We commissioned AME to provide the AME Report for use in whole or in part in this prospectus. In particular, unless otherwise specified, all of the data presented in this Industry Overview has been based on or derived from the AME Report.

AME prepared its report based on its in-house database, general industry knowledge, independent third-party reports and publicly available data from reputable industry organisations. The information contained herein has been obtained from official government and non-official sources believed by AME to be reliable. However, since such information is unavoidably subject to certain assumptions and estimates made by third parties, there can be no assurance as to the accuracy or completeness of included information. As certain economic data is collected on a sample basis or estimated by AME, each table and figure should be assumed to include estimated information.

Forward-looking statements, forecasts and assumptions included in the AME Report are inherently uncertain because of events or combinations of events that cannot reasonably be foreseen, including, without limitation, the actions of governments, individuals, third parties and competitors. As such, there can be no assurance that forward-looking statements, forecasts and assumptions will prove to be accurate; actual results and future events could differ materially from such statements. Specific factors that could cause actual results to differ materially include, among others, prices, risks inherent in the mining industry, financing risks, labour risks, uncertainty of mineral reserve and resource estimates, equipment and supply risks, regulatory risks and environmental concerns. Investors are cautioned not to put undue reliance on forecast and forward-looking information.

Investors should note that no independent verification has been carried out on any facts or statistics that are directly or indirectly derived from official government and non-official sources. We believe that the sources of the information in this section are appropriate sources for such information and have taken reasonable care in extracting and reproducing such information. We have no reason to believe that such information is false, inaccurate or misleading or that any part has been omitted that would render such information false, inaccurate or misleading. The Company, the Sole Sponsor, the Underwriters, their respective directors and advisers and other persons or parties involved in the Share Offer make no representation as to the accuracy of the information from official government and non-official sources, which may not be accurate or consistent with other information. Accordingly, the official government and non-official sources contained herein and the research methodology adopted by AME should not be relied upon.

A total fee of US$123,250 is payable to AME for the preparation and update of the AME Report.

INTRODUCTION

The developing world, and in particular, Asia, is likely to be the main source of growth over the next decade. Ultimately, economic progression in the developed world will be hindered by the uncertainty in Europe and the United States over the near term. Caution is raised as a result of current global economic instability stemming from financial uncertainty and high sovereign debt levels. Assuming this volatility stabilises, the dominant growth in materials demand will come from the developing world consumption over the short to medium term.

Broadly, the large increase in developing world apparent demand for metals (in particular China) has displaced much demand from the industrialised world. The world's labour-intensive manufacturing industries have shifted to lower cost locations. A large proportion of this production has been exported back to the developed world but consumption in the developing world is also increasing rapidly as incomes rise.

According to AME Report, it is believed the overarching theme of Chinese resource security will shape the materials industry in the long run. Over the last decade, Chinese industry has grown rapidly and is now the largest producer and consumer of steel and metals. Since 1999, China has gone from a net exporter of mined ores and concentrates to being the world's largest importer. The robust demand of the Chinese metal and steel industry has been fed increasingly by imported raw materials. Rising commodity prices (attributable primarily to the changing role of China in commodity trade) and the increased politicisation of the resources industry is leading Chinese policy makers and industrialists to consider carefully the long term supply situation.

The demand by China for concentrates remains strong, especially for iron ore and copper, although year-on-year growth in China recently does appear to be slowing down. Despite a slow down in demand growth, domestic supply streams are also impacted by growth limiting trends such as declining grades and comparatively less high-quality and easily accessible mines being available.

With respect to copper, the global demand for copper is such that China, as the world's largest refined copper consuming nation, is likely to consume both domestically produced copper and imported copper concentrate. Given the demand in China for copper, an increase in domestic production through the commissioning of new operations may be absorbed domestically.

According to AME Report, in regards to iron ore, it is believed that imports are likely to remain as an important source of supply to meet Chinese domestic demand as a supplement to domestic production. Domestic production faces the issue of falling domestic iron ore grades which impact the saleable iron product extracted from the crude ore mined. In 2011, global iron ore consumption was estimated to be in excess of 1.8 Bt; this is expected to continue to grow to around 1.9 Bt in 2012. Based on China Custom's data, China is estimated to have imported around 0.7 Bt of saleable iron ore in 2011 whilst its domestic production is estimated to have been 1.3 Bt on a crude ore basis. China is considered to account for over 50% of global demand.

As commodity prices continue to escalate over the decade, exploration and new project development has become an increasing focus for industry and policy makers. This is for the purposes of securing long term supply of raw materials with aspirations to enter the industry for value-added downstream beneficiation. Projects which may not appear viable on simple revenue from sales less costs basis, may be viable under a model of an integrated producer looking to secure a stable supply of raw materials.

As such, Chinese investment in overseas projects has increased significantly in recent times. This was accelerated during the global financial downturn in 2008-2009 when western mining companies experiencing financial challenges became attractive. Chinese companies have also been keen to secure long term off-take agreements with foreign miners, in particular junior miners. This has often been in reciprocation for subsidised development financing. In addition to portfolio equity positions in miners, Chinese mining companies have become more active investors through acquisitions of direct stakes in projects.

According to AME Report, generally, it is expected that the entire cost structure of the materials industry may shift up over the long term. This is due to declining ore grades globally and the move by producers to enter unexplored terrain in high political risk areas, thereby increasing, for example, mining and labour costs. Such risks include the ability and willingness of the State to enforce a miner's right to their tenement, the ability to reliably procure necessary supplies (including staff), to successfully operate in more difficult locations as well as the more indirect risk of higher or punitive taxes on the sector.

COPPER

Material Analysis

Overview

Copper is a reddish-brown coloured metal and amongst the most widely used chemical elements in the world.

The copper mineralogy is varied. Copper ore deposits vary in size and grade and commercial extraction typically targets sulphide or oxide ore bodies. Copper ore bodies are widely spread around the world however global production is dominated by a relatively small number of countries.

Copper sulphide ores are typically extracted at grades of between 0.5%-7.0%. These ores are beneficiated onsite by crushing and grinding and converting into copper concentrate. Copper concentrates usually have grades of approximately 25%-35%. Concentrate is sold to smelters around the world which smelt the copper concentrate. This smelted product is then refined into pure, saleable copper. According to AME Report, it is estimated that sulphide ores account for around 80% of mined copper production.

The global copper market is a deep and transparent commodity market with many market participants. Copper is traded on the London Metals Exchange (LME), Shanghai Futures Exchange (SHFE) and the CME Group COMEX exchange.

Description and uses

Copper's chemical properties make it a ductile, corrosion resistant and malleable element and an excellent conductor of heat and electricity. Copper can also be alloyed with other metals such as zinc to create brass, aluminium or tin to create bronze or nickel for specialised alloys including coins and marine applications.

Over the course of the economic cycle, construction is generally the largest end use sector for copper. According to AME Report, it is estimated that the construction sector accounts for approximately 40% of copper end use, closely followed by the manufacture of consumer durable and electric goods (35-40%). The transportation sector is the third largest sector.

Copper is one of the most recycled of all metals. Recycled copper (or 'secondary' copper) is indiscernible from copper produced from ores (or 'primary' copper).

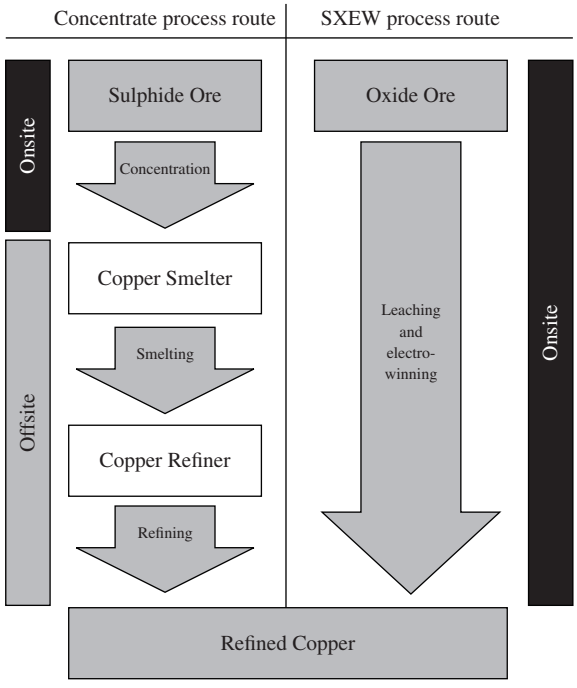
Copper mining and beneficiation

Copper concentrate is the main saleable sulphide product of copper mines. Miners are paid for the metallic copper content of their concentrates. In addition, miners may also receive revenue for the metallic by-product elements in their concentrates such as gold, silver and molybdenum. A deduction is usually made for the presence of deleterious elements in the concentrate such as arsenic and fluorine. The presence of metallic by-products or deleterious elements in a concentrate can have a very substantial impact on the profitability of a mine.

Copper oxide ores can typically be economically extracted at grades lower than sulphide ores. These ores are typically beneficiated onsite through a process called Solvent Extraction Electro-Winning (SXEW). With the SXEW process, copper ore is processed to refined copper, a saleable product. SXEW processes do not incur any smelter or refiner treatment charges or refining costs. SXEW is a chemical process whereby the ore is crushed and the copper leached from the ore at the mine site.

Figure 1 shows diagrammatically the two primary copper process routes, concentration and SXEW. In addition to these process routes, a smaller amount of copper is produced as a by-product at other base metals mines including zinc, gold, nickel and lead mines.

Figure 1: Copper mine process routes

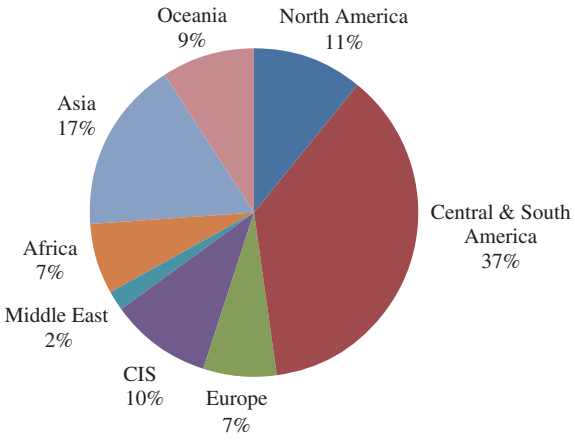


Industry Analysis

Source of copper supply

Chile is the world's largest supplier of copper contained in concentrate, producing around 3.2 Mt (or over a quarter of global concentrate supply) in 2011. Behind Chile were China, Peru and Australia producing approximately 1.3 Mt, 1.1 Mt and 0.9 Mt, respectively. These countries are likely to continue to dominate global production over the forecast period.

Figure 2: Estimated copper contained in concentrate production by region, 2011



Source: AME

Copper ore bodies are widely dispersed by geography and vary substantially by grade, by-product credits and impurities. The table below summarises copper contained in reserves by country for 2011. Central and South America, and in particular Chile, are home to the largest share of global copper reserves.

Table 1: Estimated world copper reserves (contained copper) by country, 2011

Country	*(Mt)*
Chile	190
Peru	90
Australia	86
Mexico	38
United States	35
Russia	30
China	30
Indonesia	28
Poland	26
Zambia	20
Congo (Kinshasa)	20
Kazakhstan	7
Canada	7
Other	80
Total	**687**

Source: AME; USGS

The US Geological Survey (USGS) estimates global land based copper resources exceed 3 billion tonnes (Bt), of which 1.3 Bt is located in the Andes Mountains of South America. In addition, the USGS estimates deep sea nodules to contain additional copper resources. However, there are no commercial operations currently extracting ore from seabed ore bodies.

There are a number of copper mines scheduled to commence production over the short to medium term. However, this may change as a result of construction delays and market conditions.

For a mine owner or investor, the mine construction process is fraught with numerous risks. The varying, and on occasion, unpredictable geology of different mines can mean that construction projects encounter construction delays or difficulties in metallurgical recovery. This can mean that production from planned projects run behind schedule and that the concentrate market faces possibility of supply disruptions. These risks are not specific to copper mines but to all mine development projects.

Mine development is more exposed to geological and political risks than other industries. Geological risks include risks such as that the valuable metallic component of ores cannot be liberated as economically from ores as expected, or that reserves are not able to be realised as planned. There have been instances of unexpected geological events causing delays and increased costs in mine development.

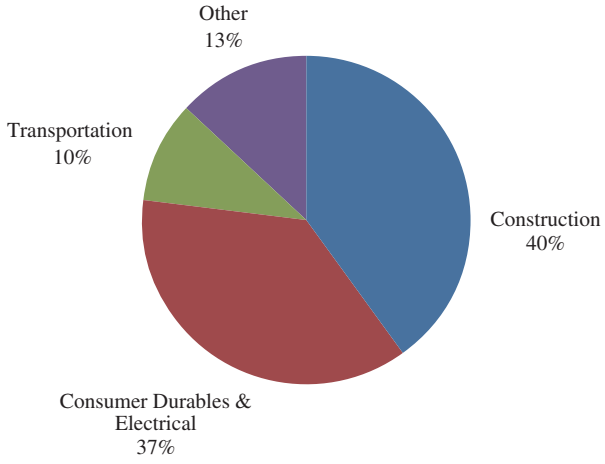
Political risk is a broad group of risks encompassing the risk of the ability and willingness of the state to enforce a miner's right to their tenement, the ability to reliably procure necessary supplies (including staff) to successfully operate in more difficult locations as well as the more indirect risk of higher taxes or royalties.

An increasing number of copper mine projects are located in countries which AME assesses as having higher levels of political risk, such as the Democratic Republic of Congo. Projects in these locations are exposed to additional risks. According to AME Report, it is forecasted that production on a mine by mine basis. In forecasting production and ramp up periods, AME made an assessment of the likely start date and ramp up period for each mine. However, some events such as strikes and natural disasters can materially affect mine development schedule but are not able to be forecasted.

Source of copper demand

According to AME Report, it is estimated that the construction sector accounts for approximately 40% of refined copper end user demand however this does vary over the economic cycle. Copper and brass are commonly used in plumbing, fittings and valves. Copper can be favoured over plastic as it does not burn or melt in the event of fire. The anti-microbial properties of copper also make it suitable for use in water pipes, as well as for roofing.

Figure 3: Estimated refined copper demand by end use



Source: AME

After construction, the consumer durable and electrical products are the second largest demand component for copper. According to AME Report, it is estimated that household and electrical product/machinery account for approximately 35-40% of end use copper demand. Copper is frequently used in electrical networks as it allows for electricity and data transmission in traditional telephone lines and electrical cabling. Copper is the best non-precious metal conductor of electricity and its malleability and ductile nature makes it highly suitable to these applications.

The transportation sector is the third largest end use demand sector for copper. Car and truck engine components contain various amounts of copper in wiring and parts such as connectors, brakes and radiators. The International Copper Study Group estimates that the average mid-sized car contains 22.5 kg (or 50 lb) of copper.

Forecasts and Assumptions

According to AME Report, its general pricing opinions are based upon our economic model which is driven by the following assumptions. Naturally, these assumptions do not reflect potential future events.

Economic Assumptions

The table overleaf shows the estimated and forecast global gross domestic product ("GDP") and industrial production ("IP") numbers utilised by AME in our analysis in the AME Report.

Table 2: Estimated global GDP % change p.a. by selected country

	2005	2006	2007	2008	2009	2010	2011	2012	2013
World	*4.5%*	*5.2%*	*5.4%*	*2.8%*	*-0.6%*	*5.3%*	*3.9%*	*3.5%*	*4.1%*
US	3.1%	2.7%	1.9%	-0.3%	-3.5%	3.0%	1.7%	2.1%	2.4%
Brazil	3.2%	4.0%	6.1%	5.2%	-0.3%	7.5%	2.7%	3.0%	4.1%
France	1.8%	2.7%	2.2%	-0.2%	-2.6%	1.4%	1.7%	0.5%	1.0%
Germany	0.8%	3.9%	3.4%	0.8%	-5.1%	3.6%	3.1%	0.6%	1.5%
Italy	16.1%	2.2%	1.7%	-1.2%	-5.5%	1.8%	0.4%	-1.9%	-0.3%
UK	8.0%	2.6%	3.5%	-1.1%	-4.4%	2.1%	0.7%	0.8%	2.0%
Eurozone	4.9%	6.6%	6.0%	2.6%	-3.2%	3.0%	3.6%	1.0%	2.4%
Russia	6.4%	8.2%	8.5%	5.2%	-7.8%	4.3%	4.3%	4.0%	3.9%
China	11.4%	12.7%	14.2%	9.6%	9.2%	10.4%	9.2%	8.2%	8.8%
India	9.0%	9.5%	10.0%	6.2%	6.6%	10.6%	7.2%	6.9%	7.3%
Japan	-4.3%	1.7%	2.2%	-1.0%	-5.5%	4.4%	-0.7%	2.0%	1.7%
Korea	4.0%	5.2%	5.1%	2.3%	0.3%	6.3%	3.6%	3.5%	4.0%

Source: IMF

Copper demand outlook

According to AME Report, it is expected that it is likely the supply side will continue to be relatively tight in the short term. The shortage of mined copper supply is the bottleneck in the supply chain and any additional supply of mined production may be absorbed by the smelting industry.

According to AME Report, it is estimated that in 2010 refined copper demand reached 19.4 million tonnes (Mt). The table below shows estimated copper demand from 2007, including AME's forecasts for 2012-2013.

Table 3: Estimated & forecast refined copper demand (Mt), 2007-2013

2007	2008	2009	2010	2011	2012	2013
18.2	18.1	18.2	19.4	20.0	20.6	21.5

Source: AME

According to AME Report, it is forecasted that copper demand to increase by approximately 3% in 2012 and around 4% in 2013. According to AME Report, though the market for refined copper may see robust growth rates in the consecutive years, it is forecasted that similar growth rates in the copper concentrate market as in the refined market. Consequently, according to AME Report, it is anticipated that a market in equilibrium over the medium-term.

Copper demand can be examined in both first use and end use terms. First use of copper is the demand for copper products from builders and manufacturers and is typically in the form of copper wire and copper pipes which are transformed into end use goods. The main end use sectors for copper are construction, transportation and consumer durable goods.

Copper supply outlook

In 2011, global copper contained in concentrate supply is estimated to have been around 12.5 Mt. Over the last decade, copper contained in concentrate production grew relatively strongly but slowed in 2008 with the economic downturn. The table below shows estimated copper contained in concentrate production over the period 2007 to 2013.

Table 4: Estimated & forecast world copper contained in concentrate production (Mt), 2007-2013

2007	2008	2009	2010	2011	2012	2013
12.3	12.2	12.5	12.6	12.5	13.6	15.7

Source: AME

Copper pricing

According to AME Report, it is forecasted that following a high in 2011 an average copper price of US380¢/lb in 2012 and US358¢/lb in 2013.

The near term copper narrative continues to be a supply side story. Though mined supply shortfalls due to strikes in key countries such as Chile and Peru are not unlikely going forward, according to AME Report, it is expected that these incidents will not substantially impact the supply chain. The recent record copper prices have attracted a significant number of miners into the copper market, resulting in operations ramping up and an increase in exploration projects. Therefore, according to AME Report, it is expected that the additional volume of copper concentrate coming online in the subsequent years may weigh on the copper price.

According to AME Report, it is forecasted that the market may move to rebalance in 2012 however, the market during the forecast period may remain susceptible to supply shocks and any disruptions may shift the market further into deficit.

Table 5: Estimated & forecast copper price 2007-2013

	2007	2008	2009	2010	2011	2012	2013
Copper Prices, US$/t	7,127	6,955	5,174	7,537	8,819	8,380	7,900
Copper Prices, US¢/lb	323	315	235	342	400	380	358

Notes:

1. Historical prices are provided in a nominal basis

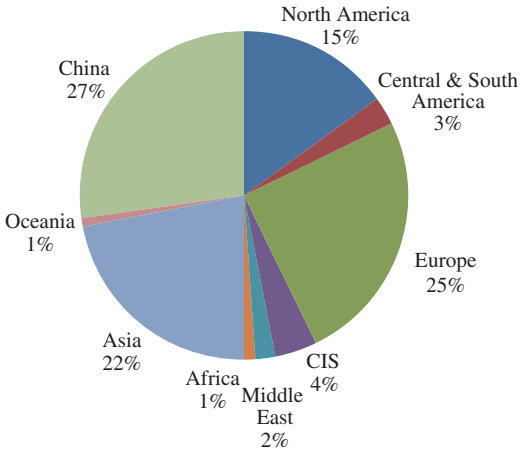
2. Forecast prices (2012, 2013) are prices on a real 2011 term basis

Source: AME, LME

China copper market overview

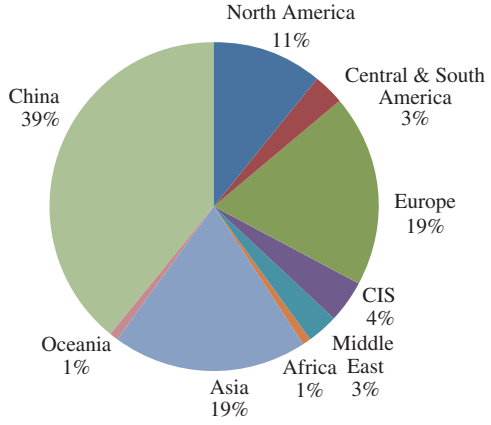
Demand for refined copper is dominated by Asia. In 2011, China accounted for almost 40% of global refined copper demand. According to AME Report, despite the financial downturn during 2009, it is estimated that Chinese copper demand grew by approximately 37% in that year.

Figure 4: Estimated refined copper demand by region, 2007



Source: AME

Figure 5: Estimated refined copper demand by region, 2013



Source: AME

According to AME Report, between 2007 and 2013, it is estimated that Chinese refined copper demand may increase from around 5 Mt to over 8 Mt, or a Compound Annual Growth Rate (CAGR) of approximately 9%, and over the same period, it is estimated that Indian refined demand increased by a CAGR of approximately 5%. According to AME Report, it is expected that Asia to remain the global centre of demand growth over the next two years. The continuing modernisation and urbanisation in China and the rest of developing Asia requires the construction of new offices, factories, shops and apartments, which is expected to account for a large amount of copper consumption over the forecast period and beyond.

Also, higher incomes will mean that consumers in the developing world should continue to consume more copper in end use products. This will take the form of new houses, household items and cars. Assuming current market volatilities stabilise, according to AME Report, it is estimated that the construction sectors continued to grow across developing countries in Asia including China, India, Indonesia, Malaysia and Vietnam. Despite this anticipated growth, the world economy has changed significantly in recent times and the risk of financial instability is apparent. Caution is raised as a result of current global economic instability stemming from financial uncertainty and high sovereign debt levels.

As current unemployment rates in these countries are typically lower, and income growth is expected to be faster than in the relatively more mature OECD economies; according to AME Report, it is expected that demand growth for consumer durable products like televisions and washing machines in developing Asia to be faster than in more mature markets.

China is the world's largest consuming nation for copper and iron and steel. China is a significant importer of refined copper as Chinese demand runs higher than consumption. As such, according to AME Report, it would expect that Chinese copper smelters and steel plants would service the domestic construction industry and manufacturers.

Table 6: Estimated Chinese import volumes of copper concentrate (Mt)

2007	2008	2009	2010	2011
4.5	5.2	6.1	6.5	6.4

Source: Chinese Customs, The Ministry of Commerce of PRC

Although according to AME Report, it sees an increase in mining activities in China, it is expected that both industries – concentrate and refined – will grow in tandem over the forecast period. Therefore, according to AME Report, it is considered that imports into China may help close the supply chain gap.

IRON ORE

Material Analysis

Overview

Iron ore is the basic material that is predominantly used to make steel. It is the fourth most abundant resource in the Earth's crust and when pure it is a dark, silvery-grey metal. It is a highly reactive element and oxidises (rusts) easily. Impurities such as sulfur, phosphorous, titanium, silica and alumina may influence or preclude commercial value. There are two principle ores in iron that are used for steel production: hematite and magnetite.

Hematite is a high grade ore generally found in large deposits of hematite rock, most commonly a banded iron formation (BIF). Generally the cut off grades for hematite are greater than 60% iron content. Hematite ore is usually found in large scale deposits in Brazil, Australia, China and India.

Magnetite type ore typically has relatively lower iron content than hematite. It is generally found in banded iron formations and predominantly composed of magnetite and silica. Magnetite ore can be found in various countries including Australia, South Africa, India and Chile. Due to its lower iron ore content, magnetite ores require beneficiating for it to be suitable for sale. The magnetic properties of magnetite enable it to be readily refined into an iron ore concentrate, suitable as feedstock for the production of steel. The final concentrate is of a sufficient iron making grade – typically 66% iron or greater.

Description and uses

Iron ore is traded in three principal intermediate forms: fines, lump and pellets for use in a steel blast furnace.

Fines comprise a wide range of products, which fall into three size categories:

- "Natural" fines, which consist of particles commonly less than 6.8 mm in diameter, and with less than 10-15% below 150 mm (microns);
- Concentrates, which have undergone a beneficiation process to produce a grain size less than 1 mm in diameter;
- The finest grained material, typically below 75 mm with a high proportion below 4.5 mm, used for pellet feed.

Lump is essentially unbeneficiated naturally occurring pellets or clumps of iron ore.

- There are relatively few deposits worldwide that produce lump ore, making it a more expensive product than fines. The grade, or iron content, is also important. Sources of lump ore suitable for direct reduction plants (high iron, low acid gangue content and very low friability) are even more limited.

Pellets are the product of an agglomeration process that involves very fine, pure ore (pellet feed) being mixed with a binder (e.g. a slurry of bentonite), rolled into green ball like pellets and then fired on a grate or in a kiln at about 1,200°C to produce the final indurated product.

- Pelletisation is usually undertaken by the concentrate producer themselves, however it is not uncommon for concentrates to be added to sinter feed blends – particularly in China. With a high iron grade and low-impurity levels they are a valuable "in-use" product.

Lumps and pellets are most commonly used as charge straight to a blast furnace or in a direct reduction plant. Fines make up the bulk of the world's run of mine production and are used mainly as either sinter or pellet feed, the resulting agglomerated product being charged to the blast furnace.

Industry Analysis

Source of iron ore demand

The dominant driver of iron ore demand is steel production. Global crude steel production is estimated to have increased by around 16% in 2010 as the world economy emerged from recession and GDP reverted to trend. Global crude steel production fell around 8% in 2009 to 1.2 Bt but recovered to approximately 1.4 Bt in 2010.

China is the largest producer of steel globally. Chinese steel production growth has outpaced the global average each year from 2007 to 2009. China's ongoing industrialisation and new construction and infrastructure projects, coupled with a recovery in export markets, is considered to sustain Chinese production over the forecast period.

However, according to AME Report, it is expected that Chinese steel production growth to ease back towards global averages in 2011. The slowdown in growth reflects a number of factors including directives by China's Ministry of Industry and Information Technology to eliminate older and more inefficient iron-making capacity and steel-making capacity as well as continuing maturation of the market.

Source of iron ore supply

Global iron ore production in 2011 is estimated to have been around 2.0 Bt. Between 2008 and 2011, global iron ore production is estimated to have grown by a CAGR of approximately 5% from approximately 1.7 Bt to 2.0 Bt. The table below shows estimated iron ore production over the last three years as well as AME's forecasts for production for 2012 and 2013.

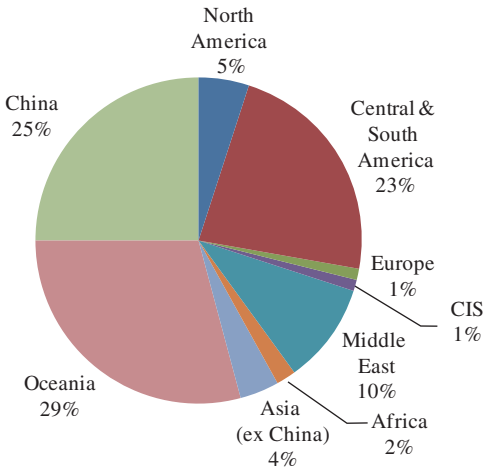
Table 7: Estimated & forecast world iron ore production (wet saleable Bt), 2007-2013

2007	2008	2009	2010	2011	2012	2013
1.7	1.7	1.6	1.8	2.0	2.1	2.2

Source: AME

A few of the significant iron ore producers in terms of volume include China, Brazil, Australia, India, Russia and South Africa. China, the largest iron ore consumer, has deposits of predominantly low iron grade. The rest of the significant producers have higher than average estimated iron grade but, due to lower domestic demand needs, are globally significant exporters.

Figure 6: Estimated major world producers by key regions and countries, 2011



Source: AME

The iron ore industry, unlike other commodities, is dominated by three key players, being Vale in Brazil and Rio Tinto and BHP Billiton in Australia. There are other emerging iron ore producers and integrated steel companies which produce iron ore.

China's iron ore production in 2011 is estimated at 1.8 Bt (based on crude ore). Average ROM ore grades at Chinese operations are comparatively lower than other producers, with some operations having estimated ROM ore grade lower than 20%. As China's domestic ROM ore grades have declined, the country's reliance on iron ore imports has grown and further grade declines in the future may lead to an even greater dependence on seaborne supply capacity.

In 2011, China's seaborne iron ore imports are estimated at approximately 0.7 Bt, an increase of around 11% from 2010. This increase is supported by China's steel demand and appetite for high grade iron ore feed.

Australia is estimated to have provided for around 43% of the iron ore imports into China in 2011 while Brazil is estimated to have accounted for 21%. India and South Africa are believed to be the third and fourth biggest exporters of iron ore to China respectively. However, India's clampdown on illegal mining and higher export duties in 2011 has provided increased scope for non-traditional exporters, such as Canada and Russia, to export to China.

Producers in Jiangxi province are not only in competition with other domestic producers but also contend with foreign exporters of iron ore supply. Chinese iron ore mines are estimated to have relatively higher operating costs given the lower ROM ore grades which necessitate additional beneficiation before producing a final concentrate. According to AME Report, it is expected that new iron ore supply from lower cost producers in Australia's Pilbara and Mid-West regions could displace some of the highest cost Chinese operations in the medium to long term.

Iron ore production costs

Generally, the cost of production across the iron ore industry is defined by several primary factors:

- Mining and logistics costs are typically the largest cost components in iron ore production. Low material movement drastically reduces the costs at bulk commodity mining operations. Low cost operations are often defined by their low strip ratios and high ore-to-product yields. High-cost operations (such as those in China) often operate with high strip ratios and low ore-to-product yields; and

- Processing costs are typically the third largest cost component in iron ore mining (excluding royalty payments). This cost relates to the associated processing required at an operation to produce a saleable product from mined ore.

The landmark move from annual to quarterly pricing after numerous decades has made iron prices more dynamic and responsive to market trends. Relatively high spot prices in 2011 and increases in contract prices since 2009 have enabled some high-cost Chinese producers to achieve margins still viable to continue producing, despite their high costs.

Freight costs, whilst not considered on a FOB (Free On Board) basis will undoubtedly remain one of the determinants of project viability over the next decade. This will be particularly pertinent for iron ore planned for export to China. Some freight costs have increased from their lows of 2009 but actual cost trends will vary by mode of transport.

- Rail is expected to remain as one of the most cost effective modes of transport and according to AME Report, it is expected that its discount relative to other modes to increase. This may be because of the lower labour component of rail transport.

- Sea freight costs are more volatile. From its peak level in May 2008 to November 2008, the Baltic Dry Index (the benchmark index for bulk commodity freight rates) has fallen by around 90% to its lowest level since 1986.

- A steep run up in shipping costs over 2006-2008 and the tremendous crash in 2009 will have ramifications on shipping costs over the coming years. The growth in commodity demand prior to the tightening of credit in 2008 has caused ship builder order books to swell. These orders that were scheduled for delivery over the period 2010-2013 have caused an oversupply of vessels at the face of weak shipping demand and high fuel costs.

Forecasts and Assumptions

Iron ore demand outlook

Table 8: Estimated & forecast world crude steel production (Bt), 2007-2013

2007	2008	2009	2010	2011	2012	2013
1.3	1.3	1.2	1.4	1.5	1.6	1.6

Source: AME

Table 9: Estimated & forecast Chinese crude steel production (Bt), 2007-2011

2007	2008	2009	2010	2011
0.5	0.5	0.6	0.6	0.7

Source: AME

Table 10: Estimated & forecast world iron ore consumption (Bt), 2007-2013

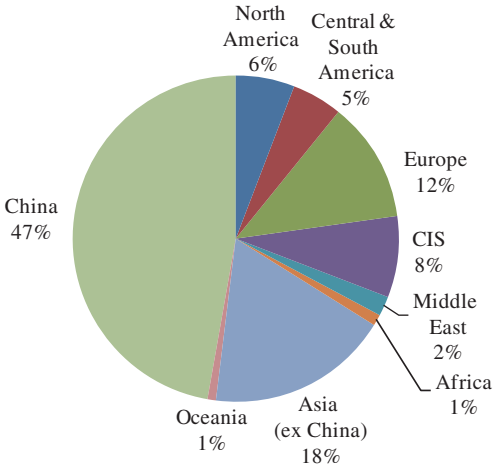
2007	2008	2009	2010	2011	2012	2013
1.6	1.6	1.5	1.7	1.8	1.9	2.0

Source: AME

Crude steel production growth is expected to steadily increase over the forecast period. Steel production will drive iron ore demand as developing nations such as China and India continue their industrialisation process. Notwithstanding, Europe and the United States are expected to recover over the longer term from recent economic instabilities.

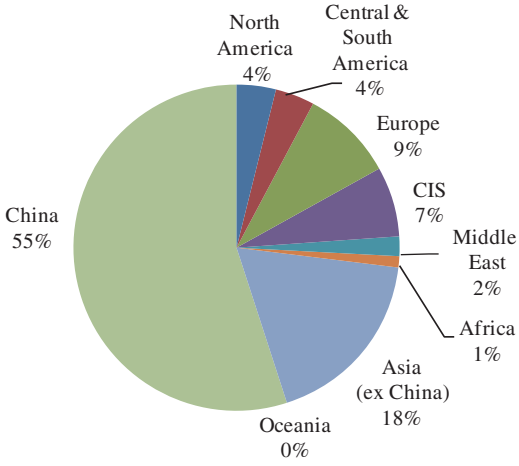
Apart from China, the other main demand growth areas include: India, the CIS and the Middle East. Meanwhile, Asian demand (excluding China and India) will be underpinned by steel industry growth in South Korea, Taiwan, Malaysia and the Philippines. Limited scrap supply means that much of this growth will be pig iron based.

Figure 7: Estimated iron ore demand by region, 2007



Source: AME

Figure 8: Estimated and forecast iron ore demand by region, 2013



Source: AME

Iron ore supply outlook

Iron ore bodies are widely dispersed by geography and vary substantially by grade, ore-type and impurities. The table below summarises estimated iron ore reserves and implied iron ore (Fe) grade by country.

Table 11: Estimated world iron ore reserves and indicative grade by country, 2011

	Reserve (Bt)		Indicated
Country	**Crude Ore**	**Iron Content**	**Iron (Fe) Grade**
Australia	35	17	49%
Brazil	29	16	55%
China	23	7	31%
India	7	5	64%
Russia	25	14	56%
South Africa	1	1	65%
Other	46	21	45%
World Total (rounded)	**170**	**80**	**47%**

Note: Country level reserves information is derived from a variety of sources. Country reserves estimates compiled by government agencies, company reports, presentations by company representatives, and trade journal articles, or a combination of these, serve as the basis for the reserves information reported. Further, definitions of reserves differ between countries. Some countries have specific definitions for reserves data, and reserves for each country are assessed separately, based on reported data and definitions.

Source: USGS; AME

There are numerous iron ore projects and expansions planned to commission in the short to medium term. New capacities and the operational ramp up of recently commissioned projects may see the tightness in the iron ore market begin to ease. However, not all of these projects will be commissioned or commence operation in the proposed timeframe. There may be constraints on the progress of mine developments such as the challenge of securing financing for typically capital-intensive iron ore projects, elongated and difficult approvals process, and limitations on the availability or access to transport infrastructure. According to AME Report, it is believed that lower cost operations will typically proceed over those that are more expensive and lacking in transport infrastructure. Furthermore, operating companies with a track record in execution are more likely to get a project producing over a smaller explorer with less project experience.

According to AME Report, it is anticipated that new capacities to come online over the medium to long term of which the more significant projects include: CITIC Pacific's Sino Iron Ore Project, Vale's Carajas project and BHP Billiton's Orebody 24 mine, and Rio Tinto's Hope Downs 4.

Iron ore pricing

Unlike base metals, which have inventories stocked at global exchanges such as the London Metal Exchange and tracked stockpiles, there are no official inventories reported for the iron ore market.

Inventories exists in private company stockpiles, at ports or in transit, and in the supply chain for steel making. The properties of iron ore make it difficult to store, needing protection from moisture or dust contamination.

According to AME Report, it is believed that the pricing power of the major producers was demonstrated during the JFY2009 negotiations. A 28-45% price drop across the major iron ore benchmarks products did not represent a dramatic reduction considering the financial events over the previous 18 months and the resultant impact these have had on the world economy, particularly if the price rises of recent years are considered alongside. This pricing power is not expected to diminish in the short run.

According to AME Report, moving into JFY2011, it is expected that iron ore producers to retain negotiating power as concerns persist about insufficient supply growth. Iron ore producers, led by Vale, Rio Tinto and BHP Billiton have implemented a quarterly pricing benchmark system to shorten the reference period in negotiations to bring contract pricing closer to that of the spot market.

AME estimates iron ore demand levels to remain robust over the short to medium term as China continues to urbanise and grow. In turn, iron ore price levels will continue to be supported in the near term due to a lack of new major supply coming on-stream.

Table 12: Estimated & forecast iron ore prices 2007-2013

	2007	2008	2009	2010	2011	2012	2013
Pilbara Blend/Newman Fines into Asian Basin (JFY, US¢/dmtu)	80	145	97	210	265	237	230

Notes:

1. Historical prices are provided on nominal basis.

2. Forecast prices are provided on real 2011 terms.

Source: AME, UNCTAD, IMF

Market mechanism

Under the traditional "benchmark pricing system", iron ore was priced through annual negotiations between the world's largest steelmakers and their suppliers. Prices based on the Japanese Financial Year (JFY) (April 1 of current calendar year to March 31 of following calendar year) were generally negotiated and settled in April.

In JFY2009, through China Iron and Steel Association (CISA), the major steel makers in China took a more collaborative role in price negotiations. In the same year, the old benchmark system broke down as negotiations dragged on beyond the customary April settlement date amid a volatile spot pricing environment. Currently, the benchmark pricing system is largely quarterly based among the major producers. However, some such as BHP Billiton and Atlas Iron are now beginning to implement monthly reference pricing periods.

China market overview

In terms of crude ore production, China is the largest producing country of iron ore and is expected to maintain a substantial proportion of global iron ore production over the forecast period. However, China has a lower iron grade relative to iron rich countries such as Brazil, Australia and India. Therefore, it will continually need to mine increasing amounts of waste to obtain an equivalent level of iron as high grade imported ore.

Many mines in China are currently mining ROM ore grades of approximately 10% to 30% (or lower in some instances) iron before beneficiation. According to AME Report, it does not expect domestic iron-ore production to gain market share over imported iron ore in the medium term. As China's domestic ROM ore grades continue to decline, China's reliance on iron ore imports is expected to grow and the market may see an even greater dependence on imported supply. According to AME Report, it is expected that by around 2014, many of these high cost producers may be displaced by new and cheaper supply capacity from producers abroad.

Presently, China possesses the largest blast furnace pellet making capacity, estimated at over 100 Mt in 2010. The expansion of China's pellet making industry and shift away from sinter to pellets has been prompted by poorer quality domestic ores and the global decrease of DSO sinter feed grades. In recent years, lower global lump supply, continued growth in steel production and a reluctance to pay pellet premiums to Brazilian producers has witnessed the use of pellets as an agglomerated blast furnace feed increase in popularity. This has supported China's demand for iron ore concentrates and pellet feeds.

ZINC

Material Analysis

Overview

Zinc is a greyish-white element and in 2010 was the third most widely used base metal after aluminium and copper. Zinc is primarily used as a corrosion protection for steel with galvanising accounting for the majority of first usage. In addition, zinc compounds are used in chemical production including for paints and in the manufacture of other products such as rubber. Zinc is also an essential element for human health.

Description and uses

Over the course of the economic cycle, the construction sector is the largest end use sector for zinc. AME estimates that the construction sector accounts for the majority of zinc end use, followed by the transportation sector and manufacture of consumer durable and electric goods.

Zinc is a recyclable material but less zinc is recycled compared to other metals. Recovery of zinc from old scrap, mainly in the form of diecastings, brass and bronze (not including the simple remelting of zinc, brass, etc. for reuse without further treatment) represents about 7% of total supply. Some zinc is recovered as dust from scrap steel furnaces processing galvanised scrap steel.

Most of the world's zinc is extracted from sulphide ores which are mined from both underground and open pit mines. Zinc ore bodies are widely spread around the world; however global production is dominated by a smaller number of countries. Zinc sulphide ores are typically extracted at grades between 1% and 20%, depending on the other by-products in the ore. The viability of a zinc mine is often determined by the presence of by-product metals in the ores. Lead is the most common by-product found in zinc ores.

Zinc ores are first beneficiated onsite by crushing and grinding and converting into concentrate. Zinc concentrate usually has a grade of around 45-55%. Concentrate is sold to smelters around the world which smelt and refine the zinc concentrate. SXEW production of zinc is still at an earlier stage relative to copper. The Skorpion mine in Namibia was the first commercial zinc SXEW plant. According to AME Report, it is noted that there are additional zinc SXEW operations at planning and feasibility stages but SXEW will remain a relatively minor process route of the forecast period.

Industry Analysis

Source of zinc supply

Zinc ores bodies are widely dispersed by geography and vary substantially by grade, by-product credits and impurities. The US Geological Survey (USGS) estimated in 2011 that world resources (identified resources) contain around 1.9 Bt of zinc, almost totally in sulphide mineralisation. The parts of the reserve base that are assessed to be economic to extract (the current reserves) are estimated to total around 250 Mt. The table below summarises zinc contained in reserves by country for 2011.

Table 13: Estimated world zinc reserves (contained zinc, Mt) by country, 2011

Country	*(Mt)*
Australia	56
China	43
Peru	19
Mexico	17
United States	12
India	12
Kazakhstan	12
Bolivia	5
Canada	4
Ireland	2
Other	68
Total	**250**

Source: USGS

Global zinc reserves have recently been revised, resulting in Australia holding the world's largest share of zinc reserves. Australia is home to the largest share of global zinc reserves, comprising approximately 22% followed by China with approximately 17%.

There is a number of zinc/lead mines scheduled to commence production over the period 2012-2013. According to AME Report, it has identified a number of zinc mines which it expects to enter commercial production over the forecast period. The expected start dates for mines may change as a result of construction delays and market conditions.

Source of zinc demand

Zinc demand can be looked at in both first use and end use terms. First use of zinc is the demand for zinc products from builders and manufacturers. The most prevalent first use of zinc is for galvanising which accounts for the majority of zinc first use.

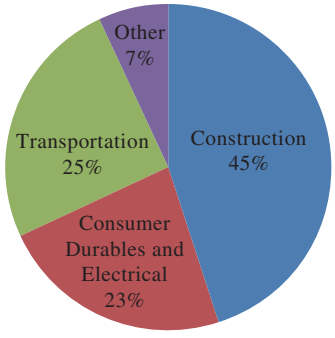
The main end use sectors for zinc are construction, transportation and consumer durable goods. These sectors commonly make use of galvanised steel as well as zinc in other alloys.

- According to AME Report, it is estimated that the construction sector accounts for between 40-50% of refined zinc end user demand. Galvanised steel is commonly used in construction as it is resistant to corrosion. According to AME Report, it is expected that, as the quality of construction in the developing world improves, a higher proportion of galvanised steel will be used. Galvanised steel is more expensive than ungalvanised steel but lasts longer and is more resistant to corrosion.

- The transportation sector is the second largest end use demand sector for zinc, accounting for an approximate 25% of end use zinc demand. Car and truck bodies are usually galvanised and other components can contain various amounts of zinc in alloys or die-cast engine parts.

- After the construction and transportation sectors, the consumer durable and household products sector is the next largest demand sector for zinc. According to AME Report, it is estimated that consumer durables and household products account for between 20-25% of end use zinc demand. Galvanised components as well as die-cast zinc alloys are used in consumer durable and household goods.

Figure 9: Estimated zinc demand by end use



Source: AME

Forecasts and Assumptions

Zinc demand outlook

According to AME Report, it is estimated that in 2011 refined zinc demand reached approximately 12.6 Mt. The table below shows estimated zinc demand from 2007, including AME's forecasts for 2012-2013.

Table 14: Estimated & forecast world refined zinc demand (Mt)

2007	2008	2009	2010	2011	2012	2013
11.2	11.5	10.9	12.5	12.6	13.5	14.1

Source: AME

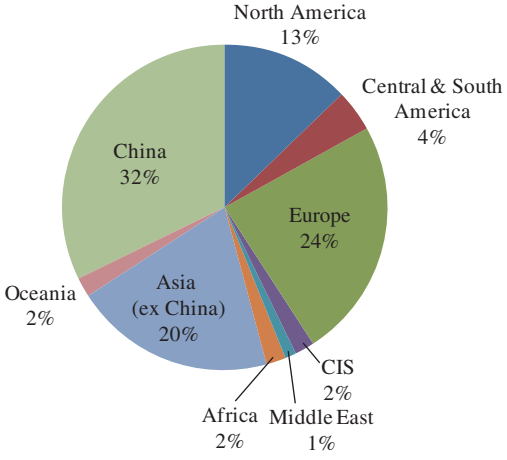
According to AME Report, it is forecasted that refined zinc demand to increase at robust rates over the forecast period as the developing world remains the main driver of zinc demand due to continuing urbanisation and industrialisation.

Global zinc demand profile

In recent years, Asia (including China) accounted for the majority of new zinc demand. Assuming current market volatilities stabilise, according to AME Report, it is expected that Asia to remain the global centre of demand growth over the short to medium term. The continuing modernisation and urbanisation in China and the rest of developing Asia requires the construction of new offices, factories, shops and apartments, which is expected to account for a large share of galvanised steel, and in turn zinc consumption over the forecast period and beyond.

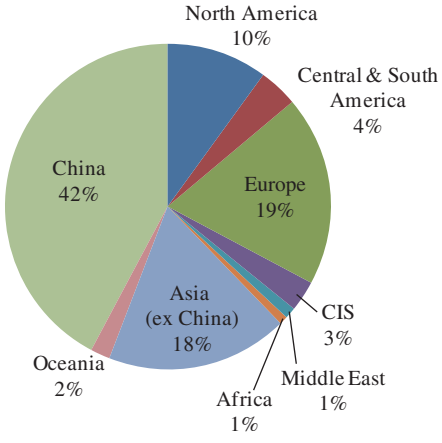
Higher incomes will mean that consumers in the developing world should continue to consume more zinc per capita in end use products. This will take the form of galvanised steel in new houses and cars as well as zinc components in household items. Improving incomes may theoretically lift the quality of construction and this is supportive of zinc demand. Galvanised steel is more expensive but is higher quality and longer lasting. According to AME Report, it is expected that improvements in the quality of buildings and a shift towards more galvanised products, especially in the developing world, would lead to higher zinc demand.

Figure 10: Estimated refined zinc demand by region, 2007



Source: AME

Figure 11: Estimated refined zinc demand by region, 2013



Source: AME

As market stabilise from recent global economy uncertainty, particularly in Europe and the United States, according to AME Report, it is estimated that the construction sectors is likely to grow across developing countries in Asia including China, India, Indonesia, Malaysia and Vietnam.

As current unemployment rates in these countries are typically lower, and income growth is expected to be faster than in the relatively more mature OECD economies; according to AME Report, it is expected that demand growth for consumer durable products like televisions and washing machines in developing Asia to be faster than in more mature markets.

Mined zinc supply outlook

According to AME Report, it is estimated that in 2011 global zinc mined supply was around 12.8 Mt. Over the last decade mined zinc production experienced relatively strong growth however fell by approximately 4% in 2009 with the global economic downturn. The table below shows estimated zinc contained in concentrate production over the last five years as well as AME's forecasts for production for 2012 and 2013.

Table 15: Estimated & forecast world zinc contained in concentrate production (Mt), 2007-2013

2007	2008	2009	2010	2011	2012	2013
11.2	11.7	11.2	12.1	12.8	13.4	13.6

Source: AME

According to AME Report, it is forecasted that zinc contained in concentrate production to increase by approximately 5% throughout 2012 and another estimated 1% to 2% in the following year. The increase in production will be as a result of mines returning to production from care and maintenance, new mines entering production as well as brownfield expansions and production increases.

Refined zinc supply outlook

According to AME Report, it is estimated that world refined zinc supply increased over 10% in 2010 as the global demand recovered, supported by a strengthening global economy after the financial downturn in 2008-2009. The increase in production was not uniform – Asian producers increased refined production relatively faster than elsewhere reflecting growing demand for metals in the Asian basin.

Table 16: Estimated & forecast global refined zinc supply (Mt), 2007-2013

2007	2008	2009	2010	2011	2012	2013
11.3	11.7	11.4	12.8	13.1	13.5	14.0

Source: AME

Secondary smelter feedstock or recycled zinc represents only a small proportion of total refined zinc supply. According to AME Report, it is estimated that in 2010 refined zinc produced from secondary materials equated to around 7% of refined production.

China market overview

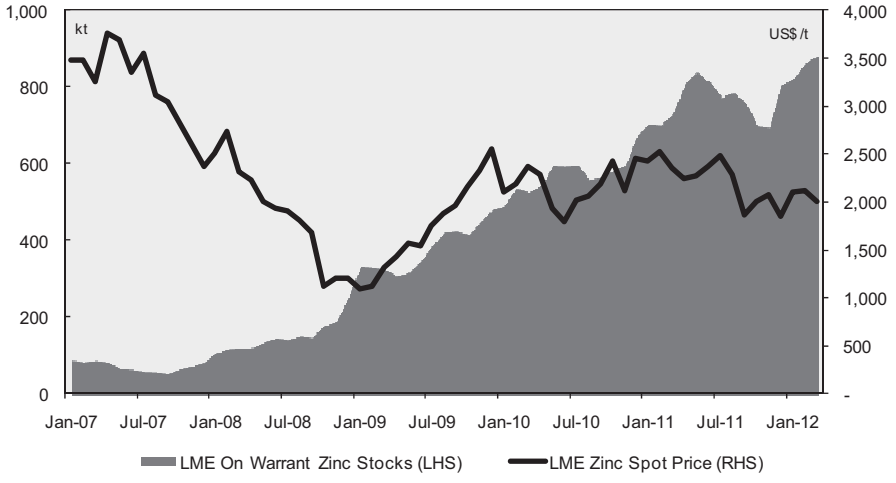
Demand for refined zinc is dominated by China. In 2011, China accounted for over 40% of global refined zinc demand. Despite the global downturn during 2009, it is estimated that Chinese zinc demand grew by approximately 12% in 2009 and increased further by approximately 15% in 2010 as the commodity market rebounded in 2010. Post 2010, growth in demand has been subdued.

China is considered to be the world's largest supplier of zinc contained in concentrate, producing approximately 4.2 Mt, over 30% of global supply in 2010. After China, other relatively large producing countries include Australia and Peru having produced around 1.4 Mt and 1.3 Mt respectively and the United States at around 0.8 Mt. According to AME Report, it is forecasted that China and Peru to continue to be major zinc producing nations over the forecast period. China holds a crucial position in the refined zinc industry. The need for concentrate and refined zinc arises from China's growing economy and manufacturing industries. According to AME Report, it is expected that urbanisation trends to continue in China. Furthermore, according to AME Report, it is expected that with increasing incomes to see consumer durables sales increase, supporting an overall increase in concentrate and refined zinc production in China.

Zinc pricing

The price of zinc is readily observable as it trades on the London Metals Exchange (LME) and the Shanghai Futures Exchange (SHFE). Figure 12 below shows the relationship between the LME spot zinc price and LME zinc stocks since 2007.

Figure 12: Estimated LME zinc prices and stocks



Over the period from 2007 to 2010 the zinc market was in surplus with estimated refined production exceeding demand in each year.

This surplus has seen LME zinc stocks increase substantially since 2009. In response to higher zinc prices, the majority of refiners ramped up their production to full capacity in 2010, leading growing zinc inventories.

The London Metal Exchange is recognised as the principal market for zinc, and its price quotations form the basis for trade in concentrates and metals. According to AME Report, it is forecasted that average zinc prices of around US98¢/lb in 2012 and approximately US118¢/lb in 2013.

Table 17: Estimated & forecast zinc prices, 2007-2013

	2007	2008	2009	2010	2011	2012	2013
Zinc Prices, US$/t	3,250	1,870	1,662	2,159	2,186	2,150	2,600
Zinc Prices, US¢/lb	147	85	75	98	99	98	118

Notes:

1. Historical prices are provided on nominal basis.

2. Forecast prices are provided on real 2011 terms.

Source: AME, LME

LEAD

Material Analysis

Overview

Lead is a soft, dullish grey coloured metal. It was one of the first metals to be exploited as it is highly ductile and malleable and easy to smelt. Lead is a toxic metal which can cause damage to the brain and nervous system and cause other detrimental health effects. It is for this reason that it has been substituted from some of its previous applications such as an additive to paints and in plumbing.

Description & uses

Currently lead still has some important applications such as in automotive batteries. It is estimated that the transportation sector accounts for approximately 80% of total lead used.

Most mined lead is produced as a by-product of zinc mines. Often, zinc containing sulphide ore also contains commercially extractable levels of lead. These ores are first beneficiated onsite by crushing, grinding and converting into a lead concentrate which usually contains between 55-65% of lead. This concentrate is then sent to a lead smelter. Smaller amounts of lead are also found in the concentrates of other metals, such as zinc concentrate.

Lead is one of the most recycled metals. In 2010, an estimated 5 Mt of refined lead production was produced from secondary lead sources, or approximately 56% of refined supply.

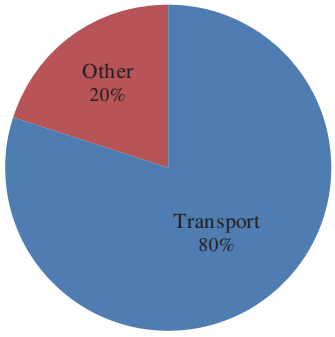
Industry Analysis

Source of lead demand

The main end use sector for lead is the transportation sector, and in particular, automotive batteries. Rising incomes in the developing world have encouraged record numbers of consumers to purchase cars for the first time in recent years. Whilst according to AME Report, it is expected that growth in new car registrations to slow, it still expects further growth which will support underlying demand for batteries. In addition, an improvement in the developed world economy should lead to an increase in new car sales would also add to lead demand.

Whilst car sales have fallen with the recession in the US and Japan, they continued to grow across Asia. Indeed, record new car sales saw China overtake the US as the world's largest automobile market in the first months of 2011. This rapid growth in car sales is not limited to China. Vehicle sales in developing nations such as India and Vietnam have also experienced significant increases.

Figure 13: Estimated lead demand by end use

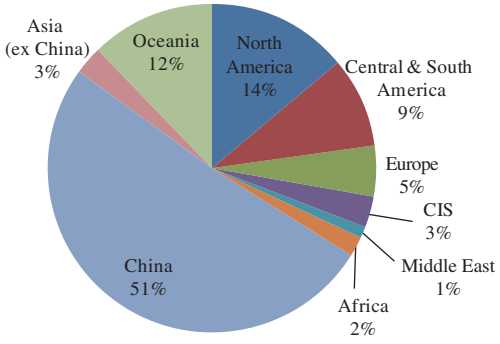


Source: AME

Source of lead supply

According to AME Report, it is estimated that China is the world's largest supplier of lead contained in concentrate, producing over 2 Mt or approximately 50% of global mined supply in 2011, and it is forecasted that China to continue to be a dominant global producing nation over the short to medium term.

Figure 14: Estimated lead contained in concentrate production by region, 2011



Source: AME

Forecasts and Assumptions

Lead demand outlook

According to AME Report, it is estimated that in 2011 refined lead demand reached around 10.1 Mt. The table below shows estimated lead demand from 2007, including AME's forecasts for 2011, 2012 and 2013.

Table 18: Estimated & forecast world refined lead demand (Mt), 2007-2013

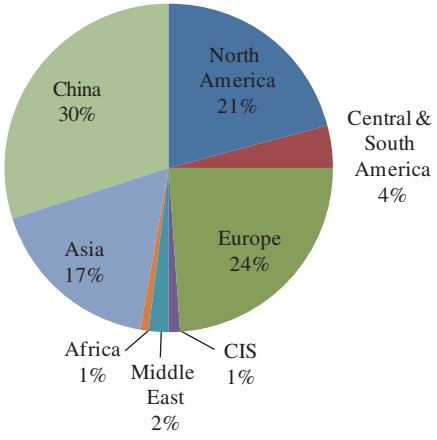
2007	2008	2009	2010	2011	2012	2013
8.3	9.0	9.0	9.6	10.1	10.5	11.0

Source: AME

According to AME Report, assuming market uncertainties are stabilised, it is expected that lead demand to increase by approximately 6% in 2012 and around 4% in 2013 as global growth remains strong, and it is forecasted that global GDP growth to be between 3% to 4% during the forecast period.

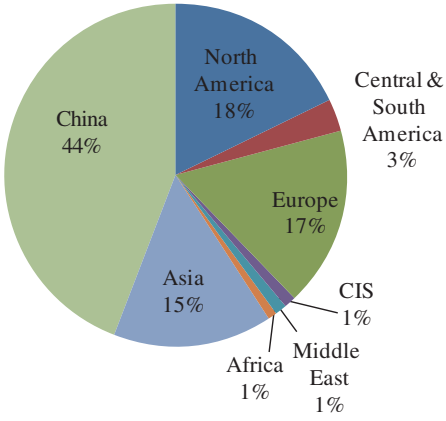
Like other metals, demand for lead is dominated by Asia. In 2011, China alone accounts for over 40% of global refined lead demand. Despite the global recession in 2009, Chinese lead demand grew by approximately 16% in 2009 as car and motorbike sales increased.

Figure 15: Estimated refined lead demand by region, 2007



Source: AME

Figure 16: Estimated refined lead demand by region, 2013



Source: AME

Mined lead supply outlook

According to AME Report, it is estimated that in 2011 global lead contained in concentrate supply was around 4.6 Mt, a decrease from 2009 levels. According to AME Report, it is forecasted that lead contained in concentrate production to grow at relatively firm rates over the forecast period, and it is expected that the increase in production to be primarily the result of a number of lead and zinc mines returning to production from care and maintenance, new mines entering production as well as brownfield expansions and production increases. The increase in lead production will be the by-product of this increase in zinc production.

There is a correlation between the location of global lead reserves and zinc reserves. This is because of the geological nature of many ore bodies containing both metals. Lead/zinc ores bodies are widely dispersed by geography and vary substantially by grade, by-product credits and impurities. The table below summarises lead contained in reserves by country for 2011. Australia, followed by China, is home to the largest share of global lead reserves, comprising an estimated 34% and 16% of total global lead reserves, respectively. The USGS estimates that currently identified world resources of lead to be approximately 1.5 Bt.

Table 19: Estimated world lead reserves (contained lead) by country, 2011

Country	*(Mt)*
Australia	29
China	14
Russia	9
Peru	8
United States	6
Mexico	6
India	3
Poland	2
Bolivia	2
Sweden	1
Ireland	1
Other	6
Total	**85**

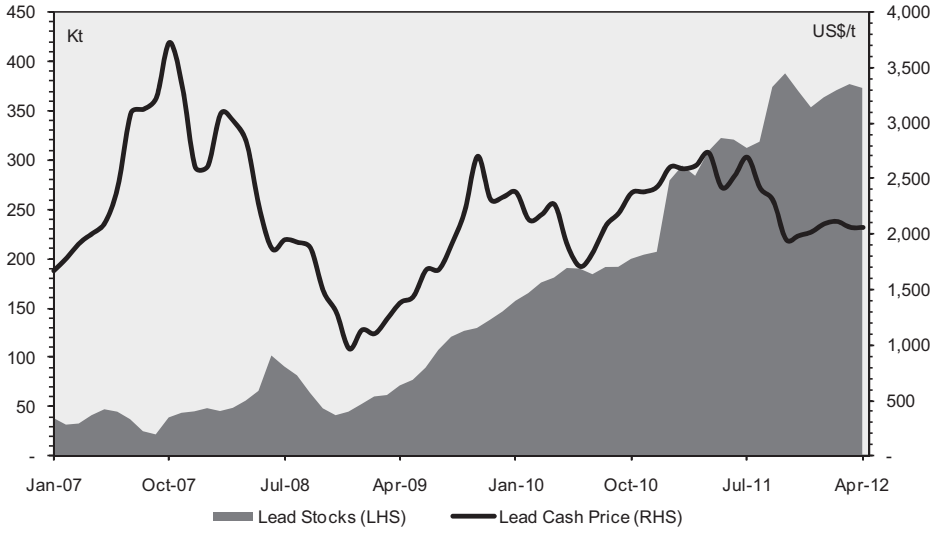
Source: AME, USGS

Lead pricing

The price of lead is readily observable as it trades on the London Metals Exchange (LME). Figure 17 below shows the relationship between the LME spot lead price and LME lead stocks since 2007.

After a deficit in 2007 and 2008, the lead market returned to surplus in 2009 as demand decreased with the global downturn.

Figure 17: Estimated LME lead prices and stocks



LME lead stocks increased substantially in late 2008 and 2009 as supply decreased ahead of demand. In recent months, LME stock levels have receded from peak levels at the start of 2010 but are still high by historical standards.

According to AME Report, it is forecasted that the LME lead price to average between US101¢/lb and US110¢/lb in 2012 and 2013, and it is expected that the lead price to be supported by continued Asian demand for lead as well as the car industry in the developed world.

Table 20: Estimated & forecast lead price, 2007-2013

	2007	2008	2009	2010	2011	2012	2013
Lead Prices, US$/t	2,596	2,084	1,765	2,147	2,394	2,225	2,425
Lead Prices, US¢/lb	118	95	80	97	109	101	110

Notes:

1. Historical prices are provided in a nominal basis.

2. Forecast prices (2011, 2012, 2013) are prices on a real 2011 term basis.

Source: AME, LME

GOLD & SILVER

Material Analysis

Introduction to gold & silver

Precious metals such as gold and silver differ from other metals in that, in addition to its application in jewellery and industry, they are an investment asset and store of value in its own right. Consequently, although gold and silver are mined, and are common by-products of other base metals mines, the main drivers of the precious metals market are dissimilar to the drivers of other base metal markets.

AME's measurements of gold supply and demand differ to other base metals. In any period, total gold supply is equal to total demand whereby production in excess of end user demand becomes part of invested gold stock. Conversely, excess end user demand is satisfied through a rundown of investment stocks. The net result is that the gold market does not have a formal inventory level like other base metals.

Total gold supply consists of mined supply (the largest single source of supply), as well as gold divestments, central banks' gold sales and recycling of scrap gold. Gold demand is the demand from end use sectors such as jewellery, as well as investment holdings and gold's industrial uses.

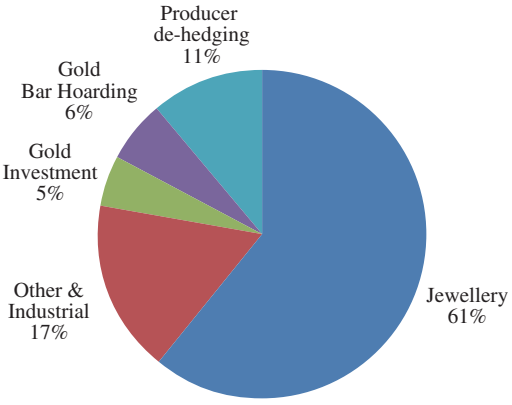
Similar to gold, silver is held as investments by banks, however, in a much smaller scale than gold. Since the end of the silver standard, silver's major application is in industrial application, followed by photography, jewellery and bullion coins.

Forecasts and Assumptions

Global gold & silver demand

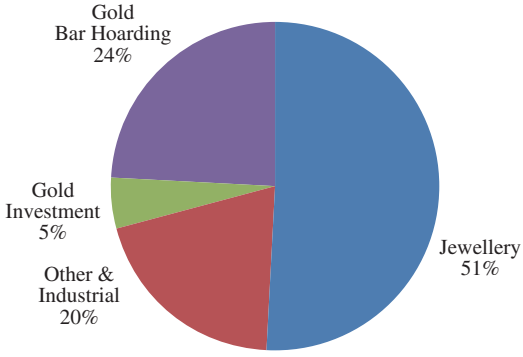
Gold demand is comprised of demand for end use gold in the form of jewellery and industrial applications, plus investment demand. In recent years, estimated gold investment demand has increased as investors have been attracted to the perceived safety of gold as an asset class. According to AME Report, it is estimated that over the forecasted period investment demand to remain relatively high by historical levels, and it is expected that demand for gold to be structurally higher in the near term as risk aversion stemming from the credit crisis remain and investor caution is high.

Figure 18: Global gold & silver supply, 2007



Source: AME

Figure 19: Global gold & silver supply, 2013



Source: AME

The two largest sources of gold are mined gold production and recycled gold. The pie charts above illustrate the share of each source in 2007 and 2013.

The primary end uses for silver are industrial uses and jewellery. These two categories comprise around 95% of silver demand.

Global gold & silver supply

According to AME Report, it is forecasted that gold supply to increase at relatively robust rates over the forecast period supported by current high gold price.

Table 21: Estimated & forecast mined gold supply, (Moz)

2007	2008	2009	2010	2011	2012	2013
79.6	77.5	83.2	87.1	90.3	102.9	107.3

Source: AME

The rise in the price of gold in recent years has generated renewed interest in the industry and additional gold exploration. According to AME Report, it is noted that a number of significant gold projects in the construction stage.

Silver is mostly mined as a by-product of base metal mines such as zinc, lead and gold and copper although there are also mines which achieve most of their revenue from the sale of silver. In 2010, silver mine production is estimated to have increased by around 5% (year on year) to 23 kt as new projects in Central and South America were commissioned.

In 2010, Mexico was the world's biggest silver producer followed by Peru and China. The table below summarises the biggest silver producing countries in 2010.

Table 22: Estimated silver contained in concentrate production in 2010 (kt)

Country	*(kt)*
Mexico	4.4
Peru	3.6
China	3.5
Australia	1.9
Chile	1.3
United States	1.3
Bolivia	1.3
Poland	1.2
Russia	1.2
Canada	0.6
Other	3.0
Total	**23.1**

Source: AME, USGS

Gold & silver pricing

The price of gold is readily observable as it is an exchange traded asset with a deep market. According to AME Report, it is estimated that the gold price may remain around current levels over the forecast period as investor demand for gold remains strong relative to long term historic levels.

Gold is likely to retain its historical role and serve as a safe-heaven investment. Considering current investors concerns and uncertainties about the European sovereign debt issues, economic instability in the US, as well as political uncertainty in the Middle East and northern Africa, according to AME Report, it is estimated that gold may stay on at high price levels over the remainder of this year. With low interest rates in the US and in Europe, gold furthermore remains an attractive alternative for investment.

According to AME Report, it is forecasted that gold to average around US$1,600/oz in 2012 and US$1,250/oz in 2013, and prices for silver to average of approximately US$30/oz in 2012 and US$25/oz in 2013.

Table 23: Estimated & forecast gold price, 2007-2013

	2007	2008	2009	2010	2011	2012	2013
Gold Prices, US$/oz	696	872	973	1,225	1,571	1,600	1,250

Notes:

1. Historical prices are provided in a nominal basis.

2. Forecast prices (2011, 2012, 2013) are prices on a real 2011 term basis.

Source: AME, LME

Table 24: Estimated & forecast silver price, 2007-2013

	2007	2008	2009	2010	2011	2012	2013
Silver Prices, US$/oz	13	15	15	20	35	30	25

Notes:

1. Historical prices are provided in a nominal basis.

2. Forecast prices (2012, 2013) are prices on a real 2011 term basis.

Source: AME, LME