Research
Macquarie Wealth Management

GLOBAL

LME cash price

	US$/tonne	% change day on day
Aluminium	1,638	-0.6
Copper	4,769	-1.0
Lead	1,965	1.4
Nickel	10,585	1.0
Tin	19,828	0.1
Zinc	2,314	1.5
Cobalt	27,250	0.0
Molybdenum	14,689	0.0

Other prices

		% change day on day
Gold (US$/oz)	1,327	-1.0
Silver (US$/oz)	19.42	-0.1
Platinum (US$/oz)	1,030	-1.2
Palladium (US$/oz)	691	0.1
Oil WTI	44.39	-2.8
USD:EUR exchange rate	1.122	-0.4
AUD:USD exchange rate	0.767	0.3

LME/COMEX stocks

	Tonnes	Change
Aluminium	2,125,850	-10,175
LME copper	371,475	7,350
Comex copper	63,968	82
Lead	191,250	0
Nickel	361,860	-504
Tin	3,650	-65
Zinc	441,475	-525

Source: LME, Comex, Nymex, SHFE, Metal Bulletin, Reuters, LBMA, Macquarie Research, September 2016

27 September 2016

Commodities Comment

Philippines to suspend 16 more nickel mines

Feature article

- The Philippines' government finally released its mining review: 16 nickel miners (plus four other metal miners) will be ordered to suspend operations over alleged environmental violations unless they can convince the government otherwise in the next seven days. 10 mines were given the all-clear, including 6 nickel mines, but the suspension orders impact what had been expected to be 173kt of contained nickel in 2016 – roughly half of Filipino contained nickel-in-ore supply. In context, the Philippines is the key supplier (contributing >95%) of nickel ore to China's nickel pig iron (NPI) producers, which in turn represents ~18% of global nickel supply. Global nickel supply is seen at 1.9Mt in 2016, so the impacted mine capacity amounts to ~8% of global supply (after recovery).
- The outcome of the likely appeals that will be lodged in the next seven days are critical, but for now we assume that SR Metals' Tubay mine will be allowed to restart since the dispute is limited to an access road, and that most others will suffer from temporary suspensions (although we don't know this for sure). Given the monsoon season is almost upon us (and that ¾ of the year has passed already), the disruption to this year is seen being limited to around 15-20kt Ni-in-ore. Presuming ore stockpiles delay the blow to the NPI sector, this pushes our balance from a 62kt to a 78kt deficit for 2016. Not too dramatic at this stage, but sufficient to drive up ore prices from the current $33-34/t CFR China for 1.5% Ni ore, raising costs at the NPI producers.

Latest news

- Our China economist Larry Hu has published a preview of China's September and Q3 macro data, which will be released on October 19. Thanks to the property market and price reflation, we believe the economy continues to improve. For September, industrial production (IP) growth could be stable at around 6.3% YoY. We expect real GDP to grow 6.7% YoY in 3Q16, the same as in the previous two quarters. But nominal GDP growth, which improved to 7.2% YoY in 1H16 from 6.4% in 2015, is set to pick up further in 2H16. As such, monetary policy will likely stay put, and the focus of policy makers is now on the property market, where Larry notes that this round of property up-cycle is hardly a national phenomenon. In the past 12 months, 48 out of the 70 biggest cities had home price growth lower than 5%. As such, tightening monetary policy at the national level doesn't make sense either. Instead, Beijing will rely more on local governments to curb any property frenzy within their own territories.
- In line with expectations in our recent price forecast changes, the spot **alumina** price is now improving. FOB Australia assessments have risen by $6/t over the past week to $236/t, while the Chinese price is up $13/t over the same period. With the import arbitrage now wide open and Chinese aluminium output rising, we expect further upward pressure on the international spot price in the near term.
- Nyrstar announced the restart of its 50ktpa Middle Tennessee **zinc** mining district on higher zinc prices. The mine was presumed to be on the for-sale list, along with operating 70ktpa sister-mine East Tennessee.

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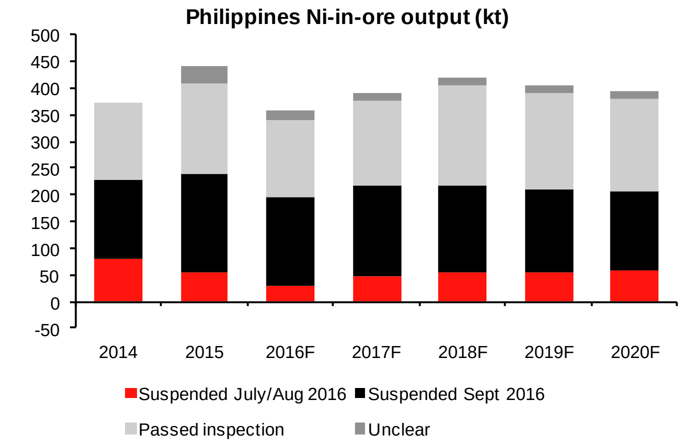
Philippines to suspend 16 more nickel mines

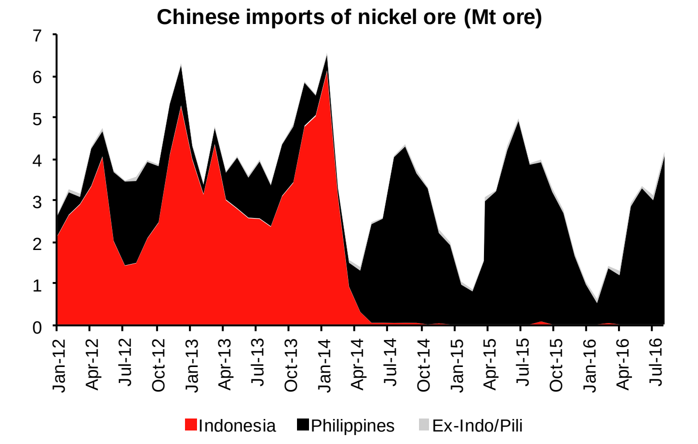
- The Philippines' government finally released its mining review: 16 nickel miners (plus four other metal miners) will be ordered to suspend operations over alleged environmental violations unless they can convince the government otherwise in the next seven days. 10 mines were given the all-clear, including 6 nickel mines, but the suspension orders impact what had been expected to be 173kt of contained nickel in 2016 – roughly half of Filipino contained nickel-in-ore supply. In context, the Philippines is the key supplier (contributing >95%) of nickel ore to China's nickel pig iron (NPI) producers, which in turn represents ~18% of global nickel supply. Global nickel supply is seen at 1.9Mt in 2016; impacted mine capacity amounts to ~8% of global supply (after recovery).
- The outcome of the likely appeals that will be lodged in the next seven days are critical, but for now we assume that SR Metals' Tubay mine will be allowed to restart since the dispute is limited to an access road. At this stage we assume that most others will suffer from temporary suspensions but we don't know this for sure yet. Given the monsoon season is almost upon us (and that three-quarters of the year has passed already), the additional disruption to this year's production is seen being limited to around 15-20kt Ni-in-ore. Presuming ore stockpiles delay the impact of NPI production, this pushes our balance from a 62kt to a 78kt deficit for 2017 but this is only on the assumption that all mines reopen next year. The impact is not too dramatic at this stage, but will be sufficient to drive up ore prices, raising costs at the NPI producers above current nickel prices.

Fig 1 Before September, 357kt of Ni-in-ore expected...



Source: Company reports, Macquarie Research, September 2016

Fig 2 ...which is vast bulk of Chinese Ni ore imports



Source: China Customs, Macquarie Research, September 2016

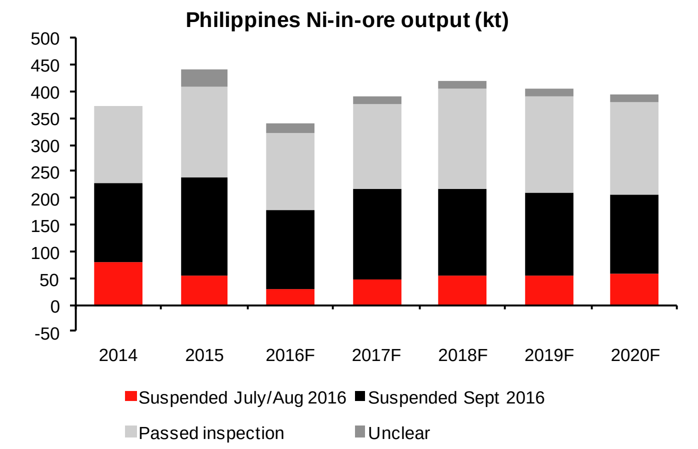
Fig 3 Philippines miners ordered to suspend operations in September 2016

Sept' Ni suspensions	**Before**	**After**	**Notes**		
Nickel to close	**2016f kt Ni**			**11 miners approved**	**Metal**
Marcventures	18	17		Atlas	Copper
Carrascal	22	20		Cagdianao	Nickel
Wellex	7	7		Taganito	Nickel
Agata	12	11		PGM (Global ferronickel)	Nickel
Hinatuan	**21**	**15**	**Already suspended**	Philsaga	Gold
Libjo	4	4		Philex	Copper
SR Metals	**32**	**32**	**Road access issue**	Rio Tuba	Nickel
Oriental Synergy	2	1		Pacific Nickel	Nickel
Oriental Vision	7	6		Greenstone	Gold
Adnama	9	8		Techiron	Chrome-nickel
CTP Construction	28	26		Apex	Gold
Benguet	**7**	**4**	**Already suspended**		
Century Peak	1	1		**Other Sept' suspensions**	
AAMPHIL	1	1		LePanto	Gold
Sinosteel	1	1		Oceanagold	Gold/copper
Krominco	1	1		Filminera	Gold
Total	**172.7**	**154.9**		Strongbuilt	Iron ore
Reduction		**-18**			
2016f	**357**	**339**			

Source: Media reports, Company reports, Macquarie Research, September 2016

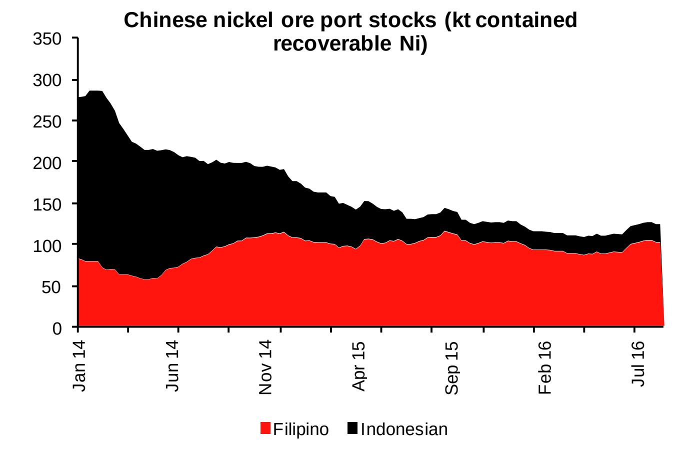
- In Figure 3 overleaf we set out our understanding of the operations impacted, and contributions to the nickel market. We arrive at a reduction of 18kt of nickel-in-ore from making the following assumptions:
  - ⇒ As mentioned, we think SR Metals' Tubay mine will be little impacted since the review specifically takes issue with the use and ownership of a certain access road, rather than any environmental damage allegations. As a larger and more important operation, we assume they can come to a suitable agreement with the authorities without meaningful disruption.
  - ⇒ Ore exports from the stockpiles of Nickel Asia's Hinatuan and operations at Benguet had already been suspended back in July, and so we increase the impact on these operations beyond the others mentioned.
  - ⇒ For the remaining nickel operations affected by the suspension, we take out only one month of output, i.e., reducing by 7.5% versus our previous estimates. It may be the case that some operations take longer to return than others, but the seven-day appeals window that has been granted does point to some cases where arrangements can be made to avoid downing tools.

Fig 4 After: Filipino output seen at 339kt Ni in 2016



Source: Company reports, media, Macquarie Research, September 2016

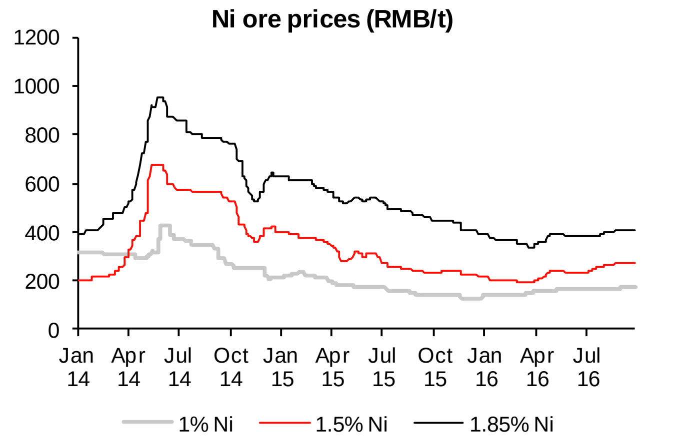
Fig 5 Nickel ore stocks should delay the impact on the global nickel market however



Source: SMM, Macquarie Research, September 2016

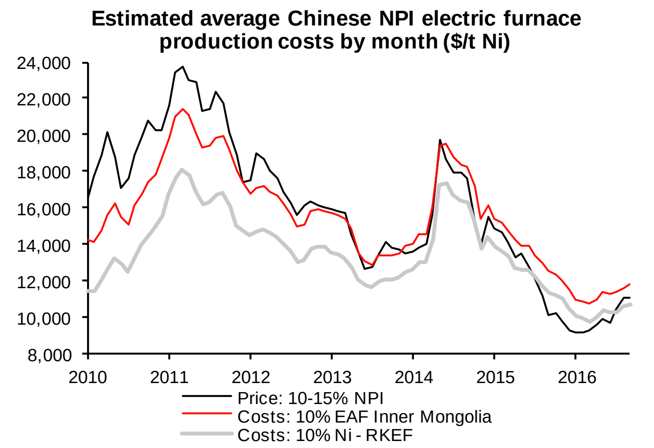
- **Deficit set to grow in 2017:** Presuming a 90% process recovery rate in China, this means around 19.7kt less nickel in NPI will be produced. However, given the extent of ore stockpiles, we think this will strike only slightly in 2016, with most NPI producers drawing down stocks to delay cutting output. We therefore see the main change being to our 2017 balance, deepening our global deficit estimate from 62kt towards 80kt.
- **Ore prices should rally, pushing up NPI costs:** Meanwhile, the news should provide positive upside for ore prices, particularly the lower Filipino-type grades, and this will have a direct read-through to NPI production costs. If we focus on the rotary kiln electric furnace (RKEF) 10% NPI producers as the largest and most influential segment (at around 70% of output), we can say that nickel ore costs are currently around 50% of total costs (with electricity, coke and coal the main other cost inputs). Total costs at these types of plants are currently ~$10,400-10,800/t (Fig. 7). If ore prices were to pick up by 10%, we could thus see a broad 5% gain in NPI prices which would put the RKEFs up by around $500/t, making nickel prices below $11,000/t unsustainable for the majority of Chinese NPI output. Recalling our earlier statement, Chinese NPI is not insignificant at 18% of global supply.

Fig 6 Ni ore prices should rally...



Source: SMM, Macquarie Research, September 2016

Fig 7 ...which will push up NPI costs



Source: SMM, Antaike, Macquarie Research, September 2016

- **Beyond 2017? Wait and see what seven days bring:** On a final note, we have decided not to adjust our views on Filipino mine output beyond 2017 at this stage. While the risks to mining in this country remain elevated, we think that the outcomes of the seven-day response period for the miners will give us more information and a clearer perspective from which to form a view on the longer term prospects for the affected operations.
- Also important to note is that reserves at existing mines are depleting and new mines need to be developed. The new government may well make it harder to get approvals on new mines and this could have a serious negative impact on our supply forecasts (and thus positive impact on price) for 2017 and onwards.

Tuesday 27 September 2016

Prices

	Closing price *		Closing price *				
	27-Sep-16 US$/tonne	**27-Sep-16 US¢/lb**	**26-Sep-16 US$/tonne**	**26-Sep-16 US¢/lb**	**% ch. day on day**	**2016 YTD US$/tonne**	**Ave 2015 US$/tonne**
LME Cash							
Aluminium	1,638	74	1,648	75	-0.6	1,569	1,661
Aluminium Alloy	1,563	71	1,563	71	0.0	1,554	1,724
NAASAC	1,735	79	1,735	79	0.0	1,699	1,767
Copper	4,769	216	4,819	219	-1.0	4,724	5,495
Lead	1,965	89	1,937	88	1.4	1,775	1,784
Nickel	10,585	480	10,485	476	1.0	9,189	11,807
Tin	19,828	899	19,805	898	0.1	16,997	16,070
Zinc	2,314	105	2,280	103	1.5	1,949	1,928
Cobalt	27,250	1,236	27,250	1,236	0.0	24,211	28,613
Molybdenum	14,689	666	14,686	666	0.0	14,159	14,837
LME 3 Month							
Aluminium	1,651	75	1,661	75	-0.6	1,576	1,680
Aluminium Alloy	1,580	72	1,580	72	0.0	1,579	1,736
NAASAC	1,750	79	1,750	79	0.0	1,721	1,790
Copper	4,787	217	4,841	220	-1.1	4,725	5,487
Lead	1,966	89	1,948	88	0.9	1,780	1,793
Nickel	10,630	482	10,530	478	0.9	9,235	11,858
Tin	19,750	896	19,725	895	0.1	16,937	16,030
Zinc	2,320	105	2,289	104	1.4	1,954	1,939
Cobalt	27,250	1,236	27,250	1,236	0.0	24,333	28,702
Molybdenum	14,900	676	14,900	676	0.0	14,182	14,870

**** LME 2nd ring price - 1700 hrs London time. Year-to-date averages calculated from official fixes.***

Gold - *LBMA Gold Price (US$/oz)*		1,327		1,341	-1.0	1,258	1,159
Silver - *LBMA Silver Price (US$/oz)*		19.42		19.44	-0.1	17.08	15.67
Platinum - *London 3pm price (US$/oz)*		1,030		1,043	-1.2	1,001	1,051
Palladium - *London 3pm price (US$/oz)*		691		690	0.1	588	690
Oil WTI - *NYMEX latest (US$/bbl)*		44.39		45.67	-2.8	41.20	48.68
EUR : USD exchange rate - *latest*		1.122		1.126	-0.4	1.116	1.110
AUD : USD exchange rate - *latest*		0.767		0.764	0.3	0.742	0.752

Exchange Stocks

			Change since last report		Cancelled	End-15	Ch. since
(tonnes)	**27-Sep-16**	**26-Sep-16**	**Volume**	**Percent**	**warrants**	**stocks**	**end-15**
LME Aluminium	2,125,850	2,136,025	-10,175	-0.5%	871,175	2,889,550	-763,700
Shanghai Aluminium	103,077	103,077	0	0.0%	0	297,037	-193,960
Total Aluminium	**2,228,927**	**2,239,102**	**-10,175**	**-0.5%**	**871,175**	**3,186,587**	**-957,660**
LME Copper	371,475	364,125	7,350	2.0%	62,625	236,225	135,250
Comex Copper	63,968	63,886	82	0.1%	-	64,184	-216
Shanghai Copper	130,780	130,780	0	0.0%	-	177,854	-47,074
Total Copper	**566,223**	**558,791**	**7,432**	**1.3%**	**62,625**	**478,263**	**87,960**
LME Zinc	441,475	442,000	-525	-0.1%	28,700	464,400	-22,925
Shanghai Zinc	175,272	175,272	0	0.0%	-	200,428	-25,156
Total Zinc	**616,747**	**617,272**	**-525**	**-0.1%**	**28,700**	**664,828**	**-48,081**
LME Lead	191,250	191,250	0	0.0%	66,150	191,650	-400
Shanghai Lead	33,576	33,576	0	0.0%	-	12,074	21,502
Total Lead	**224,826**	**224,826**	**0**	**0.0%**	**66,150**	**203,724**	**21,102**
Aluminium Alloy	13,680	13,680	0	0.0%	20	15,140	-1,460
NASAAC	73,640	71,940	1,700	2.4%	100	47,060	26,580
Nickel	361,860	362,364	-504	-0.1%	111,312	441,342	-79,482
Tin	3,650	3,715	-65	-1.7%	1,945	6,140	-2,490

Source: CME, LBMA, LME, Reuters, SHFE, Macquarie Research

Important disclosures:

Recommendation definitions

Macquarie - Australia/New Zealand
Outperform – return >3% in excess of benchmark return
Neutral – return within 3% of benchmark return
Underperform – return >3% below benchmark return

Benchmark return is determined by long term nominal GDP growth plus 12 month forward market dividend yield

Macquarie – Asia/Europe
Outperform – expected return >+10%
Neutral – expected return from -10% to +10%
Underperform – expected return <-10%

Macquarie – South Africa
Outperform – expected return >+10%
Neutral – expected return from -10% to +10%
Underperform – expected return <-10%

Macquarie - Canada
Outperform – return >5% in excess of benchmark return
Neutral – return within 5% of benchmark return
Underperform – return >5% below benchmark return

Macquarie - USA
Outperform (Buy) – return >5% in excess of Russell 3000 index return
Neutral (Hold) – return within 5% of Russell 3000 index return
Underperform (Sell)– return >5% below Russell 3000 index return

Volatility index definition*

This is calculated from the volatility of historical price movements.

Very high–highest risk – Stock should be expected to move up or down 60–100% in a year – investors should be aware this stock is highly speculative.

High – stock should be expected to move up or down at least 40–60% in a year – investors should be aware this stock could be speculative.

Medium – stock should be expected to move up or down at least 30–40% in a year.

Low–medium – stock should be expected to move up or down at least 25–30% in a year.

Low – stock should be expected to move up or down at least 15–25% in a year.
* Applicable to Asia/Australian/NZ/Canada stocks only

Recommendations – 12 months
Note: Quant recommendations may differ from Fundamental Analyst recommendations

Financial definitions

All "Adjusted" data items have had the following adjustments made:
Added back: goodwill amortisation, provision for catastrophe reserves, IFRS derivatives & hedging, IFRS impairments & IFRS interest expense
Excluded: non recurring items, asset revals, property revals, appraisal value uplift, preference dividends & minority interests

EPS = adjusted net profit / efpowa*
ROA = adjusted ebit / average total assets
ROA Banks/Insurance = adjusted net profit /average total assets
ROE = adjusted net profit / average shareholders funds
Gross cashflow = adjusted net profit + depreciation
*equivalent fully paid ordinary weighted average number of shares

All Reported numbers for Australian/NZ listed stocks are modelled under IFRS (International Financial Reporting Standards).

Recommendation proportions – For quarter ending 30 June 2016

	AU/NZ	Asia	RSA	USA	CA	EUR	
Outperform	45.17%	56.00%	36.36%	43.16%	63.39%	45.91%	(for global coverage by Macquarie, 6.27% of stocks followed are investment banking clients)
Neutral	36.21%	28.59%	40.26%	50.38%	29.46%	36.96%	(for global coverage by Macquarie, 6.33% of stocks followed are investment banking clients)
Underperform	18.62%	15.41%	23.38%	6.46%	7.14%	17.12%	(for global coverage by Macquarie, 5.38% of stocks followed are investment banking clients)

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