favourable for Polymetal's EBITDA and FCF margins in our view, or vice versa.

4. **Projects:** our base case production forecasts for 2018-20 are slightly below guidance, reflecting our view of modest execution risk at its Kyzyl, Kapan and Komar expansions, plus expansion of its POX processing facility. Successful delivery of management's targets would be a key positive for its investment appeal, whereas project overruns would be a significant negative.

Polymetal International:Summary of Financials

Profit and Loss statement

USD in millions, year-end Dec	FY16	FY17E	FY18E	FY19E
Revenue	1,583	1,809	2,078	2,206
% change Y/Y	9.9%	14.3%	14.9%	6.2%
Gross Margin (%)	46.6%	45.9%	47.1%	42.4%
EBITDA	759	774	934	919
% change Y/Y	17.2%	2.1%	20.6%	(1.6%)
EBITDA Margin (%)	47.9%	42.8%	44.9%	41.7%
EBIT	581	608	760	707
% change Y/Y	21.1%	4.7%	24.9%	(6.9%)
EBIT Margin (%)	37.7%	33.6%	36.3%	31.8%
Net Interest	(59)	(58)	(69)	(74)
Earnings before tax	564	555	690	632
% change Y/Y	104.0%	(1.5%)	24.2%	(8.3%)
Tax	(169)	(123)	(163)	(159)
as % of EBT	30.0%	22.2%	23.6%	25.2%
Net Income (Reported)	395	432	527	473
% change Y/Y	78.2%	9.4%	22.0%	(10.2%)
Shares Outstanding	426	430	430	430
Adj. EPS	0.90	1.00	1.23	1.10
% change Y/Y	30.6%	11.2%	22.8%	(10.2%)

Cash flow statement

USD in millions, year-end Dec	FY16	FY17E	FY18E	FY19E
EBIT	395	432	527	473
Depreciation & amortisation	152	162	170	206
Change in working capital	(27)	(44)	(49)	38
Taxes				
Cash flow from operations	527	560	682	750
Capex	(271)	(396)	(341)	(291)
Disposals/(purchase)	-	-	-	-
Net Interest	(59)	(58)	(69)	(74)
Free cash flow	295	207	391	512
Equity raised/repaid	0	0	0	0
Debt Raised/repaid	26	243	0	0
Other	0	0	0	0
Dividends paid	(158)	(137)	(248)	(274)
Beginning cash	18	40	151	346
Ending cash	48	291	377	555
DPS	0.22	0.32	0.58	0.64

Balance sheet

USD in millions, year-end Dec	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	48	291	377	555
Accounts receivable	101	153	166	164
Inventories	493	550	573	556
Others	79	109	150	148
Current assets	721	1,102	1,267	1,424
LT investments	-	-	-	-
Net fixed assets	1,805	2,069	2,239	2,325
Total assets	2,729	3,870	4,178	4,395
ST loans	98	133	133	133
Payables	133	151	172	191
Others	56	109	117	116
Total current liabilities	287	393	422	439
Long term debt	1,280	1,489	1,489	1,489
Other liabilities	181	178	178	178
Total liabilities	1,748	2,060	2,089	2,106
Shareholders' equity	981	1,810	2,089	2,289
BVPS				

Ratio Analysis

USD in millions, year-end Dec	FY16	FY17E	FY18E	FY19E
EBITDA margin	47.9%	42.8%	44.9%	41.7%
Operating margin	37.7%	33.6%	36.3%	31.8%
Net Profit margin	24.2%	23.9%	25.4%	21.4%
SG&A/Sales	7.6%	8.0%	6.3%	6.1%
Sales per share growth	9.0%	13.4%	14.9%	6.2%
Sales growth	9.9%	14.3%	14.9%	6.2%
Net profit growth	78.2%	9.4%	22.0%	(10.2%)
EPS growth	30.6%	11.2%	22.8%	(10.2%)
Interest coverage (x)	10.7	11.1	11.5	9.9
Net debt to Total Capital	57.6%	42.4%	37.3%	31.8%
Net debt to equity	135.6%	73.5%	59.6%	46.6%
Sales/assets (x)	0.7	0.5	0.5	0.5
Assets/Equity	3.3	2.4	2.1	2.0
ROE	52.2%	30.9%	27.0%	21.6%
ROCE	19.9%	16.4%	16.2%	13.8%
ROA	15.9%	13.1%	13.1%	11.0%

Source: Company reports and J.P. Morgan estimates.

Randgold Resources Ltd

Neutral

Company Data	
Price (p)	6,795
Date Of Price	13 Dec 17
Price Target (p)	7,100
Price Target End Date	31-Dec-18
52-week Range (p)	8,255-5,410
Market Cap (£ bn)	6.36
Shares O/S (mn)	94

Randgold Resources Ltd (RRS.L;RRS LN)

FYE Dec	2015A	2016A	2017E *(Prev)*	2017E *(Curr)*	2018E *(Prev)*	2018E *(Curr)*
Adj. EPS FY ($)	2.03	2.64	3.02	3.03	3.82	3.80
Adj P/E FY	45.0	34.5	30.2	30.1	23.9	24.0
DPS (Gross) FY ($)	0.66	1.00	2.84	2.85	3.59	3.58
Gross Yield FY	0.7%	1.1%	3.1%	3.1%	3.9%	3.9%
EBITDA FY ($ mn)	400	574	648	646	715	712
EBITDA Margin FY	36.6%	46.9%	50.2%	50.4%	52.5%	52.4%
EV/EBITDA FY	21.5	14.5	12.6	12.5	11.0	10.9
FCF FY ($ mn)	184	352	431	433	607	611
FCF Yield FY	2.2%	4.1%	5.0%	5.0%	7.1%	7.1%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Randgold Resources Ltd *(Neutral; Price Target: 7,100p)*

Investment Thesis

We are Neutral on Randgold. We are cautious on precious metals prices in 2018 given expected Fed tightening which is typically negative for gold prices. Despite an unquestionably strong track-record in value creation, RRS now trades in-line with its historical multiple relative to the sector & at 5yr highs on a 1yr forward valuation multiple vs. FRES, which we do not believe is warranted in the context of its inferior growth profile & higher jurisdictional risk. We do, however, continue to value Randgold's geologically focussed management team, capital allocation framed around a real gold price of $1,000/oz and IRR >20% and robust balance sheet that supports organic growth. We also anticipate surplus capital generation by YE'18, which likely will result in enhanced shareholder returns, although this is broadly priced into the shares in our view.

Valuation

Our Dec'18 price target is set at 1.6x P/NPV, rounded to the nearest £1. Our premium multiple assumption reflects our view of Randgold as a well-managed, quality mid-tier gold producer with an established track record of delivery, a robust balance sheet, articulated growth profile and a long-standing, significant equity premium to peers. Our NPV is based on a sum-of-the parts DCF valuation using a 7.6% nominal discount rate, which does not differ significantly from the peer group.

Risks to Rating and Price Target

Upside risks include:

- Improving commodity prices;
- Stronger than expected ramp-up of the Kibali mine as it moves underground;
- Improved returns to shareholders, with the company signalling cash above ~$500m will be returned to shareholders.

Downside risks include:

- Political risk in the DRC. The mines minister in the DRC has indicated that the country's mining code will be changed. There is a risk of higher royalty / mining tax rates for the Kibali project, in our view;

- RRS trades at a substantial premium to UK gold peers. This premium could come under threat if execution of key growth options disappoints, or if political risks unexpectedly rise in Mali, Cote D'Ivoire and DRC;
- Adverse moves in commodity prices, possibly driven by rising US interest rates.

Randgold Resources Ltd: Summary of Financials

Production & Economic Assumptions

koz Gold, Year end Dec	FY15A	FY16A	FY17E	FY18E	FY19E
Africa	1,211	1,253	1,299	1,320	1,318
Total Randgold Resources	1,211	1,253	1,299	1,320	1,318
Cash op. costs ($/oz)	622	574	574	539	541
Cash op. costs (R/Kg)	-	-	-	-	-
Gold Price ($/oz)	1,161	1,249	1,254	1,295	1,250
Gold Price (R/oz)	14,846	18,354	16,958	18,741	18,813
Copper Price (USc/lb)					
Avg exch. rate (R/$)	12.79	14.70	13.52	14.47	15.05

Profit & Loss Statement

$ in millions, year end Dec	FY15A	FY16A	FY17E	FY18E	FY19E
Revenues	1,094	1,224	1,282	1,359	1,319
% change Y/Y	(7.3%)	11.9%	4.8%	6.0%	(2.9%)
EBITDA	400	574	646	712	664
% change Y/Y	(17.7%)	43.3%	12.6%	10.2%	(6.7%)
EBIT	265	404	491	557	505
% change Y/Y	(25.8%)	52.5%	21.4%	13.5%	(9.3%)
Net interest	(4)	(2)	2	4	5
Earnings before tax	261	403	493	561	511
% change Y/Y	(26.1%)	54.4%	22.5%	13.7%	(9.0%)
Tax	(48)	(108)	(148)	(137)	(127)
Tax as % of EBT	18.4%	26.9%	30.1%	24.5%	24.9%
Net income (reported)	189	248	285	358	323
% change Y/Y	(19.7%)	31.2%	15.1%	25.7%	(9.8%)
Shares Outstanding	93	94	94	94	94
EPS (Adjusted)	2.03	2.64	3.03	3.80	3.43
% change Y/Y	(20.1%)	30.4%	14.6%	25.6%	(9.8%)
DPS (Gross)	0.66	1.00	2.85	3.58	3.23
% change Y/Y	10.0%	51.5%	184.9%	25.7%	(9.8%)

Cash Flow Statement

$ in millions, year end Dec	FY15A	FY16A	FY17E	FY18E	FY19E
EBIT	265	404	491	557	505
Depreciation & Amortization	151	175	172	169	174
Change in working capital	12	(37)	(29)	(14)	7
Taxes	(56)	(69)	(162)	(182)	(170)
Cash flow from Operations	397	521	625	730	903
Capex	(216)	(171)	(190)	(117)	(112)
Disposals/(Purchase)	-	-	-	-	-
Net interest	(4)	(1)	2	4	5
Free Cash flow	184	352	433	611	787
Free Cash flow per share	1.98	3.76	4.60	6.49	8.37
Equity raised/ repaid	0	3	0	0	0
Debt raised/ repaid	0	0	0	0	0
Dividends paid	(49)	(64)	(94)	(268)	(337)
Other	0	0	(22)	0	0
Beginning Cash	83	213	516	812	1,158
Ending Cash	213	516	812	1,158	1,612

Balance Sheet

$ in millions, year end Dec	FY15A	FY16A	FY17E	FY18E	FY19E
Property, Plant & Equipment	1,547	1,561	1,579	1,527	1,465
Net Fixed Assets	3,188	3,174	3,107	2,903	2,502
Cash and Cash equivalents	213	516	812	1,158	1,612
Others	0	0	0	0	0
Current Assets	549	867	1,167	1,526	1,985
Total Assets	3,737	4,041	4,275	4,429	4,487
Current Liabilities	159	188	164	162	174
Debt	23	64	51	51	51
Other Liabilities	36	42	51	51	51
Shareholder's Equity	3,274	3,499	3,710	3,800	3,786
Minorities	219	253	291	357	417
Total Liabilities & Shareholders Equity	3,737	4,041	4,275	4,429	4,487

Ratio Analysis

Year end Dec	FY15A	FY16A	FY17E	FY18E	FY19E
Gross Margin (%)	28.9%	36.9%	42.1%	44.9%	42.4%
EBITDA Margin (%)	36.6%	46.9%	50.4%	52.4%	50.3%
EBIT Margin (%)	24.2%	33.0%	38.3%	41.0%	38.3%
Net Margin (%)	17.2%	20.2%	22.2%	26.3%	24.5%
FCF Margin (%)	16.9%	28.7%	33.8%	44.9%	59.7%
Interest Coverage (x)	93.1	349.8	NM	NM	NM
Net debt to equity (%)	(5.5%)	(12.1%)	(19.0%)	(26.6%)	(37.1%)
Sales/Assets (x)	0.3	0.3	0.3	0.3	0.3
ROE (%)	5.9%	7.3%	7.9%	9.5%	8.5%
P/E (x)	45.0	34.5	30.1	24.0	26.6
EV/EBITDA (x)	21.5	14.5	12.5	10.9	11.1
EV/FCF (x)	46.6	23.7	18.6	12.8	9.4
Dividend Yield (%)	0.7%	1.1%	3.1%	3.9%	3.5%
FCF Yield (%)	2.2%	4.1%	5.0%	7.1%	9.2%

Valuation & Recommendation

NPV (UKp)	4,408
P/NPV	1.5
PT (UKp)	7,100
PT/NPV	1.6
PT Date	31-Dec-18
Recommendation	N

Source: Company reports and J.P. Morgan estimates.

Randgold Resources Ltd-ADR

Neutral

Company Data	
Price ($)	92.44
Date Of Price	13 Dec 17
Price Target ($)	95.00
Price Target End Date	31-Dec-18
52-week Range ($)	108.29-67.54
Market Cap ($ bn)	8.66
Shares O/S (mn)	94

Randgold Resources Ltd-ADR (GOLD;GOLD US)

FYE Dec	**2015A**	**2016A**	**2017E** *(Prev)*	**2017E** *(Curr)*	**2018E** *(Prev)*	**2018E** *(Curr)*
Adj. EPS FY ($)	2.03	2.64	3.02	3.03	3.82	3.80
Adj P/E FY	45.6	35.0	30.6	30.5	24.2	24.3
DPS (Gross) FY ($)	0.66	1.00	2.84	2.85	3.59	3.58
Gross Yield FY	0.7%	1.1%	3.1%	3.1%	3.9%	3.9%
EBITDA FY ($ mn)	400	574	648	646	715	712
EV/EBITDA FY	21.5	14.5	12.6	12.5	11.0	10.9
FCF FY ($ mn)	184	352	431	433	607	611
FCF Yield FY	2.1%	4.1%	5.0%	5.0%	7.0%	7.0%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Randgold Resources Ltd-ADR: Summary of Financials

Production & Economic Assumptions

koz Gold, Year end Dec	FY15A	FY16A	FY17E	FY18E	FY19E
Africa	1,211	1,253	1,299	1,320	1,318
Total Randgold Resources	1,211	1,253	1,299	1,320	1,318
Cash op. costs ($/oz)	622	574	574	539	541
Cash op. costs (R/Kg)	-	-	-	-	-
Gold Price ($/oz)	1,161	1,249	1,254	1,295	1,250
Gold Price (R/oz)	14,846	18,354	16,958	18,741	18,813
Copper Price (USc/lb)					
Avg exch. rate (R/$)	12.79	14.70	13.52	14.47	15.05

Balance Sheet

$ in millions, year end Dec	FY15A	FY16A	FY17E	FY18E	FY19E
Property, Plant & Equipment	1,547	1,561	1,579	1,527	1,465
Net Fixed Assets	3,188	3,174	3,107	2,903	2,502
Cash and Cash equivalents	213	516	812	1,158	1,612
Others	0	0	0	0	0
Current Assets	549	867	1,167	1,526	1,985
Total Assets	3,737	4,041	4,275	4,429	4,487
Current Liabilities	159	188	164	162	174
Debt	23	64	51	51	51
Other Liabilities	36	42	51	51	51
Shareholder's Equity	3,274	3,499	3,710	3,800	3,786
Minorities	219	253	291	357	417
Total Liabilities & Shareholders Equity	3,737	4,041	4,275	4,429	4,487

Profit & Loss Statement

$ in millions, year end Dec	FY15A	FY16A	FY17E	FY18E	FY19E
Revenues	1,094	1,224	1,282	1,359	1,319
% change Y/Y	(7.3%)	11.9%	4.8%	6.0%	(2.9%)
EBITDA	400	574	646	712	664
% change Y/Y	(17.7%)	43.3%	12.6%	10.2%	(6.7%)
EBIT	265	404	491	557	505
% change Y/Y	(25.8%)	52.5%	21.4%	13.5%	(9.3%)
Net interest	(4)	(2)	2	4	5
Earnings before tax	261	403	493	561	511
% change Y/Y	(26.1%)	54.4%	22.5%	13.7%	(9.0%)
Tax	(48)	(108)	(148)	(137)	(127)
Tax as % of EBT	18.4%	26.9%	30.1%	24.5%	24.9%
Net income (reported)	189	248	285	358	323
% change Y/Y	(19.7%)	31.2%	15.1%	25.7%	(9.8%)
Shares Outstanding	93	94	94	94	94
EPS (Adjusted)	2.03	2.64	3.03	3.80	3.43
% change Y/Y	(20.1%)	30.4%	14.6%	25.6%	(9.8%)
DPS (Gross)	0.66	1.00	2.85	3.58	3.23
% change Y/Y	10.0%	51.5%	184.9%	25.7%	(9.8%)

Ratio Analysis

Year end Dec	FY15A	FY16A	FY17E	FY18E	FY19E
Gross Margin (%)	28.9%	36.9%	42.1%	44.9%	42.4%
EBITDA Margin (%)	36.6%	46.9%	50.4%	52.4%	50.3%
EBIT Margin (%)	24.2%	33.0%	38.3%	41.0%	38.3%
Net Margin (%)	17.2%	20.2%	22.2%	26.3%	24.5%
FCF Margin (%)	16.9%	28.7%	33.8%	44.9%	59.7%
Interest Coverage (x)	93.1	349.8	NM	NM	NM
Net debt to equity (%)	(5.5%)	(12.1%)	(19.0%)	(26.6%)	(37.1%)
Sales/Assets (x)	0.3	0.3	0.3	0.3	0.3
ROE (%)	5.9%	7.3%	7.9%	9.5%	8.5%
P/E (x)	45.6	35.0	30.5	24.3	26.9
EV/EBITDA (x)	21.5	14.5	12.5	10.9	11.1
EV/FCF (x)	46.6	23.7	18.6	12.8	9.4
Dividend Yield (%)	0.7%	1.1%	3.1%	3.9%	3.5%
FCF Yield (%)	2.1%	4.1%	5.0%	7.0%	9.1%

Cash Flow Statement

$ in millions, year end Dec	FY15A	FY16A	FY17E	FY18E	FY19E
EBIT	265	404	491	557	505
Depreciation & Amortization	151	175	172	169	174
Change in working capital	12	(37)	(29)	(14)	7
Taxes	(56)	(69)	(162)	(182)	(170)
Cash flow from Operations	397	521	625	730	903
Capex	(216)	(171)	(190)	(117)	(112)
Disposals/(Purchase)	-	-	-	-	-
Net interest	(4)	(1)	2	4	5
Free Cash flow	184	352	433	611	787
Free Cash flow per share	1.98	3.76	4.60	6.49	8.37
Equity raised/ repaid	0	3	0	0	0
Debt raised/ repaid	0	0	0	0	0
Dividends paid	(49)	(64)	(94)	(268)	(337)
Other	0	0	(22)	0	0
Beginning Cash	83	213	516	812	1,158
Ending Cash	213	516	812	1,158	1,612

Valuation & Recommendation

NPV($/sh)	95.23
P/NPV	1.0
PT ($/sh)	95.00
PT/NPV	1.0
PT Date	31-Dec-18
Recommendation	N

Source: Company reports and J.P. Morgan estimates.

PJSC Polyus

Overweight

Company Data	
Price (R)	4,291.00
Date Of Price	13 Dec 17
Price Target (R)	5,711
Price Target End Date	31-Dec-18
52-week Range (R)	5,242.00- 3,520.00
Market Cap (R mn)	573,110.80
Shares O/S (mn)	134

PJSC Polyus (PLZL.MM;PLZL RX)

FYE Dec	2015A	2016A	2017E *(Prev)*	2017E *(Curr)*	2018E *(Prev)*	2018E *(Curr)*
EBITDA FY ($ mn)	1,270	1,536	1,604	1,655	1,904	1,744
EBITDA Margin FY	58.0%	62.5%	60.5%	61.6%	62.8%	60.5%
EPS FY ($)	4.74	6.59	7.70	8.00	8.34	8.05
P/E (x) FY	15.5	11.1	9.5	9.2	8.8	9.1
EV/EBITDA FY	7.9	8.4	8.6	7.7	7.1	7.2
Div Yield FY	0.0%	3.8%	5.2%	5.2%	6.1%	5.7%
Net Debt/EBITDA FY	28.7%	211.0%	188.7%	185.7%	146.1%	169.5%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

PJSC Polyus *(Overweight; Price Target: R5,711.00)*

Investment Thesis

Polyus is the world's lowest cost gold producer and one of the highest growth due to a targeted +44% production expansion to 2.8Moz by 2019 (vs 1.6Moz pa). Polyus already has the most generous dividend policy among global gold majors in our view, with a commitment to payout the greater of $550m 2017-19, $650m 2020-21, or 30% of EBITDA semi-annually. However, Polyus' key growth capex will recede from 2018, and EBITDA will expand, as new mine Natalka reaches full capacity. This will generate significant excess capital that could be used to supplement capital returns, reduce debt or fund long term growth options.

Valuation

Our Overweight recommendation reflects our view that Polyus' shares are materially undervalued. Despite its status as the highest FCF margin, highest dividend yielding and among the highest growth global gold equities, Polyus's shares trade at a significant discount to peers on most valuation metrics. Our Dec'18 Price Target is calculated as the equal weighting of: i) 1.4x NPV under JPM's Commodity Research's and FX Strategists' forecasts; and ii) 7.0x 2018E EV/EBITDA, in line with its closest peer Polymetal's average trading multiple since 2011. Our NPV calculation applies a WACC of 10.5%.

Risks to Rating and Price Target

Downside risks to our Overweight recommendation include:

- **Gold prices:** JPM's base case forecasts are for stable gold prices across 2017-18, however lower gold prices would negatively impact Polyus's earnings and cash flow. However due to its status as the world's lowest cost gold producer, Polyus has lower leverage to gold price moves than peers - we calculate a 10% rise in gold prices impacts EBITDA ~15%.
- **Stronger Ruble:** The >90% devaluation in the Ruble since 2013 has driven an expansion of operating margins. In the event the Ruble/$ strengthens to <60, this would be negative for Polyus' earnings and cash flow, US$ unit cost and capex guidance.
- **Russia:** since Polyus' revenues are denominated in US$ and its costs in Rubles, its earnings and cash flows have benefited from weaker economic conditions in

Russia. If the severity or duration of Russia's economic sanctions reduces, or global oil prices rise, this is likely to lead to Ruble strengthening which could be negative for Polyus' operating margins.

- **Development projects:** New mine Natalka's construction will be complete in 2017 and will ramp-up to full production capacity in 2018. A ramp-up delay or cost overrun would be negative for Polyus' cash flows. Our production forecasts are conservative as we factor a 10% contingency across 2018-19 to reflect our view of ramp-up risk for greenfield mining projects in remote locations.
- **Sukhoi Log's economics may underwhelm:** Newly acquired asset Sukhoi Log will commence a scoping study in 2017 and a feasibility study is expected to be complete 2020/21. The project is the key component of Polyus' target to achieve ~4.5Moz pa production by ~2027. Management has outlined an indicative and conceptual project scope – in the event that the definitive feasibility study identifies fatal flaws, or its economics are underwhelming, this could have a negative impact on the market's assessment of Polyus' valuation.
- **Dividend:** we forecast Polyus has the highest dividend yield of global gold majors. In the event it does not declare a dividend, this would be negative for its investment appeal. We consider this unlikely due to the minimum mandatory dividend of $550-650m agreed across 2017-21 with the Fosun consortium.
- **Controlling shareholder:** Said Kerimov owns a controlling stake in PJSC Polyus. This introduces specific risks due to the alignment of majority vs minority shareholder interests over time.
- **Sale of 15% in Polyus to Fosun consortium represents an overhang:** Polyus' 82% shareholder Polyus Gold International Limited, which is beneficially owned by Said Kerimov, has agreed to sell a 15% stake in Polyus to a consortium led by Fosun. This transaction has yet to receive Chinese regulatory approvals and expires at the end of Feb'18. If approval is not received, we believe there is a possibility that Polyus' controlling shareholder may seek to place shares in the market, which may present a near term overhang on Polyus' share price.

PJSC Polyus:Summary of Financials

Profit and Loss statement

USD in millions, year-end Dec	FY16	FY17E	FY18E	FY19E
Revenue	2,458	2,688	2,881	3,478
% change Y/Y	12.3%	9.4%	7.2%	20.7%
Gross Margin (%)	-	-	-	-
EBITDA	1,536	1,655	1,744	2,177
% change Y/Y	20.9%	7.8%	5.4%	24.8%
EBITDA Margin (%)	62.5%	61.6%	60.5%	62.6%
EBIT	1,388	1,476	1,566	1,910
% change Y/Y	21.5%	6.4%	6.1%	22.0%
EBIT Margin (%)	56.5%	54.9%	54.4%	54.9%
Net Interest	(145)	(211)	(215)	(306)
Earnings before tax	1,771	1,412	1,411	1,637
% change Y/Y	46.1%	(20.3%)	(0.1%)	16.0%
Tax	(326)	(250)	(321)	(288)
as % of EBT	18.4%	17.7%	22.7%	17.6%
Net Income (Reported)	927	1,037	1,076	1,339
% change Y/Y	2.7%	11.9%	3.7%	24.4%
Shares Outstanding	141	130	134	134
Adj. EPS	6.59	8.00	8.05	9.99
% change Y/Y	39.0%	21.5%	0.6%	24.1%

Cash flow statement

USD in millions, year-end Dec	FY16	FY17E	FY18E	FY19E
EBIT	1,771	1,412	1,411	1,637
Depreciation & amortisation	148	179	178	267
Change in working capital	(91)	(61)	4	81
Taxes	-	-	-	-
Cash flow from operations	984	1,043	1,381	1,696
Capex	(405)	(774)	(757)	(471)
Disposals/(purchase)	(128)	64	0	(31)
Net Interest	(145)	(211)	(215)	(306)
Free cash flow	665	402	744	1,450
Equity raised/repaid	(3,443)	399	0	0
Debt Raised/repaid	2,698	(464)	0	0
Other	(11)	15	0	0
Dividends paid	(16)	(561)	(550)	(598)
Beginning cash	1,825	1,740	1,488	1,605
Ending cash	1,740	1,488	1,605	2,201
DPS	2.77	3.81	4.16	4.92

Balance sheet

USD in millions, year-end Dec	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	1,740	1,488	1,605	2,201
Accounts receivable	87	158	166	196
Inventories	369	453	450	377
Others	89	102	102	102
Current assets	2,295	2,202	2,324	2,876
LT investments	-	-	-	-
Net fixed assets	2,938	3,684	4,263	4,499
Total assets	5,666	6,406	7,107	7,895
ST loans	283	29	29	29
Payables	222	227	253	282
Others	93	77	59	67
Total current liabilities	598	333	342	379
Long term debt	4,698	4,532	4,532	4,532
Other liabilities	784	914	1,023	1,023
Total liabilities	6,080	5,779	5,897	5,934
Shareholders' equity	(414)	627	1,210	1,961
BVPS	-	-	-	-

Ratio Analysis

USD in millions, year-end Dec	FY16	FY17E	FY18E	FY19E
EBITDA margin	62.5%	61.6%	60.5%	62.6%
Operating margin	56.5%	54.9%	54.4%	54.9%
Net Profit margin	37.7%	38.6%	37.3%	38.5%
SG&A/Sales	6.1%	6.8%	5.5%	4.9%
Sales per share growth	52.1%	18.7%	3.9%	20.5%
Sales growth	12.3%	9.4%	7.2%	20.7%
Net profit growth	2.7%	11.9%	3.7%	24.4%
EPS growth	39.0%	21.5%	0.6%	24.1%
Interest coverage (x)	13.2	9.1	10.1	7.0
Net debt to Total Capital	114.6%	83.1%	70.9%	54.6%
Net debt to equity	(782.9%)	490.0%	244.2%	120.4%
Sales/assets (x)	0.5	0.4	0.4	0.5
Assets/Equity	7.3	432.8	8.2	5.1
ROE	126.3%	7436.0%	131.1%	90.7%
ROCE	26.2%	25.4%	22.5%	26.1%
ROA	17.2%	17.2%	15.9%	17.8%

Source: Company reports and J.P. Morgan estimates.

Polyus PJSC

Overweight

Company Data	
Price ($)	36.55
Date Of Price	13 Dec 17
Price Target ($)	49
Price Target End Date	31-Dec-18
52-week Range ($)	43.99-32.25
Market Cap ($ mn)	9,763.32
Shares O/S (mn)	267

Polyus PJSC (PLZLq.L;PLZL LI)

FYE Dec	2015A	2016A	2017E *(Prev)*	2017E *(Curr)*	2018E *(Prev)*	2018E *(Curr)*	2019E *(Prev)*	2019E *(Curr)*
EBITDA FY ($ mn)	1,270	1,536	1,604	1,655	1,904	1,744	2,170	2,177
EBITDA Margin FY	58.0%	62.5%	60.5%	61.6%	62.8%	60.5%	62.4%	62.6%
EPS FY ($)	2.37	3.29	3.85	4.00	4.17	4.02	5.01	4.99
P/E (x) FY	15.4	11.1	9.5	9.1	8.8	9.1	7.3	7.3
EV/EBITDA (x) FY	7.9	8.4	8.6	7.7	7.1	7.2	6.0	5.5
Dividend Yield FY	0.0%	3.8%	5.2%	5.2%	6.1%	5.7%	6.7%	6.7%
Net Debt/EBITDA FY	28.7%	211.0%	188.7%	185.7%	146.1%	169.5%	102.3%	108.4%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Polyus PJSC *(Overweight; Price Target: $49.00)*

Investment Thesis

Polyus is the world's lowest cost gold producer and one of the highest growth due to a targeted +44% production expansion to 2.8Moz by 2019 (vs 1.6Moz pa). Polyus already has the most generous dividend policy among global gold majors in our view, with a commitment to payout the greater of $550m 2017-19, $650m 2020-21, or 30% of EBITDA semi-annually. However, Polyus' key growth capex will recede from 2018, and EBITDA will expand, as new mine Natalka reaches full capacity. This will generate significant excess capital that could be used to supplement capital returns, reduce debt or fund long term growth options.

Valuation

Our Overweight recommendation reflects our view that Polyus' shares are materially undervalued. Despite its status as the highest FCF margin, highest dividend yielding and among the highest growth global gold equities, Polyus's shares trade at a significant discount to peers on most valuation metrics. Our Dec'18 Price Target is calculated as the equal weighting of: i) 1.4x NPV under JPM's Commodity Research's and FX Strategists' forecasts; and ii) 7.0x 2018E EV/EBITDA, in line with its closest peer Polymetal's average trading multiple since 2011. Our NPV calculation applies a WACC of 10.5%.

Risks to Rating and Price Target

Downside risks to our Overweight recommendation include:

- **Gold prices:** JPM's base case forecasts are for stable gold prices across 2017-18, however lower gold prices would negatively impact Polyus's earnings and cash flow. However due to its status as the world's lowest cost gold producer, Polyus has lower leverage to gold price moves than peers - we calculate a 10% rise in gold prices impacts EBITDA ~15%.
- **Stronger Ruble:** The >90% devaluation in the Ruble since 2013 has driven an expansion of operating margins. In the event the Ruble/$ strengthens to <60, this would be negative for Polyus' earnings and cash flow, US$ unit cost and capex guidance.
- **Russia:** since Polyus' revenues are denominated in US$ and its costs in Rubles, its earnings and cash flows have benefited from weaker economic conditions in

Russia. If the severity or duration of Russia's economic sanctions reduces, or global oil prices rise, this is likely to lead to Ruble strengthening which could be negative for Polyus' operating margins.

- **Development projects:** New mine Natalka's construction will be complete in 2017 and will ramp-up to full production capacity in 2018. A ramp-up delay or cost overrun would be negative for Polyus' cash flows. Our production forecasts are conservative as we factor a 10% contingency across 2018-19 to reflect our view of ramp-up risk for greenfield mining projects in remote locations.
- **Sukhoi Log's economics may underwhelm:** Newly acquired asset Sukhoi Log will commence a scoping study in 2017 and a feasibility study is expected to be complete 2020/21. The project is the key component of Polyus' target to achieve ~4.5Moz pa production by ~2027. Management has outlined an indicative and conceptual project scope – in the event that the definitive feasibility study identifies fatal flaws, or its economics are underwhelming, this could have a negative impact on the market's assessment of Polyus' valuation.
- **Dividend:** we forecast Polyus has the highest dividend yield of global gold majors. In the event it does not declare a dividend, this would be negative for its investment appeal. We consider this unlikely due to the minimum mandatory dividend of $550-650m agreed across 2017-21 with the Fosun consortium.
- **Controlling shareholder:** Said Kerimov owns a controlling stake in PJSC Polyus. This introduces specific risks due to the alignment of majority vs minority shareholder interests over time.
- **Sale of 15% in Polyus to Fosun consortium represents an overhang:** Polyus' 82% shareholder Polyus Gold International Limited, which is beneficially owned by Said Kerimov, has agreed to sell a 15% stake in Polyus to a consortium led by Fosun. This transaction has yet to receive Chinese regulatory approvals and expires at the end of Feb'18. If approval is not received, we believe there is a possibility that Polyus' controlling shareholder may seek to place shares in the market, which may present a near term overhang on Polyus' share price.

Polyus PJSC:Summary of Financials

Profit and Loss statement

USD in millions, year-end Dec	FY16	FY17E	FY18E	FY19E
Revenue	2,458	2,688	2,881	3,478
% change Y/Y	12.3%	9.4%	7.2%	20.7%
Gross Margin (%)	-	-	-	-
EBITDA	1,536	1,655	1,744	2,177
% change Y/Y	20.9%	7.8%	5.4%	24.8%
EBITDA Margin (%)	62.5%	61.6%	60.5%	62.6%
EBIT	1,388	1,476	1,566	1,910
% change Y/Y	21.5%	6.4%	6.1%	22.0%
EBIT Margin (%)	56.5%	54.9%	54.4%	54.9%
Net Interest	(145)	(211)	(215)	(306)
Earnings before tax	1,771	1,412	1,411	1,637
% change Y/Y	46.1%	(20.3%)	(0.1%)	16.0%
Tax	(326)	(250)	(321)	(288)
as % of EBT	18.4%	17.7%	22.7%	17.6%
Net Income (Reported)	927	1,037	1,076	1,339
% change Y/Y	2.7%	11.9%	3.7%	24.4%
Shares Outstanding	282	259	267	268
Adj. EPS	3.29	4.00	4.02	4.99
% change Y/Y	39.0%	21.5%	0.6%	24.1%

Cash flow statement

USD in millions, year-end Dec	FY16	FY17E	FY18E	FY19E
EBIT	1,771	1,412	1,411	1,637
Depreciation & amortisation	148	179	178	267
Change in working capital	(91)	(61)	4	81
Taxes	-	-	-	-
Cash flow from operations	984	1,043	1,381	1,696
Capex	(405)	(774)	(757)	(471)
Disposals/(purchase)	(128)	64	0	(31)
Net Interest	(145)	(211)	(215)	(306)
Free cash flow	665	402	744	1,450
Equity raised/repaid	(3,443)	399	0	0
Debt Raised/repaid	2,698	(464)	0	0
Other	(11)	15	0	0
Dividends paid	(16)	(561)	(550)	(598)
Beginning cash	1,825	1,740	1,488	1,605
Ending cash	1,740	1,488	1,605	2,201
DPS	1.39	1.91	2.08	2.46

Balance sheet

USD in millions, year-end Dec	FY16	FY17E	FY18E	FY19E
Cash and cash equivalents	1,740	1,488	1,605	2,201
Accounts receivable	87	158	166	196
Inventories	369	453	450	377
Others	89	102	102	102
Current assets	2,295	2,202	2,324	2,876
LT investments	-	-	-	-
Net fixed assets	2,938	3,684	4,263	4,499
Total assets	5,666	6,406	7,107	7,895
ST loans	283	29	29	29
Payables	222	227	253	282
Others	93	77	59	67
Total current liabilities	598	333	342	379
Long term debt	4,698	4,532	4,532	4,532
Other liabilities	784	914	1,023	1,023
Total liabilities	6,080	5,779	5,897	5,934
Shareholders' equity	(414)	627	1,210	1,961
BVPS	-	-	-	-

Ratio Analysis

USD in millions, year-end Dec	FY16	FY17E	FY18E	FY19E
EBITDA margin	62.5%	61.6%	60.5%	62.6%
Operating margin	56.5%	54.9%	54.4%	54.9%
Net Profit margin	37.7%	38.6%	37.3%	38.5%
SG&A/Sales	6.1%	6.8%	5.5%	4.9%
Sales per share growth	52.1%	18.7%	3.9%	20.5%
Sales growth	12.3%	9.4%	7.2%	20.7%
Net profit growth	2.7%	11.9%	3.7%	24.4%
EPS growth	39.0%	21.5%	0.6%	24.1%
Interest coverage (x)	13.2	9.1	10.1	7.0
Net debt to Total Capital	114.6%	83.1%	70.9%	54.6%
Net debt to equity	(782.9%)	490.0%	244.2%	120.4%
Sales/assets (x)	0.5	0.4	0.4	0.5
Assets/Equity	7.3	432.8	8.2	5.1
ROE	126.3%	7436.0%	131.1%	90.7%
ROCE	26.2%	25.4%	22.5%	26.1%
ROA	17.2%	17.2%	15.9%	17.8%

Source: Company reports and J.P. Morgan estimates.

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