China's push for resources

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Metal workers at the Tongling Nonferrous Metals Group Holdings copper smelter Photo: Bloomberg

FAST FACTS: CHINA
Capital: Beijing
Population: 1.3 billion
GDP real growth rate 2008: 9.8% (est.)
Currency: Renminbi (RMB)
Main commodities: Coal, iron ore, aluminium

With such massive energy requirements to meet the needs of its immense population, China has been seeking to increase domestic production of commodities – and also acquiring raw materials worldwide

CHINA has not been immune from the financial crisis that has sent shockwaves through the global economy. After five years of GDP growth at a range of 9% to 12%, momentum slowed sharply to an annualised rate of 6.8% by the last quarter of 2008. There is now little doubt about the extent of coupling between Asia and the US. This has highlighted several structural challenges facing China, particularly the reliance on G7 consumer demand and the importance of domestic consumption for stable and sustained future growth.

In early 2008, material shortages and the impact of prices on inflation were a major policy concern for China. In particular, tensions were building over annual coal and iron-ore price negotiations. Now the situation has reversed, and while lower commodity prices will dampen inflation and to some extent support domestic demand, many sectors are in a state of shock and yet to adjust properly to business conditions.

In a sense, China has been a victim of its own success during this downturn. Since joining the World Trade Organization (WTO) in 2001, China has increased its share of global trade (from 3% to 8% in 2006) and has become more exposed to the global business cycle, while exports increased as a proportion of GDP (from 23% to 39% in 2007). This, plus the domestic property contraction, has weighed heavily against the contribution of domestic consumption towards China's growth.

The government response to the financial crisis has been swift, with aggressive monetary easing and a two-year stimulus package of RMB4 trillion (US$585 billion), around 7% of annual GDP. There is little doubt the government will increase the stimulus if required.

The stimulus is targeting rural infrastructure, low-cost housing, environmental subsidies, transport, health, education and bank lending. This is seen as an opportunity to rebalance economic growth towards domestic consumption and strengthen social welfare programmes. However, it is expected to take longer than two years to significantly expand domestic consumption. One further concern regarding the economic stimulus and deteriorating business conditions is that it may put at risk recent progress in environmental laws and worker safety.

ACQUIRING GLOBAL MINING ASSETS

One of China's key strategic goals is the sourcing of raw materials to sustain economic growth over a 20- to 40-year horizon. China is willing to use its wealth for this and has been encouraging offshore investment in natural resources projects. Before 2008, the focus had been on acquiring strategic interests in undeveloped orebodies in the developing world. However, recently, China has been an aggressive bidder for developed world projects that are already in production. While perhaps an opportunistic response to the rapid decline in the value of mining companies since July 2008, it also represents a significant swing in the balance of power from commodity producers to commodity consumers.

Most notable is the proposal in which Chinalco will inject US$19.5 million into Anglo-Australian giant Rio Tinto through convertible bonds and the purchase of interests in projects including the Escondida copper mine in Chile and the Hamersley iron-ore operations in Western Australia. This will be China's largest investment in a foreign company. A recent Rio Tinto presentation suggested that the company sold 56% of its product to China.

China is seeking a significant role in leading the world out of the economic crisis and in building a broader sphere of influence. China's approach to date has been multilateral and as a concerned global citizen. It will be interesting to see how the US and other developed nations accommodate China's policy objectives. The sharp increase in China-led M&A activity will also bring to the surface political tensions over China's ownership of foreign resources and whether or not it is in the national interest of the countries affected.

TABLE ONE: CHINA COMMODITY PRICES JULY TO AUGUST 2008

Commodity	Jul 08 peak (RMB)	Dec 31 08 (RMB)	Change (%)
Hot rolled coil	6,135	3,331	-46
Qinhuangdao spot coal	1,010	520	-49
SHFE copper	63,400	24,950	-61
SHFE aluminium	19,270	10,500	-46

Source: Bloomberg

CHINA'S MINING INDUSTRY

China has the world's third-largest mineral resources, behind the US and Russia, with about 12% of the total volume. China is the world's largest producer of coal, steel, aluminium, lead, zinc, tin, magnesium, tungsten, antimony, mercury and rare earths. The country's share of world commodity demand has grown rapidly over the past six years, especially for iron ore. In 2007, China accounted for over 40% of global trade. Its reserves of major industrial minerals are mainly low grade, poorly developed and small on a per capita basis.

MINERAL DISTRIBUTION

Generally speaking, the geographic distribution of China's mineral resources is:

- **Coal**: Shanxi, Inner Mongolia, Shaanxi, Guizhou, Xinjiang, Henan, Anhui;
- **Iron**: Liaoning, Hebei, Sichuan, Inner Mongolia, Shandong, Anhui, Shanxi;
- **Copper**: Jiangxi, Shanxi, Yunnan, Inner Mongolia, Anhui, Tibet, Gansu;
- **Zinc**: Yunnan, Inner Mongolia, Gansu, Guangdong, Hunan, Sichuan, Guangxi;
- **Lead**: Yunnan, Inner Mongolia, Guangdong, Hunan, Gansu, Qinghai, Sichuan;
- **Nickel**: Gansu, Xinxiang, Yunnan, Jilin, Sichuan, Shaanxi, Qinghai, Hubei;
- **Alumina**: Henan, Shandong , Shanxi, Guangxi;
- **Gold**: Shandong, Henan, Jiangxi;
- **Silver**: Hunan, Henan, Jiangxi, Yunnan; and
- **Uranium:** Hunan, Jiangxi, Guangdong, Qinghai

There are many large exploration programmes under way across China. One estimate suggests that RMB66 billion was invested in exploration activities in 2007, including around 10 million metres of drilling. Given the relative scarcity of data and previous exploration, reported reserves have potential to increase significantly. The National Geological Prospecting Plan gives priority to energy resources such as coal, petroleum, natural gas, uranium and coal bed methane, and non-energy resources including iron, copper, aluminium, lead, zinc, manganese, nickel, tungsten, potash and gold.

There are also several large, unexploited mineral deposits in western China. New infrastructure is opening these areas to greater exploration and the mining industry will play an important role in regional development. For example, around RMB126 billion has

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China Shenhua Energy Co is the largest coal producer and export coal producer in China *Photo: Bloomberg*

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been allocated towards the development of ten mining projects in the Tibet Autonomous Region.

IMPORTS AFFECT PRICE DRAMATICALLY

China's iron-ore imports and coal demand have strained trade and placed strong upward pressure on prices over the past five years. For example, coking coal prices have increased 350% and iron-ore prices 500% since 2002. China has large coal reserves but infrastructure bottlenecks, and the economics of transporting coal to the southeast has seen China become a net importer of coal for several months in the last two years. China was a significant exporter of coal in early 2000 and the combination of slower domestic demand and better infrastructure may cause exports to increase again.

The government has responded to the reversal in trade trends by modifying the tariffs and taxes incurred throughout the mining value chain in favour of domestic producers. It has imposed a 5% import tax on primary aluminium, increased the zinc import tax from 3% to 5% and, correspondingly, removed export restrictions and taxes.

Further, the State Reserve Bureau has made purchases to assist producers and build inventories for when trade tightens again. The aluminium and zinc sectors, in particular, have been targeted. In December 2008, Yunnan Province announced it would create a stockpile of 300,000t of aluminium, 100,000t of tin, 300,000t of zinc, 150,000t of lead and 150,000t of copper over the next 13 months.

PRODUCTION

China's economy is still expected to grow in 2009, albeit at a slower rate than recently, and some of the loss of demand through exports will be replaced with large infrastructure and industrial projects that are accelerated under the proposed fiscal programmes.

Coal increases by 200Mt/y since 2002

In 2008, domestic production of coal was around 2,622Mt. Over the past five years, production has increased at a constant annual rate of 13%. Chinese coal output has increased at an average rate of around 200Mt/y since 2002.

Despite the large reserves and surplus production capacity, China became a net importer of coal several times in 2008. This was due to a combination of strong demand, severe winter storms in January, temporary mine closures due to accidents, the closure of some small mines in Shanxi and Hebei prior to the Olympics and infrastructure bottlenecks in the transport networks. The railways will be one of the key beneficiaries of government infrastructure spending, with capital expenditure doubling to RMB700 million.

Productivity will also be improved by increasing the level of mechanisation of coal mines and converting state-owned enterprises into public companies. The government is also consolidating the industry by establishing eight to ten leading coal companies, each with production capacity above 50Mt.

Safety remains a major issue in the industry. According to statistics from the State Administration of Work Safety, there has been a decrease in fatal accidents in the coal industry, with a decline of 559 reported fatalities last year from 3,770 in 2007. This is being addressed by the closure of small mines with a target of reducing the number of coal mines from around 16,000 to 10,000 by 2010. Thermal coal supplies around 80% of the country's energy needs and places significant pressure on the environment. As a result, the government is seeking to diversify its energy sources.

Iron-ore consumption greatest in world

China is the world's largest iron-ore consumer and steel producer. China's iron-ore resources are significant but of relatively low quality, with average grades of less than 30% iron. As a result, China has been a major importer of iron ore from Brazil and Australia for several years and this exposure has left it with little choice but to accept increasingly higher iron-ore prices.

In 2008 domestic production of iron ore was around 824Mt and production of crude steel was around 498Mt. China imported more iron ore than needed in 2008. It is expected that controls on price and volume will be tighter for 2009 imports.

In February, 2008 Chinese steel mills agreed to an iron-ore price increase of 65% to 71% with Cia Vale do Rio Doce (Vale). Later in the year, Rio Tinto and BHP Billiton agreed to increases in contract prices of 80% to 97%. However, as the 2009 negotiations are under way, the balance of power has swung dramatically into the hands of the Chinese steel mills and substantial price decreases are anticipated. Perhaps for many of the iron-ore producers, their aggressive tactics in the last round of negotiations may mean there is little goodwill going into the next round. Baosteel Group will represent China at the next negotiations and is expected to propose 2007 ore prices as the starting point.

During 2008, there was significant consolidation in China's steel industry, with the establishment of Guangdong Iron and Steel Group (by Baosteel Group), Hebei Iron and Steel Group, Shandong Iron and Steel Group and Guangxi Iron and Steel Group. Further consolidation is expected in 2009 as steel mills adjust to the downturn and construction work should start on Baosteel's Zhanjiang project, Wuhan Iron and Steel Group's Fang Chenggang project, Shandong Iron and Steel Group's Rizhao project, and Nanjing Steel's Lianyungang project. The government is also encouraging steel producers to replace outdated facilities.

Aluminium production hit by natural disasters

At the start of 2008, China's domestic aluminium demand was robust and expectations were that China would become a net importer of aluminium by 2010. China's primary aluminium refining capacity increased rapidly, placing the local energy infrastructure under significant strain. Then smelters were hit by severe snowstorms, the Sichuan earthquake and high raw-material costs. The industry was already weak when the economic crisis peaked. More than 2Mt worth of domestic aluminium smelting capacity has been suspended. In 2008 domestic production was around 13Mt. Chinalco dominates the industry.

Copper stockpiling likely in 2009

China, a net importer of copper concentrates and refined copper, is expected to purchase copper on the international market to build reserves while prices are low. However, purchases from domestic refiners are expected to be limited as the industry maintains a reasonable financial position, and expected investment in China's power infrastructure will boost copper consumption. China's demand for copper represents around 25% of global demand. The domestic industry is dominated by Tongling Nonferrous Metals Group Holdings Co, Jiangxi Copper Industry Co and Yunnan Copper Industry Co.

Zinc production cut

China is the largest producer of mined lead and zinc, representing 40% and 30%, respectively, of global production in 2007. Nearly all zinc smelters have cut production or delayed new production facilities. Zhuzhou Smelter Group Co (the largest zinc manufacturer in China and a subsidiary of Hunan

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TABLE THREE: CHINA IDENTIFIED BASIC RESERVES (2006)*

Commodity	Reserves
Coal (Gt)	334
Iron ore (Gt)	221
Copper	31
Lead	14
Zinc	42
Bauxite	742
Nickel	3
Gold (t)	1,995
Silver (t)	45,277

*'000t unless indicated
Sources: National Bureau of Statistics of China; Ministry of Land and Resources China

TABLE TWO: CHINA OFFSHORE MINING SECTOR INVESTMENT

Bidder	Target	Date	Comment
China Investment Corp Ltd	Fortescue Metals Group Ltd	Feb-09	Placement, speculative
Wuhan Iron & Steel Group	Iron ore in Australia and Brazil	Feb-09	Placement, speculative
	Centrex Metals Ltd iron ore project	Dec-08	Placement, speculative
China Shenhua Energy Corp Ltd	Mongolian coal project	Feb-09	Placement, speculative
	NSW coal exploration licence	Feb-09	Acquisition, completed
China Minmetals Corp	OZ Minerals Ltd	Feb-09	Acquisition, announced
Aluminium Corp of China (Chinalco)	Rio Tinto	Feb-09	Placement, announced
Shenzhen Zhongjin Lingnan Co	Perilya Ltd	Feb-09	Acquisition, announced
Yanzhou Coal Mining Co	Felix Resources Ltd	Dec-08	Acquisition, speculative
Sinosteel Corp	Murchison Metals Ltd	Sep-08	Acquisition, completed
	Midwest Corp	Jun-08	Acquisition, completed

Source: Company announcements

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Nonferrous Metals Corp), Huludao Zinc Industry Co Ltd (the second-largest zinc manufacturer) and Yunnan Luoping Zinc, Electricity Co Ltd cut output by between 25% and 30% of their total production capacity.

China leads world in gold production

China is now the world's largest gold producer, exceeding South Africa's production, with 9Moz last year. As at December 2008, China's gold reserves were approaching 19Moz, according to the People's Bank of China. Prior to 2002, China's gold market was closely managed with little domestic production or consumption. Deregulation of the domestic gold market commenced following China's entry into the WTO. Gold exploration has been largely controlled by national and local government geology bureaus and the police exploration team.

A significant development was the auctioning of exploration rights of reserves in the Yangshan gold mine area. The Yangshan deposit in Gansu province is a Carlin-type deposit with reserves of 9.9Moz. China's largest nickel miner, China National Gold Group, won an auction and will form a joint venture with Jinchuan Group Ltd to explore the area.

Uranium exploration on the rise

China relies on coal for 80% of its energy generation. The country is actively developing alternatives to coal-fired power stations in order to reduce pollution and carbon emissions, with nuclear energy emerging as a preferred energy source. However, China lacks adequate uranium reserves to develop the industry to a meaningful scale and uranium production in 2008 amounted to 870t – around half of current demand. China is actively encouraging uranium exploration in the western provinces and overseas, especially in Kazakhstan, Australia and Canada.

China is expected to build 30 new reactors by 2020, at a cost of RMB450 billion. In 2008, major agreements were reached with Westinghouse Electric Co and Areva SA for plant construction and the transfer of the latest technology. The Areva contract was for €8 billion (US$10.2 billion) for two European pressurised-water reactors and a long-term uranium supply with Guangdong Nuclear Power Group Co. The Westinghouse contract was for the construction of four of its AP1000 reactors at a cost of US$5.3 billion with China's State Nuclear Power Technology Co.

TABLE FOUR: NET IMPORTS OF SELECTED COMMODITIES ('000t)

Commodity	2004	2005	2006	2007	2008
Coal	-67,980	-45,530	-25,000	-2,190	-4,602
Iron ore	208,080	275,250	326,320	383,670	409,610
Aluminium	-646	-687	-701	-264	-581
Copper	1,142	1,144	637	1,429	1,410
Lead	-377	-406	-495	-219	14
Zinc	196	468	191	41	263

Sources: General Administration of Customs of the Peoples Republic of China; CEIC Data Company Ltd

Copper rods at a retail shop in Shanghai Photo: Bloomberg

NEEDS WILL DRIVE CHINA'S EXPLORATION

China's consistently strong growth has been a major macroeconomic driver of the recent commodity boom. The apparent looming shortages drove significant change in China's mining industry, with more intense exploration, increases in capacity and attempts at restructuring whole industry segments in order to achieve better productivity and environmental and safety standards. Additionally, it drove China's industrial base outside of the country's borders to secure access to deposits to sustain future growth.

In mid-2008 this process was halted as production and commodity prices tumbled. At the time of writing, there are some encouraging signs of a recovery, with increases in steel production and credit over January, but the short-term outlook remains uncertain.

It is guaranteed that the government and industrialists are looking beyond the short term as they continue to drive consolidation and modernisation and press on with extending their reach outside of China's borders.

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