Australian Government
Department of Industry, Innovation and Science

Westpac

China Resources Quarterly

Southern summer ~ Northern winter 2016

China Resources Quarterly, Southern summer ~ Northern winter 2016

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Contents

Acronyms and abbreviations

ABS	Australian Bureau of Statistics
ASEAN	Association of Southeast Asian Nations
AUD, $A	Australian dollar
bcm	billion cubic metres
CEIC	Chinese Economic Information Company
CFR	Cost including freight
CNY, CNH	Chinese yuan (onshore & offshore)
cm	cubic metres
dltu	dry long tonne unit
FDI	foreign direct investment
FOB	free on board
FX	Foreign exchange
G3	United States, Europe and Japan
GDP	gross domestic product
GFC	global financial crisis
GFCF	gross fixed capital formation
GCF	gross capital formation
IEA	International Energy Agency
IMF	International Monetary Fund
koe, mtoe	kilogram of oil equivalent, million tonnes of oil equivalent
kgpp	kilograms per person
kWh	kilowatt hour
LNG	liquefied natural gas
Mt	million tonnes
na	not available
NAR	net as received
NIEs	Newly Industrialised Economies (Singapore, Taiwan, Hong Kong, South Korea)
ODI	outward direct investment
OECD	Organisation for Economic Cooperation and Development
OPEC	Organisation of Petroleum Exporting Countries
PMI	Purchasing Managers Index
PPP	purchasing–power parity
ppt	percentage point
RMB	Chinese Renminbi
SHIBOR	Shanghai Interbank Offered Rate
sqkm	square kilometres
USD, US$	United States dollar

Growth rate conventions and abbreviations.

"Year–ended growth", abbreviated %yr, is the level of an indicator in a single period (a month or quarter) versus the corresponding period in the prior year, expressed as a percentage.

The term "smoothed growth" should be understood to represent a 3 month moving average (3mma) of the year– ended growth rate.

"Year–to–date growth", abbreviated %ytd, is the accumulated level of an indicator at a point in the calendar year (for example year–to–June, year–to–Sep) versus the corresponding point in the prior year, expressed as a percentage.

"Annual average growth", abbreviated %ann, is the level of an indicator over four quarters, versus the previous four quarter period, expressed as a percentage.

"Month–on–month and quarter–on–quarter growth", abbreviated %mth or %qtr, is the level of an indicator in one period, versus the immediately prior period, expressed as a percentage.

"Annualised growth or annualised rate", is the change in an indicator in a single period grossed up to a year, expressed as a percentage. If seasonally adjusted, this may be rendered as %saar.

Foreword

Welcome to the Southern summer ~ Northern winter edition of the ***China Resources Quarterly*** – hereafter the ***CRQ***. The ***CRQ*** is a collaborative research venture between the Westpac Institutional Bank (hereafter Westpac) and the Australian Government Department of Industry, Innovation and Science.

The ***CRQ*** is the primary reference point for public and private sector decision makers seeking to understand developments in the Chinese economy, with special reference to its demand for resources.

This edition has been compiled against a discouraging economic backdrop. China's domestic demand profile remains fragile and exports are falling. As a result, nominal activity growth is extremely subdued *vis-a-vis* the double-digit percentage growth rates that were *de rigeur* for much of the last decade.

In the resources sphere, the intersection of increasing Australian supply potential and the fact that it is the most resource and energy intensive parts of the Chinese economy that have slowed the most has produced steep declines in the prices of a number of important commodities.

With China's development model in the midst of a major structural inflection point, and Australia's own commodity cycle having shifted decisively into the supply phase, it is more vital than ever to trade in fact rather than rumour. The ***CRQ*** aims to do its part in this regard by making available rigorous and empirically grounded analysis of macroeconomic and resource industry trends.

China is now the world's largest national economy in purchasing power parity (internationally comparable volume) terms and the largest producer of industrial value added, however measured. And it is now a free-trade agreement partner of Australia. These observations underscore the value of continuing to deepen our collective understanding of the ever-evolving Chinese economy.

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Executive summary

The Chinese economy continued to lose momentum through 2015, consistently registering sub-par outcomes over the year. Since the previous edition of the ***CRQ***, aggregate demand moderated further in the December quarter. The principal sources of weakness remain building activity and heavy industry on the domestic front, in addition to soft external demand for Chinese produced goods. Against these negatives however, the services sector remains a key positive, experiencing robust growth in 2015.

Growth in **heavy industrial capacity** and in **mining investment** both slowed significantly during 2015, with **coal mining** and **ferrous metals smelting** among the weakest segments. Outlays on **utilities capex** have grown at a healthy pace, while investment in **transport infrastructure** continues to run at a relatively high level. **Public sector capex** stabilized in 2015, having experienced steep declines in 2014; that said, overall support for demand from this quarter has been extremely modest.

Real estate construction activity remains weak, and from the point of view of **sales turnover,** the housing market may be at an important inflection point. In recent months, there has been evidence of **dwelling price gains** fading before an aggregate spill-over from the early respondents to policy easing to the smaller, less wealthy, non-coastal cities has been achieved. This earlier than anticipated levelling out in the sales rebound will delay any recovery in building activity until deep into 2016.

The **heavy industrial sector** continues to struggle. The proportion of industrial firms making losses remains historically high; and demand for **basic inputs consumed by construction** has deteriorated. As a result, excess capacity is looking increasingly pronounced in some sub-sectors; and **producer prices** continue to decline, as they have done since early 2012.

China's **exports** fell in 2015, with the deterioration evident across the **G3**, in **intra–Asian trade** and in shipments to **extra-regional emerging markets**. Demand for **imported raw materials** has been reasonable (albeit volatile) in volume terms, but the overall import bill has declined due to steep falls in **metals, energy** and certain **food prices.**

An unexpected shift in **exchange rate policy** sparked global comment in the second half of 2015 (and again in early 2016). Yet, with respect to capital flows, the reduction in FX reserves associated with intervention is only part of the story. China's ongoing development and first steps toward financial liberalisation have seen robust growth in service imports; Chinese bank loans to foreign entities; and outward foreign direct investment.

Commodity prices followed the declines of 2014 and the first half of 2015 with yet further declines through late-2015 and early-2016. Lower prices have been driven largely by increased supply, although as noted above and throughout the ***CRQ***, growth in demand has, in the main, been considerably lower than the norms established in the 2000s.

The global supply trend has been exemplified by **Australia's bulk commodity export volumes**, which have continued to increase despite substantially lower prices. Even so, as the period of time that commodity prices spend around their current levels extends, the more pressure will be brought to bear on those mines, in Australia, China and elsewhere, that are operating in the upper quartile of their respective industry cost curves.

Recent developments in the Chinese economy

The Chinese economy had a sub-par year in 2015, with an already weak first six months followed by a distinct loss of momentum in the second half. Since the previous edition of the ***CRQ***, the overarching narrative has changed little. Heavy industry and construction remain the principal sources of weakness domestically; while modest global growth is a major impediment for external demand. Against this weakness, offsetting positives include the structural rise of the Chinese consumer and infrastructure capex associated with China's continued urbanisation.

Real GDP expanded by 6.8%yr in Q4 2015. That compares to 6.9%yr in Q3; 7.0%yr in Q1 & Q2; 7.2%yr for Q4 2014 and 7.6%yr in Q4 2013.

While not the focus of market participants, nominal GDP has historically given a better guide on current momentum, exhibiting significantly more cyclical amplitude than the volume measure. In the December quarter, it decelerated further to 5.8%yr. Compare this to 7.1%yr just six months prior; 7.4%yr in Q4 2014; and 10.4%yr in Q4 2013. With the exception of the GFC period, the recent phase has produced the slowest nominal growth since the deflationary late 1990s. The change in the GDP deflator, a derived estimate of economy-wide prices, was –1.0%yr in Q4, versus +0.2%yr a year ago and +2.8%yr in 2013.

Looking at the breakdown of (nominal) activity from the production side of the accounts highlights the key tension in the China growth narrative. Whereas momentum in the secondary sector has moderated to just 0.2%yr as at Q4 2015, growth in the tertiary sector (i.e. services production) remains a resoundingly healthy 12%yr, in part due to stronger demand from consumers. The rise of the consumer is made clear in the expenditure detail: two years ago, fixed capital formation and final consumption contributed 4.2ppts and 3.7ppts respectively. At end-2015, the relevant contributions for investment and consumption are 2.5ppts and 4.6ppts.

By sector, nominal investment growth in heavy industrial and extractive industries remains weak, so too for housing and non–residential building (see page 4). Utilities and transport capex however remain at elevated levels. State-owned enterprises continue to contribute a little over a third of the growth in fixed investment.

Figure 1: Nominal GDP: total & broad sectors

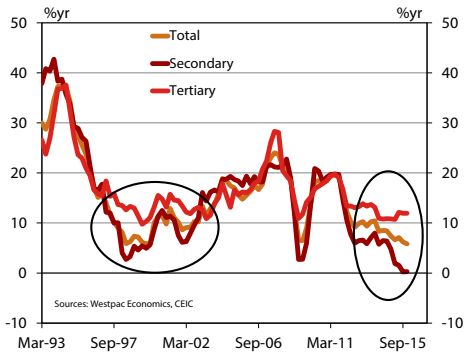


Figure 2: Various elements of the national accounts

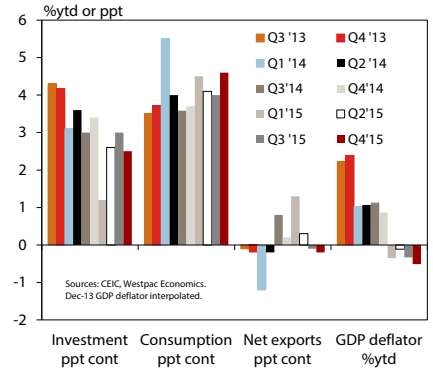
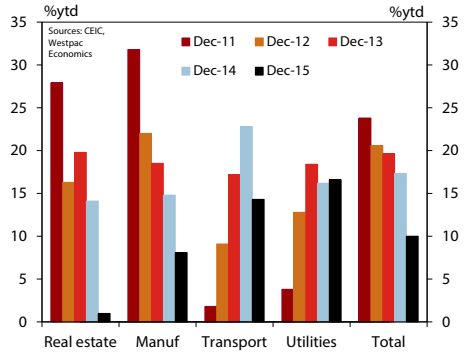


Figure 3: The investment cycle: a sectoral view



It is constructive to complement the national accounts with a range of alternative indicators which also correlate with overall activity. Doing so provides a richer and more complete picture of key macroeconomic trends.

Beginning with the People's Bank of China's corporate survey, we see that the largest firms across the nation believe conditions deteriorated further in the final quarter of 2015 – consistent with the national accounts.

The survey's 'business situation' measure has now been below its long-run average for eight consecutive months – and ten of the past eleven. Weakness in domestic orders is a key factor; though, as per this survey and recent PMI results, external demand is also unsupportive, with foreign orders contracting.

Other measures of aggregate activity highlight the impact that weak conditions in the old bellwether sectors of manufacturing and construction have had on raw material demand. Growth in steel demand remains in trend decline, from 12%yr at end 2013 to –0.7%yr at the close of 2015; likewise, though it bounced in 2015, demand for cement is continuing to fall, currently –4.3%yr. Reduced activity in manufacturing has also seen growth in electricity consumption abate.

As noted in our discussion of GDP, in stark contrast to the ongoing deterioration in secondary sector growth, and consequently raw material demand, is robust momentum in services.

This sector is job intensive. And given the stage of development China currently finds itself in, is the key to continued, sustainable wage gains for the urbanising population.

Buoyed by rapidly growing interest in the stock market and wealth management products in 2014/15, the financial sector experienced particularly rapid growth of 23%yr to end-2015.

For real estate services, growth of near 10%yr is modest historically, but still provides solid support for the aggregate pulse. A strengthening trend for the wholesale & retail sectors is to be expected as more jobs are created and a greater share of income is spent on discretionary consumption.

Figure 4: Business conditions, orders & GDP

Figure 5: The old model: bellwether sectors

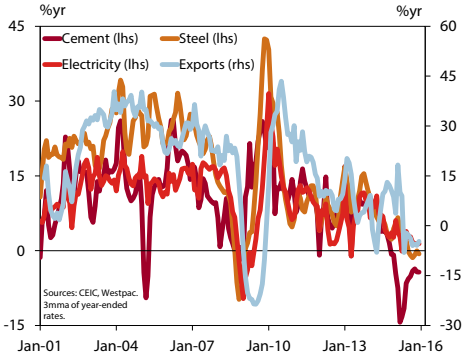
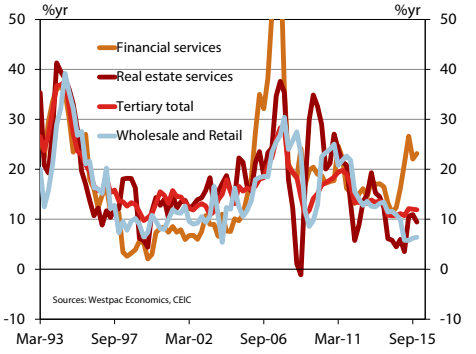


Figure 6: The new model: bellwether sectors



The real estate sector

Real estate represents around one quarter of nominal urban fixed investment. Real estate investment itself is split roughly 70/30 between residential and non–residential. State–owned enterprises represent around 14% of the total.

In the previous edition of the ***CRQ***, we noted that the real estate slowdown directly accounted for around 45% of the 5.8ppt deceleration in investment growth in the year-to-September 2015. Come December, the contribution to the 2015 capex slowdown increased slightly, to around 47%.

Our interpretation is that the housing market may be at an important inflection point. The cumulative evidence implies that the genuine price and turnover recovery in tier-1 and certain tier-2 cities seen earlier in 2015, responding to the shift in policy stance, strong pass through from benchmark rate cuts to mortgages and the increase in affordability brought about by the weak performance over the last year, is no longer broadening out to the smaller, less wealthy jurisdictions where developer inventories are most pronounced. In short, the impetus provided by easier housing policies is fading before an aggregate spill-over to the smaller, less wealthy, non-coastal cities has been achieved.

In terms of the pricing detail, the net balance of 70 cities seeing month-on-month price appreciation in new dwellings eased to +20.0% in December (41 rising, 27 declining) from +28.6% in September (40 rising, 20 declining); the equivalent figures for secondary markets are +14.3% in December (35 up, 25 down) and +30.0% in September (40 up, 19 down).

The volume of housing sales turnover effectively stalled at just 1.6%yr in December, down from +9.0%yr in September and 16.0%yr in June. After spiking in September to +15.3%yr, starts have consequently slumped again in the past three months, to –6.7%yr in December. On the whole, until we see a broader improvement in prices across the tier-2 and tier-3 cities, we are unlikely to see a material improvement in activity. Herein is justification for continued policy easing by authorities to stoke long-lasting confidence and demand in this key sector of China's economy.

Figure 7: 70 city house prices: m/m chg net balance

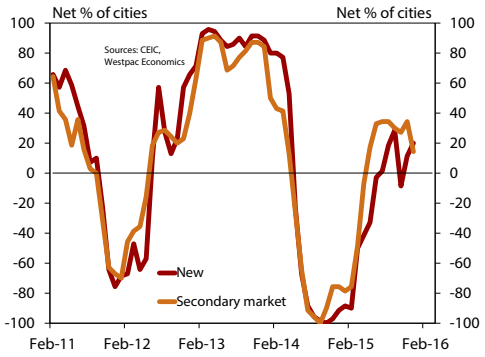


Figure 8: Completions, sales & land prices

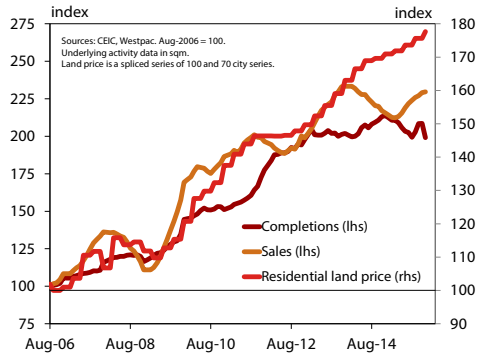
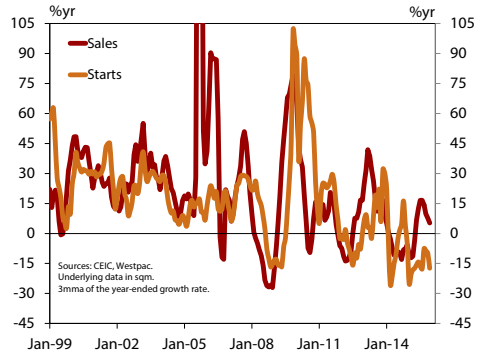


Figure 9: Housing sales and starts: volumes



Monetary & financial conditions

The monetary policy stance has had a basic tightening posture since 2011, related to the unwinding of the stimulus-era legacy, periodically interrupted by a cyclical need to underpin growth and/or accommodate smooth refinancing. The annual flow of credit to GDP peaked at 40% in late 2009; hit a local trough of 25% of GDP in early 2012; rebounded to 33% of GDP in early 2013; and then hit another low south of 23% of GDP as of Q2 2015. While traditional bank loans were a major contributor to the stimulus package, much of the cyclical amplitude since has been related to shadow finance, dominated by the off-balance sheet activity of the banks themselves (figure 10).

Last August, authorities altered the way in which the Renminbi was managed, focusing on a basket of currencies as opposed to the bilateral rate against the USD. Notwithstanding the circa 6.0% depreciation of USD/CNY since then (two-thirds of which came in the first month), the real exchange rate remains strong.

Coupled with real interest rates just a tick below average (despite a series of cuts), a strong real exchange rate means financial conditions are inappropriately restrictive, giving cause for further action from policy makers in coming months.

In aid of financial market stability and confidence in their longer-run objectives, Chinese authorities have intervened in FX markets over the past six months and also tightened capital flow rules. Markets are anxiously assessing these efforts to contain 'speculative' capital outflows. While we believe the authorities will prove successful, volatility seems a likely constant in the process.

It is worth highlighting that there are additional factors behind the depletion of FX reserves, namely: a rise in foreign loans made by Chinese banks and outward FDI by Chinese corporates and citizens at a time of weaker export receipts.

As internationalisation and development proceed, private flows will grow rapidly. Bank-related activity; outward direct investment; rapid growth in portfolio flows (from a very low base) and a growing services deficit will all become increasingly important avenues for goods' surplus recycling.

Figure 10: Flow of credit by type, % of GDP

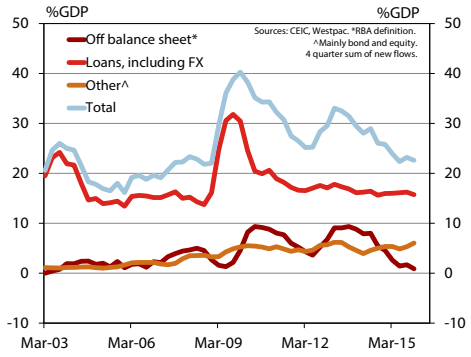


Figure 11: Financial conditions in China

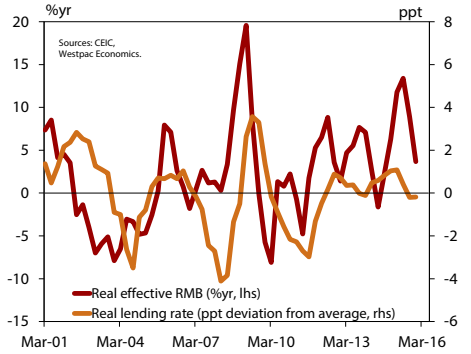


Figure 12: FX reserves & net capital flows by type

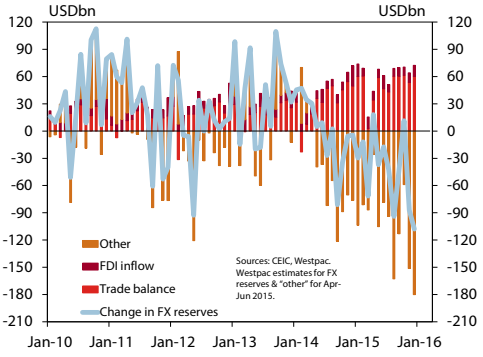


Table 1: General macroeconomic data

Quarterly

	Dec–12	Mar–13	Jun–13	Sep–13	Dec–13	Mar–14	Jun–14	Sep–14	Dec–14	Mar–15	Jun–15	Sep–15	Dec–15
Real GDP %yr	8.0	7.8	7.5	7.9	7.6	7.3	7.4	7.2	7.2	7.0	7.0	6.9	6.8
Nominal GDP %yr	9.9	10.3	9.4	10.2	10.4	8.3	8.5	8.5	7.4	6.6	7.1	6.2	5.8
Contributions to real GDP percentage points ytd													
Final consumption expenditure	4.3	4.3	3.4	3.5	3.7	5.5	4.0	3.6	3.7	4.5	4.1	4.0	4.6
Gross capital formation	3.2	2.3	4.1	4.3	4.2	3.1	3.6	3.0	3.4	1.2	2.6	3.0	2.5
Net exports	0.1	1.1	0.1	-0.1	-0.2	-1.2	-0.2	0.8	0.2	1.3	0.3	-0.1	-0.2
Secondary industry %ytd	8.2	7.7	7.6	7.8	7.9	7.3	7.5	7.4	7.3	6.3	6.1	6.0	6.0
Tertiary industry %ytd	8.0	8.3	8.3	8.3	8.3	7.6	7.6	7.6	7.8	8.0	8.3	8.4	8.4
Current Account %GDP 4qma	2.5	2.6	2.4	1.8	1.5	1.2	1.5	1.8	2.1	2.8	2.8	2.0	1.4
GDP deflator %yr	1.9	2.5	1.9	2.3	2.8	1.0	1.1	1.3	0.2	-0.4	0.1	-0.7	-1.0
Fixed investment deflator %yr	0.3	0.2	-0.1	0.0	0.9	1.1	0.6	0.4	-0.1	-0.9	-1.2	-2.3	0.0
Land price index %yr	2.6	3.9	5.1	6.2	7.0	7.5	7.2	6.1	5.2	3.8	3.4	3.5	3.2
Consumer price index %yr	2.1	2.4	2.4	2.8	2.9	2.3	2.2	2.0	1.5	1.2	1.4	1.7	1.7
Producer price index %yr	-1.7	-2.5	-2.2	-1.4	-1.7	-1.9	-1.1	-2.2	-4.1	-4.6	-5.4	-5.9	-5.9
Central revenue 4qma %yr	12.8	10.7	10.1	10.8	10.2	10.8	10.8	9.7	8.7	7.3	7.5	8.2	8.3
Central expenditures 4qma %yr	15.1	11.6	10.8	7.5	11.2	11.3	13.4	14.1	8.5	7.6	7.1	11.1	14.5
Central operating position 4qma %GDP	-1.6	-1.7	-1.7	-1.4	-1.8	-1.8	-2.3	-2.4	-1.8	-1.9	-2.2	-3.0	-3.2
Money supply M2 %yr	13.8	15.7	14.0	14.2	13.6	12.1	14.7	12.9	12.2	11.6	11.8	13.1	12.8
Bank loans (stock) %yr	15.0	14.9	14.2	14.3	14.1	13.9	14.0	13.2	13.6	14.7	14.4	15.8	0.0
Total credit supply (new, rolling annual) %GDP	29.5	33.0	32.5	31.5	29.4	28.0	29.0	26.0	25.9	24.0	22.4	23.2	22.8

Table 1 continued on page 7

Table 1: General macroeconomic data

Quarterly

	Dec–12	Mar–13	Jun–13	Sep–13	Dec–13	Mar–14	Jun–14	Sep–14	Dec–14	Mar–15	Jun–15	Sep–15	Dec–15
Exports %yr	9.4	18.9	4.1	3.9	7.5	-4.7	5.0	13.0	8.6	10.0	-2.2	-5.9	-5.3
to G3	-1.6	3.4	-4.9	2.6	9.4	2.8	9.3	10.5	3.8	7.6	-1.0	-3.3	-4.2
to Asia ex Japan	21.7	36.7	15.2	7.5	6.9	-10.3	2.8	16.2	13.3	9.9	-2.6	-7.4	-4.1
to Australia	12.4	5.7	-5.3	3.0	-1.5	1.1	4.8	4.1	5.3	14.4	4.2	1.0	2.0
to non–Asian emerging markets	10.2	22.2	0.4	-1.4	5.9	-3.3	3.9	14.6	10.0	16.6	-5.0	-10.0	-14.7
Imports %yr	2.7	9.4	5.2	8.4	7.2	3.3	1.5	1.2	-1.4	-17.9	-13.5	-14.2	-12.0
from G3	-4.3	-0.8	-0.1	4.3	8.1	11.5	7.4	4.3	2.4	-11.8	-10.2	-13.0	-11.0
from Asia ex Japan	10.9	17.5	8.1	7.3	1.5	-4.7	1.7	3.5	-0.4	-14.1	-11.4	-14.5	-9.2
from Australia	-8.1	7.5	9.1	19.0	33.5	24.8	2.4	-1.9	-20.5	-26.5	-30.9	-20.5	-18.5
from non–Asian emerging markets	-1.7	-0.9	-6.8	4.9	6.3	2.4	4.5	0.8	-4.4	-36.7	-27.6	-20.5	-23.0
Trade balance USDbn	83.3	43.5	65.7	61.5	90.5	16.6	85.9	128.1	149.5	123.7	139.5	163.6	174.8
Change in FX reserves USDbn	26	131	54	166	159	127	45	-106	-45	-113	-36	-180	-184
Enterprise survey – net balance, 50 base													
Business conditions	61.8	62.6	57.1	56.3	58.1	55.3	55.4	54.9	54.5	52.8	51.8	49.4	48.4
Profitability	53.1	52.8	55.6	55.1	57.6	50.9	54.1	55.0	55.0	51.0	52.8	51.1	50.5
Domestic orders	47.7	48.8	50.3	48.2	49.4	44.4	48.5	46.9	46.5	42.5	46.3	43.3	42.5
Foreign orders	47.1	46.6	49.9	50.1	48.7	45.4	49.7	49.9	47.9	44.2	48.7	46.3	43.7
Banking climate – % of average													
Demand for loans	90.8	98.9	92.6	95.4	95.0	99.9	91.3	85.1	82.9	87.9	77.2	72.4	72.6
Ease of policy stance	81.7	91.6	91.5	72.6	73.6	68.7	74.1	84.3	90.3	96.9	118.7	110.1	121.0
Bankers' confidence level	99.7	130.7	116.0	110.4	129.1	122.4	97.2	107.0	95.0	86.0	78.6	73.5	68.6
Westpac MNI Consumer Sentiment* – % of average													
Headline composite	100.4	100.4	101.4	96.1	102.8	98.6	97.3	94.6	92.6	93.9	92.7	96.7	93.2
Expected family finances	101.7	101.8	103.4	96.7	103.9	97.8	99.4	94.9	92.3	94.1	93.2	99.2	93.5
House price expectations	99.6	100.4	100.2	104.2	102.7	106.2	105.0	106.2	104.9	106.9	105.8	107.9	104.3
Employment outlook	103.1	107.7	106.8	96.4	109.1	98.6	98.7	93.7	92.4	92.9	92.2	89.8	89.1

Sources: Westpac Economics, CEIC, MNI.
* Quarterly observations are the 3 month average.

Table 2: Resource related economic indicators

Monthly

	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
Industrial production %yr 3mma	7.3	7.2	6.4	6.1	5.9	6.3	6.3	6.3	5.9	5.8	5.8	5.9
Electricity	6.0	3.8	2.8	-0.1	2.5	3.9	2.6	2.8	1.6	1.4	1.4	1.4
Processed crude oil	7.5	5.4	5.5	4.8	8.2	7.2	6.2	5.6	4.7	3.3	2.2	2.8
Cement*	na	na	-21.2	-14.4	-11.6	-6.6	-5.7	-5.1	-4.1	-3.6	-4.3	-4.3
Steel products*	na	na	2.6	3.4	2.9	2.1	-0.2	-0.9	-1.4	-0.9	0.0	-0.7
Non–ferrous metals*	na	na	17.3	19.9	21.1	23.5	22.6	21.2	18.4	16.1	13.6	9.9
Automobiles*	na	na	3.7	-0.6	-2.6	-5.2	-8.9	-10.6	-12.3	-7.0	0.1	8.8
Civilian ships*	na	na	26.9	11.0	7.0	-1.7	-1.9	-0.7	-2.3	0.3	-9.8	-9.1
Metal cutting tools*	na	na	4.6	6.9	5.2	9.7	2.5	-1.7	-14.9	-16.4	#na	#na
	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
Fixed asset investment %yr 3mma	13.3	13.4	13.6	12.2	10.9	10.4	10.5	10.2	8.6	8.4	9.0	9.0
Manufacturing, of which	13.3	12.9	10.5	9.9	9.9	9.3	8.7	7.7	6.4	6.8	7.4	7.4
Heavy industry	12.7	11.5	8.7	7.5	6.8	7.1	6.2	5.4	3.4	4.9	4.9	5.7
Hard infrastructure, of which	17.6	19.6	22.0	20.5	18.5	17.3	17.3	18.8	16.6	15.5	16.7	15.4
Highways	21.0	29.2	24.4	21.9	20.5	21.1	18.4	14.9	12.2	13.8	15.7	13.4
Railways	14.6	11.9	33.3	34.5	44.3	23.7	26.7	12.3	3.4	-10.2	-10.7	-13.6
Utilities	15.3	18.2	21.9	20.5	18.1	15.7	15.8	15.8	14.2	12.8	14.5	17.5
Real estate, of which	5.4	6.3	9.1	5.8	3.2	2.1	2.9	1.7	-0.4	-2.2	-3.5	-3.1
Dwellings	3.9	5.2	6.9	3.5	0.6	0.7	2.3	1.7	-0.1	-1.8	-2.9	-3.0
Non–residential	8.4	8.8	14.0	10.9	8.7	5.1	4.3	1.9	-1.1	-3.0	-4.8	-3.4
Off–market urban construction	-27.7	-18.7	-5.5	-10.3	-20.9	-13.7	-29.8	-27.2	-37.5	-6.5	17.0	33.7
	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
Value of new project starts	8.1	3.7	2.3	8.8	9.9	-0.2	-4.5	-3.8	1.2	-0.2	-0.2	-0.2
Number of new project starts	5.8	5.2	6.0	8.7	12.2	11.3	18.0	17.5	23.6	23.3	23.3	23.3
Local government projects	15.2	14.8	13.8	12.4	11.0	11.0	10.8	10.7	8.9	9.1	9.1	9.1
Central government projects	-8.5	-2.7	10.5	8.3	7.7	-2.9	2.8	0.3	3.2	-3.0	-3.0	-3.0
State owned enterprise investment	10.6	12.4	14.5	12.0	10.1	10.7	11.9	12.5	10.2	10.6	11.7	9.7

Table 2 continued on page 9. * Output for these sectors was not released for the months of January and February. As a consequence, we have entered na for those two months and reported the unsmoothed year–ended rate for March.

Table 2: Resource related economic indicators

Monthly

%yr 3mma unless otherwise specified	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
Volume of housing starts	-25.0	-20.5	-18.3	-17.4	-15.7	-14.2	-16.4	-17.7	-7.6	-8.6	-10.0	-17.4
Volume of housing sales	-10.5	-12.2	-11.4	-3.6	6.8	12.7	16.6	16.6	14.2	9.7	7.7	5.2
Value of housing sales – Nationwide	-11.4	-13.8	-14.2	-9.4	-2.1	5.3	11.6	16.1	17.9	18.3	18.0	12.0
Eastern provinces	-13.6	-13.8	-13.0	-8.4	-0.6	8.8	17.0	22.9	25.1	25.4	24.7	16.2
Central provinces	-9.8	-16.8	-19.2	-12.3	-3.6	1.7	5.9	9.0	10.8	12.0	13.2	9.2
Western provinces	-6.1	-10.5	-12.7	-9.5	-5.1	-1.6	1.7	3.9	4.5	4.4	4.1	2.7
Volume of land sales	-35.8	-24.4	-32.4	-43.5	-41.7	-44.5	-30.6	-32.6	-33.6	-37.1	-34.9	-34.9
70 city *new* dwelling prices net % rising m–o–m	-88.6	-90.0	-50.0	-41.4	-32.9	-2.9	1.4	18.6	28.6	-8.6	11.4	20.0
70 city *secondary* dwelling prices net % rising m–o–m	-78.6	-75.7	-48.6	-7.1	17.1	32.9	34.3	34.3	30.0	27.1	34.3	14.3
Auto sales, of which	7.6	6.8	3.6	0.9	0.8	-1.1	-3.3	-4.1	-2.7	3.6	11.3	15.8
passenger cars	10.3	10.9	8.7	6.5	4.8	0.5	-2.9	-4.4	-2.2	4.4	13.4	18.5
Excavator sales	-31.0	-43.3	-45.4	-49.7	-36.5	-33.6	-32.2	-32.3	-31.0	-31.6	-29.2	-28.4
Terrestrial freight	7.3	9.8	7.7	6.7	2.1	1.7	-0.5	-2.3	-4.2	-6.0	-7.2	-12.2
Aquatic freight	18.2	13.0	5.2	1.2	0.8	1.6	4.1	4.1	4.6	5.3	5.9	4.7
International air freight	8.0	13.7	11.0	9.3	3.7	5.8	5.1	3.9	2.6	2.3	3.6	4.8
	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
Manufacturing PMI – index – of which	49.8	49.9	50.1	50.1	50.2	50.2	50.0	49.7	49.8	49.8	49.6	49.7
Output	51.7	51.4	52.1	52.6	52.9	52.9	52.4	51.7	52.3	52.2	51.9	52.2
New orders	50.2	50.4	50.2	50.2	50.6	50.1	49.9	49.7	50.2	50.3	49.8	50.2
New export orders	48.4	48.5	48.3	48.1	48.9	48.2	47.9	47.7	47.9	47.4	46.4	47.5
Raw material inventories	47.3	48.2	48.0	48.2	48.2	48.7	48.4	48.3	47.5	47.2	47.1	47.6
Finished goods inventories	48.0	47.0	48.6	48.0	47.5	47.7	47.4	47.2	46.8	47.2	46.7	46.1
Purchases of inputs	49.6	49.4	49.7	50.1	51.0	50.9	50.3	49.4	48.6	48.8	48.3	50.3
Imports	46.4	47.5	48.1	47.8	47.6	48.0	47.8	47.2	48.1	47.5	46.7	47.6
New orders to finished goods inventories ratio	1.05	1.07	1.03	1.05	1.07	1.05	1.05	1.05	1.07	1.07	1.07	1.09

Sources: Westpac Economics, CEIC.

Steel

- In Q4, Chinese steel prices continued on a downward trajectory—averaging 60 to 70% below the Q2 2008 peak. Continued weakness in crude steel consumption, largely attributable to soft demand from the construction sector, aided the fall in steel prices.
- China's steel production fell 3.1%yr in Q4 to 194 Mt—the lowest since Q4 2012. Falls in production across most of the country—particularly in Liaoning, Xinjiang and Shanxi—more than offset a 293 kt increase in production in the key producing region of Jiangsu.
- The pace of decline in China's crude steel production has been accelerating, with the 6.1 Mt yoy fall in Q4 the steepest since Q4 2008.

Figure 13: Benchmark steel prices

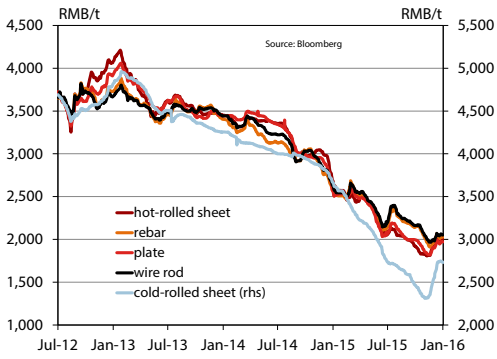


Figure 14: Crude steel output: level & growth

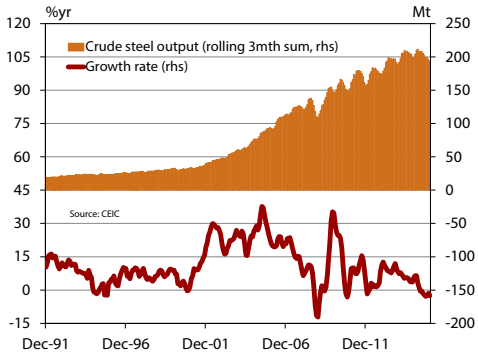


Figure 15: The rebar price and input costs

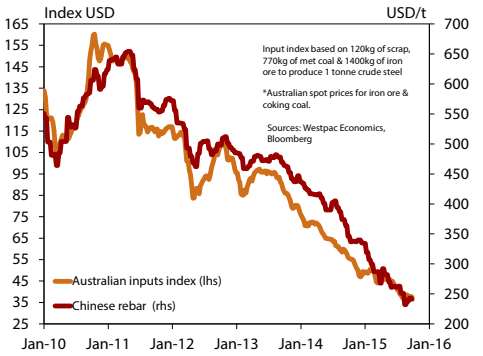


Table 3: Steel prices (quarterly averages).

Domestic RMB/t	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
Rebar	3507	3527	3348	3258	3078	2940	2577	2435	2226	2055
Hot–rolled sheet	3609	3489	3399	3392	3272	3008	2636	2425	2071	1882
Cold–rolled sheet	4460	4342	4214	4096	4001	3898	3582	3160	2719	2423
Plate	3599	3455	3433	3448	3270	2962	2588	2404	2091	1916
Wire rod	3509	3519	3394	3347	3155	2952	2605	2471	2265	2083
Benchmarks USD/t										
Rebar benchmarker	474	477	454	431	408	392	344	314	274	251
HRC benchmarker	494	480	466	454	442	410	359	325	271	245
CRC benchmarker	613	611	597	562	551	534	489	424	356	322

Source: Bloomberg.

- China's excess capacity has contributed to a rapid increase in exports. China's net export position of crude steel in Q4 was 26 Mt—around 6% of global production and just shy of the record high of 28 Mt recorded in Q3.
- To combat excess capacity in the steel and coal sectors, the Chinese Government announced it will spend RMB 100 billion (US$15.25 billion) every year for up to five years. Over this period it will cut 100–150 Mt of crude steel production by eliminating 90 Mt of capacity.

Figure 16: Steel end–use by sector

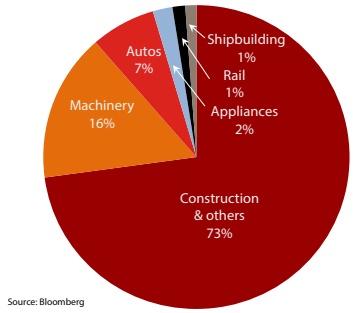


Figure 17: Steel inventories by product type

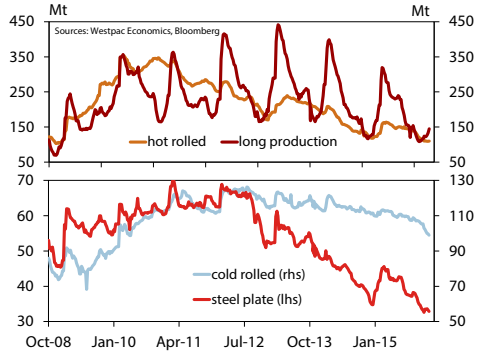


Figure 18: Steel inventory–to–sales scatter plot

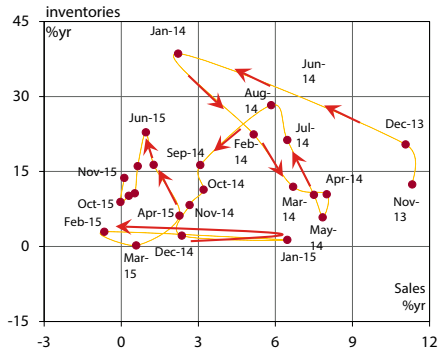


Figure 19: Steel demand per head

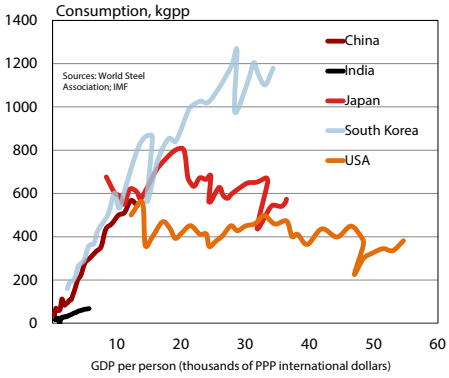
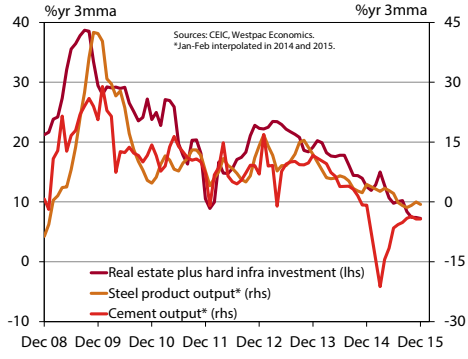


Figure 20: Construction, cement and steel



Iron ore

- Iron ore prices averaged US$47/t (CFR) in Q4, down 15%qtr and 37%yr. Prices slid as low as US$38/t in mid-December but rebounded to around US$41/t by early February. Increasing supply from Australia and Brazil, amid weaker demand from China's steel industry, have contributed to downward pressure on prices.
- China's iron ore port stocks rose 10.4%qtr, to end Q4 at 89 Mt. They were down 6%yr.
- China's iron ore production (run of mine) was down by 8%yr in 2015. However, the rate of decline in China's pig iron production relative to the increase in iron ore imports imply a decline in the iron content of domestic

Figure 21: Iron ore prices: spot and forward

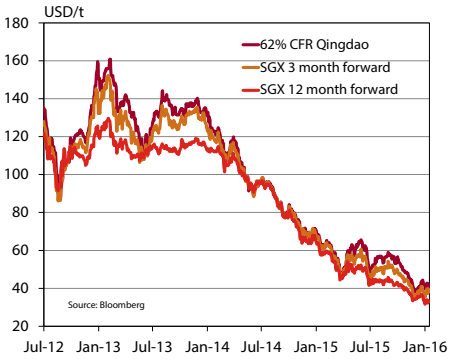


Figure 22: Iron ore prices and rebar steel

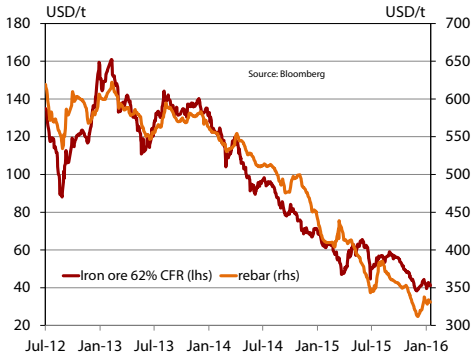


Figure 23: Port inventories versus end demand

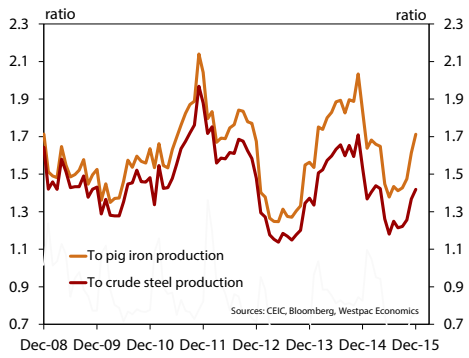


Table 4: Iron ore prices (USD/t, 62% ferrous metal content unless otherwise indicated).

TSI spot price, CFR	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
Quarter average	133.6	134.9	120.5	103.0	90.4	74.4	62.5	58.5	54.9	46.7
Quarter end	131.4	134.7	116.6	94.0	78.1	71.3	51.4	59.4	56.3	43.6
Quarter high	144.18	140.28	135.27	119.82	98.35	84.17	71.49	65.61	59.2	56.6
Quarter low	118.28	130.35	103.99	89.48	77.97	66.8	51.4	47.1	44.6	38.3
TSI in CNY terms, CFR	818.1	821.8	735.4	642.0	557.6	457.4	389.7	362.7	345.8	298.7
IODEX Aust FOB	122.2	122.6	110.8	93.9	81.4	66.1	57.6	53.2	48.8	49.0
IODEX Brazil FOB	106.9	107.2	95.9	80.4	67.3	54.3	50.9	46.5	40.4	41.9

Sources: Bloomberg; Platts. CFR is cost including freight. FOB is free on board.

production. As such, the decline in the metal content of production is likely to be steeper than reported by official statistics. This has provided additional support to demand for seaborne iron ore.

- Falling global bulk freight rates have improved the competitiveness of seaborne iron ore. In early February, the Baltic Dry Index was the lowest since records began in 1985. Reflecting this, iron ore freight rates for Capesize bulk carriers travelling from Western Australia to Qingdao declined to US$3.05/t in late January, down 31%yr and the lowest since 1999.

Figure 24: Chinese import volumes by source

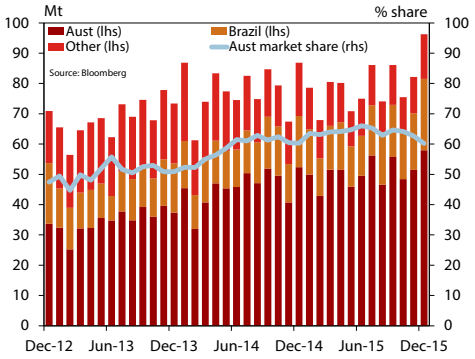


Figure 25: Australian iron ore exports to China

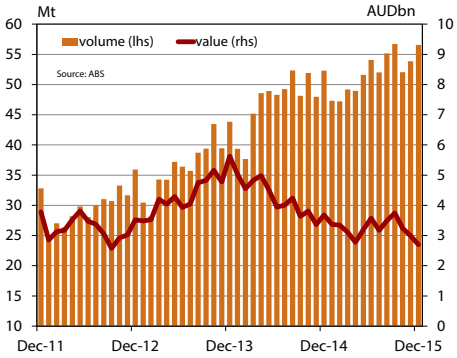


Figure 26: Chinese imports, unit values & prices

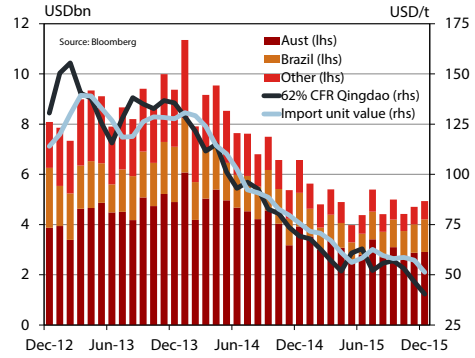


Figure 27: World trade in iron ore – seaborne

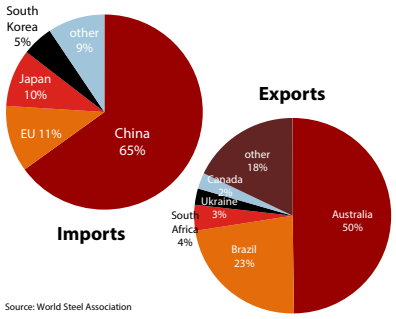
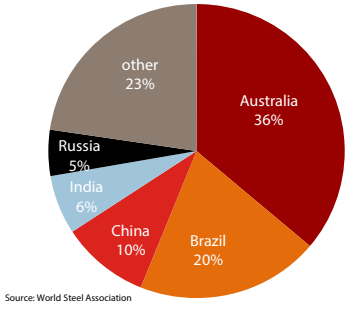


Figure 28 : Shares of world iron ore output



- Iron ore imports into China increased 9%yr in Q4. Australia and Brazil increased their share of the seaborne market into China in 2015. Australia's share increased from 59% to 64% while Brazil's share increased from 18% to 20%.
- Australia's iron ore export volumes into China fell 0.9%qtr but increased 7%yr to 162 Mt in Q4. However, due to lower prices, values decreased 14%qtr and 18%yr to $A9 billion—the weakest result since Q1 2010.
- The first shipment from the Roy Hill project left Port Hedland on December 10, following three months of delays. The project aims to eventually produce 55 Mtpa.

Figure 29: China's total iron ore supply

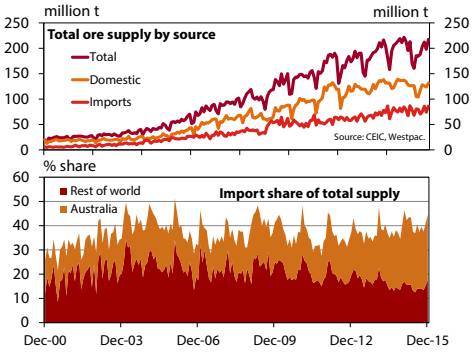


Figure 30: Chinese iron ore miners' margins

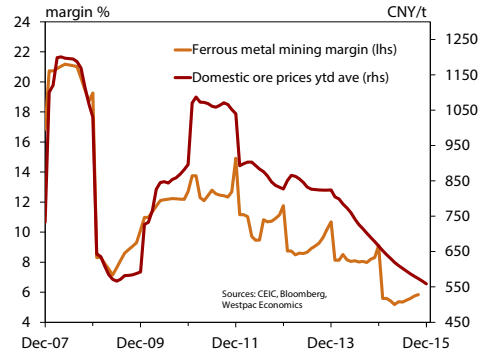


Figure 31: Chinese output, imports & stocks

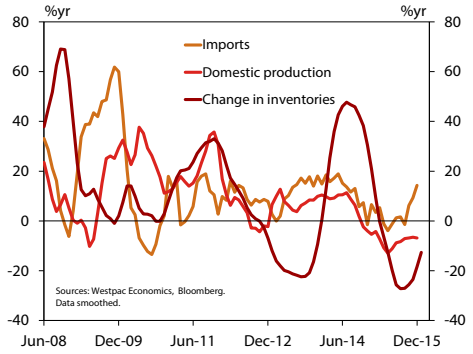


Figure 32: Chinese iron ore miners: loss–makers

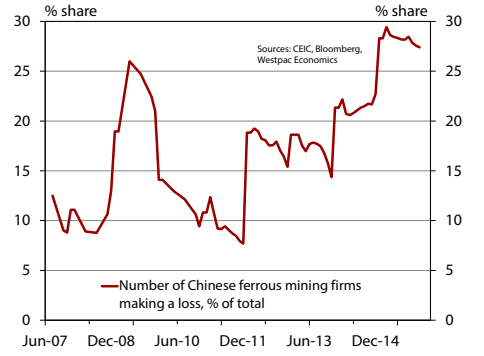


Figure 33: Seaborne iron ore cost curve

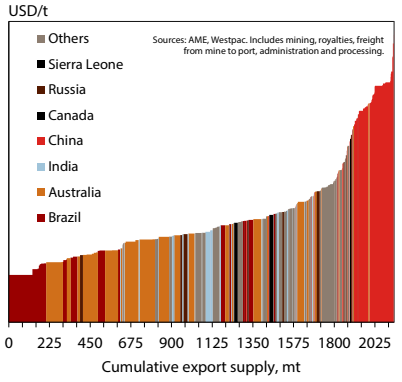


Table 5: Iron ore & metallurgical coal summary data

Iron ore		unit	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
China imports		Mt	216.7	219.1	222.0	235.3	242.1	233.6	227.1	226.0	246.3	253.9
	Australia	Mt	111.8	112.9	118.2	138.2	149.4	142.7	144.4	146.8	158.5	157.9
	Brazil	Mt	40.5	44.4	41.6	38.9	44.7	45.8	41.8	42.3	50.1	57.5
	value	USDbn	26.3	28.1	28.4	25.7	21.9	18.5	15.8	13.2	14.8	14.1
Raw production *		Mt	387.0	405.4	304.2	393.6	410.6	389.3	280.6	350.2	381.6	3 62.6
Iron ore stocks at ports, end of qtr		Mt	70.1	81.3	103.8	105.7	103.2	95.2	93.3	74.1	80.9	89.3
	weeks of imports	weeks	4.1	4.8	6.1	6.2	6.1	5.6	5.5	4.4	4.8	5.3
Australian exports to China		Mt	113.8	126.8	122.2	145.8	149.7	152.2	143.7	154.6	163.9	162.5
	value	AUDbn	13.6	15.6	14.4	13.4	11.9	10.9	9.8	9.5	10.4	8.9
Metallurgical coal												
China imports		Mt	19.4	20.7	13.0	18.1	13.4	18.0	10.9	10.7	14.8	11.6
	value	USDmn	2414.0	2418.0	1633.6	1812.4	1270.3	1736.1	980.2	882.6	1162.8	790.6
Australian exports to China		Mt	12.4	14.0	10.1	11.6	11.2	13.4	7.7	11.0	8.5	8.9
	value	AUDmn	1547	1823	1248	1238	1144	1513	957	1160	932	1096

Sources: Bloomberg, ABS, IHS, CEIC. * Raw mine output with a low iron content.

Metallurgical coal

- Spot prices for metallurgical coal fell through Q4 and early 2016, weighed down by reduced import demand from China. Low volatility HCC CFR China averaged US$82 in Q4, down 33%yr and 10%qtr. Low volatility PCI CFR China averaged US$72, down 29%yr and 1%qtr, while Semi Soft CFR China averaged US$68, down 7%qtr and 24%yr.
- Australian benchmark prices for high-quality metallurgical coal delivered in Q1 2016 settled at US$81 a tonne (FOB), down from US$89 a tonne in Q4 2015.
- China imported 12 Mt of metallurgical coal in Q4, down 36%yr. China's imports from Australia fell 41%yr to 6 Mt but remained the primary

Figure 34: Met coal spot prices

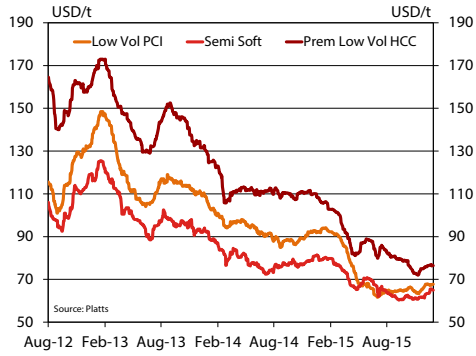


Figure 35: World trade in met coal

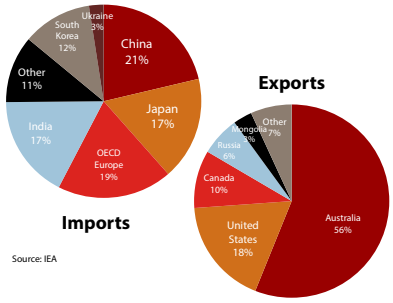


Figure 36: Met coal use and supply by country

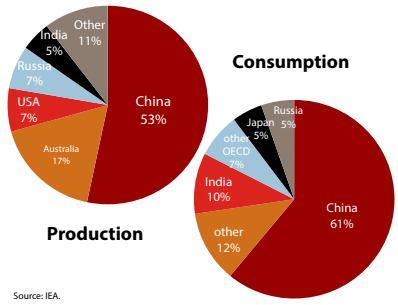


Table 6: Metallurgical coal prices (quarterly average spot prices).

	unit	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
Prem Low Vol HCC CFR China	USD/t	154.7	156.3	135.0	124.3	123.3	121.8	111.8	94.5	90.8	82.0
Low Vol PCI CFR China	USD/t	125.9	129.0	115.9	108.7	102.1	101.3	99.9	81.0	72.2	71.5
Semi Soft CFR China	USD/t	109.1	110.9	101.1	92.8	87.7	89.7	86.6	76.9	72.5	67.8
Prem Low Vol HCC FOB Aust	USD/t	140.9	140.5	120.6	111.4	110.7	110.0	104.0	86.8	82.7	75.8
Prem Low Vol HCC FOB Aust	AUD/t	155.4	155.3	133.3	123.1	122.4	121.5	114.9	95.9	91.4	83.8

Source: Platts. CFR is cost including freight. FOB is free on board. HCC is hard coking coal.

source of China's metallurgical coal imports, accounting for over 50%. China's imports from Mongolia, China's second largest source of imported metallurgical coal, decreased 15%yr to 3 Mt.

- Although China's imports of metallurgical coal from Australia fell to 26 Mt in the 2015 calendar year, import volumes were still substantially above the levels recorded in the decade to 2013, which averaged around 8 Mt a year (from 2003-2013).
- Australia exported 8.9 Mt of metallurgical coal to China in Q4, a decline of 34%yr. Export values declined by 28%yr to $A1.1 billion, weighed down by falls in both price and volume.

Figure 37: Chinese met coal import volumes

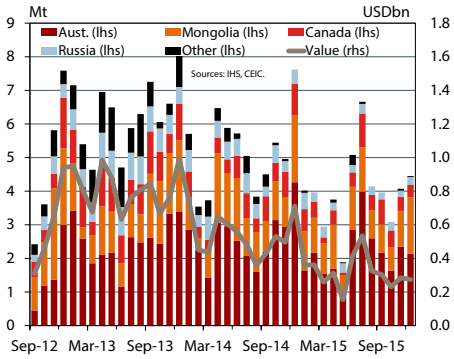


Figure 38: Aust met coal exports to China

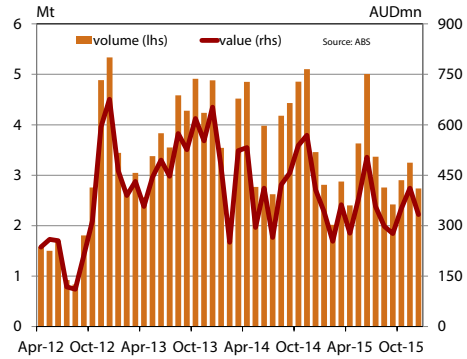


Figure 39: Australian met coal exports: total

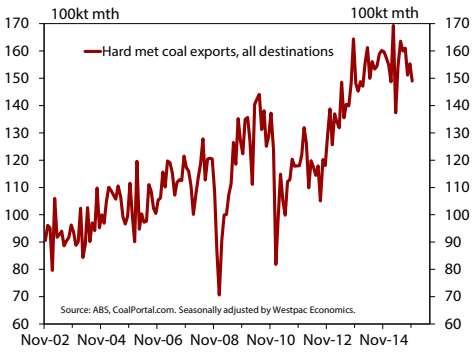


Figure 40: Seaborne met coal cost curve

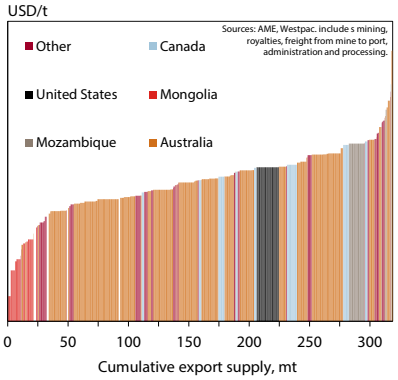
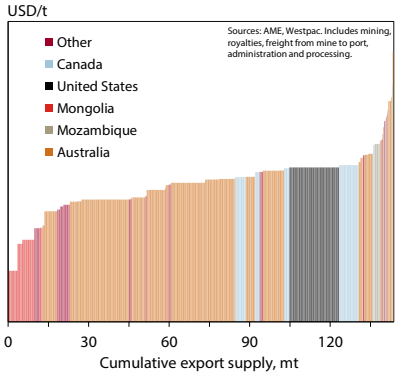


Figure 41 : Seaborne hard coking coal cost curve



Developments in China's energy policy

- In December, China realised its 12th Five-Year plan goal of universal electricity access when it connected residents in the remote Qinghai-Tibet Plateau to the electricity grid. This will ensure reliable electricity access to households in the region.
- China and Iraq signed a Memorandum of Understanding (MoU) in December to promote energy cooperation. The MoU covers oilfield development and refinery construction in Iraq and the use of Chinese-made equipment in oil and gas ventures.
- In December, Sinopec and Rosneft signed a MoU on oil and gas projects in eastern Siberia during the 20th China-Russia Prime Ministers' meeting. China National Petroleum Corporation and Gazprom also agreed on the design and construction of the cross-border section of the China-Russia east-route natural gas pipeline.
- In November, the National Energy Administration (NEA) announced that the 13th Five-Year plan will include plans to upgrade its energy system through innovation. As part of these plans it will coordinate the development of smart grids and distributed energy resources and the efficient allocation of resources in coal and thermal power production and oil refining.
- In late December Pakistan and China signed a financing agreement for a coal project in Pakistan as part of the China-Pakistan Economic corridor (a 3000 km network of roads, railways and energy infrastructure between the ports of Gwadar in Pakistan and Kashgar in Xinjiang). The project will include the development of a 3.8 Mt coal mine and 660 MW co-located power station. It is expected to cost more than US$2 billion, with around US$800 million of the funding to come from China.
- As part of the China-Pakistan Economic corridor initiative, Chinese company Zonergy began construction of the second phase of the world's largest solar farm in Pakistan's Punjab province. Once completed it will have total capacity of 1000 MW.
- The NEA announced that more than 1000 coal mines will be closed in 2016, which will remove around 60 Mt of capacity. These closures are in addition to the 70 Mt of capacity removed in 2015.
- The NEA announced plans to cut the share of coal in total energy consumption to 62.6% in 2016, from 64.4% in 2015. It was also announced that wind and solar power capacity would be increased by more than 21% in 2016, supported by an addition of at least 20 GW of wind power capacity and 15 GW of solar power capacity.

Electricity trends

- China generated 5.6 trillion kWh of electricity in 2015, up 2.4%yr, despite slowing economic growth. The largest increases were registered in nuclear power and wind generation, which increased by 32%yr and 19%yr, respectively. Hydro electricity generation increased 4.6%yr, while thermal electricity generation declined by a modest 0.3%yr.
- Investment in new generation capacity increased 12% in 2015 to RMB 409 billion. Lower investment in nuclear and hydro capacity, down 1.6%yr and 19%yr, respectively were offset by a 47%yr increase in investment in thermal generation capacity.
- Despite slower economic growth, overall electricity consumption in China increased 0.5% in 2015 to 5.5 trillion kWh. Consumption across all sectors increased except for the secondary industry, which declined 1.5%yr as activity in energy intensive sectors continued to contract. Tertiary, residential and primary electricity use increased by 7%yr, 5%yr, and 2.7%yr, respectively.

Figure 42: World energy consumption

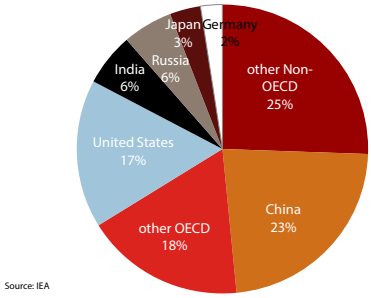


Figure 43: World energy production

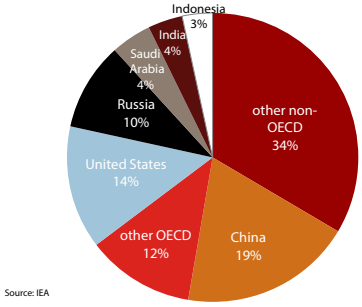


Figure 44: Chinese electricity output by source

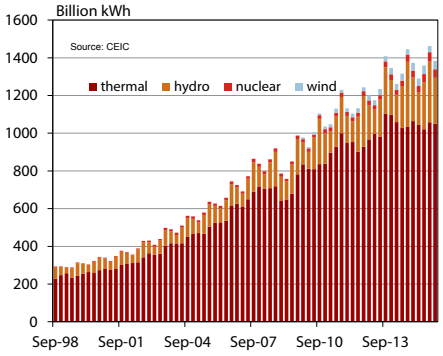


Figure 45: Chinese electricity use by sector

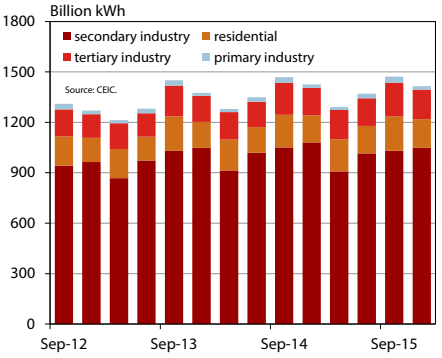


Figure 46: Chinese electricity growth: broad source

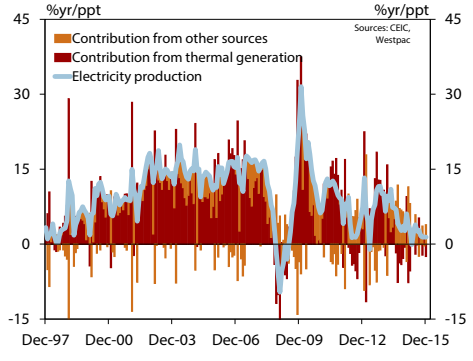
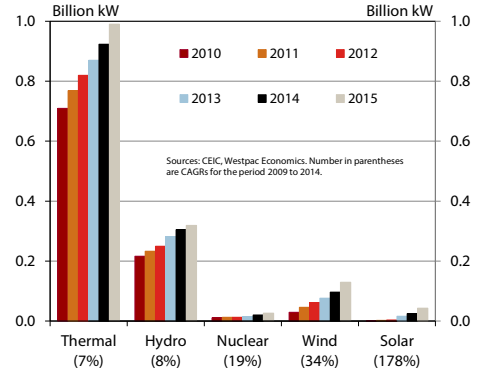


Figure 47: China's generating capacity by type



Thermal coal

- Lower import demand from China and a slow supply response continued to keep pressure on key thermal coal FOB prices in Q4. Newcastle spot prices fell 18%yr, Richard's Bay fell 22%yr and Baltic decreased 30%yr.
- The National Energy Administration (NEA) announced that more than 1000 coal mines will be closed in 2016, which will remove around 60 Mt of capacity. These closures are in addition to the 70 Mt of capacity removed in 2015.
- In an effort to cut coal production capacity the NEA announced that no new coal mines will be approved between 2016 and 2018.

Figure 48: Thermal coal prices

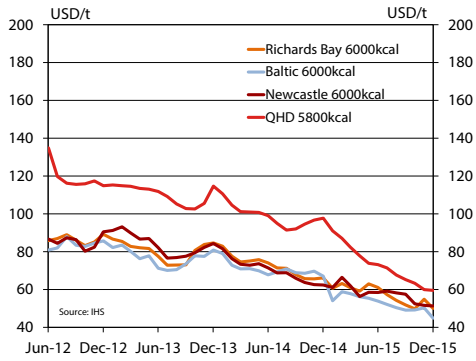


Figure 49: Thermal coal stocks: ports & generators

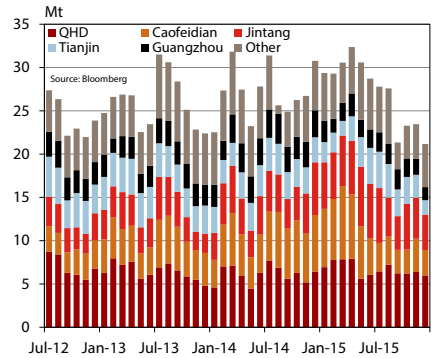


Figure 50: Export thermal coal cost curve

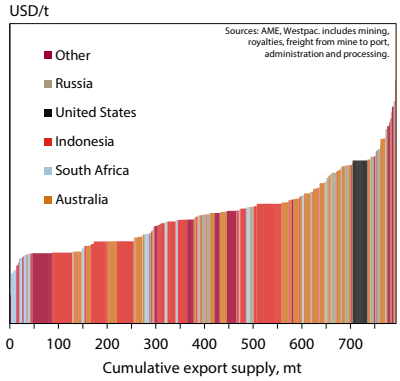


Table 7: Thermal coal prices (USD/t, NAR unless otherwise indicated).

Quarterly averages	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
QHD 5800kcal	105.8	106.1	105.8	100.3	92.8	96.1	87.4	74.9	68.4	61.0
QHD 5800kcal RMB/t	647.8	646.8	645.2	624.8	571.9	590.5	544.9	464.3	430.6	390.2
Newcastle 6000kcal	77.1	82.0	77.4	72.7	68.0	63.0	63.0	57.8	58.4	51.8
Newcastle 6000kcal AUD/t	84.3	88.6	86.5	77.9	73.5	73.7	80.1	74.4	80.4	71.9
Richards Bay 6000kcal	73.0	83.1	78.7	75.0	70.2	65.8	61.5	61.2	54.7	51.3
Baltic 6000kcal	71.4	78.2	74.3	69.4	69.7	68.7	56.9	55.2	50.6	48.0

Sources: IHS. NAR stands for net as received.

- China's total thermal coal stocks declined 44%yr and 30%qtr to finish Q4 at 16 Mt.
- Following the implementation of the Free Trade Agreement between Australia and China, the tariff on imports of thermal coal from Australia will be eliminated on 1 January 2017.
- China's imports of thermal coal declined 28%yr to 36 Mt in Q4 in response to relatively slower demand growth. China's imports of thermal coal from Indonesia declined 22%yr to 17 Mt while imports from Australia fell 34%yr to 10 Mt.
- Australia's exports to China decreased by 39%yr to 6.8 Mt in Q4 and values declined by 45%yr to $A390 million.

Figure 51: Thermal coal imports

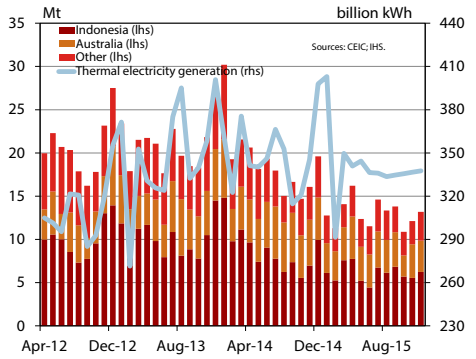


Figure 52: Aust thermal coal exports to China

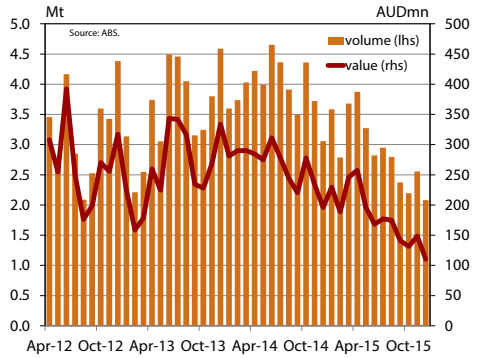


Figure 53: Capex: coal mining vs power generation

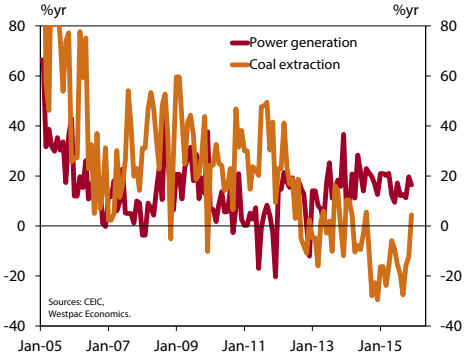


Figure 54: Thermal coal use and supply by country

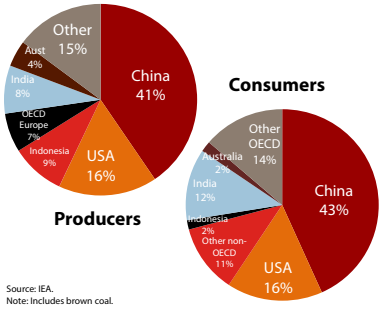


Figure 55: World trade in thermal coal

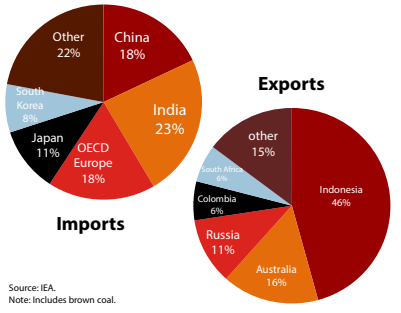


Table 8: Thermal coal summary data

		unit	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
China imports		Mt	60.9	67.6	71.0	58.1	49.7	50.4	38.1	40.1	41.7	36.2
	Indonesia	Mt	27.8	32.8	35.7	26.1	21.4	22.5	19.0	17.4	19.7	17.5
	Australia	Mt	17.0	15.9	15.4	15.2	17.5	15.1	10.6	12.6	12.0	10.0
	value	USDmn	4647	4973	5145	4069	3346	3156	2255	2244	2095.8	1682.0
End of quarter stocks at ports		Mt	25.1	22.5	27.5	31.4	26.3	29.4	32.4	27.8	23.3	16.3
	weeks of imports		5.4	4.3	5.0	7.0	6.9	7.6	11.0	9.0	7.2	5.1
Australian exports to China		Mt	11.7	11.6	11.4	12.9	11.8	11.1	10.0	10.0	8.1	6.8
	value	AUDmn	892.2	830.4	862.3	870.2	741.8	708.0	664.3	622.2	493.0	390.0

Sources: ABS, Bloomberg, IHS.

Oil

- A mix of geopolitical factors and ongoing excess supply contributed to a rapid decline in oil prices in Q4 and early Q1 2016. In mid-January, WTI prices declined to US$26.55/bbl and Brent to US$28.26/bbl.
- WTI prices averaged US$42.02/bbl in Q4, down 10%qtr. Brent prices declined 13%qtr to average US$44.69/bbl and Tapis declined 16%qtr to US$44.24/bbl.
- China's benchmark gasoline prices ended Q4 1.7%qtr lower than Q3 2015 while diesel prices declined 0.2%qtr.
- China's cabinet approved the restructuring of the two biggest shipping conglomerates, the China Ocean Shipping (Group) Company

Figure 56: Oil prices

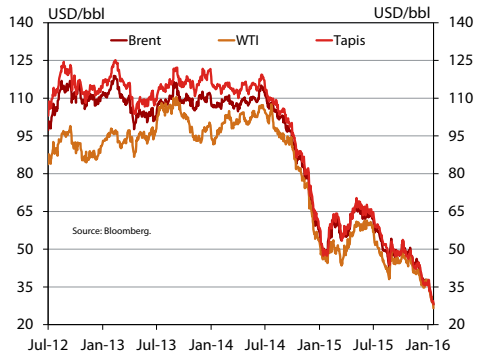


Figure 57: Oil use by sector: China & the World

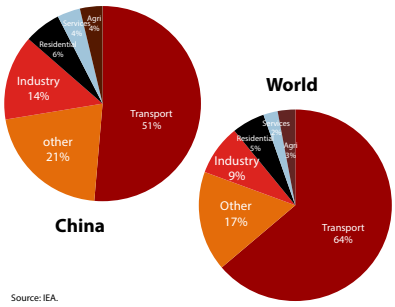


Figure 58: Oil use and supply by country

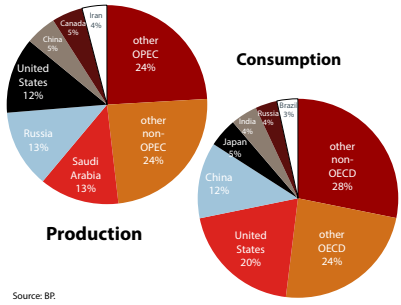


Table 9: Crude oil spot prices (USD/bbl, quarterly).

Brent	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
Quarter average	109.7	109.4	107.9	109.8	103.5	77.1	55.1	63.5	51.3	44.7
Quarter end	108.4	110.8	107.8	112.4	94.7	57.3	55.1	63.6	49.6	44.4
Quarter high	116.6	112.6	111.2	115.1	112.3	94.2	62.6	67.8	62.1	53.1
Quarter low	103.0	103.5	105.8	104.8	94.7	57.3	46.6	55.0	42.7	36.1
Tapis										
Quarter average	115.9	117.2	114.3	115.0	106.2	79.5	56.1	64.6	52.6	44.2
Quarter end	114.5	120.7	113.2	117.0	100.2	58.6	55.9	63.3	53.0	44.8
Quarter high	122.2	121.7	118.6	119.4	115.0	98.4	64.2	70.3	64.7	53.7
Quarter low	109.1	110.8	111.7	110.1	98.7	58.6	47.4	56.8	43.8	35.6
West Texas intermediate										
Quarter average	105.8	97.6	98.7	103.1	97.6	73.2	48.5	57.8	46.5	42.0
Quarter end	102.3	98.4	101.6	105.4	91.2	53.3	47.6	59.5	45.4	41.9
Quarter high	110.5	104.1	104.9	107.3	107.6	91.0	53.5	61.4	57.0	49.6
Quarter low	98.0	92.3	91.7	99.4	91.2	53.3	43.5	49.1	38.1	34.7

Source: Bloomberg.

(COSCO) and the China Shipping (Group) Company (China Shipping), creating the largest oil tanker fleet in the world.

- China's imports of crude oil increased 9%yr to a five year high of 87 Mt in Q4, supported by higher import quotas for private refineries.
- China's imports of crude oil from Russia and Saudi Arabia, increased 28%yr and 1.8%yr in 2015 to 42 Mt and 51 Mt, respectively. Imports from Angola and Iran decreased 4.8%yr and 3.1%yr, in 2015 to 39 Mt and 27 Mt, respectively.
- In 2015 China's crude oil imports from Australia declined 12%yr to 2.4 Mt and import values declined 52%yr to US$1 billion.

Figure 59: Chinese oil import volumes

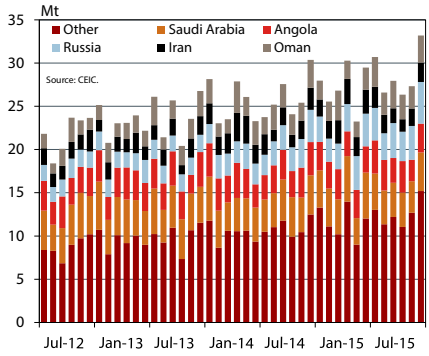


Figure 60: Chinese imports of Australian oil

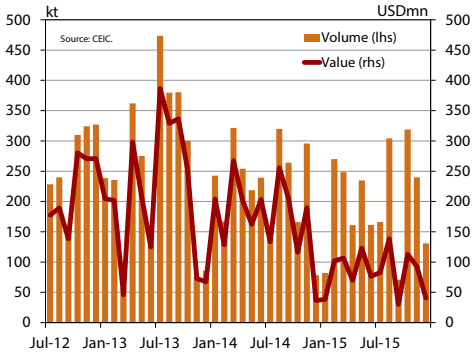


Figure 61: World trade in oil

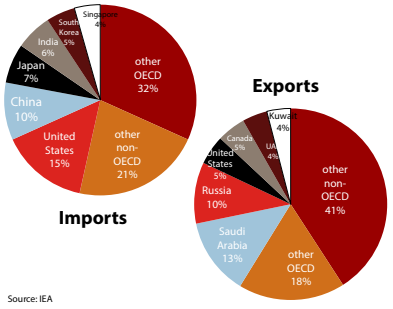


Figure 62: Automobile penetration

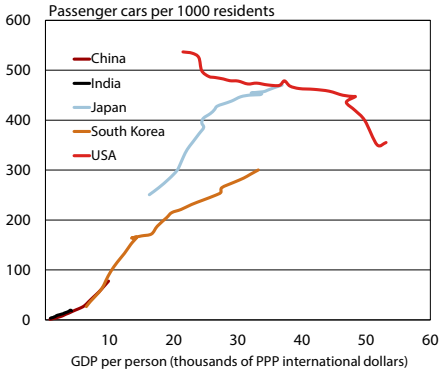


Figure 63: Oil demand per capita

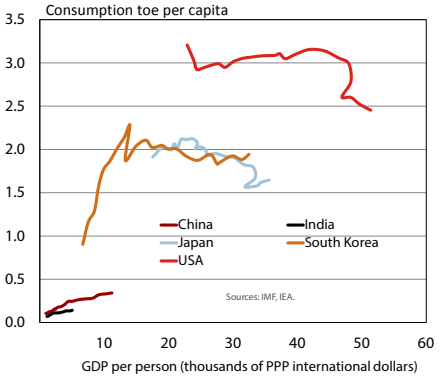


Table 10: Oil and gas summary data

Oil		unit	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
China imports		Mt	73.2	70.8	74.7	77.2	76.5	79.9	80.3	83.0	85.3	86.9
	Saudi Arabia	Mt	13.9	13.0	12.7	11.5	12.4	13.1	12.8	13.6	12.1	12.1
	Angola	Mt	10.5	9.4	10.7	10.2	9.5	10.4	9.9	9.2	10.2	9.5
	Russia	Mt	6.1	6.0	7.5	7.8	8.0	9.8	8.6	10.9	10.9	12.1
	Iran	Mt	5.5	5.4	6.9	8.7	5.8	6.1	6.7	7.9	6.3	5.7
	Oman	Mt	6.8	7.4	6.0	8.5	7.6	7.7	7.8	6.5	9.2	8.6
	other	Mt	30.4	29.5	31.0	30.5	33.3	32.9	34.6	35.0	36.6	38.9
China production												
	Crude	Mt	51.4	53.2	51.3	52.2	52.0	53.9	52.2	53.8	54.0	53.9
	Gasoline	Mt	24.0	25.4	26.6	26.9	26.8	28.7	28.7	30.6	30.9	31.0
	Diesel	Mt	42.7	44.0	42.3	42.9	43.5	46.0	43.8	45.6	44.8	45.4
Chinese imports from Australia		kt	1233.7	461.8	730.9	711.9	744.2	540.3	600.4	557.2	541.2	689.7
	value	USDmn	1052.3	393.3	599.8	567.1	594.8	342.1	247.3	269.1	251.8	246.0
Gas												
China pipeline imports		Mt	5.2	5.4	4.9	5.9	6.0	6.2	6.7	5.7	5.8	6.5
China LNG imports		kt	4560	5140	5629	4297	4811	5155	5127	4392	4627.3	5522.1
	Qatar	kt	1618.3	1784.8	2570.0	1380.5	1328.7	1458.3	1322.7	711.3	1152.7	1627.6
	Australia	kt	833.9	906.2	842.5	904.6	1162.2	902.1	1093.8	1286.3	1671.8	1500.2
	Indonesia	kt	605.5	676.6	617.4	608.3	676.3	652.9	672.4	745.3	817.3	630.8
	Malaysia	kt	679.0	685.0	842.9	698.1	622.6	829.4	820.0	1128.4	473.9	829.7
	other	kt	823.3	1087.4	756.2	705.2	1021.0	1311.7	1218.4	521.1	511.7	933.8
China production		Bcm	26.4	30.2	32.3	29.0	29.2	33.5	33.6	29.2	30.1	34.0
Chinese imports from Australia		kt	833.9	906.2	842.5	904.6	1162.2	902.1	1093.8	1286.3	1671.8	1500.2
	value	USDmn	145.7	159.6	146.4	159.7	239.1	173.1	270.9	433.3	485.4	444.3

Source: CEIC .

Gas

- China's LNG import unit values increased 7%qtr in Q4 while pipeline gas unit values declined 13%qtr.
- ENN LNG Trading Company (ENN), the first private company to be authorised to build and operate an LNG import facility in China, began construction of its Zhoushan LNG project (2 Mtpa) in Zhejiang.
- Chevron signed an agreement with China Huadian Green Energy Co. to export up to 1 Mtpa of LNG for 10 years from 2020. This is likely to be sourced from its Wheatstone and Gorgon projects in Western Australia. Chevron also announced a non-binding heads of agreement with ENN to deliver up to 500 ktpa of LNG over 10 years from late 2018.

Figure 64: Gas unit values in China

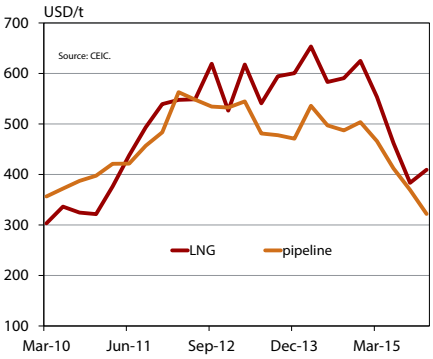


Figure 65: Gas use by sector: World

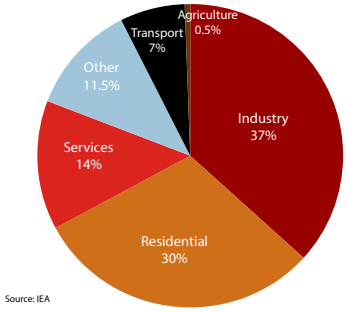


Figure 66: Gas use by sector: China

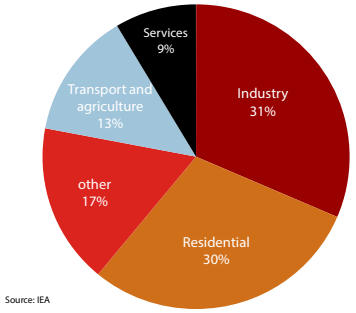


Figure 67: Gas demand per capita

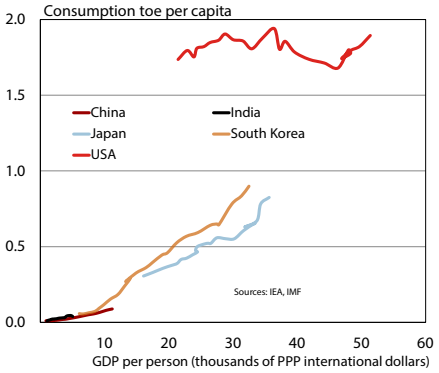
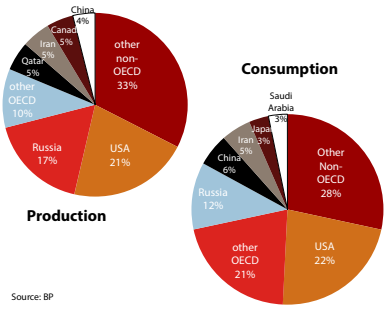


Figure 68: Gas use and supply by country



- Sinopec began shale gas production at its Fuling project (5 bcm a year), the largest shale gas project in China to date.
- China's LNG imports declined 1.1%yr in 2015 to 19.7 Mt. LNG imports from Qatar declined 29%yr to 4.8 Mt in 2015, while imports from Malaysia and Indonesia increased by 9%yr to 3.3 Mt and 12%yr to 2.9 Mt, respectively.
- China's LNG imports from Australia accounted for the majority of total LNG imports in 2015. Imports from Australia increased 46%yr in 2015 to 5.6 Mt. Their value increased 127%yr to US$1.6 billion.

Figure 69: China's gas imports by type

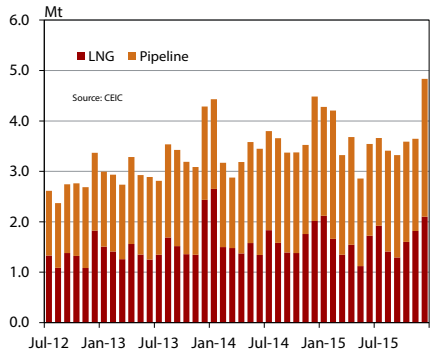


Figure 70: Chinese LNG imports by source

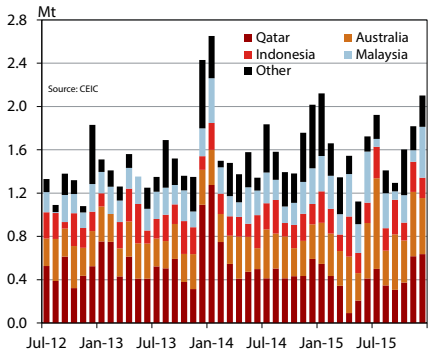


Figure 71: Chinese LNG imports from Australia

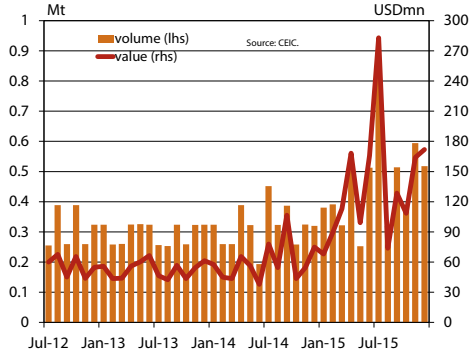


Figure 72: World gas exports by country

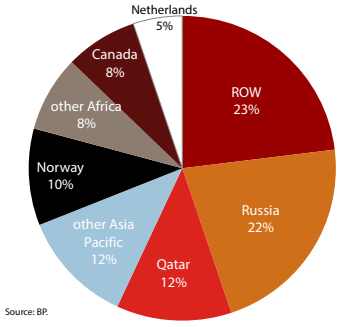
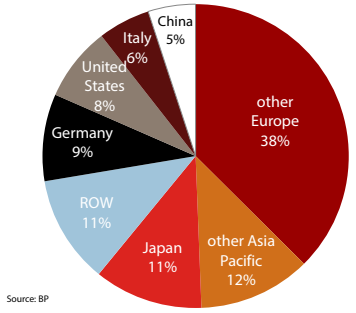


Figure 73: World gas imports by country



Uranium

Figure 74: Uranium prices

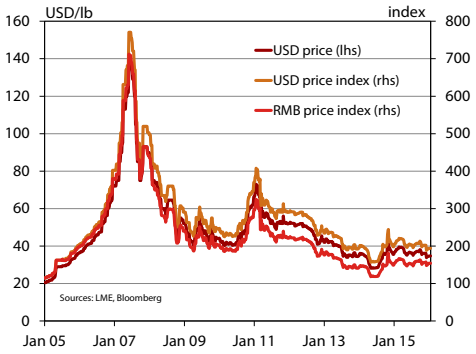


Figure 75: China's uranium imports

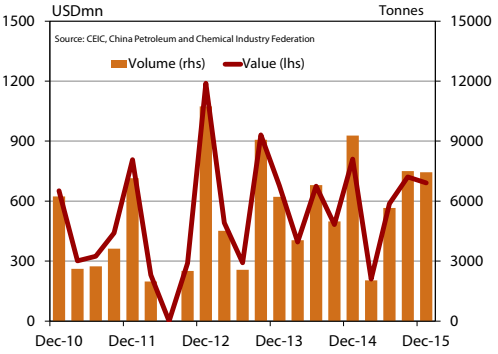


Figure 76: Global uranium output & reserves

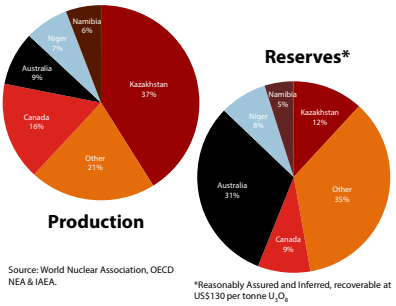


Figure 77: Uranium use by country

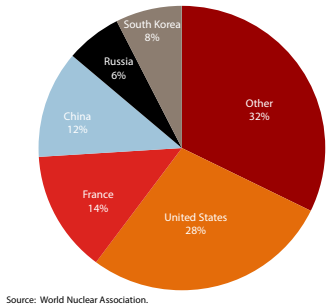


Table 11: Uranium summary data.

	Units	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
Uranium spot price U_3O_8	USD/lb	35	35	29	32	37	38	36	36	35
China nuclear power output	bn kWh	30	27	28	38	37	35	42	50	45
Investment in nuclear	RMBbn	20	11	13	14	19	10	11	13	23
China uranium imports	t	6216	4045	6801	4985	9281	2041	5659	7505	7439
Value	USDmn	677	396	675	482	810	210	587	721	691

Sources: CEIC, Cameco, The Ux Consulting Company, Trade Tech.

- The average spot price for uranium fell by 2%qtr and 5%yr in Q4 to US$35/lb.
- Despite a 10%qtr fall in China's nuclear power output in Q4, nuclear generation increased by 20%yr to 45 billion kWh in 2015.
- China's investment in new nuclear capacity increased by 19%yr to RMB 22.6 billion in Q4.
- State-owned China National Nuclear Corporation (CNNC) signed contracts for cooperation with Slovakia's nuclear power plant research institute and Argentina's Nucleoelectrica.
- China imported 7439 tonnes of uranium in Q4, a decrease of 20%yr. These imports were worth US$691 million, a decline of 15%yr.

Figure 78: Chinese nuclear generation growth

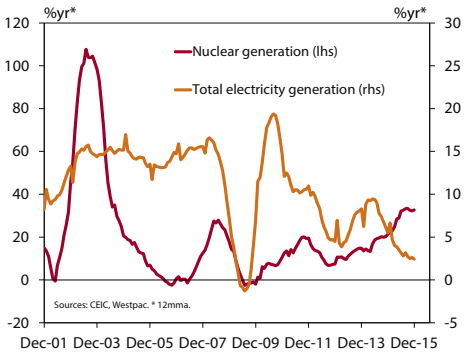


Figure 79: New capacity: planned & underway

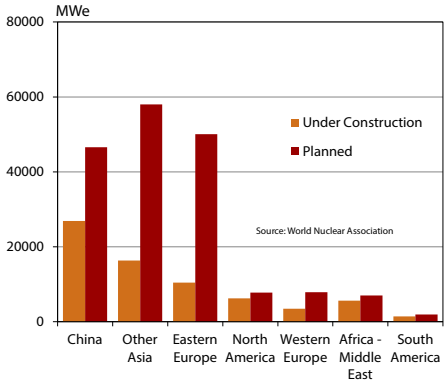


Figure 80: Chinese nuclear generation capacity

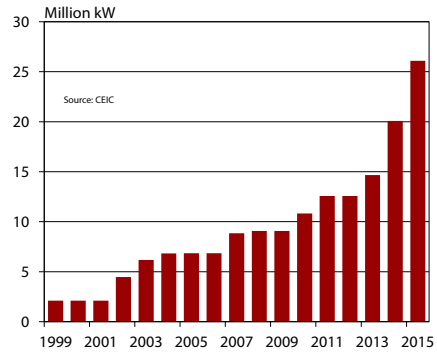


Figure 81: China's nuclear construction spending

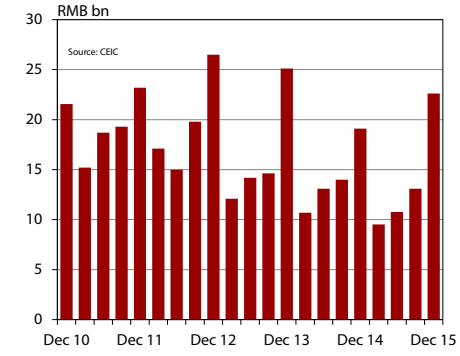
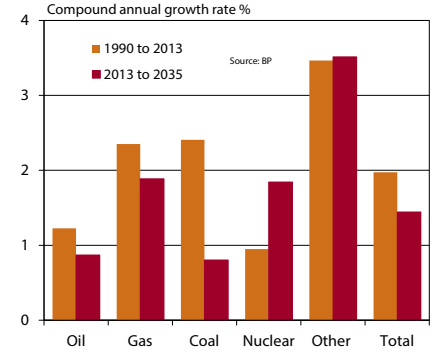


Figure 82: Growth in world energy by source



Gold

- LBMA gold prices fell through Q4, weighed down by an expected, and then realised, rise in the US Federal Funds rate. In December, the US Federal Reserve increased its benchmark rate by 0.25%, the first increase in almost a decade.
- LBMA gold prices declined 8%yr in Q4 to average US$1104 per ounce. Shanghai Gold Exchange prices declined 4%yr to RMB 228 a gram in Q4.
- According to the World Metal Statistics, world gold mine production fell 1.3%ytd to 2758 tonnes in the first eleven months of 2015. Production in China—the world's largest producer—increased 1.6%ytd to 425 tonnes.
- According to the World Gold Council, world gold demand increased 8% in Q3 2015 to 1121 tonnes. The increase was supported by a rise in China's gold demand which increased 13%yr to 240 tonnes.
- China's gold demand was underpinned by an increase in China's jewellery consumption, which grew 4%yr to 188 tonnes as lower prices encouraged purchases. Demand for gold bars increased 70%yr to 52 tonnes, supported by the devaluation of the yuan and the release of commemorative coins.
- The Chinese Government's gold reserves increased by 54 tonnes to 1762 tonnes in Q4, an increase of 3%qtr and 67%yr. Despite the growth, it is reported that gold still accounts for less than 2% of China's total reserves.

Figure 83: Gold prices, London & Shanghai

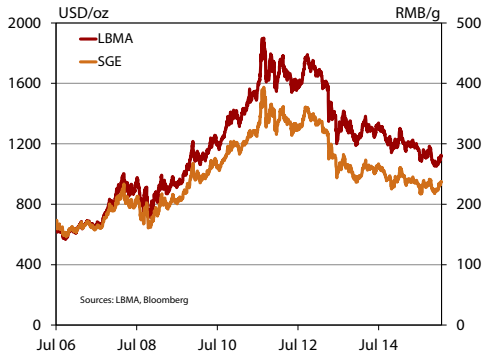


Figure 84: Chinese gold imports via Hong Kong

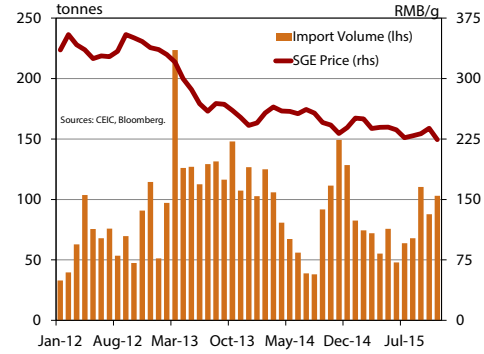


Table 12: Gold prices (USD/oz unless specified otherwise)

LBMA spot prices	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
Quarter average	1330	1272	1292	1290	1282	1201	1219	1194	1125	1104
Quarter end	1329	1206	1284	1327	1208	1185	1184	1172	1115	1061
Quarter high	1418	1353	1383	1328	1339	1249	1302	1226	1170	1184
Quarter low	1223	1189	1201	1244	1208	1141	1150	1172	1085	1051
Shanghai avg RMB/g	265	251	256	259	255	238	246	239	229	228
Shanghai avg USD/g	43	41	42	41	41	39	39	38	36	36

Sources: LBMA, Bloomberg.

- China's gold imports via Hong Kong fell 13%ytd to 841 tonnes in the first eleven months of 2015.
- ETF stockholdings closed at 1462 tonnes in December 2015, down 9%yr. The fall likely reflects the effect of a rise in the US Federal Funds rate on the interest in gold as an investment asset. ETF holdings are typically used as a hedge against a low US dollar.
- Australia's gold export volumes to China increased 26%yr to 53 tonnes in Q4, while the value of gold exports increased 37%yr to $A2.6 billion.

Figure 85: Australian gold exports to China

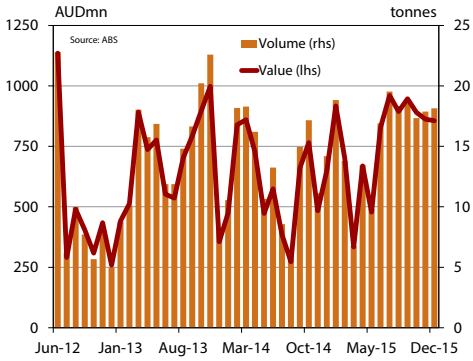


Figure 86: Gold exchange traded funds

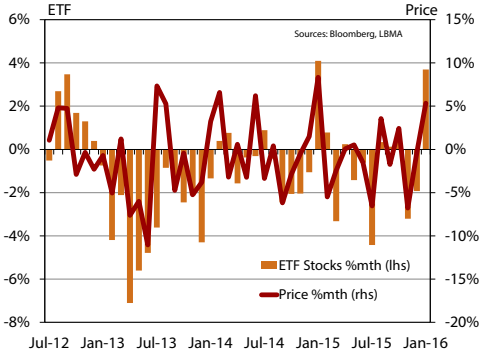


Figure 87: Gold output by country

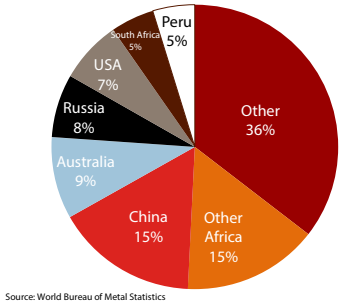


Figure 88: Gold fabrication cons. by country

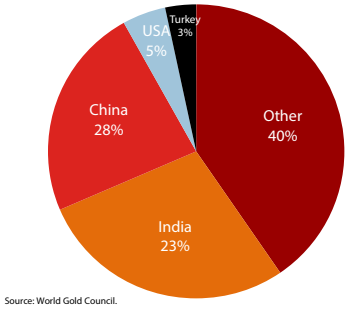


Figure 89: Gold end–use by sector

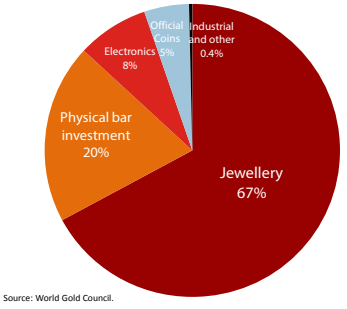


Table 13: Gold and silver summary data

Gold		unit	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
China imports (via Hong Kong)		t	377.0	381.9	333.5	204.1	168.8	389.1	229.0	178.8	241.9	na
Domestic production		t	115.0	120.4	96.5	114.6	140.7	100.1	110.7	118.0	117.9	na
Australian exports to China		t	43.3	50.9	47.0	40.1	29.7	42.5	39.4	40.1	56.4	53.4
	value	AUDmn	2032.3	2254.7	2174.1	1773.9	1317.8	1899.0	1951.9	1974.6	2800.5	2607.6
Silver												
China imports		t	99.9	78.1	67.8	90.5	83.7	76.3	117.7	217.0	331.9	78.7
Domestic production		t	977	977	918	918	918	918	918	918	918	na

Sources: CEIC, ABS, World Metal Statistics.

Silver

Figure 90: Silver prices, London & Changjiang

Figure 91: Silver output & fabrication demand

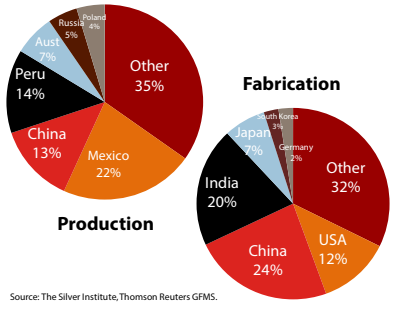


Figure 92: Chinese silver import volumes: annual

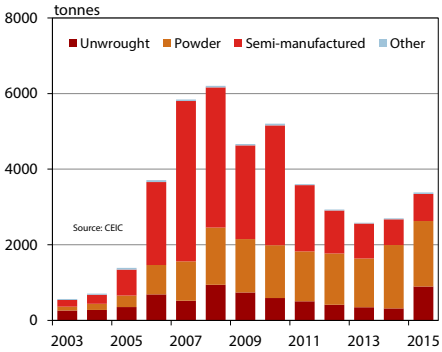


Figure 93: Silver end–use by sector

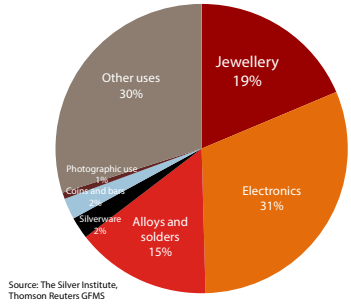


Table 14: Silver prices (USD/oz unless specified otherwise)

LBMA spot prices	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
Quarter average	21.5	20.8	20.5	19.7	19.7	19.7	16.6	16.5	14.9	14.8
Quarter end	21.7	19.5	19.8	21.0	17.0	15.7	16.7	15.7	14.5	16.1
Quarter high	24.5	22.8	22.0	21.1	21.4	21.4	18.3	17.7	15.8	13.7
Quarter low	18.9	19.1	19.2	18.8	17.0	17.0	15.5	15.7	14.7	13.9
Changjiang RMB/g	4.28	4.24	4.15	4.15	4.22	3.59	3.58	3.54	3.31	3.28
Changjiang USD/g	0.70	0.70	0.68	0.67	0.68	0.59	0.57	0.57	0.53	0.54

Sources: LBMA, Bloomberg.

Copper

- The average LME copper price declined by 7%qtr in Q4 to US$4892 a tonne. LME copper closed at US$4516 on 23 November—a six year low—before rising to US$4702 at the end of December. The SHFE copper price declined by 7.4%qtr in Q4 to RMB 36,954. Despite low prices, new copper capacity continues to be commissioned. The Las Bambas copper mine in Peru, developed by China's MMG, commenced production in January with forecast output of about 200,000 tonnes in 2016.
- LME copper stocks were 236 kt at the end of Q4 2015, up 33.2%yr and down 26.4%qtr. SHFE inventories were up 68.5%yr at the end of Q4 at 178 kt.

Figure 94: Copper prices, London & Shanghai

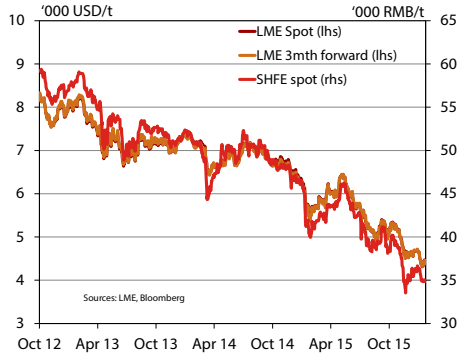


Figure 95: LME prices & inventories

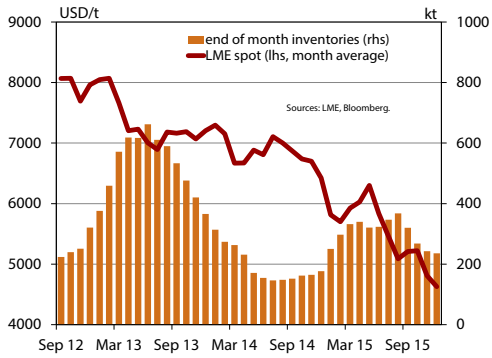


Figure 96: Copper use and supply by country

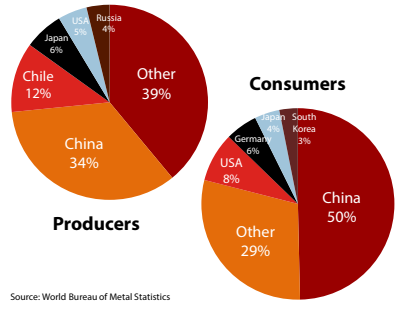


Table 15: Copper prices (USD/t unless specified otherwise)

LME spot prices	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
Quarter average	7073	7153	7041	6787	6994	6624	5818	6043	5259	4892
Quarter end	7291	7395	6636	6955	6736	6359	6051	5721	5093	4702
Quarter high	7341	7395	7440	7035	7184	6860	6309	6448	5762	5344
Quarter low	6719	6939	6435	6600	6736	6306	5391	5646	4888	4516
3 Month forward	7096	7161	7008	6757	6976	6568	5790	6046	5261	4885
Shanghai avg RMB/t	51690	51555	49403	49328	50273	47525	42391	44074	39913	36954
Shanghai avg USD/t	8438	8468	8097	7915	8156	7729	6799	7104	6335	5779

Sources: LME, Bloomberg.

- China's refined copper production decreased by 5%yr to 2.2 Mt in Q4, with smelters agreeing in December to deepen production cuts in 2016 to counter lower prices. Jiangxi and Anhui were the highest producing regions in the first eleven months of 2015, producing 1243 kt and 1141 kt respectively.
- China's total copper imports in Q4 increased 20%yr to 2324 kt. For the full year 2015 China imported 7713 kt of copper. Chile continued to be the principal source of China's copper imports with a 31% market share. Total imports from Chile were 2425 kt in 2015, up 13%yr.
- Australia's copper export volumes (metal content) to China decreased 15%yr to 159 kt in Q4. Export values decreased 5%yr to $A1.1 billion.

Figure 97: Chinese copper import volumes

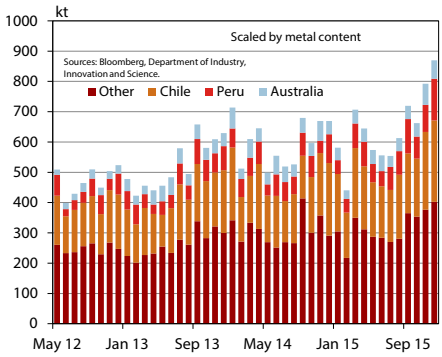


Figure 98: Australian copper exports to China

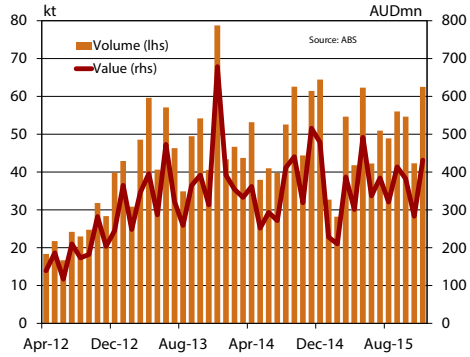


Figure 99: Copper end–use by sector

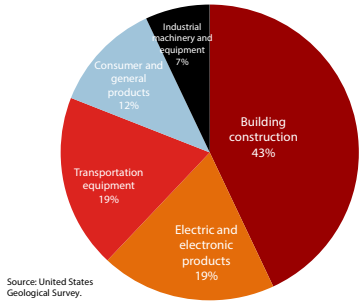


Figure 100: Copper demand per capita

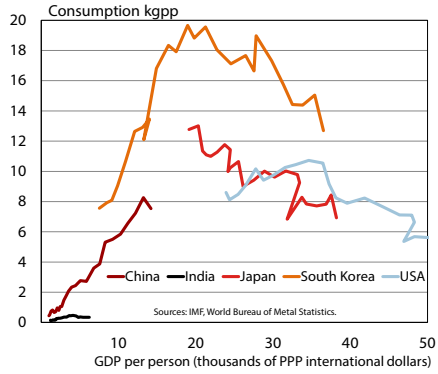


Figure 101: Copper output by Chinese province

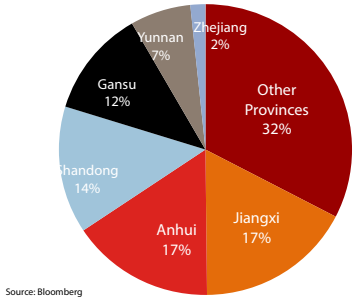


Table 16: Copper summary data

	unit	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
China imports	kt	1731	1819	1836	1699	1725	1935	1729	1774	1886	2324
Australia	kt	135	128	165	144	140	152	116	142	123	174
Chile	kt	519	574	542	538	438	629	569	558	580	717
Peru	kt	200	213	182	182	196	205	172	192	267	300
other	kt	877	904	946	834	950	949	872	883	916	1133
Refined production	kt	1715	1909	1651	1823	2027	2321	1834	1951	2009	2205
World stocks	kt	1110	916	909	694	700	769	1037	934	963	n.a
weeks of stocks	weeks	2.7	2.1	2.2	1.5	1.6	1.7	2.5	2.1	2.2	n.a
Australian exports to China	kt	123	154	121	128	126	138	109	122	140	159
value	AUDmn	888	1209	962	881	902	1045	778	921	1004	1097

Sources: Bloomberg, World Metal Statistics, ABS.

Aluminium

- The LME aluminium spot price averaged US$1495/t in Q4, down 6%qtr and 24%yr. The price reached a six year low of US$1424/t on 23 November. Despite declining prices, LME stocks continued to decline, reaching a seven year low of 2890 kt at the end of December.
- China's exports of unwrought aluminium and aluminium products increased 14%qtr to 1201 kt in Q4, but remained down 8%yr despite strong growth in production and slower growth in consumption.
- China added over 5 Mt of new aluminium smelting capacity in lower-cost regions in 2015, but also shut 4.9 Mt of capacity due to low prices, excess supply and high stocks.

Figure 102: Aluminium prices, LME & Shanghai

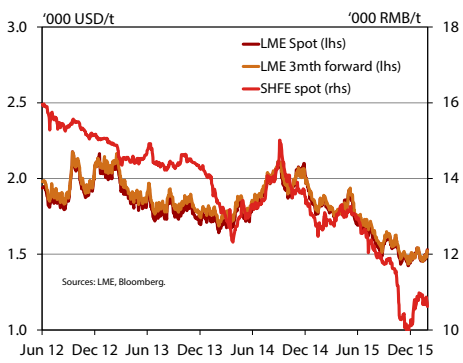


Figure 103: LME prices & inventories

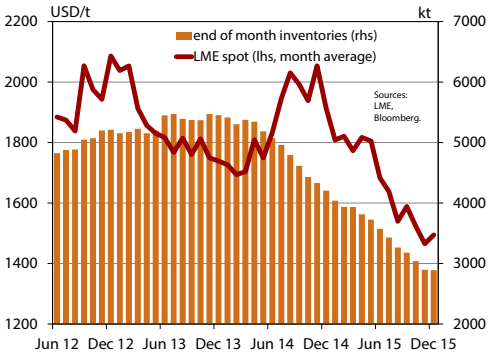


Figure 104: Aluminium use & supply by country

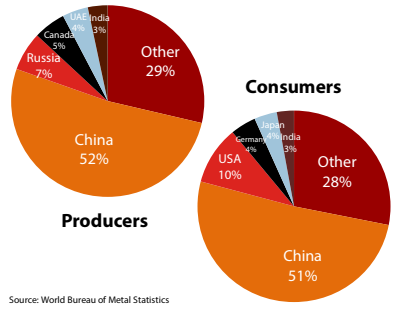


Table 17: Aluminium and Alumina prices (USD/t unless specified otherwise)

LME spot prices	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
Quarter average	1781	1769	1708	1798	1987	1966	1800	1765	1591	1495
Quarter end	1803	1765	1731	1851	1935	1832	1789	1647	1562	1508
Quarter high	1877	1849	1768	1871	2114	2099	1872	1919	1693	1608
Quarter low	1730	1695	1642	1715	1838	1828	1742	1642	1486	1424
3 Month forward	1827	1815	1752	1836	2008	1974	1813	1787	1621	1509
Shanghai avg RMB/t	14363	14349	13168	13133	14069	13507	12849	12964	12000	10500
Shanghai avg	2345	2356	2158	2107	2282	2197	2060	2090	1904	1642
Aust FOB Alumina	318	320	328	318	323	355	342	337	292	233
China Alumina RMB/t	2500	2503	2438	2353	2435	2737	2630	2442	2272	1853

Sources: LME, Bloomberg.

- In the first 11 months of 2015, China's aluminium production increased 32%ytd to 29 Mt. Almost all of the increased production came from the Shandong and Xinjiang provinces, where production costs are low due to low-cost energy.
- Despite increased domestic supply, China's aluminium imports rose 104%yr in Q4 to 73 kt. Imports from Australia rose 171%yr to 15 kt in Q4, which increased Australia's share of China's total imports to 21%, up from 18% a year earlier.
- In Q4, Australia's aluminium exports to China increased 78%yr to 11 kt and export earnings increased 47%yr to $27 million.

Figure 105: Chinese aluminium import volumes

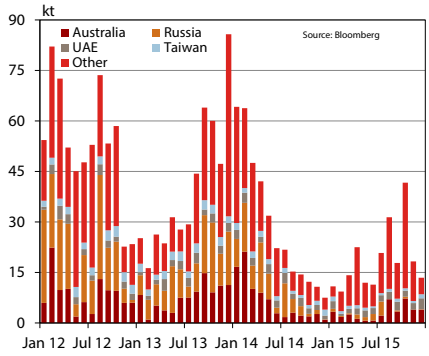


Figure 106: Australian aluminium exports to China

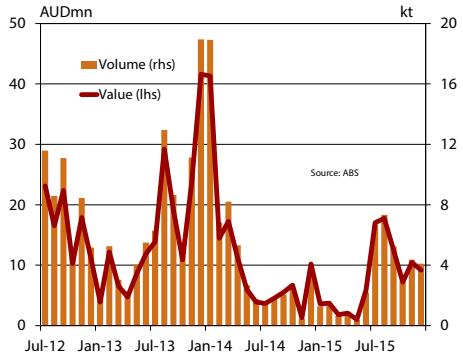


Figure 107: Aluminium end–use by sector

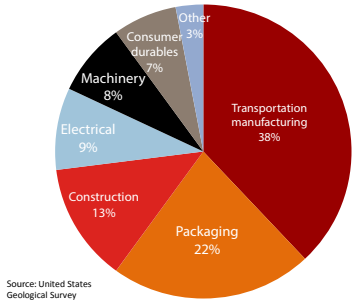


Figure 108: Aluminium demand per head

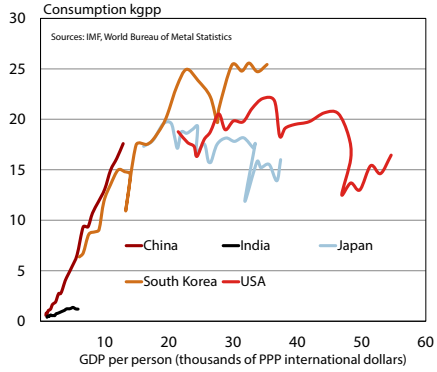
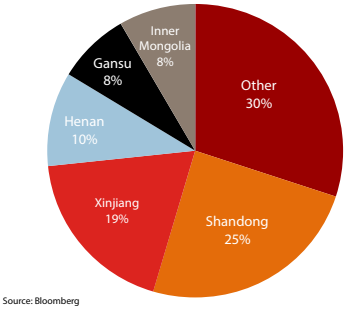


Figure 109: Aluminium output by province



Alumina

- Alumina prices continued to decline for a fourth consecutive quarter, falling 20%qtr and 34%yr to average US$233/t (FOB Australia) in Q4. In response to lower prices, Antaike, a government-backed research agency, expects China to cut 11.4 Mt of its production capacity.
- In the first 11 months of 2015, China's alumina production increased 20%ytd to 51 Mt, supporting increased demand from aluminium smelters.
- In Q4, China's alumina imports increased 14%qtr to 1512 kt, the highest since Q3 2010. This was supported by a 14%qtr increase in imports from Australia, which remained China's largest source of alumina imports, at 987 kt.

Figure 110: Alumina prices

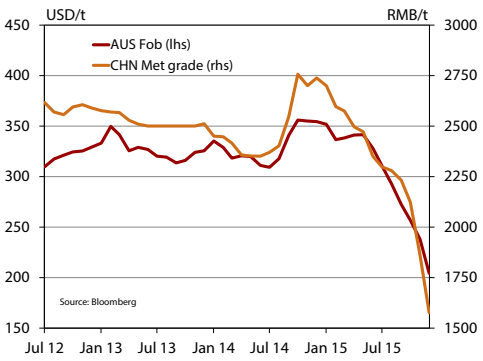


Figure 111: World alumina trade

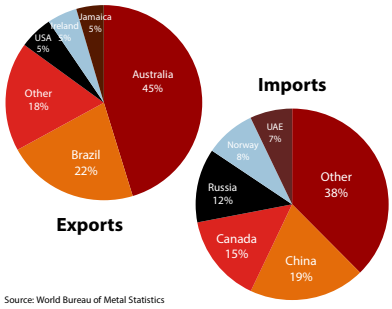


Figure 112: China's alumina imports

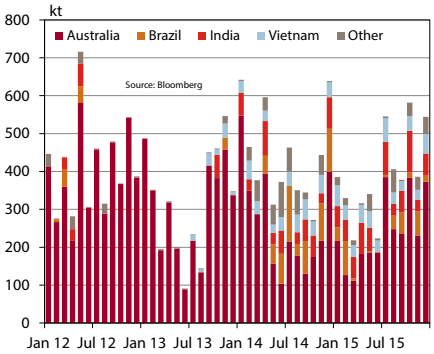


Figure 113: World alumina output

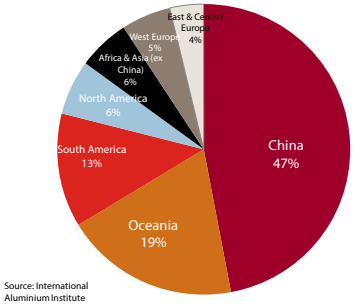
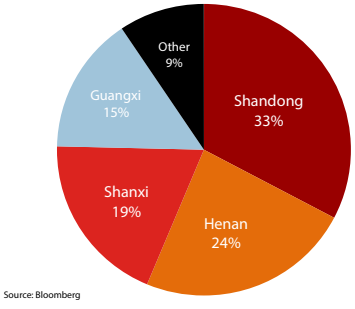


Figure 114: China's alumina output by province



Bauxite

- China is the world's second largest producer of bauxite, after Australia. In the 11 months to November China produced 60 Mt, unchanged from a year earlier.
- China imported 17 Mt of bauxite in Q4, up 3%qtr and 103%yr, to support increased alumina production. Growth in China's bauxite imports was largely attributable to Malaysia (up 312%yr) and India (up 66%yr).
- Australia was the second largest source of China's bauxite imports in Q4, with a market share of 26%, down from 50% a year earlier. While imports from Australia increased 7%yr in Q4, imports from Australia have been displaced by Malaysia, which increased its market share to 48% in Q4, up from 24% a year earlier.
- Malaysia's government introduced a three month moratorium on bauxite mining in Pahang on 15 January to begin to address growing environmental concerns and illegal mining. Pahang is responsible for 70% of Malaysia's bauxite production. This is likely to lead Chinese alumina producers to draw down on bauxite stocks in the short term.
- In Q4, Australia's bauxite exports to China declined 3.5%yr to 4.8 Mt and export earnings increased 10%yr to $251 million.

Figure 115: China's bauxite import by source

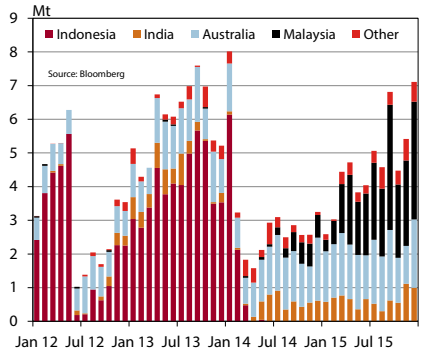


Figure 116: Australia's bauxite exports to China

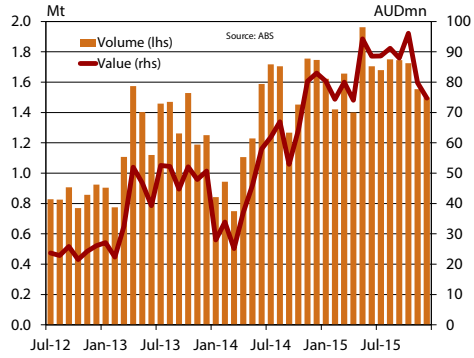


Figure 117: World bauxite output

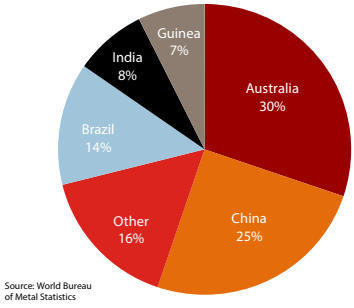


Figure 118: World bauxite trade

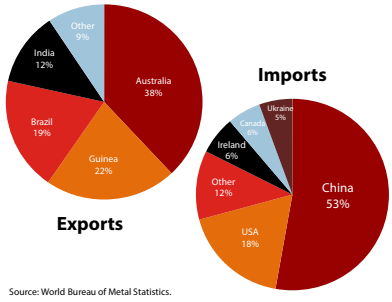


Table 18: Aluminium, alumina and bauxite summary data

Aluminium		unit	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
China imports		kt	137.7	193.0	175.5	96.1	51.5	30.5	34.4	45.9	70.0	73.4
	Australia	kt	31.7	31.5	48.0	18.9	7.0	5.6	7.7	2.7	12.7	15.3
	India	kt	13.1	17.7	19.1	0.7	0.8	1.6	6.6	2.0	0.0	0.8
	Russia	kt	28.9	46.1	29.6	24.2	16.9	2.1	1.5	4.3	4.5	0.7
	other	kt	64.0	97.7	78.8	52.3	26.8	21.2	18.6	36.8	52.9	56.8
Refined production		kt	5560	5837	5755	5747	6045	6393	7205	8010	8185	na
World stocks		kt	7089	7171	7377	7145	6738	6428	4807	4549	4145	na
	weeks of stocks	weeks	7.9	7.9	7.3	6.9	6.6	6.3	4.5	4.0	3.7	na
Australian exports to China		kt	28	35	34	10	5	6	3	3	19	11
	value	AUDmn	62	76	73	21	14	18	9	9	47	27
Alumina												
China imports		kt	829.3	1354.4	1483.7	1280.7	1158.1	1353.9	933.1	879.8	1329.1	1511.5
	Australia	kt	766.5	1177.0	1183.7	654.9	523.0	790.7	455.4	554.5	869.0	986.9
	Chinese production	Mt	11.6	11.2	11.2	11.5	11.7	12.6	13.3	14.2	14.3	na
Bauxite												
China imports		Mt	21.1	17.6	13.1	6.6	8.4	8.4	10.1	12.6	16.5	17.0
	Australia	Mt	4.2	3.4	3.1	3.7	4.7	4.2	4.9	4.5	5.6	4.5
	Indonesia	Mt	0.0	0.0	0.0	0.2	1.1	2.0	2.5	5.5	8.0	8.2
Australian exports to China		Mt	4.2	4.0	2.5	3.9	4.7	5.0	4.7	5.1	5.2	4.8
	value	AUDmn	149.5	150.6	87.0	140.9	181.7	227.5	234.7	256.9	267.7	250.6

Sources: Bloomberg, World Metal Statistics, ABS.

Nickel

- The LME nickel price averaged US$9437 in Q4, down 40%yr and 11%qtr. This is the lowest quarterly price recorded in 12 years, underpinned by persistently high stocks, low consumption growth and a lack of any significant reductions in production in response to declining prices.
- In Q4, LME stocks declined by 2%qtr to a still high 445 kt, while SHFE stocks increased 89%qtr to 48 kt. China port stocks of nickel ore are estimated to have decreased by 32%ytd to 15.8 Mt at the end of November 2015.
- China's refined nickel production decreased by 1%ytd in the first ten months of 2015 to 297 kt. Production in Gansu increased 5%ytd

Figure 119: Nickel prices, London & Shanghai

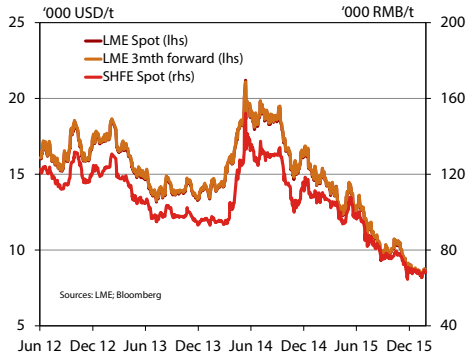


Figure 120: LME prices & inventories

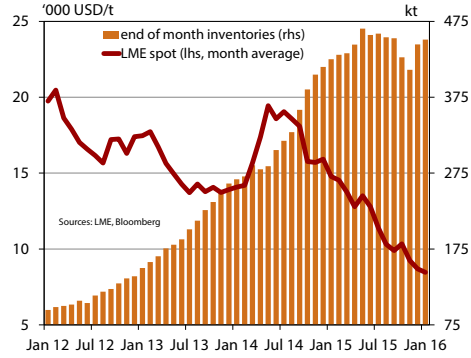


Figure 121: Nickel use and supply by country

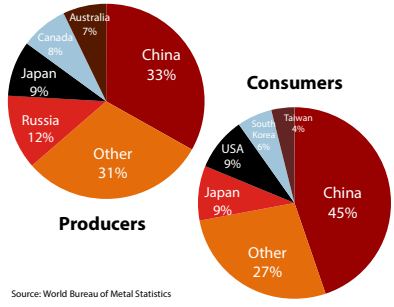


Table 19: Nickel prices (USD/t unless specified otherwise)

LME spot prices	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
Quarter average	13916	13909	14643	18465	18576	15799	14338	13008	10561	9437
Quarter end	13860	13970	15735	18715	16505	14935	12460	11680	10070	8665
Quarter high	14775	14635	16225	21200	19795	16825	15455	14415	12060	10710
Quarter low	13160	13270	13365	15780	16505	14650	12460	11680	9305	8160
3 Month forward	13996	13979	14693	18512	18669	15877	14400	13055	10611	9481
Shanghai avg RMB/t	98866	96850	96380	128595	128862	109421	106548	98129	80765	72228
Shanghai avg USD/t	16139	15905	15785	20634	20905	17792	17089	15817	12826	12327

Sources: LME, Bloomberg.

to 12.7 kt, while production in Guangxi and Jiangxi fell 71%ytd to 4.4 kt and 33%ytd to 21.6 kt respectively.

- The value of China's nickel imports increased by 21%yr in Q4 to US$1.5 billion. China's nickel imports from Russia increased by 342%yr to $US644 million, while China's imports from the Philippines and Australia fell 55%yr and 33%yr respectively to US$313 million and US$48 million.
- The value of Australia's nickel exports to China is estimated to have decreased by 22%yr in Q4 to $A741 million.

Figure 122: Chinese nickel import values

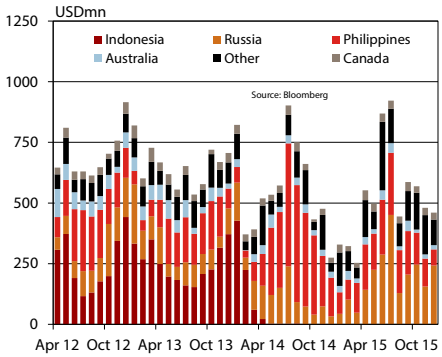


Figure 123: Nickel output by province

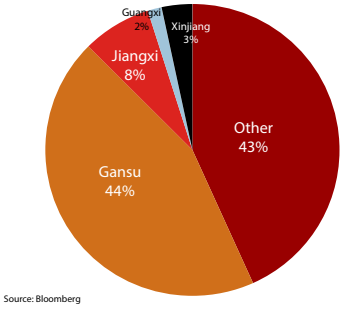


Figure 124: Nickel end–use by sector

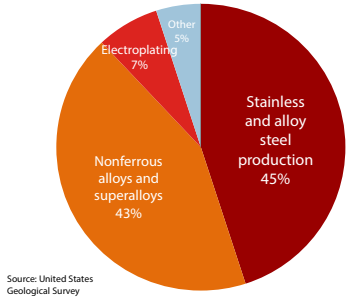


Figure 125: Nickel demand per capita

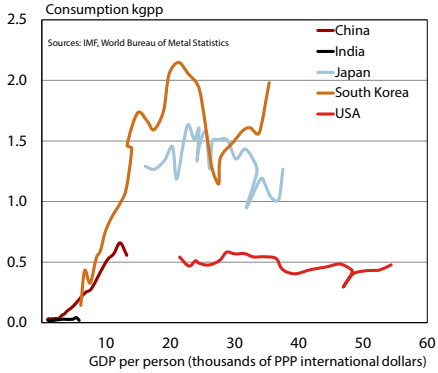


Figure 126: World trade in nickel

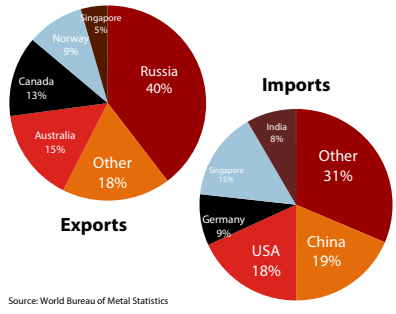


Table 20: Nickel summary data

	unit	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
China imports	USDmn	1766	2095	1585	1625	2314	1251	904	1918	1951	1510
Australia	USDmn	119	112	67	112	99	71	81	87	97	48
Canada	USDmn	86	89	96	85	102	57	72	107	98	87
Russia	USDmn	270	233	326	402	396	146	193	655	784	644
Indonesia	USDmn	521	914	712	28	8	1	0	0	1	0
Philippines	USDmn	482	448	171	720	1375	694	294	562	612	313
other	USDmn	287	299	212	276	334	282	265	507	359	418
Refined production*	kt	69	87	75	90	99	102	82	93	91	na
LME stocks	kt	248	282	284	305	358	415	433	457	453	441
weeks of stocks	weeks	7.2	7.6	8.5	9.1	10.7	13.8	14.7	11.3	16.2	16.9
Australian exports to China	kt	67.2	59.2	48.7	50	57	62	57	68	66	na
value	AUDmn	821	736	731	929	1002	948	873	756	789	741

Sources: Bloomberg, World Metal Statistics, International Nickel Study Group, CEIC.

* Note: Refined production data series no longer includes smelter output and has been revised.

Zinc

- The LME zinc spot price averaged US$1613 in Q4, a decline of 13%qtr and 28%yr. The ongoing decline in prices has been underpinned by a fall in stainless steel production and generally pessimistic commodity market sentiment. However, towards the end of Q4, prices stabilised in response to declining stocks. World production has been affected by mine closures and reductions in production, driven by ore depletion and low prices.
- LME stocks decreased 21%qtr to end the year at 464 kt. However, stocks held at the SHFE increased 20%qtr to 200 kt.
- China's refined zinc production increased 10%ytd to 5.2 Mt in the first 10 months of

Figure 127: Zinc prices, London & Shanghai

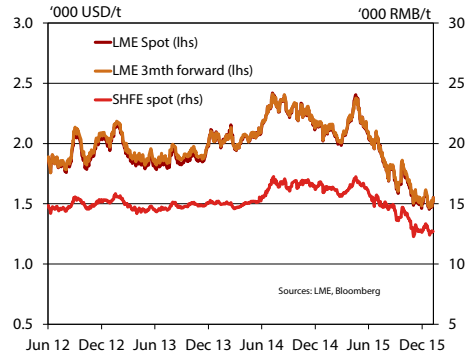


Figure 128: LME prices & inventories

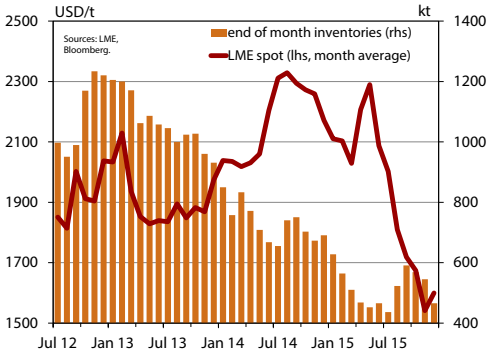


Figure 129: Zinc use and supply by country

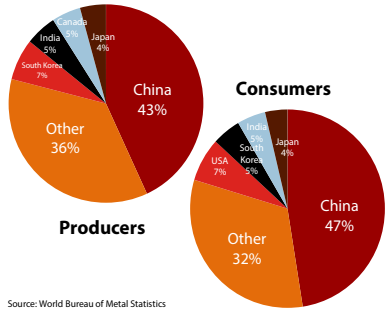


Table 21: Zinc prices (USD/t unless specified otherwise)

LME spot prices	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
Quarter average	1859	1907	2029	2073	2311	2235	2080	2190	1847	1613
Quarter end	1877	2086	1981	2205	2290	2167	2076	1994	1657	1600
Quarter high	1956	2116	2156	2205	2420	2335	2184	2405	2096	1835
Quarter low	1793	1828	1942	2073	2194	2114	1985	1994	1587	1462
3 Month forward	1896	1932	2027	2079	2314	1932	2092	2192	1855	1634
Shanghai avg RMB/t	14726	14969	14953	15155	16542	16655	16127	16399	14840	13347
Shanghai avg USD/t	2404	2459	2450	2432	2683	2709	2586	2643	2356	2264

Sources: LME, Bloomberg.

2015. Growth was particularly strong in Shaanxi where production increased 17%ytd to 808 kt and Gansu where production increased 64%ytd to 336 kt.

- China's total zinc imports (refined and ore) increased 28%ytd in the first 11 months of 2015 to 1.7 Mt as consumers took advantage of lower prices. Imports from Australia increased 39%ytd to 594 kt. Imports from Peru increased 55%ytd to 386 kt, while imports from Turkey decreased 41%ytd to 11 kt.
- Australia's zinc exports (by metal content) to China increased 40%yr to 285 kt, with export earnings growing by 34%yr to $A469 million in Q4.

Figure 130: Chinese zinc import volumes

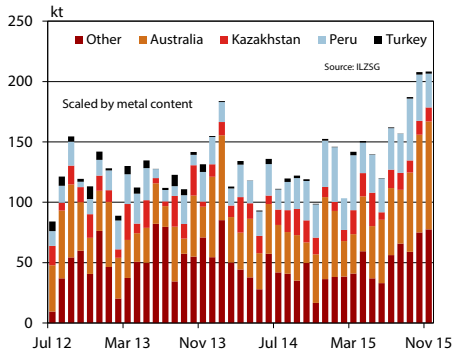


Figure 131: Chinese zinc imports by type

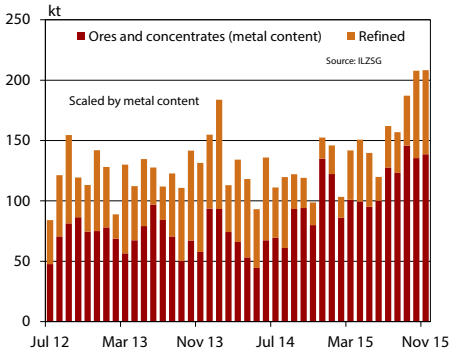


Figure 132: Australian zinc exports to China

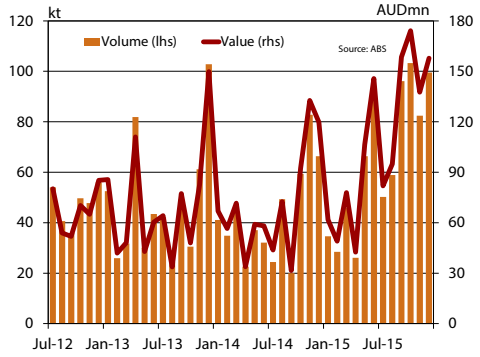


Figure 133: Zinc demand per capita

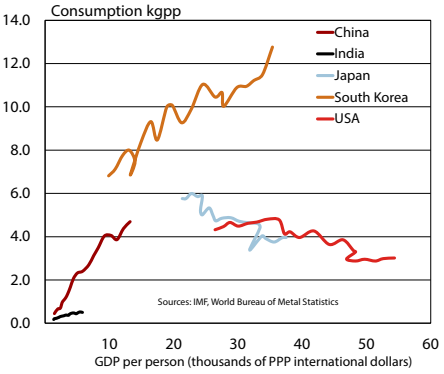


Figure 134: Zinc output by province

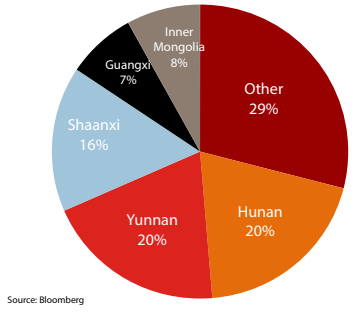


Table 22: Zinc summary data

		unit	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
China imports		kt	345.5	427.9	431.0	347.2	353.0	370.3	391.0	410.3	506.1	na
	Australia	kt	75.1	142.8	138.5	119.5	111.4	125.1	116.7	141.2	165.8	na
	Kazakhstan	kt	41.6	39.6	49.9	34.1	52.5	40.6	36.6	53.0	39.2	na
	Peru	kt	41.2	55.6	57.5	65	65.7	98.5	117.0	84.7	117.9	na
	Turkey	kt	16.2	9.5	5.5	5.3	5.5	3.3	3.1	1.8	2.2	na
	other	kt	171.5	180.3	179.6	123.3	117.9	102.8	117.6	129.6	181.0	na
Refined production		kt	1340.7	1444.6	1259.3	1405.6	1508.1	1607.3	1458.1	1612.7	1574.4	na
World stocks		kt	1589	1472	1511	1283	1330	1192	1108	1111	1215	na
	weeks of stocks	weeks	6.2	5.6	6.2	4.9	4.9	4.5	4.5	4.0	4.5	na
Australian exports to China		kt	116	190	119	91	90	204	109	183	205	285
	value	AUDmn	175	282	195	152	150	350	189	295	335	469

Sources: Bloomberg, World Metal Statistics, International Lead and Zinc Study Group, ABS.

Lead

Figure 135: LME prices & inventories

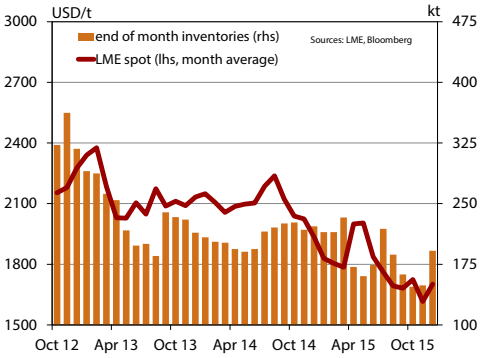


Figure 136: Chinese lead import volumes

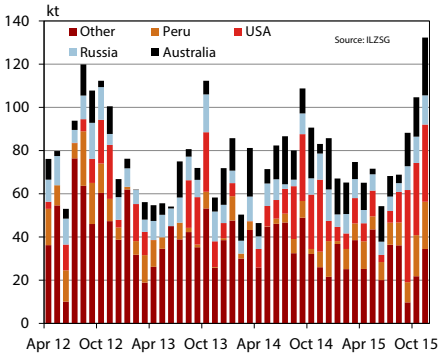


Figure 137: Australian lead exports to China

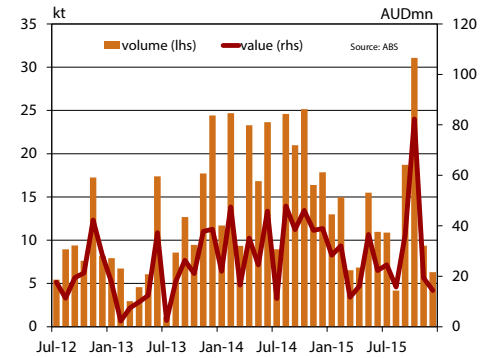


Figure 138: World trade in lead

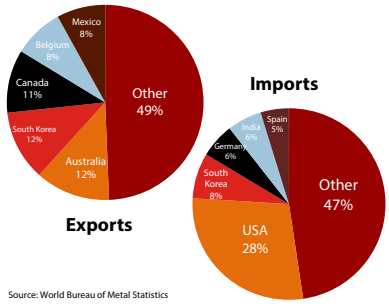


Table 23: Lead prices (USD/t unless specified otherwise).

LME spot prices	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
Quarter average	2102	2111	2106	2096	2181	2000	1806	1942	1714	1681
Quarter end	2075	2206	2041	2129	2083	1853	1808	1754	1656	1802
Quarter high	2238	2259	2212	2160	2269	2095	1882	2140	1857	1817
Quarter low	2017	2027	2008	2016	2051	1814	1696	1742	1625	1555
3 Month forward	2116	2134	2127	2120	2194	2009	1817	1952	1725	1689
Shanghai avg RMB/t	14141	14109	13928	13922	14208	13452	12494	13494	13336	13207
Shanghai avg USD/t	2308	2317	2282	2234	2305	2184	2004	2175	2116	2129

Sources: LME, Bloomberg.

Table 24: Lead summary data

		unit	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
China imports		kt	227.9	242.5	224.0	213.8	284.8	273.0	220.4	197.0	238.3	na
	Australia	kt	25.7	29.6	49.6	28.8	47.8	52.0	39.1	31.6	28.9	na
	Peru	kt	10.8	9.0	17.6	2.6	18.3	26.1	18.4	27.2	30.1	na
	Russia	kt	30.9	40.0	23.1	25.9	14.8	34.2	23.6	19.9	21.8	na
	USA	kt	44.0	46.5	6.1	26.6	66.9	67.8	25.5	23.5	62.2	na
	Mexico	kt	7.0	6.7	6.8	13.6	8.9	17.3	13.5	6.1	13.1	na
	other	kt	111.4	110.6	120.8	116.3	128.1	75.6	100.3	88.7	94.4	na
Refined production		kt	1152.0	1140.8	1055.7	1105.2	1050.5	1064.7	995.2	1071.6	951.9	na
World stocks		kt	603	586	562	542	577.3	560.1	546.4	467.6	448.9	na
	weeks of stocks	weeks	3.0	2.9	2.8	2.6	3.0	2.8	2.9	2.4	2.4	na
Australian exports to China		kt	22.4	51.6	45.7	63.7	54.5	59.4	34.5	33.3	33.8	46.8
	value	AUDmn	47	97	86	105	97	123	72	75	77	116

Sources: Bloomberg, World Metal Statistics, International Lead and Zinc Study Group, ABS.

Tin

Figure 139: Tin prices

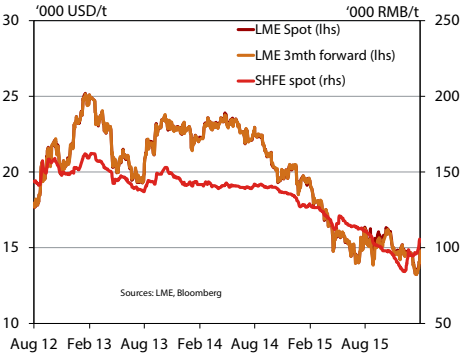


Figure 140: LME prices and inventory

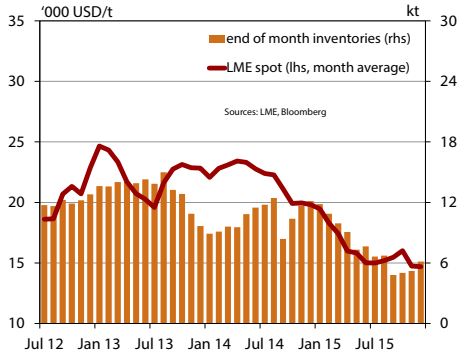


Figure 141: World tin producers and consumers

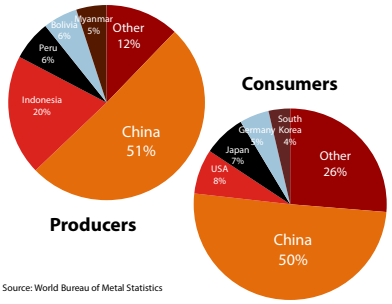


Figure 142: China's tin imports by source

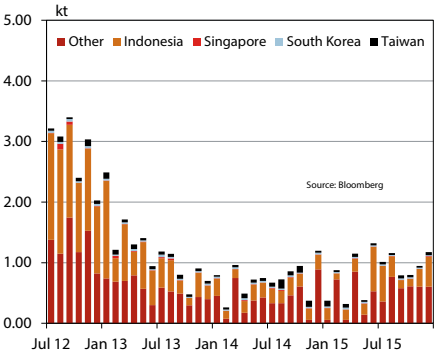


Figure 143: Tin use by sector

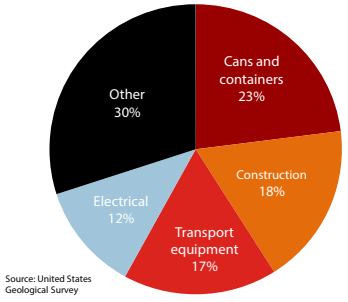
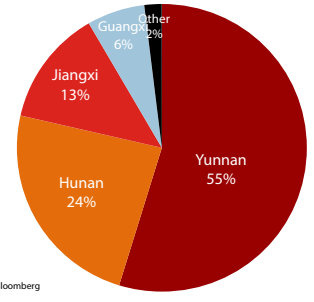


Figure 144: China's tin output by province



Molybdenum

Figure 145: Molybdenum prices

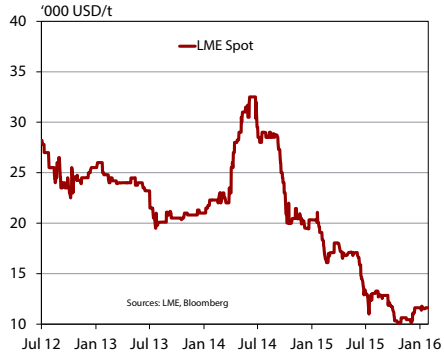


Figure 146: China's molybdenum ore imports

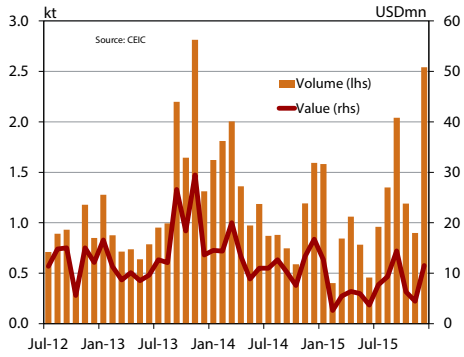


Figure 147: China's molybdenum articles exports

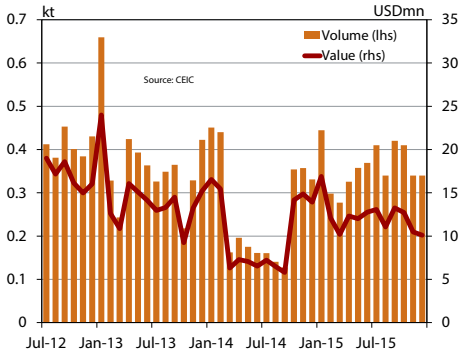


Figure 148: China's molybdenum ore exports

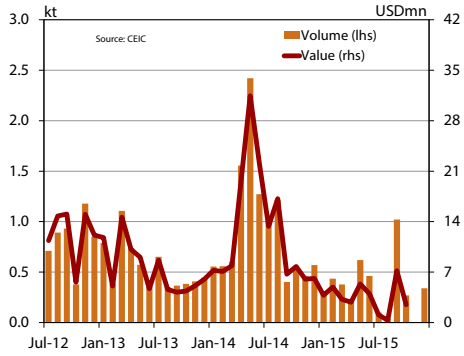


Figure 149: China's molybdenum production

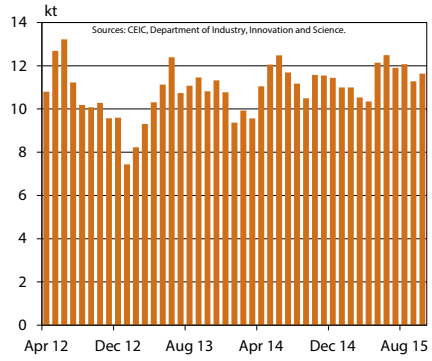
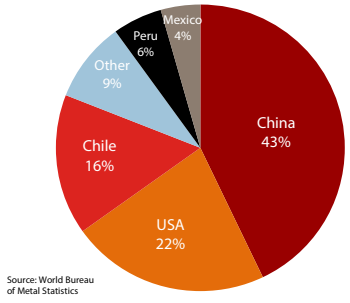


Figure 150: World molybdenum output



Tungsten

Figure 151: China's tungsten ore imports

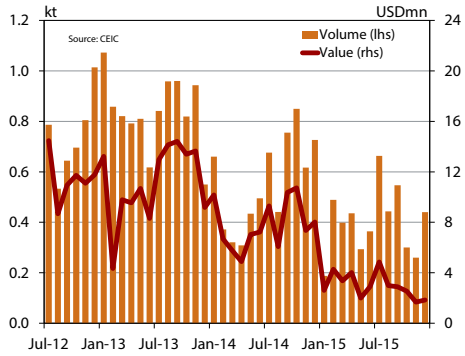


Figure 152: China's tungsten articles imports

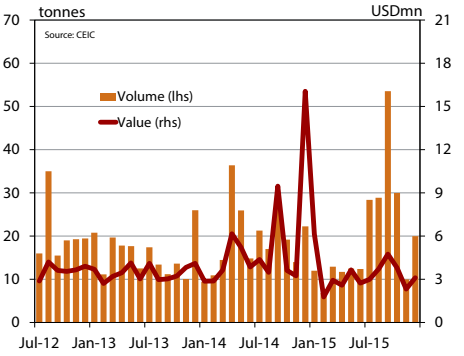


Figure 153: China's tungsten and articles exports

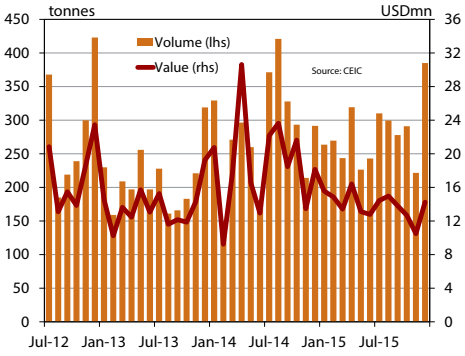


Figure 154: China's tungsten products exports

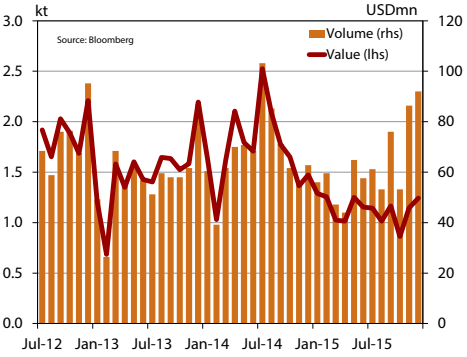


Figure 155: World tungsten output

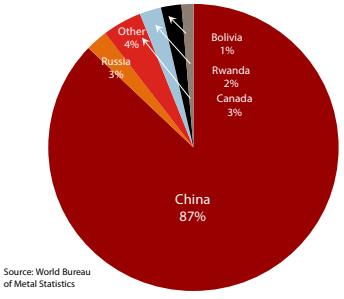
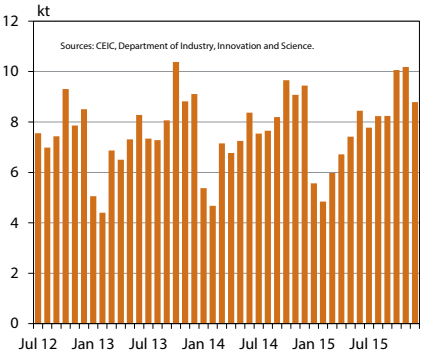


Figure 156: China's tungsten output (metal content)



Cobalt

Figure 157: Cobalt prices

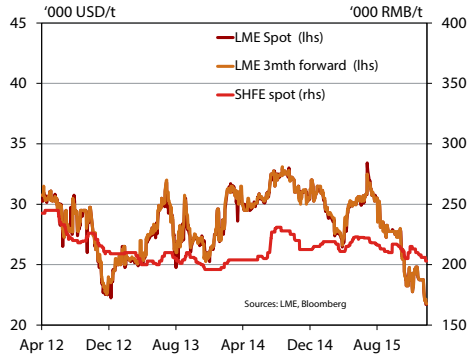


Figure 158: China's cobalt ore imports

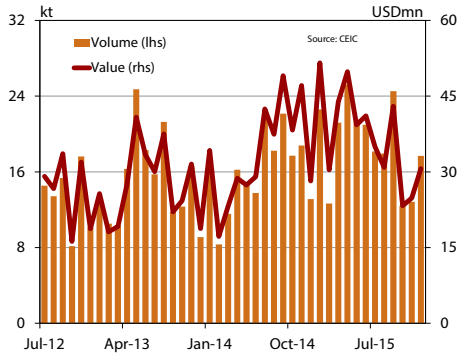


Figure 159: China's cobalt articles imports

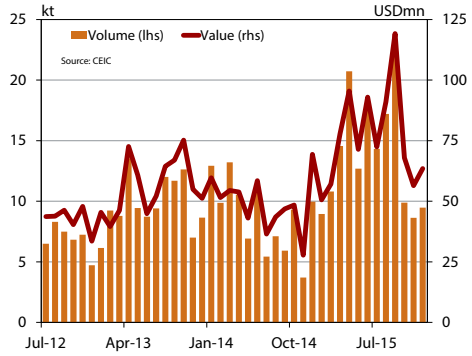


Figure 160: World cobalt mine output

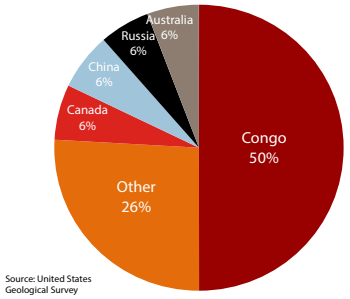


Figure 161: World cobalt refined output

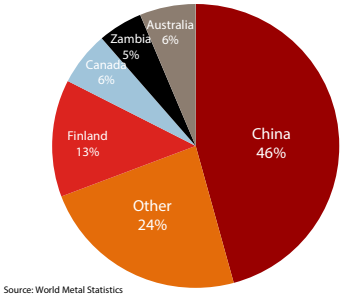
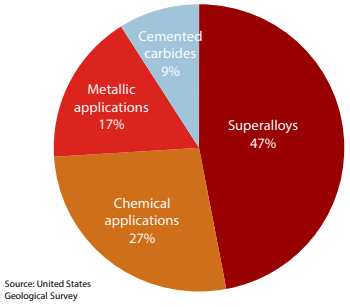


Figure 162: Cobalt use by sector



Antimony

Figure 163: Antimony prices

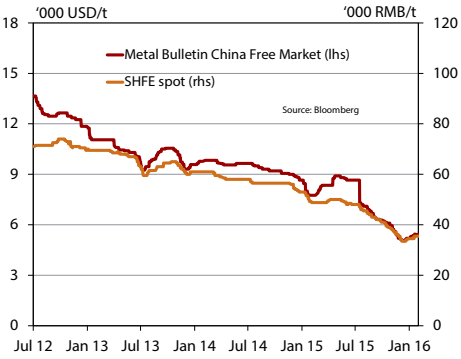


Figure 164: China's antimony ores imports

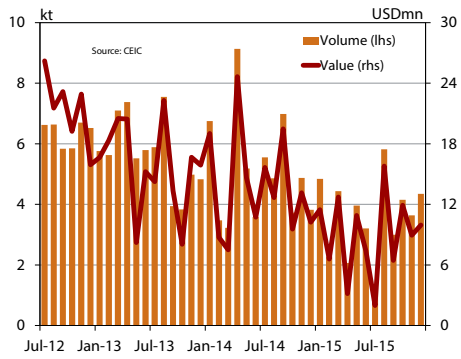


Figure 165: China's unwrought antimony exports

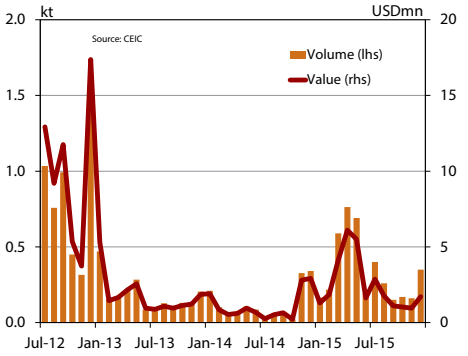


Figure 166: Australian antimony exports to China

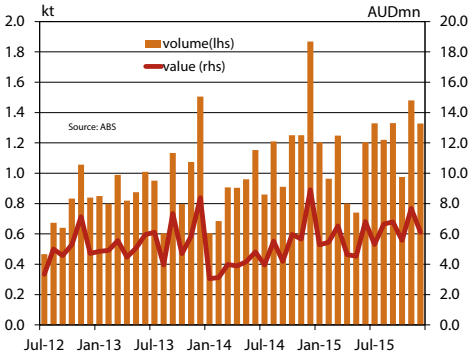


Figure 167: China's antimony mine output

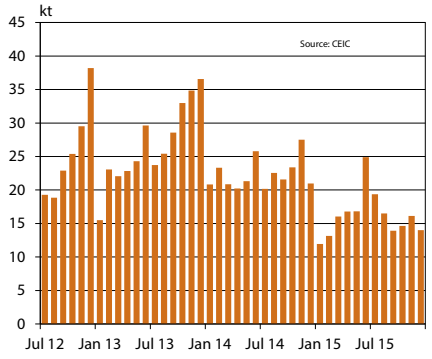
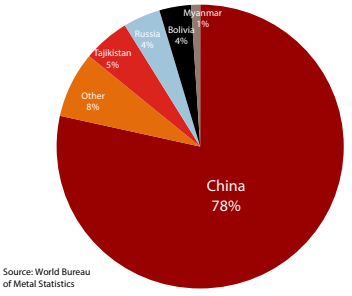


Figure 168: World antimony mine output



Platinum & Palladium

Figure 169: Platinum prices

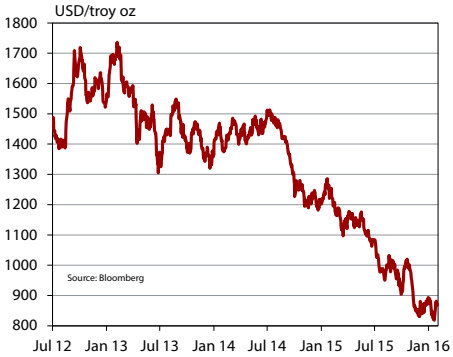


Figure 170: Palladium prices

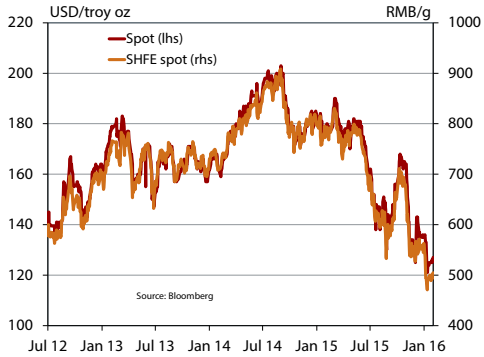


Figure 171: China's platinum imports

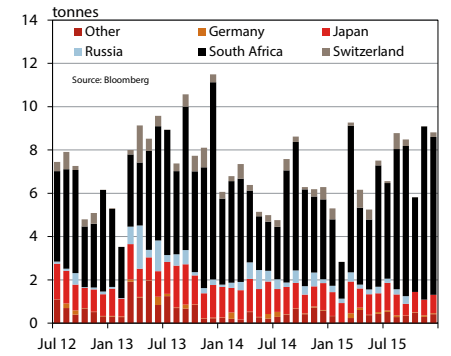


Figure 172: China's platinum exports

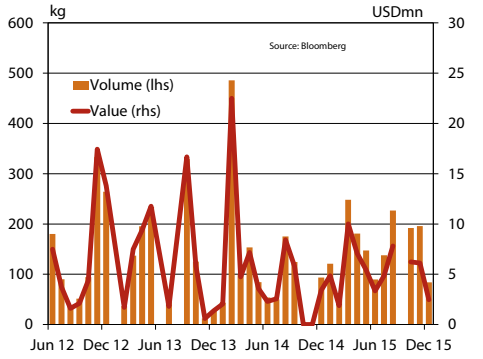


Figure 173: World platinum output

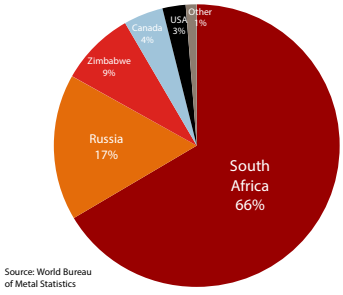
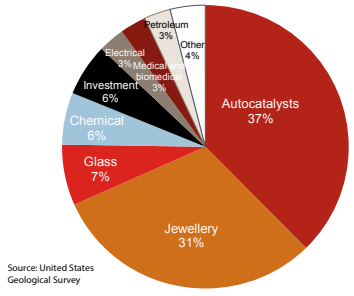


Figure 174: Platinum end use by sector



Mineral Sands

Figure 175: China's titanium dioxide imports

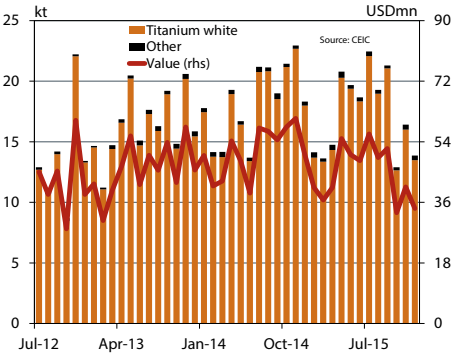


Figure 176: China's titanium dioxide exports

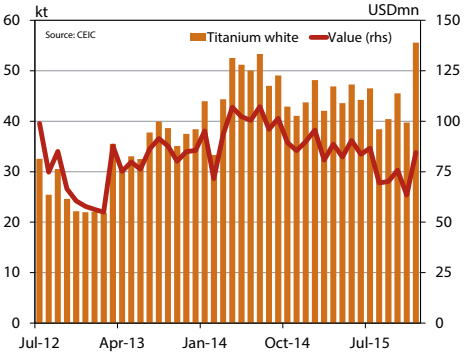


Figure 177: Aust titanium dioxide exports to China

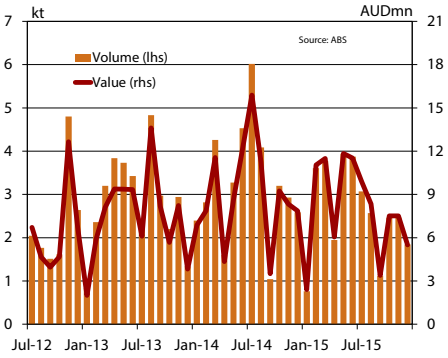


Figure 178: Australian rutile exports to China

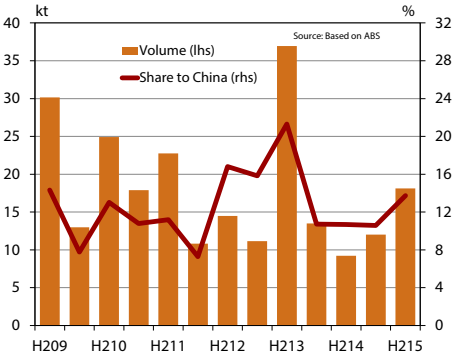


Figure 179: Australian zirconium exports to China

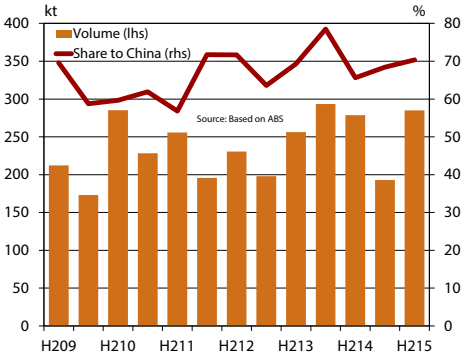
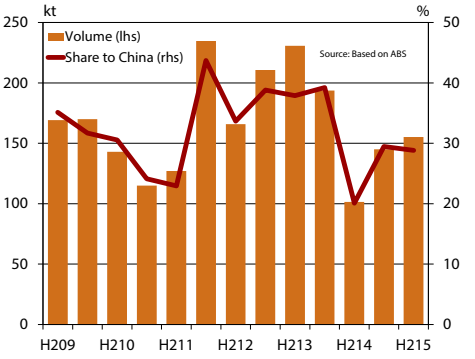


Figure 180: Australian ilmenite exports to China



China's exports of rare earth oxides

Figure 181: China's total rare earth oxides exports

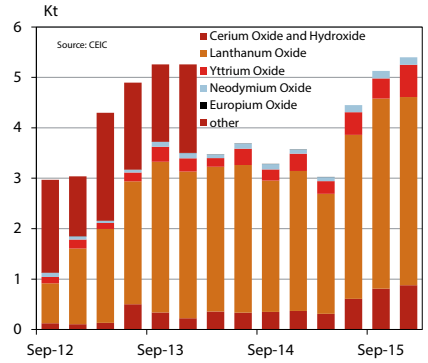


Figure 182: Cerium oxide & hydroxide exports

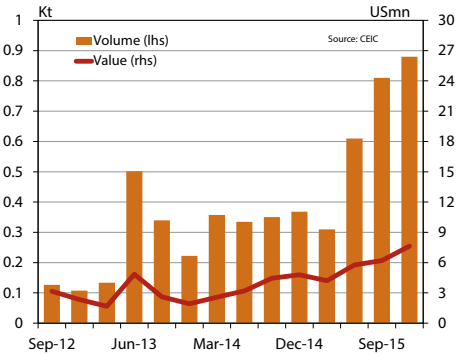


Figure 183: Lanthanum oxide exports

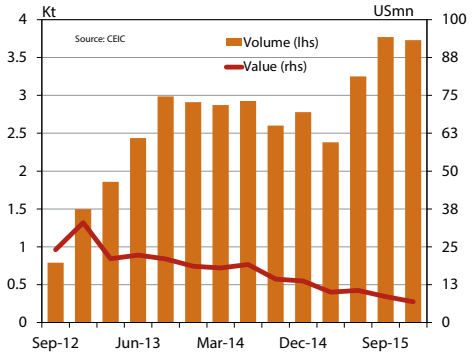


Figure 184: Neodymium oxide exports

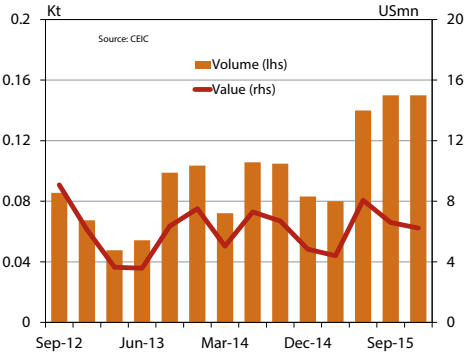


Figure 185: Europium oxide exports

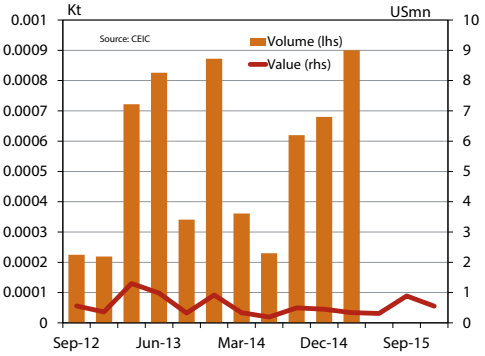
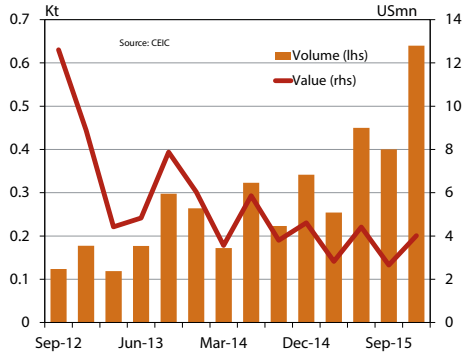


Figure 186: Yttrium oxide export



Manganese & Cadmium

Figure 187: Manganese & cadmium prices

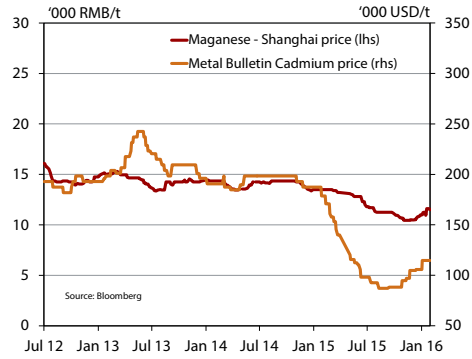


Figure 188: China's manganese ore imports

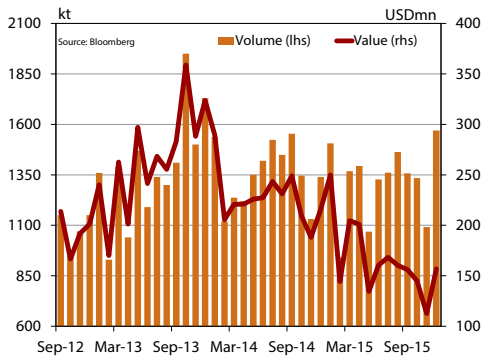


Figure 189: Australian manganese exports to China

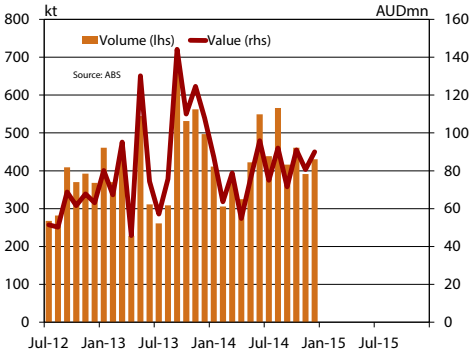


Figure 190: World manganese mine output

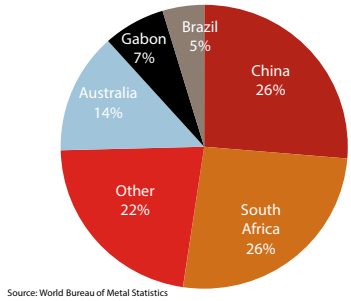


Figure 191: World cadmium production

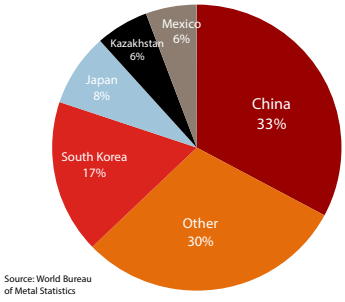
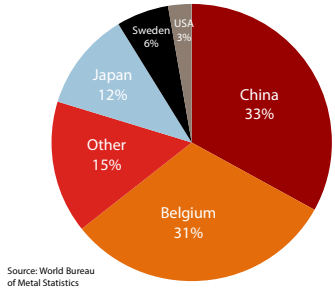


Figure 192: World cadmium consumption



Diamonds & Magnesium

Figure 193: World diamond exports

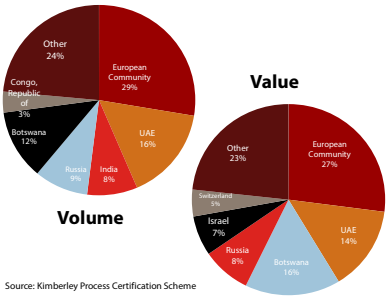


Figure 194: World diamond imports

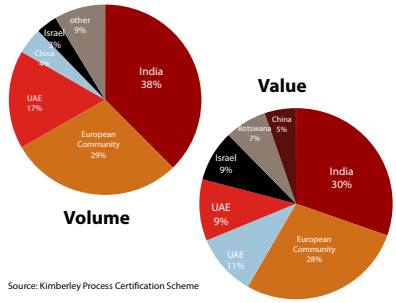


Figure 195: World diamond output

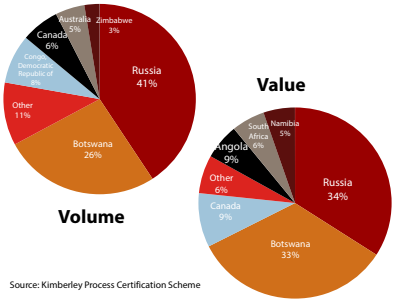


Figure 196: Magnesium prices

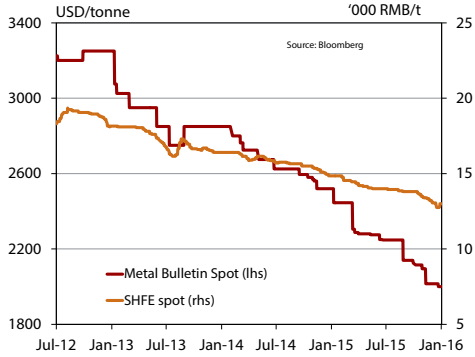


Figure 197: China's magnesium exports

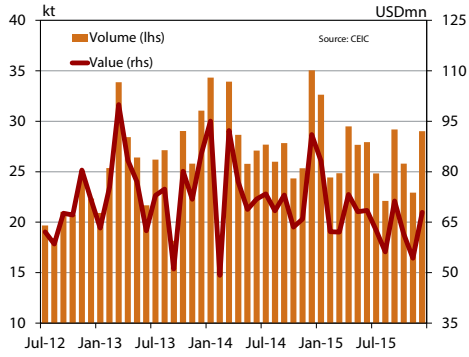


Figure 198: Shares of world magnesium output

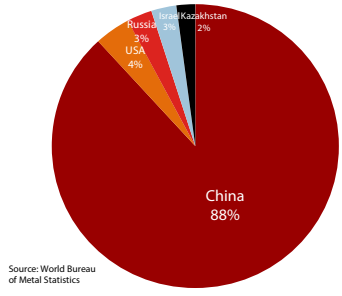


Table 25: China mineral and energy import summary

	unit	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
Iron ore	Mt	222.0	235.3	242.1	233.6	227.1	226.0	246.3	253.9
from Australia	Mt	118.2	138.2	149.4	142.7	144.4	146.8	158.5	157.9
Australian share	%	53	59	61.7	61.1	63.6	65.0	64.4	62.2
Thermal coal	Mt	71.0	58.1	49.7	50.4	38.1	40.1	41.7	36.2
from Australia	Mt	15.4	15.2	17.5	15.1	10.6	12.6	12.0	10.0
Australian share	%	22	26	35	30	28	32	29	28
Metallurgical coal	Mt	13.0	18.1	13.4	18.0	10.9	10.7	14.8	11.6
from Australia	Mt	6.5	8.6	5.9	10.3	5.3	5.5	8.7	6.1
Australian share	%	50	47	44	57	49	51	59	53
Aluminium	kt	175.5	96.1	51.5	30.5	34.4	45.9	70.0	73.4
from Australia	kt	48.0	18.9	7.0	5.6	7.7	2.7	12.7	15.3
Australian share	%	27	20	14	18	22	6	18	21
Alumina	kt	1484	1281	1158	1354	933	880	1329	1512
from Australia	kt	1184	655	523	791	455	555	869	987
Australian share	%	80	51	45	58	49	63	65	65
Bauxite	Mt	13.1	6.6	8.4	8.4	10.1	12.6	16.5	17.0
from Australia	Mt	3.1	3.7	4.7	4.2	4.9	4.5	5.6	4.5
Australian share	%	24	55	55	50	49	36	34	26
Copper	kt	1836	1699	1725	1935	1729	1774	1886	2324
from Australia	kt	165	144	140	152	116	142	123	174
Australian share	%	9	8	8	8	7	8	7	7

Table 25 continued on page 61

Table 25 continued:

	unit	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
Oil	Mt	74.7	77.2	76.5	79.9	80.3	83.0	85.3	86.9
from Australia	Mt	0.7	0.7	0.7	0.5	0.6	0.6	0.5	0.7
Australian share	%	1.0	0.9	1.0	0.7	0.7	0.7	0.6	0.8
Gas (LNG)	kt	5629	4297	4811	5155	5127	4392	4627	5522
from Australia	kt	843	905	1162	902	1094	1286	1672	1500
Australian share	%	15	21	24	18	21	29	36	27
Zinc	kt	431.0	347.2	353.0	370.3	391.0	410.3	506.1	na
from Australia	kt	138.5	119.5	111.4	125.1	116.7	141.2	165.8	na
Australian share	%	32	34	32	34	30	34	33	na
Nickel	USDmn	1585	1625	2314	1251	904	1918	1951	1510
from Australia	USDmn	67	112	99	71	81	87	97	48
Australian share	%	4	7	4	6	9	5	5	3
Lead	kt	224.0	213.8	284.8	273.0	220.4	197.0	238.3	na
from Australia	kt	49.6	28.8	47.8	52.0	39.1	31.6	28.9	na
Australian share	%	22	13	17	19	18	16	12	na
Tin	kt	2.0	2.0	2.3	2.5	1.6	2.9	3.0	2.9
from Australia	kt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Australian share	%	0	0	0	0	0	0	0	0
Uranium	t	4045	6801	4985	9281	2041	5659	7505	7439

Sources: CEIC, Bloomberg, IHS.

Electricity generation and consumption

Figure 199: Electricity generation by region, 2015

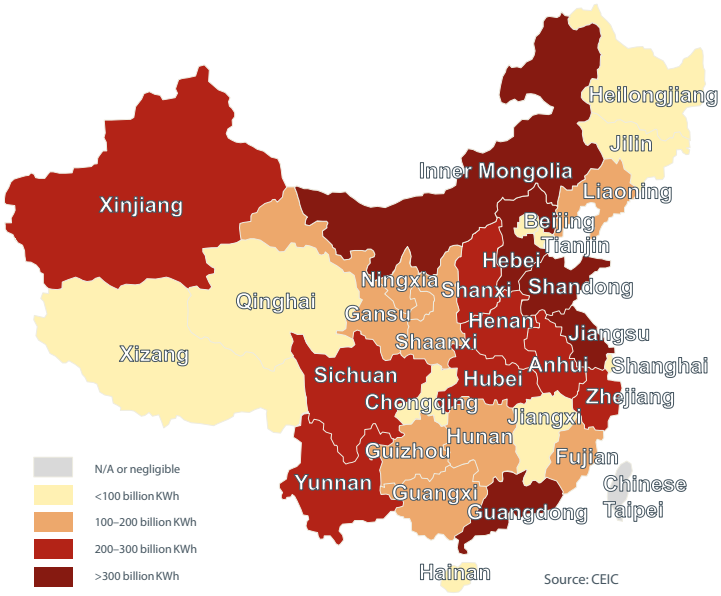
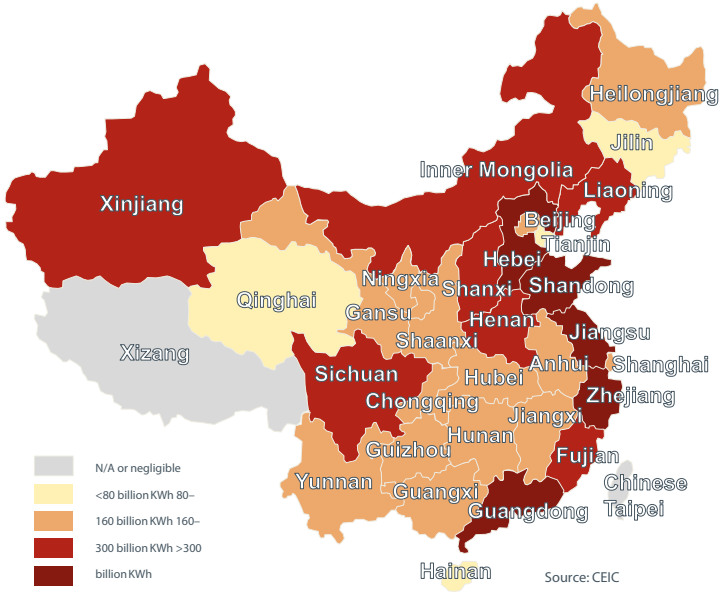


Figure 200: Electricity consumption by region, 2014



Coal and gas

Figure 201: Coal production by region, 2015 estimate

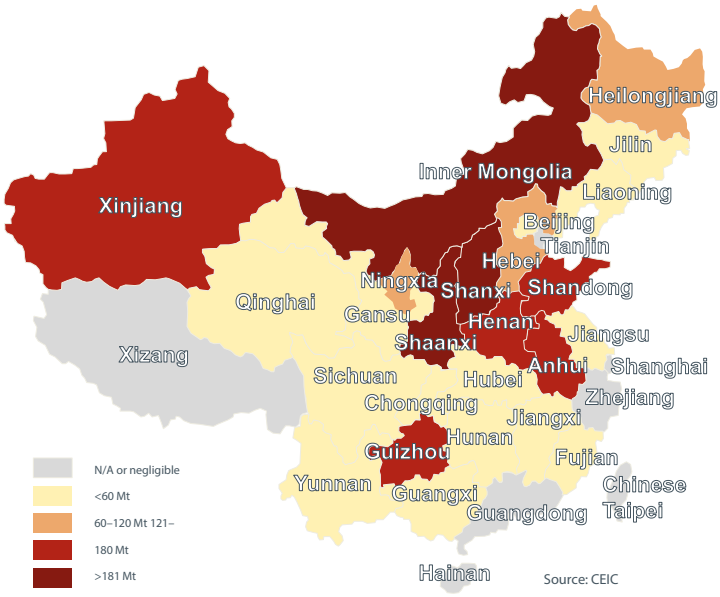
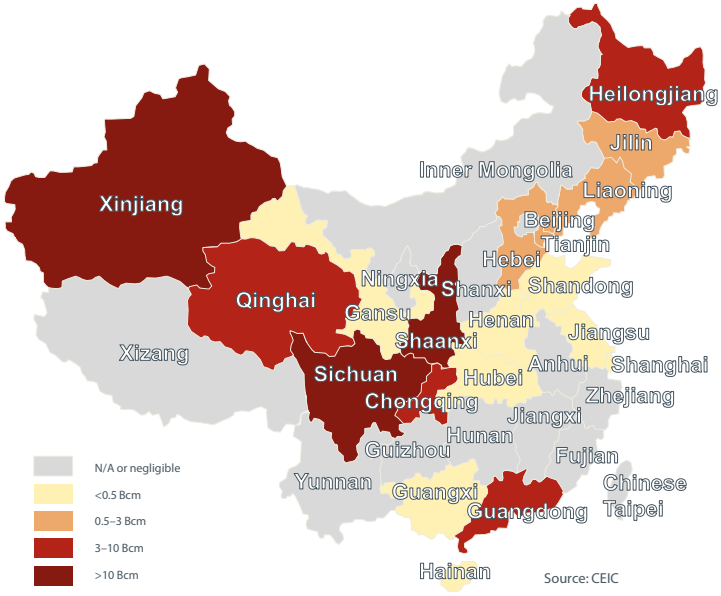


Figure 202: Gas production by region, 2015



Ferrous metals

Figure 203: Iron ore production by region, 2015

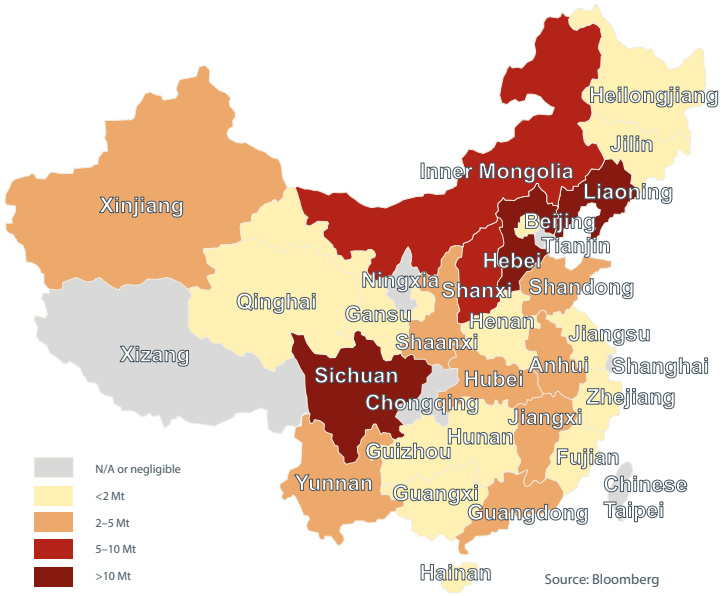
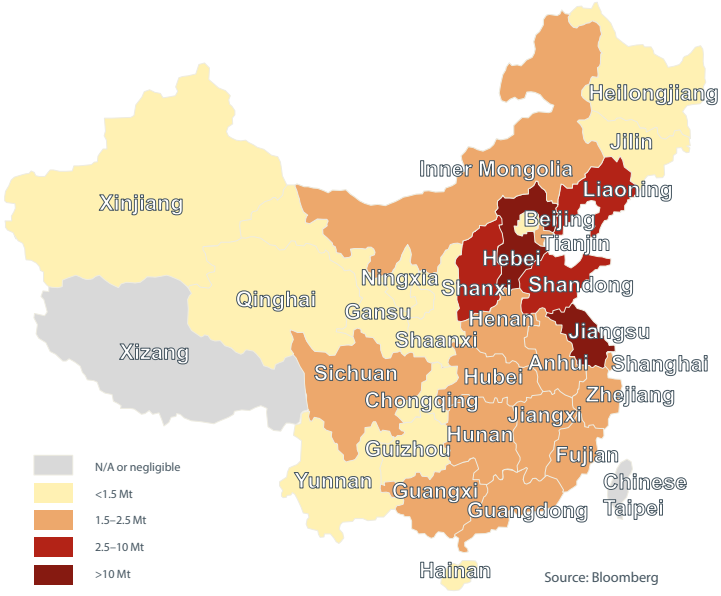


Figure 204: Crude steel production by region, 2015



Alumina and aluminium

Figure 205: Alumina production by region, 2014

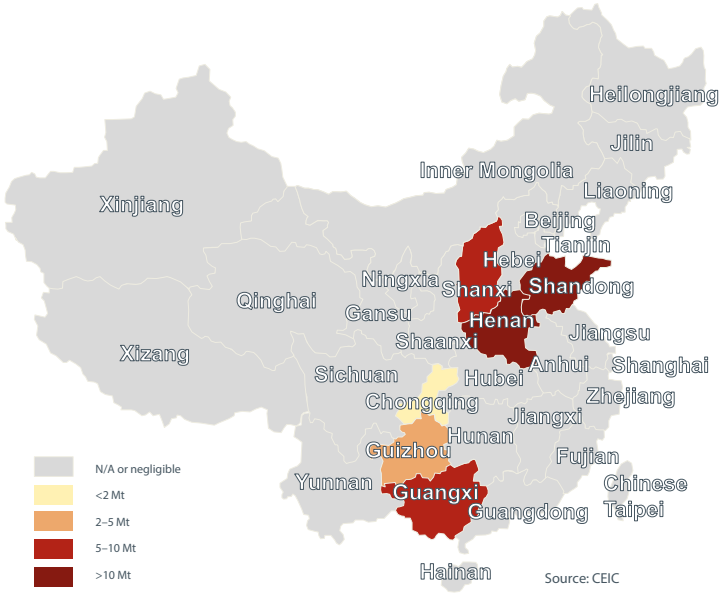


Figure 206: Aluminum production by region, 2014

Copper and gold

Figure 207: Copper production by region, 2014

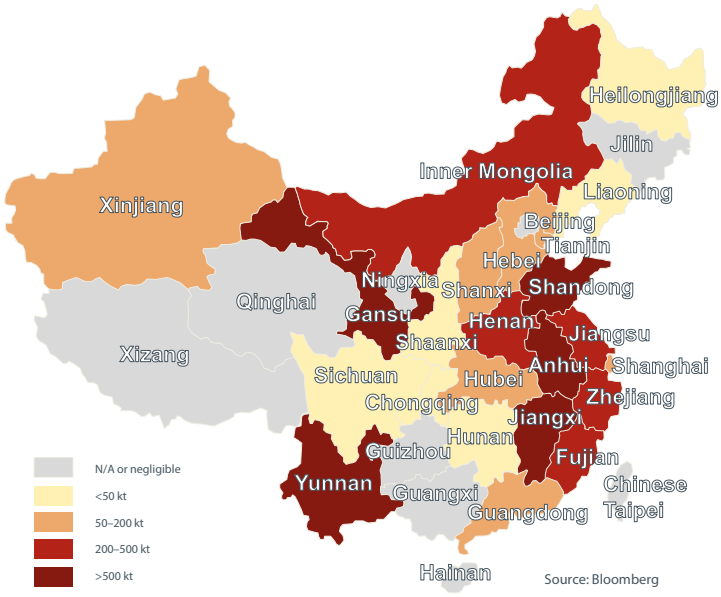
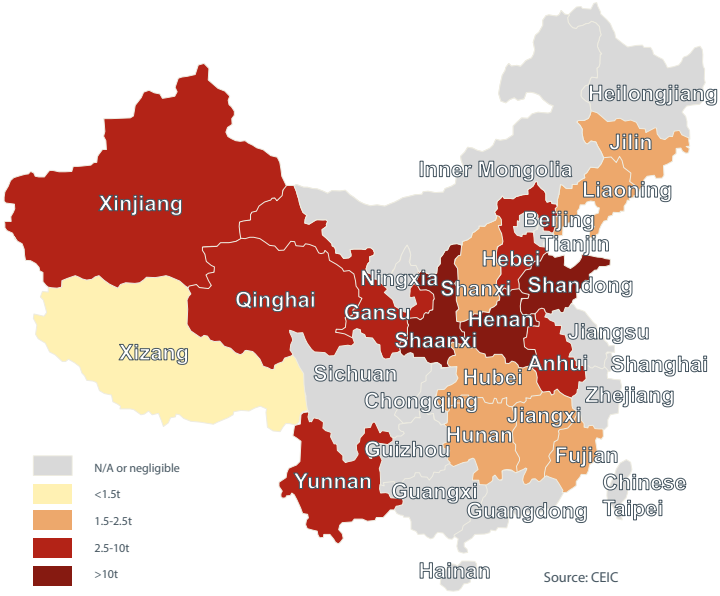


Figure 208: Mined gold production by region, 2014



Nickel and zinc

Figure 209: Nickel production by region, 2015

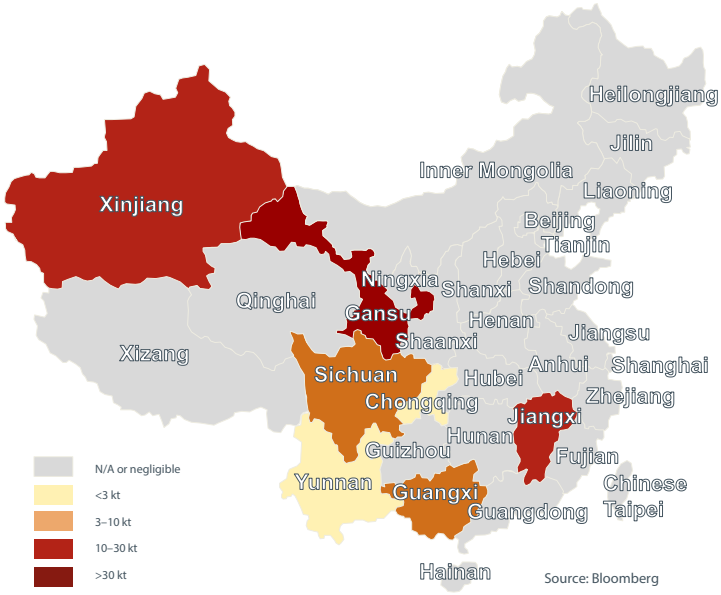
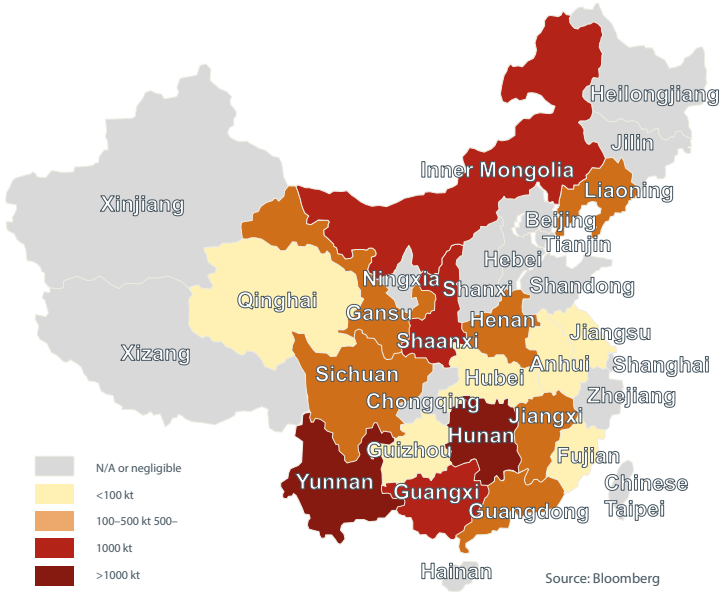


Figure 210: Zinc production by region, 2015



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