China’s Ferrochrome Production: Altering the Global Balance

China owns less than 1% of the world’s chrome reserves. However, thanks to strong growth in stainless steel demand and relatively cheap production costs, China’s domestic ferrochrome capacity has steadily increased over the past decade, with China overtaking South Africa in the first half of 2012 to become the world’s largest ferrochrome producer. Yet, the lack of both upstream and downstream capabilities, along with looming chrome export restrictions, rising domestic production costs and stricter environmental controls, is putting Chinese ferrochrome producers in an increasingly precarious situation. To overcome these obstacles, Chinese ferrochrome producers will continue going overseas to gain control over upstream resources, significantly altering the global balance of the chrome ore trade. By Jeff Dong

Reviewing the remarkable growth in China’s demand for commodities and its domestic production during the last decade is always eye opening, with the steel industry standing out as the prime example. In 2011, China produced 61% of the world’s total steel output, and consumed most of that production domestically. This is even more astounding given China’s domestic iron ore supply meets only 40% of domestic demand. To delve deeper into the stainless steel industry one must examine ferrochrome, a main ingredient used in steel production. In 2011, China consumed 3.5 million tons of high carbon ferrochrome, more than half of which was produced domestically. With China having almost no domestic chrome reserves, nearly all of the ferrochrome produced in China relies on imported chrome. From 2003 to 2011, though China’s production of high carbon ferrochrome increased by nearly 10 times, from around 420,000 tons to over 2.5 million tons, this still cannot meet domestic demand.

China has several key advantages in ferrochrome production including low electricity costs, an adequate supply of relatively cheap labour, a well-established transportation network, as well as low capital investment costs for new plants. While many would argue China’s ferrochrome industry will unlikely grow at the same rate for the next five to 10 years, and may even downsize, China is currently taking a significant share of the world’s ferrochrome production.

As a matter of fact, thus far in 2012, China’s domestic ferrochrome production is still increasing steadily, even amidst worsening prospects for the global economy. At the same time, chrome ore imports continue to rise, while ferrochrome imports are decreasing. Traditional ferrochrome producers such as SA are inevitably facing stiff competition.

South African ferrochrome – will export restrictions help?

While the world has witnessed China’s share of global ferrochrome production surge from less than 5% in 2001 to 33% currently, SA producers are suffering from sub-par performances. Strong competition from China, according to many insiders, is the main challenge facing SA producers. This is particularly startling given China holds very little domestic chrome reserves. South Africa, which owns a majority of the world’s chrome reserves, are feeding the mills and...
furnaces in the Far East. To address this issue, one can put forward the 'new colonialisation' approach in exploiting Africa for its mineral resources in raw material form, leaving local value-added industries in a tough situation, or one can examine this issue through a more analytical lens.

First of all, SA chrome ore exports, including UG2 chromite, remain a crucial source of stock for China's ferrochrome producers. The comparatively low cost of mining UG2 and subsequent big profits are coercing many miners to stick to operations in the UG2 area. In fact, UG2 chrome ore exports to China now make up an integral part of SA-Chinese bilateral trade activities – the trade employs thousands of SA miners and supports local economies. In 2011, the total value of SA chrome ore exports to China amounted to USD 1.2 billion, representing 9.3% of SA's total exports to China.

South Africans advocating a chrome export tax are basically betting that chrome export restrictions will most likely lead to price increases for chrome ore, which will help to put further pressure on China's domestic ferrochrome industry and ultimately reduce its capacity. Therefore, if stainless steel demand remains robust, demand for ferrochrome will also see a strong increase, offering SA producers an opportunity to regain their advantage in ferrochrome production. Ideally, SA ferrochrome producers will go one step further, and adopt innovative technologies to improve their performance and strengthen their market position.

However, another scenario may emerge; a decrease in SA chrome ore exports will be offset by increased supply from other sources. One cannot underestimate the potential of increasing chrome supplies from other countries such as Iran, Turkey and several Asian countries, especially since these sources have higher quality reserves – their ores are lumpy and better suited for ferrochrome production than the fines produced in SA.

As a reference, we can look at the recent export restriction imposed by Indonesia. A leading producer of nickel, Indonesia significantly raised their export tax for nickel ore to 20%, in an effort to protect the local ferronickel industry. However, the higher export tax did not prop up nickel export prices; on the contrary, not only did the China import price of nickel ore drop, the Philippines increased shipments of nickel ore to China, increasing their market share in China at the expense of their neighbour. The policy also caused large layoffs of Indonesian nickel mine workers.

Even if chrome ore exports are curbed, SA ferrochrome producers will still suffer from electricity shortages, underdeveloped transportation infrastructure, higher production cost, etc. These problems will remain even if restrictions are put in place. SA should first take a long term view and address these problems to increase local competitiveness, rather than merely attempt to curb chrome ore trade.

Outlook

China's production of ferrochrome will most likely remain strong and continue to be highly influenced by the on-going consolidation and transformation taking place in China's steel sector. The following trends are also expected to emerge in the mid-to-long term:

- **Ferrochrome demand will continue to increase**
  With the upgrading of China's domestic steel industry, stainless steel and chrome alloy demand will increase. This means that ferrochrome producers in China will still be blessed with a huge market. We do not foresee a downturn in China's domestic ferrochrome production capacity; on the contrary, we expect capacity to increase by another 25% in the next five years.

- **Consolidation, integration, and innovation**
  China can no longer be simply viewed as a low-cost producer – labour costs, power costs, and environmental costs are all rising at a steady pace. China's extensive production model will be altered and replaced by a more consolidated and efficient model, which requires cuts in CO2 emissions. Green technology will spur innovation in the production cycle, which will be largely led by the country’s huge state-owned enterprises or large scale producers with the financial, administrative and technical resources.

- **Greater control over upstream resources**
  China is definitely strengthening its control over upstream resources in the ferrochrome and stainless steel industries. As a matter of fact, China's endeavour of going overseas for chrome dates back to the early 1990s. Some of the most recent examples include Sinosteel's ambitious venture in SA – however, there is definitely more to come.

- **Localisation**
  We believe China's ferrochrome producers will inevitably transfer their capacity to local producers in chrome-rich countries such as SA. In the short term, China's domestic production will still hold a comparative advantage over SA in terms of power supply, capital equipment costs, logistics, etc. But over the longer term, we believe the electricity and logistics issues in SA will be properly addressed and significantly improved. Under the dual trend of rising production costs and an appreciating currency, China will need to transfer primary manufacturing activity overseas, closer to the source of chrome reserves. This presents an opportunity for forward-looking SA producers to strike deals with the world’s newest leader in ferrochrome production.

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