

Posco: A New Steel Plant in India[©]

China and India are widely expected to be the two growth engines of the world economy in the 21st century. The two economies, however, are a study in contrasts. While China's economy is dominated by manufacturing, India's has a relatively larger share in agriculture.

Consistent with the difference in economic structures, India produces much less steel. In 2005, India's annual steel manufacturing capacity was 45 million metric tons, which was less than one-seventh that of China's 330 million tons. Ironically, India is one of the world's top four producers of iron-ore, the others being Brazil, Russia, and Australia.

Lured by prospects of future growth in manufacturing and India's iron-ore deposits, five international steel-makers have announced plans to build or expand capacity in India. The combined increase in capacity would be 75 million tons, or about 7.5% of current global production.

India's second-largest producer, Tata Steel, plans to increase capacity at its plant in Jamshedpur, Jarkhand State, from 5 to 33 million tons a year. Mittal Steel announced plans for a 12 million ton facility, also in Jarkhand State.

Seeking to expand overseas, Korea's Posco contracted with the government of Orissa State for up to 600 million tons of iron ore over 30 years. Posco committed to build a 12 million ton steel mill at a cost of US\$12 billion. The mill would be built in four phases, with the first phase capacity of 4 million tons a year.

Chairman and CEO of Posco, Mr Lee Ku-taek, recognized the risks, "The world's leading steelmakers have purchased steelworks abroad but have never constructed steelworks abroad from scratch".¹

Meanwhile, in China, steel-making capacity will increase by 60 million tons in 2005, and a further 40 million tons in 2006. This increase in supply, and prospects of a glut, would increase the downward pressure on steel prices.

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¹ "Posco aims to expand beyond South Korea", *Wall Street Journal Asia*, November 1, 2005.

Questions

1. Consider the investment decisions of Tata and Posco in India. If only one company expands capacity, then it will earn profits from the increased capacity, while the other earns and loses nothing. If both expand, then there will be excess supply and both companies will incur losses from their additional capacity. Using a suitable game in strategic form, identify the pure-strategy equilibria.
2. Now, suppose that one company can commit to its investment before the other. Using a suitable game in extensive form, identify the equilibrium or equilibria.
3. Referring to your answer (2) above, explain how Posco's long-term contract with Orissa State to purchase iron ore can be a strategic move to persuade other steel manufacturers not to expand capacity.