China's Vertical Integration Backward into Iron Ore

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INTRODUCTION

The rapid growth of China is one of the big economic events of recent years. China is increasingly sucking up raw materials throughout the world to feed its continually growing manufacturing sector. This project is particularly focusing on the iron ore industry. Steel is the most basic manufacturing industry and China's steel companies are not only importing the iron ore, it is "vertically integrating backward" into the iron ore business by going to Australia, Brazil and other part of world where are the sources of iron ore and buying up the iron ore and taking over the mining and production of it. My paper aims to explain why China is taking the trouble doing so rather than taking investment opportunities within China itself and why it cannot just purchase iron ore, like many other countries do. Korea's steel companies are also investing large sum of money overseas, is there any difference between them ?

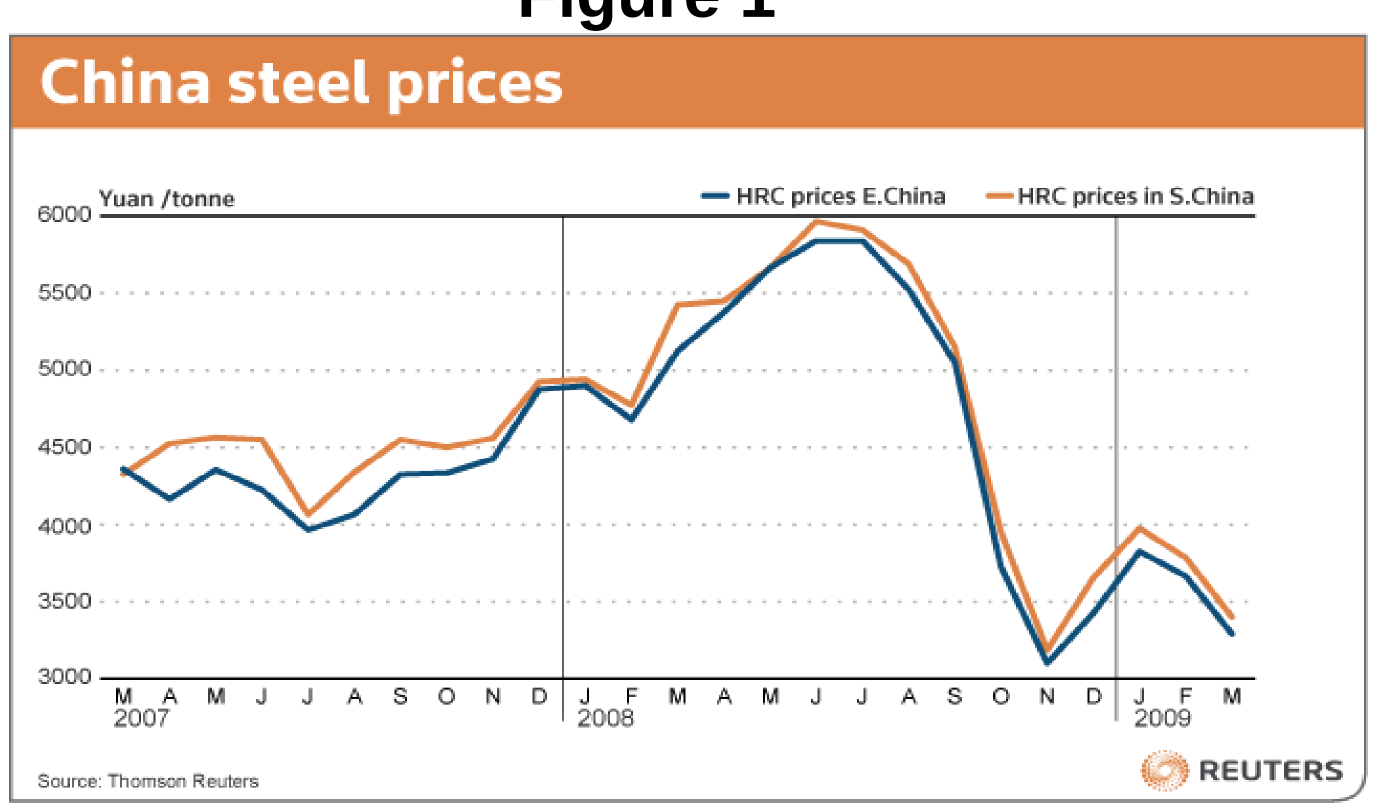
METHOD

Raising Rival's Price

In Riordan's paper (1998), he explained this theory called "raise rivals' price" on vertical market foreclosure, which explains these backward integrating downstream firms as dominant firms.

- Competitive fringe competes with the dominant firm both for sales to consumers and for a scarce input that is supplied competitively.
- The dominant firm wants to foreclosure in the input market, so it raises the price of the input, which can reduce the size of the fringe.
- As the dominant firm continues this foreclosure and price-raising, the backward vertical integration is furthered and vice versa.
- Furthermore, the dominant firm chooses both the input and output price, making the fringe firms as price takers when they are making decisions of entry and production.
- China's steel price was increasing before the third quarter in 2008 as shown in Figure 1.

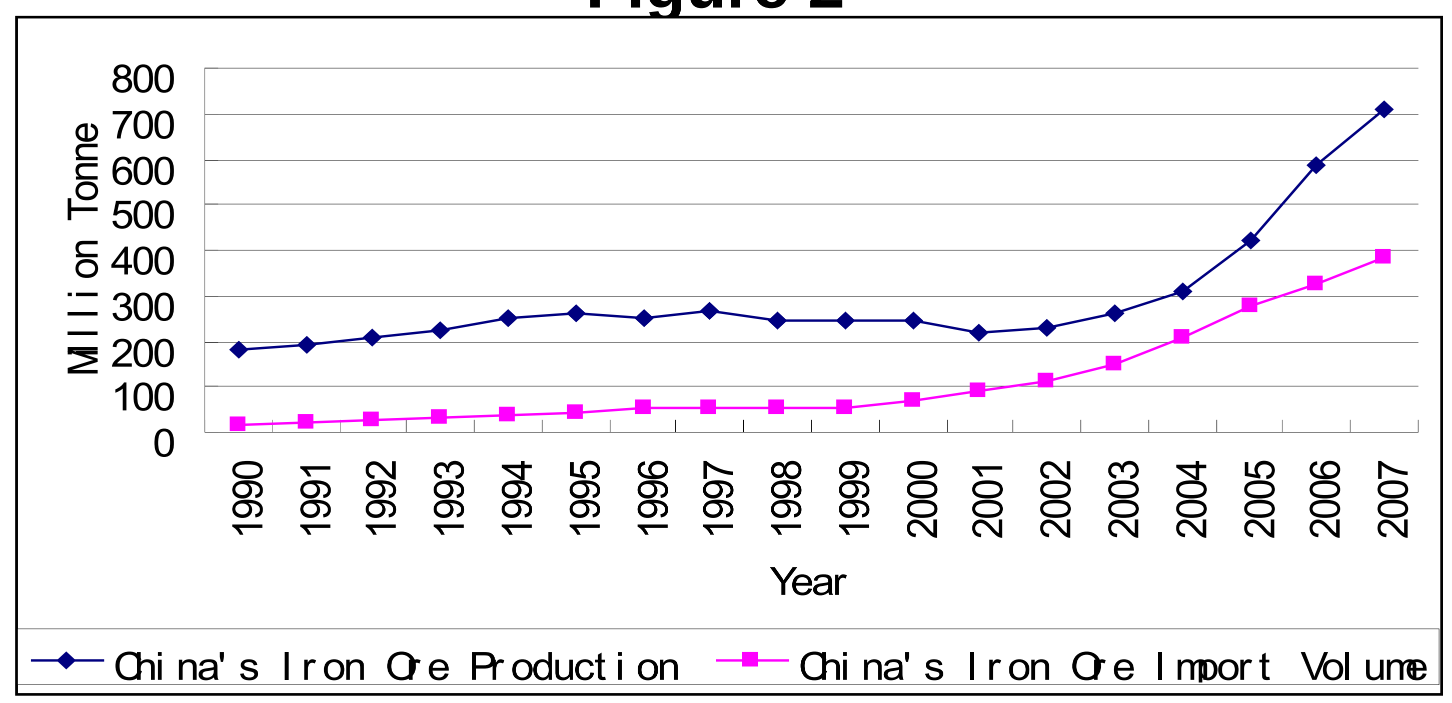
Figure 1



China's Large Quantity of Importing

From 1990 to 2007, China's iron ore production and its imported iron ore volume have been climbing up with a high speed as shown in Figure 2. The proportion of imports to local production increased from less than 1/10 to over 1/2. Does China need that much of iron ore ?

Figure 2



China, Korea's Action in Australia

- The big three miners elevating the iron ore price to ensure that China won't reach to the upstream market by vertical integration, China is building up relationship with other relatively smaller miners in Australia.
- I researched on 22 major iron ore miners(Rio Tinto and BHP Billiton is excluded) in Australia and compared China and Korea's behavior on them shown in Table 1.
- Korean has only one steel producer POSCO investing or signing contract with Australian miners. And the major steel producers of China are all take part in putting money into the iron ore business in Australia.
- China's steel production is approximately 10 times of Korea, however Korea's iron ore import volume is more than 1/10 of China's before 2009.
- Table 2 indicates that the iron ore imported from Australia was Korea's main source while it only took up less than half of China's import.

Table 1

	Vertical Integration	Shareholder or Joint Venture	Long term supply
China	1	8	3
Korea	0	2	1

Table 2 Iron ore Import from Australia (in million tons)

	2007	2008
China	**145.64(41.03%)***	**183.36(41.30%)**
Korea	**31.18(71.03%)**	**34.14(73.77%)**

**The percentage in the parenthesis is the ratio of import from Australia to the total import in that year.*

EVIDENCE&RESULTS

- China is importing large amount of iron ore, table below shows the iron ore supply and demand volume of three steel producers Baosteel, AnSteel and Shougang Group in 2007. All three companies hold more volume of iron ore than it demanded in that year.
- China is stock piling these ore in order to adjust for the price rising and dominate the iron ore market ultimately.
- To look at how largely China stocked the ore, we need to compare the pig iron production with its steel production.
- From data provided by U.S geological survey, the average ratio of pig iron production to raw steel of Korea is 0.565 and as for China the ratio is 0.951, which proves that China is stock piling the ore.

	Pig Iron Production	*Volume Demanded*	*Volume Produced*	*Volume Imported*	*supplied*
BaoSteel	24,127	37,110	3,600	40,000	0
Ansteel	16,000	25,000	50,350	6,000	6,000
Shougang	12,285	20,475	69,613	4,000	15,000

CONCLUSION

- According to Riordan's theory, China's steel producers as a whole is considered as a dominant firm in the steel industry.
- China is already buying up the iron ore in Australia and other parts of the world and in fact stock piling the ore, which is proving that China is trying to vertically backward into iron ore industry and controlling the world market.
- Though China's steel price prior to the financial crisis is elevating, it needs to control the input (iron ore) price to absolutely dominate over the fringe firms in the steel market.
- However, the big three miners are the ones to decide the iron ore price and as a price-taker for iron ore, China needs to stock pile enough quantity of iron ore to make the big three miners the fringe firms in the iron ore industry.
- And, there is a long way to go.

REFERENCE

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