

China Rising

From Net Demand to Net Supply

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Construction projects are becoming prohibitively expensive around the world. Why? Because the global demand for concrete, steel, wood and other key construction materials has exploded due to economic and infrastructure growth in China, while supply has lagged badly.

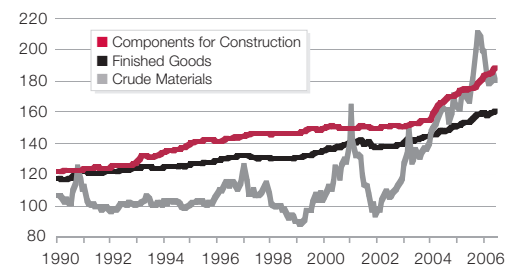
Similarly, world commodity prices have increased dramatically over the last several years. From the period beginning in mid-2001 to early June 2006, the price of oil has increased by 285%, copper by 425%, zinc by 346% and gold by 154%. While supply interruptions of some of these commodities have played a role, much of the price increase is due to rapid demand growth, particularly in China. However, today's rising prices will revert as the net consumers of today's construction materials rapidly expand their domestic production capacities. Specifically, to meet their exploding domestic needs and long-term growth requirements, China is rapidly adding production capacity in sectors such as steel, concrete and drywall.

In the U.S., the increase in commodity prices is reflected in a variety of producer price indices. Raw materials, as well as commodities in various stages of production, have all exhibited rising market prices. From 1990 to 2003, construction components only rose by 1.7% annually, versus general inflation (CPI) of 2.8%. In June of 2003, this trend reversed. The combination of flat to decreased production in the industrialized world and surging demand (but little new supply) in Asia have forced commodity prices upwards.

Commodity cycles tend to be prolonged, as is the case for real estate, as lags in supply occur. As the bull market continues, companies increase their production capacity in order to capitalize on (or insulate themselves from) rising prices. But expanding operations for extracting raw materials and producing finished goods requires significant time and financial resources. As companies eventually increase their supply capacity, commodity and material prices moderate.

China's insatiable appetite for steel, cement and other commodities is putting upward pressure on prices, but growing supply will exceed demand in two to three years.

U.S. Producer Price Indices – Stage of Processing



U.S. Producer Price Indices – Commodities



increasing demand



The demand for commodities has boomed over the past few years, fueled largely by unexpected domestic growth in China. China is benefiting from globalization, as the developed world's insatiable appetite for cheaply manufactured products, together with cheap transportation and reduced duties, propels its growth. But the world's relatively fixed short-term supply of commodities and finished goods has created significant upward pressure on prices.

The current market imbalance in construction inputs will continue for another two to three years before increased capacity (to the point of overcapacity) creates a bear market. But excess capacity is coming, as suppliers tend to expand as if no one else will do the same. Those of you who have spent your lives in real estate know this phenomenon all too well. Also, as material prices become prohibitively high for construction projects, builders will build less, putting a natural damper on demand. In addition, new technologies are developed which use cheaper materials more efficiently.

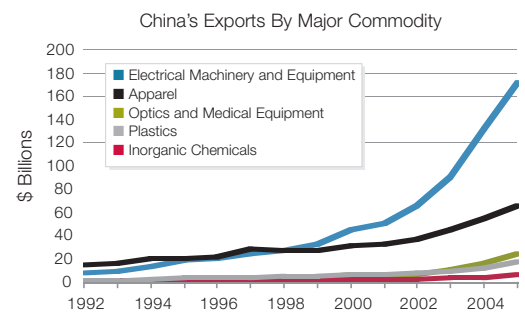
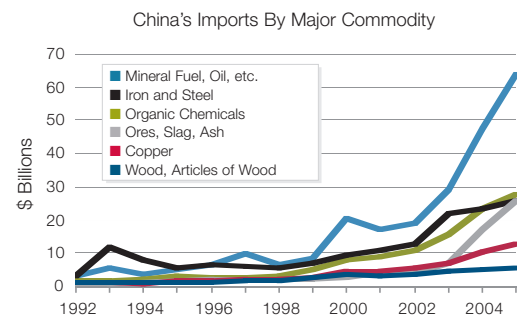
Increasing Demand

China's Demand. China is now the world's largest consumer of steel (33% of total global demand), copper (22%), and aluminum (20%). China's GDP, which is 53% manufacturing, 15% agriculture, and 32% services, saw industrial output triple from 1995 to 2005, and continues to increase at double-digit rates.

Similarly, China prints 82 million newspapers daily, compared to just 52 million in the U.S., and exports 33% of the world's furniture production. It should be noted that in just seven years, China went from the seventh to the second largest importer of forest products. In 1997, China imported \$6.4 billion of timber, while last year its timber imports stood at \$16.4 billion. By 2010, it is estimated that China will use 65% more timber than today, supplied primarily by imports.

China currently consumes 47% of the world's supply of cement, some five times the size of the entire U.S. cement industry. A decade ago, it was a non-factor from a production perspective. Now it is the largest cement producer in the world, generating in excess of 1 billion tons of cement annually. To date, domestic demand has absorbed most of this supply, driving up concrete prices across the globe, including a \$2,000 annual average increase (2004-2005) for the concrete required for a typical American home.

Oil is another resource affected by China's growth. China's oil consumption increased by 11% in 2004, to 6.6 million barrels per day, and contributed to the largest annual increase



China's Exports (\$ Millions)

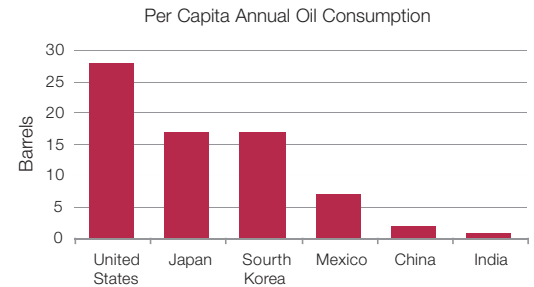
Commodity Description	2005	% Change*
Electrical Machinery and Equipment	68.1	68
Power Generation Equipment	80.5	77
Apparel	92.7	92
Iron and Steel	87.1	89
Optics and Medical Equipment	81.6	84
Furniture and Bedding	89.4	88
Inorganic and Organic Chemicals	86.2	82
Footwear and Parts Thereof	89.9	86
Plastics	79.6	85

* Percent change over 2004

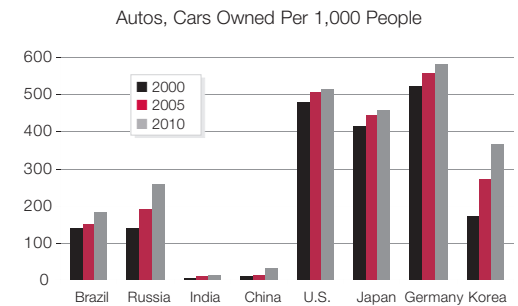
growing supply



in world oil consumption in 16 years. Its oil imports from Saudi Arabia have increased 900% since 2000. Given these statistics, it is no surprise that oil prices have surged. China is now the world's second largest oil importer, despite per capita consumption of only one-fifteenth of U.S. levels, and well below that of even Latin American and other Asian countries. For example, Japan and South Korea use 17 barrels per capita per year, Latin America averages 4.5 barrels, and Mexico uses 7 barrels, while China uses less than 1.7 barrels per person per year. If China's auto-to-population ratio increases to just 30% of the U.S. level, it would result in 800 million cars. Clearly, its usage of oil has a great deal of room to grow! However, China consumes twice as much oil per unit of GDP as the world average, indicating substantial room for improvement in consumption efficiency.

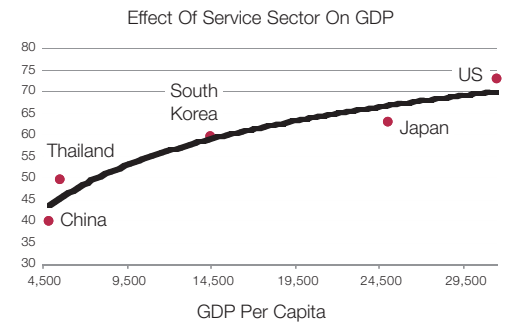


In addition, China faces shortages of natural gas at its gas-fired power plants. Approximately 40% of China's gas-fired plant capacity has been closed in the past year due to shortages. In fact, a Hong Kong utility company, Meiya Power Co., scrapped plans to build a power plant in China due to supply uncertainties. Furthermore, China's coal usage for electricity is expected to grow by 3.3% per year, from 14.8 quadrillion BTU today to 31.2 quadrillion BTU in 2025. An additional 32 quadrillion BTU will be needed by 2025 for the industrial sector.

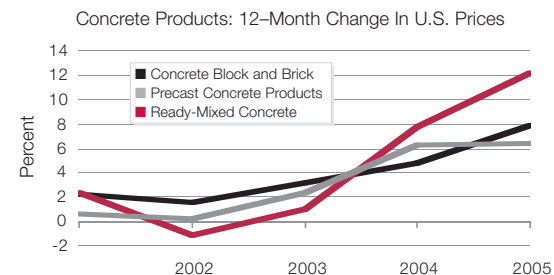


Growing Supply Will Exceed Demand

While China's rapidly increasing demand for commodities grabs the media's attention, what is not reported is the rapid ramp-up of their long-term capacity, even to the point of overcapacity. In addition, China is making efforts to increase energy efficiency.



In its most recent five-year program, China announced a move away from energy and natural resource intensive industries towards the service sector and the IT industry. As a result, the Chinese government now forecasts an increase in electricity usage of 7% per year over the next five years, compared with 10% per year over the last five years. Specifically, China's government is seeking to reduce energy consumption per unit of GDP by 16%, from 2.68 tons of coal equivalent in 2002 to 2.25 tons in 2010, and further to 1.54 tons in 2020.



In order to make its economy more service-oriented, China must educate its workforce so as to make people more suitable for high-skilled professional jobs, which are more pervasive in service-oriented economies.

consumption

Furthermore, the Chinese government recently doubled the export tax to 10% on certain copper and alloy products, and will likely impose future taxes to curb raw material exports. China is also obtaining energy from places such as the Sudan and Chad, and its trade with Africa has increased from \$10 billion in 2000 to \$40 billion in 2005. Nigeria, Africa's largest oil producer, was once a minor supplier to China, but CNOOC (one of China's biggest oil companies) now owns large stakes there. In South America, Venezuela is providing China with 300,000 barrels of oil per day.

Oil and Coal. Xinjiang, a major Chinese oil producing region, will raise its production to 50 million barrels, from 22 million barrels last year, and will eventually expand to 100 million barrels of crude oil a year. While this is not a major expansion of capacity, given that the state of Texas alone produces about 400 million barrels a year, it helps to reduce the supply-demand imbalance. Increased coal capacity in China is also under way to meet the demand associated with the government's approval of 168 power plants over the 18 months through July 2005.

Steel. World production of steel has increased by about 33% over the last five years. It is as if North America, South America, and Europe were to simultaneously undertake 20-25 years worth of expansion in just five years. And yet supply expansion has still lagged demand growth. Little wonder prices rose!

China's steel production capacity now exceeds the combined capacity of the U.S. and Japan. This has triggered an increase in iron ore demand in China by 34% in 2004 and 40% in 2005, with a projected rise of 42% in 2006. China continues to ramp up production at a feverish pace, to meet its soaring demand for steel, and to profit from exporting it around the world. In 2005, Chinese domestic steel production was 349 million tons, up from 280 million tons in 2004, 222 million tons in 2003, and 182 million tons in 2002. As a result, imports to China fell from 43 million tons in 2003 to 29.3 million tons in 2004, and to 25.8 million tons in 2005. At the same time, China's steel exports grew from a mere 8 million tons in 2003 to 14.2 million in 2004 and 20.5 million tons in 2005.

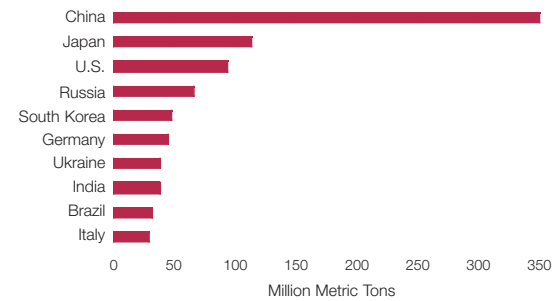
China is on the verge of becoming a major exporter of steel. While China was a net importer in 2005 (by only 5% of its domestic demand), it should be a net exporter of steel from 2006 onward as its capacity grows from 490 million tons in 2006 to 538 million tons in 2008, with a cumulative rise of 43% by 2010. Accordingly, steel profits in China rose from about \$600 million in 1999 to in excess of \$15 billion in 2005. This reflects China's evolution from a non-factor in global steel production and consumption to the major player in both in just six years.



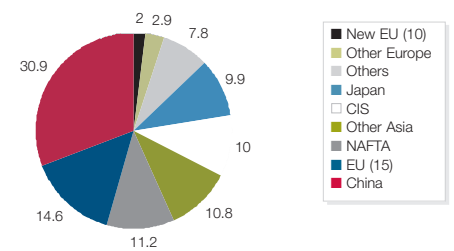
Capacity Utilization In Select Indian Industries

Industry	Capacity Utilization		
	03-04	04-05	% Change
Food Products	68.1	68.0	-0.2
Beverages, Tobacco & Related Products	80.5	77.0	-4.4
Cotton Textile	92.7	92.0	-0.8
Wool, Silk & Manmade Fiber Textiles	87.1	89.0	1.7
Jute & Other Vegetable Fiber Textiles	81.6	84.0	2.7
Textile Products (Including Wearing Apparel)	89.4	88.0	-2.0
Wood & Wood Products, Furniture & Fixtures	86.2	82.0	-5.2
Paper & Products, Printing & Publishing	89.9	86.0	-4.9
Leather, Leather & Fur Products	79.6	85.0	6.3
Basic Chemicals & Chemical Products	81.0	82.0	1.6
Rubber, Plastic, Petroleum & Coal Products	84.0	87.0	3.1
Non-metallic Mineral Products	87.9	87.0	-1.1
Basic Metal & Alloy Industries	87.8	86.0	-1.6
Metal Products & Parts	72.3	71.0	-1.7
Machinery & Equipment	74.6	76.0	1.9
Transport Equipment & Parts	81.6	81.0	-1.4
Manufacturing Industry	81.0	81.0	0.5

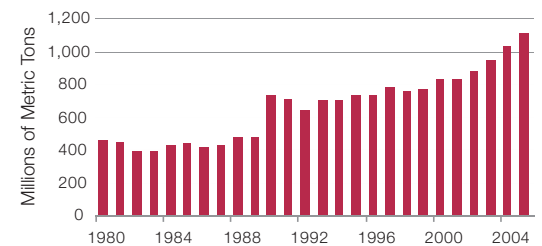
Major Steel Producing Countries



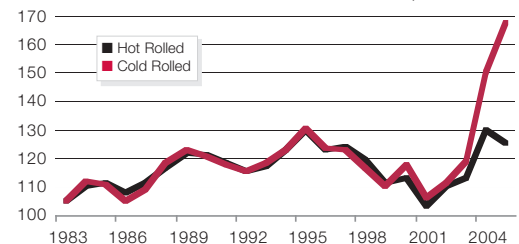
Geographical Distribution Of Steel Production



World Crude Steel Production



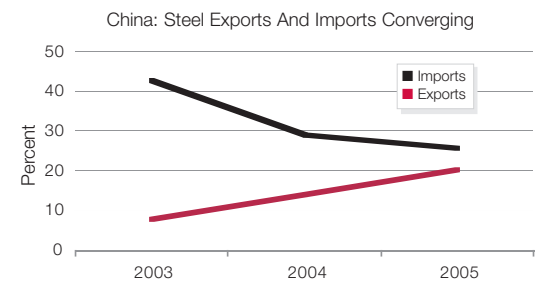
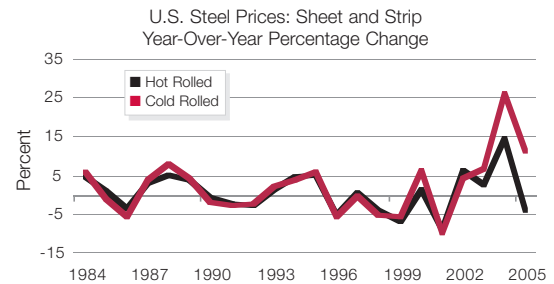
U.S. Steel Price Index: Sheet and Strip



capacity

Over the last five years, China has invested approximately \$72 billion in new plants and equipment in the steel industry. They have grown from almost no production to an excess capacity of approximately 120 million tons. And this capacity is growing as additional facilities are brought online more rapidly than domestic demand expands. In this context, it is noteworthy that no other country even produces 100 million tons of steel, and yet China currently possesses 120 million tons of excess capacity. This will cause prices for steel-related construction elements to decline over the coming years.

Iron Ore. China's proven domestic reserves of iron ore can accommodate 90 million tons of steel production, enough to last for some 40 years. Although China's current reserves are relatively inaccessible and of inferior quality, the International Iron & Steel Institute (IISI) expects iron ore supply to meet or exceed demand on a global basis for the next several years. By 2009, IISI estimates that the global seaborne iron ore supply will equal



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-Dean Adler

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production

836 million tons, 33 million tons more than the forecasted demand. CVRD, the world's largest iron ore mining company, is slated to finish a 30 million ton mine, the largest ever, by 2007. BHP Billiton will also expand operations in Western Australia by 8 million tons this year and an additional 20 million tons in 2007.

China is also expanding iron ore mining. The government has announced plans to increase extractions by 28% this year. Furthermore, the Chinese government is coercing its steel producers to consolidate in order to achieve improved bargaining power against CVRD, BHP Billiton and other international mining companies. The Chinese are also investing in iron ore exploration in other countries. They recently earmarked \$3 billion to take over two Australian mines and partnered with a U.S. firm to reopen a mine in Minnesota that went bankrupt two years ago.

Cement. China is rapidly expanding cement production capacity to support its growing infrastructures and real estate industries. China is already able to meet its cement needs of almost 1 billion tons. By 2010, the country plans to produce 1.25 billion tons, even after shutting down about 250 million tons of inefficient capacity. That is, in the next four years, 50% of China's current capacity will be developed.

What Does It All Mean?

With 20% of the world's population experiencing rapid growth and the attendant consumption of commodities, construction prices have soared as demand has outpaced supply. But China is now increasing its production capacity more rapidly than demand. Over the next five to seven years, China will become a substantial net "exporter" of most global products. Their planned capacity will far exceed domestic demand growth, which, combined with greater consumption efficiency and the emergence of alternative technologies, will lead to a prolonged period of declining prices for commodities and construction materials.



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A decorative graphic on the right side of the page consists of several colored rectangles: a large black rectangle at the top left, a red rectangle at the top right, a grey rectangle in the middle left, and another red rectangle at the bottom left. A vertical strip of a blurred photograph of an industrial interior with metal railings and a person walking is positioned on the right side, overlapping the red and grey rectangles.

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