

**Ohio University Integrated MBA**  
**Joint Student Consulting Project**

# **The Steel Industry in the People's Republic of China**

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### Executive Summary

**China Profile:** China is a great nation with a complicated past. Internally, due to its vast size and diverse ethnic makeup, there has been significant internal strife, corruption, and revolution. These periods of internal instability, in conjunction with its vast borders, have left it open to repeated invasion and its peoples to subjugation by outside forces. While China is modernizing and at this point is a more socialist than strictly communist country, the historical dangers rooted in internal instability provide a clear reason for why it is that the Chinese government and people have such a need to maintain internal stability, even if it (possibly) slows down the rate of economic progress. It is this preference for stability over sudden change, and the transitions from monarchy to communism to socialism, that provides the context in which Chinese business operates. Overall, the impact of Chinese history has led to a unique economic system.

**China's Business Environment:** The business environment in China is a complex hybrid of free-market capitalism and socialism. This complex environment is a result of the transitional nature of the Chinese government as it deals with the conflict of communist ideals and capitalist reality in a globally competitive world marketplace. This environment was further complicated by China's entry into the WTO in December of 2001. The best way to describe the Chinese business environment is that it is not capitalism, it is not socialism or communism; it is uniquely Chinese.

**Wuhan City Profile:** Wuhan is a very large city that has developed through a mixture of organic and planned growth. While manufacturing is an important part of its economy, calling it a "manufacturing city" would miss its financial, scientific, educational, and research aspects. The Wuhan city website notes that the city's GDP (as of 2006) was 259.0 billion Yuan<sup>1</sup> (approximately \$40 billion U.S. using June 2011 exchange rates).

Wuhan is a center of heavy and light manufacturing, research, business (both foreign and domestic), and higher education. With a population of over 9 million people, and an area covering approximately 8.5 thousand square kilometers, the only activity not prominent in the Wuhan economy is agriculture.

**China's Steel Industry:** The Chinese Steel Industry is the largest steel industry in the world. It is a large, competitive, and fragmented industry with a mixture of state owned and private companies. It is decentralized and has a wide geographic dispersion although it tends to the northeastern part of the country to be near the iron ore mines. Because of its size and national importance, government management and planning have and will continue to play a large role in its development. In this latest (12<sup>th</sup>) 5YP the government will be working with the largest steel companies to both increase industry concentration and move the concentration towards sea coasts and large rivers in order to reduce pollution, reduce logistics costs, and increase efficiency. In the process of increasing the industry's concentration, overcapacity issues will be addressed.

The primary risks facing the Chinese steel industry are risks to input prices. In particular, much of the high-iron-content ore used by the steel industry must be imported and world energy prices have been

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<sup>1</sup> <http://www.wuhan.com/cmarter.asp?doc=314&node=284>, accessed 6/13/2011 9:18 AM

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and will continue to rise. While the ore issue affects China more than some other steel producing nations, the energy cost issue is a global issue that will affect all steel companies.

The Chinese steel industry, already the largest in the world, will probably become even larger and more efficient in the next few years.

**Wuhan Iron and Steel Group (WISCO):** WISCO is a multi-divisional company with significant vertical and horizontal integration. A partial example of the vertical would include mining of iron ore, the production of coking coal, the design and manufacture of mining and mill equipment and control systems, and power generation. A partial example of the horizontal integration would include architectural engineering, plastics manufacturing, automation and technology development, and logistics.

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## The Steel Industry in the People's Republic of China

### Country Profile: The People's Republic of China

As with any country profile, it makes sense to begin with the country's geography and follow up with its history, before examining the specific aspects of interest. While this report is ultimately focused on the steel industry in the People's Republic of China (PRC), understanding the geography and history of this great nation are crucial for understanding the context in which this industry operates.

#### Geography

Continents are, conceptually, distinct landmasses separated by bodies of water. The separation of the Eurasian landmass into the European and Asian continents is anomalous in that there is no body of water separating them. Although it is sometimes asserted that either the Ural or Emba rivers separate the continents<sup>2</sup>, the continental divide is, ultimately, more sociological rather than physical.

A look at a map (Figure 1) reveals that China is located in the eastern part of the Asian continent and has its eastern borders along the Yellow, East China, and South China Seas. In this region, China also borders North Korea.



Figure 1 Source:3

The majority of China's northern border contacts Russia, Mongolia, and Kazakhstan, while its western border contacts Kyrgyzstan, Tajikistan, and India. China's complicated southern border includes contact with Nepal, Bhutan, Myanmar and Vietnam. China's land area comprises about 9.6 million sq. kilometers (approximately 3.7 million square miles). This area is comparable to the land area of the

<sup>2</sup> [http://en.wikipedia.org/wiki/Geography\\_of\\_Europe](http://en.wikipedia.org/wiki/Geography_of_Europe), accessed 6/11/2011 11:45 AM

<sup>3</sup> [http://www.lonelyplanet.com/maps/asia/china/map\\_of\\_china.jpg](http://www.lonelyplanet.com/maps/asia/china/map_of_china.jpg), accessed 6/13/2011 10:20 AM

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United States (approximately 9.2 million sq. kilometers). This large land area bordering on a variety of countries and civilizations has had significant impact on the development Chinese civilization. In particular, the region known as Manchuria, located in the northeastern part of China, has had an historically large impact on China's culture and governmental structure.

### A Brief History of China

Much of the information in this section is taken from the John King Fairbank Memorial Chinese History Virtual Library maintained at the University of Michigan by Robert Gray. Additionally, substantial supporting material is derived, or quoted directly from, U.S. Department of the Army *China Area Handbook* published in 1994.

### Historical Scope

According to the U.S. Department of the Army Area Handbook, Chinese civilization in its earliest "flourished between 2500 and 2000 B.C. in what is now central China and the lower Huang He (Yellow River) Valley of north China."<sup>4</sup> While there is much to value in the study of ancient Chinese history, the context of this report requires a perspective on the emergence of modern China. For that reason, our examination of Chinese history will begin with the Qing Dynasty covering the period from 1644 to 1911.

Again from the Army Area Handbook:

Long wars with the Mongols, incursions by the Japanese into Korea, and harassment of Chinese coastal cities by the Japanese in the sixteenth century weakened Ming rule, which became, as earlier Chinese dynasties had, ripe for an alien takeover. In 1644 the Manchus took Beijing from the north and became masters of north China, establishing the last imperial dynasty, the Qing (1644-1911).<sup>5</sup>

According to John King Fairbank<sup>6</sup>, the Manchus of the Qing dynasty maintained the status-quo of the long-standing Han Chinese culture from ancient times until it was destabilized by the arrival of the Western powers (Portugal and Britain) in the 1800s. These powers brought both missionary (religious) and trade interactions. A variety of complex issues involving natural disasters, internal uprisings, and the introduction of opium into China by Britain in an attempt to re-balance trade in tea, porcelain and silk, led to the collapse of the Qing Dynasty and the rise of the so-called "Republican Era."

The final acting rulers of the Qing dynasty were unable to achieve the necessary reforms and adapt to the changing trade and power situations as China's interaction with the West increased. According for Fairbank:

The republican revolution broke out on October 10, 1911, in Wuchang (武昌), the capital of Hubei (湖北) Province, among discontented modernized army units whose anti-Qing plot had been uncovered. It had been preceded by numerous abortive uprisings and organized protests inside China. The revolt quickly spread to neighboring

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<sup>4</sup> <http://www-chaos.umd.edu/history/part2>, accessed 6/10/2011 2:49 PM

<sup>5</sup> Ibid.

<sup>6</sup> <http://www.cnd.org/fairbank/>, accessed 6/10/2011 3:00 PM

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cities, and Tongmeng Hui members throughout the country rose in immediate support of the Wuchang revolutionary forces. By late November, fifteen of the twenty-four provinces had declared their independence of the Qing Empire. A month later, Sun Yat-sen returned to China from the United States, where he had been raising funds among overseas Chinese and American sympathizers. On January 1, 1912, Sun was inaugurated in Nanjing as the provisional president of the new Chinese republic. But power in Beijing already had passed to the commander-in-chief of the imperial army, Yuan Shikai, the strongest regional military leader at the time. To prevent civil war and possible foreign intervention from undermining the infant republic, Sun agreed to Yuan's demand that China be united under a Beijing government headed by Yuan. On February 12, 1912, the last Manchu emperor, the child Puyi (溥儀), abdicated. On March 10, in Beijing, Yuan Shikai was sworn in as provisional president of the Republic of China.<sup>7</sup>

Shikai's political ambitions knew no bounds. He attempted to dissolve the Guomindang, the collection of political parties that gave legitimacy to his government, undermine the power of the parliament, and revive the historical monarchy with himself as emperor. This led to widespread rebellion through China, and while attempting to consolidate his power, Shikai died of natural causes 1916.

### Recent History

After Shikai's death, there were complicated power struggles involving various factions and warlords. These internal struggles made China weak and subject to further foreign domination. This domination manifested as a demand by Japan (fighting on the side of the Allies in World War I) that China become a Japanese Protectorate under Japanese rule. The allies consented to Japan's claims in return for Japan's naval engagement against Germany, and in 1918 the Beijing government signed a secret deal with the Japanese giving them control of Shandong province. When this "sell-out" by the Beijing government became public as part of the 1919 peace conference in Paris, the calls for rebellion among the Chinese people became overpowering and led to a national awakening called the May Fourth Movement<sup>8</sup>.

In the subsequent process of stabilizing China, two parties came into being. One was the Nationalist Party and the other was the Chinese Communist Party (CCP). Western powers ignored the internal conflicts inside China, so the developing Chinese government parties turned to the Soviet Union for assistance in stabilizing the country. The Soviets, at least publicly, supported both parties. Through another series of complicated power struggles, the Nationalist party achieved power and maintained control until after World War II. After WWII the CCP, under the leadership of Mao Zedong, overthrew the Chinese Nationalists (then under the leadership of Chiang Kai-shek) and on October 1<sup>st</sup>, 1949, established the People's Republic of China (PRC). The PRC was recognized by the Soviets as the official government of China on October 2<sup>nd</sup>.

Interestingly, Chiang Kai-shek and a few hundred thousand Nationalist troops escaped to Taiwan and declared Taipei the temporary capital of China. At the end of WWII, Japan relinquished all claims on

<sup>7</sup> <http://www-chaos.umd.edu/history/modern3.html#republican>, accessed 6/10/2011 3:31 PM

<sup>8</sup> <http://www-chaos.umd.edu/history/part2>, accessed 6/10/2011 4:03 PM

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Taiwan, but did not specify to whom it belonged. This ambiguity has led to complications in the legal status of Taiwan. While the PRC is universally recognized as the government of China, the Republic of China (ROC) remains intact in Taiwan and retains its claim as the legitimate government of China. It is not legally clear if Taiwan is a free nation (The ROC) or a renegade Chinese province. This lack of clarity remains a point of international debate and a point of contention between China and the United States.

When China, correctly perceiving a threat to its sovereignty by UN peacekeeping forces, entered the Korean War in 1950 and by 1951 was declared to be an aggressor by the UN. This led the UN to impose a global embargo on arms shipments to China. This international isolation led to an internal concern about actual and perceived "enemies of the state" which, in turn, led to a series of policies designed to address this perceived threat.<sup>9</sup> Again, according to the Army Area manual "these enemies consisted of "war criminals, traitors, bureaucratic capitalists, and counterrevolutionaries."<sup>10</sup> It was during this period that the "san fan" and "wu fan" (literally 'three anti' and 'five anti') movements took place. These movements were intended to eliminate "corruption, waste, and bureaucratism [sic]" (san fan) and "tax evasion, bribery, cheating in government contracts, thefts of economic intelligence, and stealing of state assets" (wu fan)<sup>11</sup>.

By 1953, China had started a series of "5-year plans" reminiscent of those of the Soviet Union at the time. This started the period referred to as "The Transition to Socialism." This period, ending in 1957, saw the redistribution of land and the nationalization of banking, industry, and trade. "Private enterprise in mainland China was virtually abolished."<sup>12</sup>

After the "transition to socialism" period, the CCP focused on economic development based on a soviet model of consolidation and focused on individual communes. This period, known as "The Great Leap Forward," was an economic failure and, because of its close attribution of Mao Zedong, caused him to step down as the Chairman of the People's Republic in 1959. The National People's Congress elected Liu Shaoqi as Mao's successor<sup>13</sup>. During this period of unrest within the party, China asserted control over Tibet leading to a rebellion (or fight for freedom, depending on your point of view) among the Tibetans and culminated in the Dali Lama's flight to India. This conflict led to a brief war between India and China in October of 1962. The Soviets sided (morally, not militarily) with India in this conflict and started a rift in the already cooling Soviet and Chinese relations<sup>14</sup>. These complications led to a moderation of policies in a series of events including the return of production control to factory managers. This led to concern on the part of a now sidelined Mao that the party had been infiltrated by capitalists and anti-socialists. This led Mao to reassert control of the party and launch "The Cultural Revolution." This period of upheaval lasted from 1966 to 1976.

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<sup>9</sup> <http://www-chaos.umd.edu/history/part2>, accessed 6/10/2011 4:55 PM

<sup>10</sup> Ibid.

<sup>11</sup> <http://www.china-hongkong-travelguide.com/peoples-republic-of-china.html>, accessed 6/10/2011 5:23 PM

<sup>12</sup> <http://www-chaos.umd.edu/history/part2>, accessed 6/10/2011 4:55 PM

<sup>13</sup> Ibid.

<sup>14</sup> Ibid.



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The Cultural Revolution brought increasing internal conflict within the government and led to the Minister of National Defense Lin Biao's rise to the center of power. This was accompanied by Socialist education movement, reform of the school system, and the "re-education" of intellectuals to understand the need for their involvement in manual labor<sup>15</sup>. There was increasing internal violence and strife until external conflicts made it evident that further internal conflict would put Chinese sovereignty in danger. In particular, a military clash between Chinese and Soviet troops on Zhenbao Island made it clear that unity was needed. It was during this period that China sought to reengage with the West and culminated in the visit in February of 1972 of President Nixon.

Despite a variety of complex power struggles between the People's Liberation Army and the National Party Congress stability was returning. At this point, Lin Biao attempted a coup, but failed. He was killed in a plane crash as he attempted to escape China. This was followed by the attempt to 'rehabilitate' intellectuals and politicians that had been driven from influence (and in some cases imprisoned) in the early parts of the Cultural Revolution. From the Army Area Manual:

Among the most prominent of those rehabilitated was Deng Xiaoping, who was reinstated as a vice premier in April 1973, ostensibly under the aegis of Premier Zhou Enlai but certainly with the concurrence of Mao Zedong. Together, Zhou Enlai and Deng Xiaoping came to exert strong influence. Their moderate line favoring modernization of all sectors of the economy was formally confirmed at the Tenth National Party Congress in August 1973, at which time Deng Xiaoping was made a member of the party's Central Committee (but not yet of the Political Bureau).<sup>16</sup>

### China Today

While there were some intervening complications with internal politics, and the death of Mao Zedong, it is in this post Mao period that China as we know it today came to be, and its trajectory as an important, possibly dominant player on the world stage was set in motion. Again, the Army Area manual provides a succinct description.

The post-Mao political order was given its first vote of confidence at the Eleventh National Party Congress, held August 12-18, 1977. Hua was confirmed as party chairman, and Ye Jianying, Deng Xiaoping, Li Xiannian, and Wang Dongxing were elected vice chairmen. The congress proclaimed the formal end of the Cultural Revolution, blamed it entirely on the Gang of Four, and reiterated that "the fundamental task of the party in the new historical period is to build China into a modern, powerful socialist country by the end of the twentieth century."<sup>17</sup>

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Third Plenum is considered a major turning point in modern Chinese political history. "Left" mistakes committed before and during the Cultural Revolution were "corrected,"

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<sup>15</sup> Ibid.

<sup>16</sup> Ibid.

<sup>17</sup> Ibid.

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and the "two whatevers" policy ("support whatever policy decisions Chairman Mao made and follow whatever instructions Chairman Mao gave") was repudiated. The classic party line calling for protracted class struggle was officially exchanged for one promoting the Four Modernizations. In the future, the attainment of economic goals would be the measure of the success or failure of policies and individual leadership; in other words, economics, not politics, was in command.

In order to provide clarity on the stated intentions of the existing government of the People's Republic of China, the following sections are quoted from "Gov.cn: The Chinese Central Government's Official Web Portal."<sup>18</sup> The web site states that "The fundamental task and goals of the state" are:

To concentrate on the socialist modernization drive along the road of building socialism with Chinese characteristics; to adhere to the socialist road, persist in the reform and opening up program, improve the socialist system in all aspects, develop the market economy, expand democracy, and improve the rule of law; to be self-reliance and work hard to gradually realize the modernization of the industry, agriculture, national defense, science and technology so as to build China into a strong and democratic socialist country with a high degree of cultural development.<sup>19</sup>

Further, in order to allow the Chinese Government to speak for itself in this report, it is important to note certain points asserted in this section of the government's web site<sup>20</sup>. These include:

- The People's Republic of China was founded by the Communist Party of China which is the leader of the Chinese people.
- The socialist system led by the working class and based on the alliance of the workers and farmers is the fundamental system of the People's Republic of China
- All the power in the country belongs to the people who exercise their power through the National People's Congress and local people's congresses at all levels. The people manage the state, economy, culture and other social affairs through a multitude of means and forms.
- All individuals, political parties and social organizations must abide by the Constitution in all their actions and shall not be privileged to be above the Constitution or the law. All acts in violation of the Constitution and law must be investigated. The rule of law is practiced to build China into a socialist country with the rule of law.
- All ethnic groups are equal. All prejudice and oppression against any ethnic group is forbidden. All behaviors harmful to ethnic unity and aimed at ethnic separation are forbidden.
- All citizens who have reached the age of 18 have the right to vote and stand for election, regardless of ethnic status, race, sex, occupation, family background, religious belief, education, property status or length of residence, except persons deprived of political rights according to law.

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<sup>18</sup> <http://english.gov.cn/about/politics.htm>, accessed 6/11/2011 11:32 AM

<sup>19</sup> <http://www.china.org.cn/english/Political/26143.htm>, accessed 6/11/2011 11:34 AM

<sup>20</sup> Ibid.

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- All citizens enjoy freedom of speech, of the press, or assembly, of association, of procession and of demonstration
- Citizens enjoy the freedom of religious belief. No state organ, public organization or individual may compel citizens to believe in, or not to believe in, any religion.
- No citizen may be arrested except with the approval or by decision of a people’s procuratorate or by decision of a people’s court, and arrests must be made by a public security organ. Unlawful detention or deprivation or restriction of citizens’ freedom of the person by other means is prohibited, and unlawful search of the person of citizens is prohibited. The personal dignity of citizens is inviolable, so are their residences.

It may be surprising to people from the west, especially from the United States, the significant philosophical overlap between the concepts in the constitution of the PRC and the constitution of the United States.

### Analysis of the Brief History of China

China is a great nation with a complicated past. Internally, due to its vast size and diverse ethnic makeup, there has been significant internal strife, corruption, and revolution. These periods of internal instability, in conjunction with its vast borders, have left it open to repeated invasion and its peoples to subjugation by outside forces. While China is modernizing and at this point (at least according to the aspirations noted in its constitution) is a more socialist than strictly communist country, the historical dangers rooted in internal instability provide a clear reason for why it is that the Chinese government, and the Chinese people, have such a need to maintain internal stability even if it (possibly) slows down the rate of economic progress. It is this preference for stability over sudden change, and the transitions from monarchy to communism to socialism, that provides the context in which Chinese business operates.

### The Business Environment in China

As part of understanding the business environment in China it is necessary to have some basic statistical information:

<b>Statistic</b>	<b>Value</b>
Population	1.3 Billion
Working Age	Approximately 74% (983 million) between 15 and 64
Median Age	36 years
Urbanization	Approximately 47% live in cities
Literacy	Approximately 92% can read and write

Table 1

As noted earlier, the governmental structure of China is somewhere between communism and socialism. Because of the historical emotional and ideological loadings of these two words, and the possibility of misunderstanding associated with these loadings, it is prudent to begin this section with definitions.

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### **com·mu·nism**<sup>21</sup> noun

1. a theory or system of social organization based on the holding of all property in common, actual ownership being ascribed to the community as a whole or to the state.
2. ( often initial capital letter ) a system of social organization in which all economic and social activity is controlled by a totalitarian state dominated by a single and self-perpetuating political party.
3. ( initial capital letter ) the principles and practices of the Communist party.
4. communalism.

### **so·cial·ism**<sup>22</sup> noun

1. a theory or system of social organization that advocates the vesting of the ownership and control of the means of production and distribution, of capital, land, etc., in the community as a whole.
2. procedure or practice in accordance with this theory.
3. (in Marxist theory) the stage following capitalism in the transition of a society to communism, characterized by the imperfect implementation of collectivist principles.

As the definitions above note, in both systems the ownership and control of the “means of production” are in the hands of “the community.” Since “the community” can only act through individuals, the inevitable result of these systems is that a governmental body plans and controls economic activity. However, as the Chinese government stabilized after the great leap forward, it was impossible for the leaders to miss what was happening elsewhere in the world. According to Joseph Fewsmith writing in *The China Handbook* (published by Routledge):

When Deng Xiaoping and other reform-minded leaders returned to power at the end of 1978, they focused their attention on two related topics: social stability and economic development. Chen Yun, a senior party leader and economic specialist, fretted over the prospect of rural violence. If the livelihood of the peasants did not improve, Chen warned, peasants would flood into the cities to demand food. Deng Xiaoping dismissed the previous 20 years of Chinese history—the period since the Great Leap Forward—as “wasted.”

The Dengist leadership's views were influenced by the emergence over the previous two decades of several economic power-houses in Asia: Japan, South Korea, Taiwan, Hong Kong, and Singapore. Even Deng Liqun, who emerged as a leading critic of reform, marveled at the economic progress and social order in Japan. That such nations had grown their economies while China had destroyed itself in internecine conflict only increased the leadership's resolve to pursue reform.<sup>23</sup>

The introduction of market forces into the formerly planned economy under which China had been operating, and the price distortions that the planned economy created, caused a variety of unintended consequences in which companies succeeded or failed not because of their intrinsic capabilities or

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<sup>21</sup> <http://dictionary.reference.com/browse/communism>, accessed 6/11/2011 12:35 PM

<sup>22</sup> <http://dictionary.reference.com/browse/socialism>, accessed 6/11/2011 12:34 PM

<sup>23</sup> [http://www.routledgepoliticsonline.com.proxy.library.ohiou.edu/Book.aspx?id=w002\\_w002b3.1.1](http://www.routledgepoliticsonline.com.proxy.library.ohiou.edu/Book.aspx?id=w002_w002b3.1.1), accessed 6/11/2011 1:47 PM

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efficiencies, but because of the distortions inherent in the mixed marketplace. In 1980 there was an attempt to back the market forces out of the economy and to return to planned operations.

From the China Handbook quoting the Beijing Review:

In present-day China, public ownership of the means of production is in an absolutely dominant position and labor force is no longer a commodity. Generally speaking, individual economy will not engender capitalism because in the scope of management, the supply of raw materials, price and taxation, it is subject to control and restriction by the public economy and by the state organs concerned.<sup>24</sup>

—Beijing Review, August 18, 1980

These attempts had unintended consequences causing increased market influence in the production systems and a consequent increase in production. In essence, China was reaping the first benefits of nearly unlimited production capacity.<sup>25</sup> The party, sensing creeping capitalism, attempted to put further pressure on the economy through tightening monetary policy, regulation, and price controls. The end result was a collapse of the profitability of state-run enterprises, a period of deflation, and a liquidity crisis.<sup>26</sup> Seeing the problems in stark terms, Deng Xiaoping realized that retrenchment into the past was no longer possible, and that China must move forward in a market economy. Again, from Joseph Fewsmith in the China Handbook:

In January and February 1992 Deng Xiaoping made an important trip to the Shenzhen Special Economic Zone (SEZ) in Guangdong province.

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He called for faster economic growth and urged Guangdong province to catch up to the “four small dragons” (Hong Kong, Taiwan, Singapore, and South Korea) within 20 years. With Deng leading the charge, economic reform took off once again. At the Fourteenth Party Congress in Beijing in October 1992, the CCP adopted the most reform-oriented platform in its history. The goal of reform, the party now declared, was to build a “socialist market economy,” a system that far exceeded in scope the commodity economy that had been pursued by the leadership in 1984.

The effect of Deng Xiaoping focus on improved economic development can be seen in the following party decision:

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<sup>24</sup> [http://www.routledgepoliticsonline.com.proxy.library.ohiou.edu/Book.aspx?id=w002\\_w002b3.5](http://www.routledgepoliticsonline.com.proxy.library.ohiou.edu/Book.aspx?id=w002_w002b3.5), accessed 6/11/2011 2:04 PM

<sup>25</sup> [http://www.routledgepoliticsonline.com.proxy.library.ohiou.edu/Book.aspx?id=w002\\_w002b3.1.1](http://www.routledgepoliticsonline.com.proxy.library.ohiou.edu/Book.aspx?id=w002_w002b3.1.1), accessed 6/11/2011 1:47 PM

<sup>26</sup> [http://www.routledgepoliticsonline.com.proxy.library.ohiou.edu/Book.aspx?id=w002\\_w002b3.1.4](http://www.routledgepoliticsonline.com.proxy.library.ohiou.edu/Book.aspx?id=w002_w002b3.1.4), accessed 6/11/2011 1:56 PM

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The state should create conditions for economic sectors under different kinds of ownership to compete in the market on equal terms, and should deal with the various types of enterprise without discrimination.<sup>27</sup>

—Central Committee decision, November 14, 1993

While this dramatic transition from state-mandated control of production to a point at which the Central Committee asserts that 'different types of ownership' can compete 'in the market on equal terms' implies a free marketplace, the reality is not quite so 'free.' According to Susan Young writing in the Routledge China Handbook:

Although China's private sector has overcome various political and institutional constraints on private business during the reform period, it has done so at considerable cost to its independence. Private businesses in China continue to rely on personal connections for their success. Furthermore, they are highly vulnerable to the whims of local government administration and sensitive to political change.<sup>28</sup>

In an attempt to help private business flourish, private businesses were brought into collective sector categories. This helped entrepreneurs overcome the bias against private enterprises that had been long cultivated under the communist/socialist philosophy of the past many years.<sup>29</sup> Again from Susan Young writing in the Routledge China Handbook:

Despite promises to the contrary, the private sector has not been limited to a marginal role in China's reforming economy, although key elements of the state-run economy certainly have shaped the private sector. Economically, discriminatory policies designed to favor socialist ownership merely encouraged corruption, as entrepreneurs used other channels to obtain favorable economic conditions and supplies. Administratively, entrepreneurs devoted much of their time to maintaining informal agreements and personal relationships with local officials. Not surprisingly, entrepreneurs considered connections to be as important as financial capital; they even referred to connections as "capital" and calculated the worth of their relationships in business terms.

### Conclusion

From the research cited above, it is clear that the business environment in China is a complex hybrid of free-market capitalism and socialism. This complex environment is a result of the transitional nature of the Chinese government as it deals with the conflict of communist ideals and capitalist reality in a globally competitive world marketplace. This environment was further complicated by China's entry into

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<sup>27</sup> [http://www.routledgepoliticsonline.com.proxy.library.ohiou.edu/Book.aspx?id=w002\\_w002b3.5](http://www.routledgepoliticsonline.com.proxy.library.ohiou.edu/Book.aspx?id=w002_w002b3.5), accessed 6/11/2011 2:08 PM

<sup>28</sup> [http://www.routledgepoliticsonline.com.proxy.library.ohiou.edu/Book.aspx?id=w002\\_w002b3.5.5](http://www.routledgepoliticsonline.com.proxy.library.ohiou.edu/Book.aspx?id=w002_w002b3.5.5), accessed 6/11/2011 2:21 PM

<sup>29</sup> [http://www.routledgepoliticsonline.com.proxy.library.ohiou.edu/Book.aspx?id=w002\\_w002b3.5.3](http://www.routledgepoliticsonline.com.proxy.library.ohiou.edu/Book.aspx?id=w002_w002b3.5.3), accessed 6/11/2011 2:31 PM

## The Steel Industry in the People's Republic of China

the WTO in December of 2001. The best way to describe the Chinese business environment is that it is not capitalism, it is not socialism or communism; it is uniquely Chinese.

### Dominant Industries

China is the third largest, and given the recent disasters in Japan probably soon to be the second largest, economy in the world. It is the nature of such a large economy that it must have several if not many dominant industries. For that reason, any research on the subject of "dominant industries in China" produces a long list. A typical list, in this case from the U.S. Department of State includes the following as major industries operating in China:

Major industries are mining and ore processing; iron; steel; aluminum; coal, machinery; textiles and apparel; armaments; petroleum; cement; chemicals; fertilizers; consumer products including footwear, toys, and electronics; automobiles and other transportation equipment including rail cars and locomotives, ships, and aircraft; telecommunications equipment; commercial space launch vehicles; and satellites.<sup>30</sup>

From this list, three industries were chosen for analysis: Textiles and Apparel, Mining and Ore Processing, and Electrical Power Generation. The analysis is conducted using Michael Porter's 'Diamond of National Advantage' as an analytical model.

### Textiles and Apparel

China is one of the largest processors of cotton and fibers and one of the largest exporters of fabric and clothing, with much of the clothing coming to the United States. According to The Harvard Center for Textile and Apparel Research, "The U.S. imported \$7.4 billion dollars of apparel from the People's Republic of China (P.R.C.), more than from any other country."<sup>31</sup> This is further supported by the China Cotton Association which reports that "According to the latest investigation of CCA, the national gross output is estimated to be 7.8 million tons in 2007 which rise by 300,000 tons from last month data, because some cotton district planting area are more than previous expect according to the latest agricultural census."<sup>32</sup>

Component	Notes
Firm Strategy, Structure and Rivalry	Due to the unique structure of the Chinese economy and its associated business regulation, the firms in the Textile industry face significant internal competition. When coupled with the near commodity nature of the industry output, firms are forced to focus on efficiency and cost minimization.

<sup>30</sup> <http://www.state.gov/r/pa/ei/bgn/18902.htm>, accessed 6/11/2011 4:40 PM

<sup>31</sup> <http://www.hctar.org/pdfs/GS01.PDF>, accessed 6/11/2011 5:52 PM

<sup>32</sup> <http://www.china-cotton.org/english/enevshow.php?articleid=155>, accessed 6/11/2011 6:31 PM

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Factor Conditions	<p>Factors include access to cotton or fiber inputs and machinery to process these fibers into clothing. China is the largest cotton producer in the world<sup>33</sup>.</p> <p>Due to the high level of word trade, China has been able to acquire Unit Production Systems (Automation) from the U.S. and Europe, and then use these machines to produce clothing for internal and export markets<sup>34</sup>.</p> <p>It is well known that China has the labor pool to support high levels of automated production.</p>
Demand Conditions	<p>China has a large internal demand for clothing due to its large population, as well as large external demand. In 1994 textile exports represented almost 28% (by revenue) of Chinese exports.<sup>35</sup></p>
Related and Supporting Industries	<p>The textile industry focuses on transforming cotton or other fibers into thread, fabric, and clothing. Because the industry’s supply chain is only one step from its commodity origins (farming) there is minimal requirement for additional supporting industries.<sup>36</sup></p> <p>Joint ventures receive preferential tax treatment, and there is widespread availability of financing to support the industry.<sup>37</sup></p>

Table 2

**Summary:** Because of the highly competitive nature of the firms in this near commodity industry, the availability of financing and preferential tax treatment, the short domestic supply chain, and significant domestic demand conditions, the textile industry in the PRC has been forced to develop into a world-class competitor. This has given China a significant competitive advantage in the world Textile Industry.

Research was unable to identify a multinational textile company operating within China. This is not to say that many multinational textile companies do not source materials, and in some cases completed goods from China, but there do not seem to be any significant (identifiable) multinational textile companies selling products within China. This may be the best evidence of the global competitive advantage of the Chinese textile industry.

### Steel Production

According to Bloomberg<sup>38</sup>, China is the largest steel producer in the world. China’s share of world steel production hovers around 42-44% of world production. China’s lead as a steel producer is significant as the second largest producer, Japan, produces around 8%. The United States comes in third with about 5% of world production.

<sup>33</sup> [http://www.nationmaster.com/graph/agr\\_cot\\_pro-agriculture-cotton-production](http://www.nationmaster.com/graph/agr_cot_pro-agriculture-cotton-production), accessed 6/11/2011 6:02 PM

<sup>34</sup> <http://www.hctar.org/pdfs/GS01.PDF>, accessed 6/11/2011 5:52 PM

<sup>35</sup> <http://www.hctar.org/pdfs/GS01.PDF>, accessed 6/11/2011 5:52 PM

<sup>36</sup> Ibid.

<sup>37</sup> Ibid.

<sup>38</sup> <http://www.bloomberg.com/news/2011-02-22/world-crude-steel-production-share-by-country-table.html>, accessed 6/12/2011 1:21 PM



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Component	Notes
Firm Strategy, Structure and Rivalry	<p>The Steel industry in China operates in the same basic business conditions as the textile industry, and the similarities are striking, so the descriptions of strategy, structure, and rivalry are identical:</p> <p>Due to the unique structure of the Chinese economy and its associated business regulation, the firms face significant internal competition. When coupled with the near commodity nature of the industry output, firms are forced to focus on efficiency and cost minimization.</p> <p>Additionally, there may be some governmental support for the industry. According to the Metal Daily Bulletin dated 5/9/2011, "Steel prices may receive some support after the ministry of industry and information technology said it planned to eliminate 26.27 million tonnes of outdated steel capacity in 2011."<sup>39</sup></p>
Factor Conditions	<p>Factors in the steel industry include availability of iron ore, power, and processing technology.</p> <p>According to the USGS, China has significant iron ore reserves<sup>40</sup>. Additionally, China is working with Australia to gain access to its reserves. Bloomberg reports in the article entitled <i>The deal is simple. Australia gets money, China gets Australia</i>, "China buys A\$22 billion worth of iron ore from Australia each year."<sup>41</sup></p> <p>In terms of processing technology, China has access to all of the required cash to purchase any necessary equipment from manufacturers in the U.S., Europe, and Australia as well as the ability to produce much of the equipment within the country.</p> <p>The main risk in the Steel production industry in China is the availability of Energy for processing, but since the world energy market is completely global, China is not at a differential disadvantage with respect to other countries and, due to its abundant coal reserves and growing focus on nuclear energy, may experience advantages in the future.</p>
Demand Conditions	<p>According to Business Monitor International's <i>China Mining Report Q3 2011</i><sup>42</sup>, forecasted demand is being reduced below previous recent forecasts, but remains elevated near all-time highs, and much of this demand is internal to China.</p>

<sup>39</sup> Metal Bulletin Daily; 5/9/2011, Issue 261, p164-164, 1p

<sup>40</sup> [http://minerals.usgs.gov/minerals/pubs/commodity/iron\\_ore/feoremcs05.pdf](http://minerals.usgs.gov/minerals/pubs/commodity/iron_ore/feoremcs05.pdf) accessed 6/12/2011 1:44 PM

<sup>41</sup> [Bloomberg BusinessWeek](#); 9/6/2010, Issue 4194, p44-49, accessed 6/12/2011 1:50 PM

<sup>42</sup>

<http://search.ebscohost.com.proxy.library.ohiou.edu/login.aspx?direct=true&db=bth&AN=60569296&site=ehost-live>, accessed 6/12/2011 2:03 PM

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Related and Supporting Industries	China has a significant machine tool and mining equipment manufacturing. For example, the Data Monitor Industry profile on Metals & Mining in China notes that “Baosteel operates in the technology service business through Shanghai Baosteel Engineering & Equipment (BSEE), a wholly-owned subsidiary of the company and Shanghai Baosight (Baosight).” <sup>43</sup>
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Table 3

**Summary:** As the above analysis demonstrates, the Steel production firms in China operate in a highly competitive local, regional, and global marketplace forcing them to become highly efficient. Additionally, governmental assistance and industry regulation place many of these firms on a solid competitive basis. The factor conditions within China are highly favorable to the development of world-class competitors, and China offers both the supporting industries and demand conditions to support a collection of rival firms. These competitive environments, in conjunction with the large and growing ore reserves available to Chinese steel producers, has placed the steel production industry in China among the best in the world.

Tata Steel is an example of a multinational company operating within China. According to Tata Steel’s web site, “Tata Steel is a top ten global steel maker and the world’s second most geographically diversified steel producer.”<sup>44</sup> Pankaj Ghemawat’s AAA Triangle is an excellent model for evaluating how Tata Steel achieves a competitive advantage while operating within the Chinese steel industry. This model scores a company on its levels of Adaptation (to local markets), Aggregation (to achieve higher levels of scope or scale), and Arbitrage (to leverage cost or price advantages on one region into profitability). Each item is scored (estimated) on a scale of 1-10 with an ideal score of 30. Due to the inherent conflict between aggregation and adaptation scores above 20 are unusual.

In China, Tata Steel operates Tata Wire, a global steel wire manufacturer.

Attribute	Notes <sup>45</sup>
Adaptation	Tata Steel manufactures steel throughout the world, but has chosen open Wuxi Jinyang Metal Products (WJMP) in the city of Wuxi in the Jiangsu province of the PRC. This has allowed Tata to provide ideal products to the Chinese market while fitting nicely into the way in which business is done in China. <b>Estimated Adaption Score: 9</b>
Aggregation	Since WJMP purchases local steel instead of taking advantage of the vertical integration implied by its membership in the Tata Steel organization, there is little in the way of aggregation in this arrangement: <b>Estimated Aggregation Score: 2</b>
Arbitrage	By using local steel and transforming it into the steel wire that is needed for a variety of products in local construction and manufacturing, Tata Steel, by way of WJMP, has found an excellent method of arbitraging low labor costs and eliminating the need for shipping costs. This arbitrage allows Tata Steel to reap profits that it would not otherwise be able to access. <b>Estimated Arbitrage Score: 7</b>

<sup>43</sup>

<http://search.ebscohost.com.proxy.library.ohiou.edu/login.aspx?direct=true&db=bth&AN=53057218&site=ehost-live>, accessed 6/12/2011 2:19 PM

<sup>44</sup> <http://www.tatasteel.com/about-us/index.asp>, accessed 6/12/2011 5:15 PM

<sup>45</sup> <http://www.tatawire.com/companies/wjmp.asp>, accessed 6/12/2011 5:27 PM

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Total	<b>Estimated Total Score: 18</b> While this is not a “high” score (above) 20, this reflects a well-functioning multinational company operating efficiently within a host country to leverage profit opportunities.
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Table 4

### Electrical Power Generation

China’s economy has been growing at a tremendous pace for more than twenty years. This growth requires significant amounts of energy, and can be limited or reduced through high energy prices. For these reasons, the Chinese people and the Chinese government have recognized the strategic importance of a careful energy policy. According to Global Access China:

Of all Chinese industries, the thermal, hydro and nuclear power industries have developed the most rapidly. Since the 1990s, the installed capacity of generators increased from 100 million kw to 385 million kw by the end of 2003. The country produced 1.9108 trillion kwh of electricity in 2003. Presently, China is the world's second in the installed capacity of generators and generated electricity.<sup>46</sup>

Component	Notes
Firm Strategy, Structure and Rivalry	<p>Similar to the other industries operating within the Chinese economy, the power generation industry has a mixture of private, joint venture, and state owned firms. However, due to the strategic nature of this industry it receives particular state attention. This attention helps by making sure that initiatives that may not be profitable in a free market environment still receive funding.</p> <p>Additionally, Chinese power generation firms benefit from significant technology transfer and experience by engaging in joint ventures with foreign power companies.</p>

<sup>46</sup> [http://www.gac-china.com/China\\_Insight/China\\_Facts/China\\_Major\\_Industries/china\\_major\\_industries.html](http://www.gac-china.com/China_Insight/China_Facts/China_Major_Industries/china_major_industries.html), accessed 6/12/2011 2:35 PM

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<p>Factor Conditions</p>	<p>The main factors for power production are the supplies of fuel for the specific power generation technique (coal, natural gas, or uranium), and the ability to produce the equipment needed to turn the fuel into electrical energy.</p> <p>As noted in the steel industry section above, China has vast reserves of coal. According to Business Monitor International's China Oil &amp; Gas Report Q1 2010, "coal accounts for more than two-thirds of Chinese energy consumption, making it the world's biggest coal consumer. China owns 11.6% of the world's coal deposits, with reserves of 114.5bn tonnes."<sup>47</sup></p> <p>The primary limitation on China's power production is the lack of availability of moderately priced petroleum products (gas and diesel) and natural gas. According to the PRC official website the Chinese government is working to alleviate these issues. It notes that: "Oil industry development has accelerated the growth of local economies and related industries, such as machinery manufacturing, iron and steel industries, transport and communications."<sup>48</sup></p> <p>According to Business Monitor International's China Oil &amp; Gas Report Q1 2010, the Chinese government is taking steps to mitigate these issues: "China has approved the construction of 28 new nuclear power plants by 2020, which will exceed its capacity target for 2020 by 10GW."<sup>49</sup></p>
<p>Demand Conditions</p>	<p>The demand conditions for power in China can only be described as overwhelming. According to an article published in ICIS Chemical Business, entitled <i>China's power predicament</i>, "China is grappling with its worst power shortage in years, particularly in the country's main industrial bases in the east and south. This will lead to reduced economic output in the second quarter, according to industry sources."<sup>50</sup></p>

<sup>47</sup>

<http://search.ebscohost.com.proxy.library.ohiou.edu/login.aspx?direct=true&db=bth&AN=55432737&site=ehost-live>, accessed 6/12/2011 4:22 PM

<sup>48</sup> [http://english.gov.cn/2006-02/09/content\\_183861.htm](http://english.gov.cn/2006-02/09/content_183861.htm), accessed 6/12/2011 4:15 PM

<sup>49</sup>

<http://search.ebscohost.com.proxy.library.ohiou.edu/login.aspx?direct=true&db=bth&AN=55432737&site=ehost-live>, accessed 6/12/2011 4:22 PM

<sup>50</sup>

<http://search.ebscohost.com.proxy.library.ohiou.edu/login.aspx?direct=true&db=bth&AN=61045352&site=ehost-live>, accessed 6/12/2011 2:48 PM

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Related and Supporting Industries	<p>According to the PRC official website, “Starting in the 1980s, China has invested hugely into creating a number of large-scale modern coalmines, contributing to the gradual increase of coal output, maintained at more than one billion tons annually since 1989.” There is additional information available at this site indicating that the government is also developing related initiatives in the mining of uranium, production of natural gas, and other industries that are required to support the power industry<sup>51</sup>. Again from the PRC web site:</p> <p>“To relieve the shortage of energy supplies that fetters China's economic growth, China is developing new energy resources, such as wind, solar, geothermal, and tidal power. Its abundant wind energy resources give China the potential for mass-produced wind power. Between 2001 and 2005, the government invested 1.5 billion Yuan in the wind power industry.”<sup>52</sup></p>
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Table 5

**Summary:** An advantage not accounted for in the Porter’s Diamond analysis is that since China is currently growing, they have the opportunity to install state-of-the-art equipment to meet their growing demand while other countries are still depreciating and recovering the cost of installed equipment. This “new infrastructure” situation also helps China’s power industry achieve competitive advantages. This is evidenced by the PRC web portal which notes:

An international advanced control automation system with computers as the mainstay has been universally adopted, and has proved practical. Now China's power industry has entered a new era featuring large generating units, large power plants, large power grids, ultra-high voltage and automation.”<sup>53</sup>

As the above analysis indicates, with state assistance, experience gained through joint ventures, and new power generation infrastructure, Chinese power generation companies are becoming some of the most competitive and advanced in the world.

An example of a multinational power generation company operating within China is BP. The following section uses company documents and Ghemawat’s AAA triangle to evaluate the China strategy adopted by BP.

Attribute	Notes <sup>54</sup>
Adaptation	BP has been in China for over 30 years, first selling and licensing chemicals, and later taking equity positions in Chinese companies. BP is now involved in setting up PV (photovoltaic) Solar Cell production facilities, oil and gas exploration, and every other aspect of energy production within China. <b>Estimated Adaptation Score: 10</b>
Aggregation	While BP seems to have become so entrenched within China that one might think that the Chinese involvement may isolate it from other parts of the company, nothing could

<sup>51</sup> [http://english.gov.cn/2006-02/09/content\\_183861.htm](http://english.gov.cn/2006-02/09/content_183861.htm), accessed 6/12/2011 2:45 PM

<sup>52</sup> Ibid.

<sup>53</sup> Ibid.

<sup>54</sup> <http://www.bp.com/sectiongenericarticle.do?categoryId=179&contentId=2000604>, accessed 6/12/2011 6:00 PM

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	be further from the truth. BP has leveraged its R&D and global manufacturing and refining capabilities in conjunction with its reputation within China to create significant economies of both scale and scope. <b>Estimated Aggregation Score: 9</b>
Arbitrage	BP is doing so well operating within China that it seems that little of what is created within China leaves the country. There does not seem to be any leverage of low-cost labor to provide lower costs to components of BP outside of China. <b>Estimated Arbitrage Score: 1</b>
Total	With a score of 20, BP is amazingly well adapted to its role as a multinational operating within China.

Table 6

### Industry Summary

While the above analyses examine three industries, this is by no means to be taken as the only highly competitive and advanced Chinese industries operating on the global stage. The lists from which these three were chosen tended to be long and included several other industries. For anyone who has been watching the global economic environment for the last twenty or more years, it is relatively obvious that China has many globally competitive industries.

### Advice for CEOs

This section attempts to distill information from the Chinese business environment, overall industry considerations, and personal experience to provide suggestions on things that CEOs (U.S. and Chinese) should consider when moving beyond their native market.

#### U.S. CEOs Considering the Chinese Market

For a U.S. CEO considering entering the Chinese market there are certain things that should be considered (based on the author’s education and experience).

1. Make use of Ghemawat’s AAA triangle to provide a lens through which opportunities can be understood, but understand that China is unique. Because of its past, China will always be concerned about the impact of any business or foreign involvement within China. Do not “fight” the system. Instead, operate within the Chinese culture and attempt to provide customer value by making your company helpful to China.
2. Do not **focus** on labor price arbitrage. While it may have made sense in the past, there are other emerging countries that have cheaper labor. Instead, focus on serving the Chinese market. If a U.S. company can figure out how to do well within China, it will be at an advantage as it goes into other international markets.
3. Employ Chinese management, train them in what your company does, but learn from them about how this is done in China.
4. Move beyond the cities. China is as large as the U.S. but much of the population is still outside the cities. While this is changing, it is not a good idea to ignore such a large market.
5. Learn the history; understand the people.

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### **Chinese CEOs Considering Non-U.S. Markets**

Chinese CEOs entering non-U.S. markets must, in the author's opinion, be aware of the following items. It should come as no surprise that many of these will overlap with the list above.

1. Make use of Ghemawat's AAA triangle to provide a lens through which opportunities can be understood, but understand that each market is unique. Because of China's dominance in the global economic environment, understand that some countries will be wary of China's entry into their market and protective of their local industries. Learn the culture and attempt to provide customer value by making your company helpful to your customers.
2. Do not attempt to put the local companies out of business. If businesses are destroyed and people displaced then there will be political consequences that will be unprofitable. Work with the local companies and industries to develop the nation.
3. Employ local management, train them in what your company does, but learn from them about how this is done in their country.
4. Food before products.
5. Learn the history; understand the people.

### **Conclusion to Country Report**

Each country has a unique history that results in its particular views of business, products, and foreign peoples. Marketing, at its core, is about understanding your customers and doing a better job of satisfying their needs and wants than your competitors. When a company enters another country, it enters a complex web where the competitors, the companies operating within that country, are also the customers. So, understanding the customer, the culture of the country, and the reasons that things are as they are is crucial to being successful. Ultimately, it is important to have a mindset of 'elevating the people' as opposed to 'exploiting a market.'

### City Profile: Wuhan, Hubei Province, PRC

It is best to let the city of Wuhan introduce itself in its own words. According to its official website, Wuhan is:

A modern metropolis with unlimited possibilities, situated in the heart of China. Wuhan is an energetic city, a commercial centre of finance, industry, trade and science, with many international companies located here. Having scientific, technological and educational institutions such as Laser City and the Wuhan University, the city is also an intellectual centre.<sup>55</sup>

With such a broad activity profile, it is inevitable to ask how Wuhan came to be, and to seek more information on its economy.

### A Brief History of Wuhan

According to the Wuhan city website, Wuhan traces its roots back at least 3500 years<sup>56</sup>. Wuhan started as the town of Panlong, a water hub during the Shang Dynasty. In 222 CE Sun Quan, the king of Wu, created the city of Wuchang<sup>57</sup>. During the Ming dynasty (1368-1644), Hankou starts to be developed as the main city in the area, the two new cities of Wuchang and Hanyang began to be built at the junction of Yangtse River and Han River.<sup>58</sup> Finally, in 1927 "the three towns, Hankou, Wuchang and Hanyang come under one administrative system and named Wuhan."<sup>59</sup> Again, according to the Wuhan city web site, 1992 was an important year for the development of Wuhan because in 1992:

Wuhan became an open city for foreign companies. The following 7 years Wuhan's local economy had an average annual growth rate of 16% which was called "Wuhan Phenomenon" by Chinese economists.

Today Wuhan has a population of over 9 million people divided into thirteen districts: Hudian, Dongxihu, Hannan, Hanyang, Hongshan, Huangpi, Jiang'an, Jianghan, Jiangxia, Qiaokou, Qingshan, Wuchang and Xinzhou.<sup>60</sup> The Wuhan city website tells us that "Wuhan offers limitless business opportunities and already today more than 5,000 foreign enterprises have invested in Wuhan and/or incorporated here."<sup>61</sup>

### The Culture of Wuhan

Wuhan is an ancient city that has become a modern manufacturing hub and business center. Its history is reflected in historical sites such as the Yellow Crane Tower, the East lake (the largest lake within a

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<sup>55</sup> <http://www.wuhan.com/cmarter.asp?doc=310&node=278>, accessed 6/14/2011 9:50 AM

<sup>56</sup> <http://www.wuhan.com/cmarter.asp?doc=316&node=283>, accessed 6/13/2011 8:36 AM

<sup>57</sup> Ibid.

<sup>58</sup> Ibid.

<sup>59</sup> Ibid.

<sup>60</sup> <http://www.wuhan.com/cmarter.asp?doc=314&node=284>, accessed 6/13/2011 8:44 AM

<sup>61</sup> <http://www.wuhan.com/cmarter.asp?doc=326&node=280>, accessed 6/13/2011 8:50 AM



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Chinese city), the Moshon Hill which is the location of the Chutian Tower, and the Hubei Provincial Museum.<sup>62</sup>

### The Economy of Wuhan

In the following paragraphs, the Wuhan city web site is quoted at length because of the clarity and succinct nature of its overview of the industries and focus of the local economy.

Even though Wuhan has for decades been a traditional base of manufacturing industry, the city is also one of the birthplaces of China's modern industry. With three national development zones, four scientific and technologic development parks, over 350 research institutes, 1470 hi-tech enterprises and numerous enterprise incubators, Wuhan offers a global competitive strength in most business fields.

By combining the old-line industry like automobile manufacturing, that once was the starting point of China's economic liberalization, with new hi-tech industries in places like the Optics Valley, where fibre-optic, electronics and pharmaceutical companies are developing new products, Wuhan is positioning itself as one of the most progressive business cities in all Asia.

...

With Wuhan's strategic position in central China the city is a natural hub for effective distribution for products of many industries, particularly for distribution of cars, as domestic car sales are booming all over China. These facts are also one of the reasons that car makers like Citroen, Peugeot, Nissan and Honda have entered joint-ventures with the state-owned company Dongfeng.<sup>63</sup>

This above information is consistent with the U.S. Library of Congress country studies website which states that "major machinery centers were Shanghai, Tianjin, Shenyang, Beijing, Harbin, Changchun, Taiyuan, Luoyang, **Wuhan**, Chongqing, Chengdu, Xi'an, and Lanzhou."<sup>64</sup>

**Conclusion:** By any standard, Wuhan is a very large city that has developed through a mixture of organic and planned growth. While manufacturing is an important part of its economy, calling it a "manufacturing city" would miss its financial, scientific, educational, and research aspects. The Wuhan city website notes that the city's GDP (as of 2006) was 259.0 billion Yuan<sup>65</sup> (approximately \$40 billion U.S. using June 2011 exchange rates).

Wuhan is a center of heavy and light manufacturing, research, business (both foreign and domestic), and higher education. With a population of over 9 million people, and an area covering approximately 8.5 thousand square kilometers, the only activity not prominent in the Wuhan economy is agriculture.

<sup>62</sup> <http://www.wuhan.com/cmarter.asp?doc=346&node=327>, accessed 6/13/2011 8:51 AM

<sup>63</sup> <http://www.wuhan.com/cmarter.asp?doc=326&node=280>, accessed 6/13/2011 8:54 AM

<sup>64</sup> [http://lcweb2.loc.gov/cgi-bin/query/D?cstdy:3:/temp/~frd\\_gzwl::](http://lcweb2.loc.gov/cgi-bin/query/D?cstdy:3:/temp/~frd_gzwl::), accessed 6/13/2011 9:07 AM

<sup>65</sup> <http://www.wuhan.com/cmarter.asp?doc=314&node=284>, accessed 6/13/2011 9:18 AM

### Industry Analysis: Steel in the PRC

#### The Scale of the Chinese Steel Industry

The People's Republic of China is, by a broad margin, the largest steel producer in the world. Production figures vary depending on the year and organization reporting, but according to the World Steel Association's Statistical Yearbook for 2010<sup>66</sup>, world steel production in 2009 totaled 1.2 billion metric tons. China's total 2009 steel production was approximately 568 million metric tons. This places China as the world's number one steel producer with production comprising approximately 47% of the world's total steel output.<sup>67</sup> For comparison, the number two world steel producer, Japan, produced approximately 88 million metric tons or approximately 7% of the world's total steel production. To put this in scale, China's steel industry is the largest in the world, exceeding the second largest producer by a *factor* of approximately 6.4.

In terms of the growth of production, the following graph shows Chinese steel production by year for the period from 2000 until 2009.

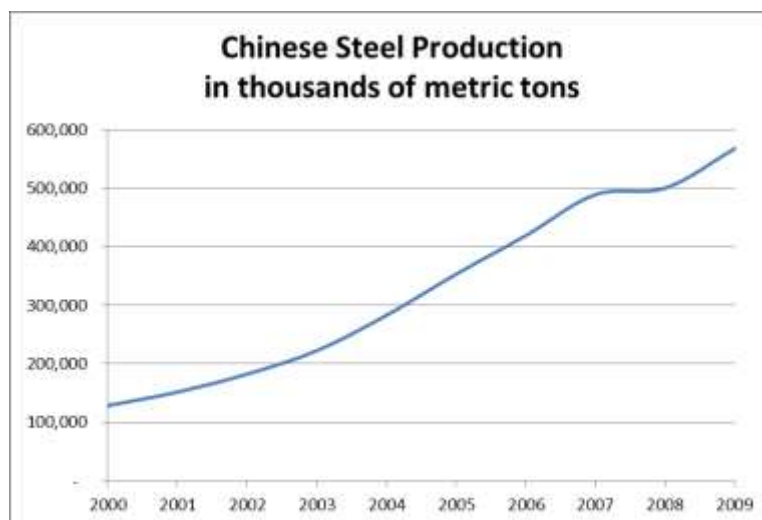


Figure 2<sup>68</sup>

Over this period, the compound annual growth rate was 18%. According to Reserve Bank of Australia analysts James Holloway, Ivan Roberts, and Anthony Rush (RBA report), these growth trends are a continuation of the growth trends that have been evident in China for over 30 years and are driven by the economic growth and industrialization set in motion by the market-based economic reforms introduced in 1978.<sup>69</sup>

<sup>66</sup> <http://www.worldsteel.org/pictures/publicationfiles/SSY%202010.pdf>, accessed 6/14/2011 8:47 AM

<sup>67</sup> Ibid.

<sup>68</sup> Calculated using World Steel Association Statistical Yearbook for 2010 (link above)

<sup>69</sup> <http://www.rba.gov.au/publications/bulletin/2010/dec/pdf/bu-1210-3.pdf>, accessed 6/14/2011 9:45 AM

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### *Industry Structure*

Again, according to the RBA report, “the Chinese steel industry is highly decentralized, consisting of a relatively small number of large, advanced steelmakers and a large number of small- and medium-sized firms that produce lower-value steel products.”<sup>70</sup> The same RBA report notes that as of 2008 there were approximately 660 steel producers.<sup>71</sup> This is also a relatively fragmented industry with the top 10 producers accounting for less than 50% of total production.<sup>72</sup> KPMG reports the concentration of the top 10 producers at 48%.<sup>73</sup>

According to the China Mining Association, the top 10 steel producers as of 2008 were<sup>74</sup>:

- 1. Baosteel Group\*** 35.44 mln -1 including:
  - Baosteel Bayi Iron and steel 4.84 mln 19.7
  - Guangdong Shaoguan Steel 4.07 mln -7.7
  - Guangdong Guangzhou Steel 3.23 mln -8.2
- 2. Hebei Iron and Steel** 33.28 mln 7.1 including:
  - Tangshan Iron and Steel 14.79 mln 11
  - Handan Iron & Steel Group 6.08 mln 1.4
- 3. Wuhan Iron & Steel Group** 27.73 mln 6.7
- 4. Anben Iron and Steel Group** 23.44 mln -0.6
- 5. Jiangsu Shagang Group** 23.30 mln 1.8
- 6. Shandong Iron and Steel Group\*\*** 21.84 mln -8.3 including:
  - Jinan Iron & Steel Group 11.21 mln -7.5
  - Laiwu Iron & Steel Group 10.63 mln -9.2
- 7. Maanshan Iron & Steel Group** 15.04 mln 6.2
- 8. Shougang Group** 12.19 mln -20.9
- 9. Hunan Valin Iron & Steel Group** 11.26 mln -3.6
- 10. Baotou Iron & Steel Group** 9.84 mln 11.3

The Chinese steel industry is also geographically dispersed with coastal provinces accounting for more than half of all steel production. However, much of the production is located in the northeast of the country due to the proximity of major iron-ore mines.<sup>75</sup>

Most of the steel produced within China is used within China. According to the World Steel Association's Statistical Yearbook for 2010<sup>76</sup>, China exported approximately 24 million metric tons of Semi-finished and Finished Steel Products, accounting for approximately 4% of its production and leaving more than 96% of Chinese steel production to be used within the country.

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<sup>70</sup> Ibid.

<sup>71</sup> Ibid.

<sup>72</sup> Ibid.

<sup>73</sup> <http://www.kpmg.com/CN/en/IssuesAndInsights/ArticlesPublications/Publicationseries/5-years-plan/Documents/China-12th-Five-Year-Plan-Iron-Steel-201105-2.pdf>, accessed 6/14/2011 2:26 PM

<sup>74</sup> <http://www.chinamining.org/News/2009-02-19/1235014000d21668.html>, accessed 6/14/2011 1:26 PM

<sup>75</sup> <http://www.rba.gov.au/publications/bulletin/2010/dec/pdf/bu-1210-3.pdf>, accessed 6/14/2011 9:45 AM

<sup>76</sup> <http://www.worldsteel.org/pictures/publicationfiles/SSY%202010.pdf>, accessed 6/14/2011 8:47 AM

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### Industry Trends

Research reveals four major trends affecting the Chinese steel industry. The four trends, in no particular order, are:

First, according to the MEPS's China Steel Insight report dated March, 2011, the demand for, and production of, steel within China is expected to continue to grow, albeit at a reduced rate, and with this increased demand steel prices will continue to rise.<sup>77</sup>

Second, because of increasing demand for steel, there is greater Chinese and world demand for iron ore. While China has significant reserves of iron ore, the increased demand worldwide is causing further upward pressure on steel prices due to the increase in the raw ore price.<sup>78</sup> According to KPMG, China imported almost 60% of its total iron ore consumption in 2010, sourcing only 40% internally<sup>79</sup>. One of the issues driving this significant importation of iron ore is that much of the Chinese ore reserves have relatively low iron content in the 33 percent range.<sup>80</sup> This puts the price of the major input for steel production squarely in market control and will force an increase in steel prices or a reduction in industry margins.

Third, increased demand for energy worldwide (both electrical and fossil) has caused upward pressure on energy prices. The increased price of fossil fuels such as oil and coal is causing an increase in input prices for steel companies that use blast furnaces to process ore into steel, while the increase in electricity demand has put upward input price pressure on steel producers and scrap processors that use arc-furnaces for processing. While the Chinese government is working to mitigate the effects of the energy shortage, implementing energy policy takes time and during that time there will be further upward price pressure on steel and steel products.

Fourth, the introduction of China's 12<sup>th</sup> Five-Year Plan (5YP). According to the KPMG report entitled *China's 12<sup>th</sup> Five-Year Plan: Iron and Steel*<sup>81</sup>, the new 5YP has a focus on energy usage, CO<sub>2</sub> emissions, and water usage per unit of GDP. This focus puts significant pressure on the steel industry and is expected to have at least the following effects:

China intends to restructure the iron and steel sector under the 5YP

- Over the next five years (2011-2015), the sector is expected to see the following changes:
  - Increased M&A activity as the government seeks to create larger, more efficient steel companies
  - Restrictions on steel capacity expansion
  - Upgrading of steel industry technology

<sup>77</sup> <http://www.meps.co.uk/publications/PDF/CSI-Mar2011.pdf>, accessed 6/14/2011 1:44 PM

<sup>78</sup> Ibid.

<sup>79</sup> <http://www.kpmg.com/CN/en/IssuesAndInsights/ArticlesPublications/Publicationseries/5-years-plan/Documents/China-12th-Five-Year-Plan-Iron-Steel-201105-2.pdf>, accessed 6/14/2011 2:39 PM

<sup>80</sup> <http://www.rba.gov.au/publications/bulletin/2010/dec/pdf/bu-1210-3.pdf>, accessed 6/14/2011 9:45 AM

<sup>81</sup> <http://www.kpmg.com/CN/en/IssuesAndInsights/ArticlesPublications/Publicationseries/5-years-plan/Documents/China-12th-Five-Year-Plan-Iron-Steel-201105-2.pdf>, accessed 6/14/2011 2:06 PM

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- Greater emphasis on high-end steel products
- Relocation of iron and steel companies to coastal areas
- The steel sector's growth rate is set to slow during the 5YP period, with forecasts ranging from 5 percent to 6 percent. This contrasts with the double-digit growth rates seen during the 10<sup>th</sup> and 11<sup>th</sup> Five-Year plans.

Again, according to the KPMG report, "the rapid growth of China's steel sector in the last 10 years has led to overcapacity, heavy pollution, and a fragmented industry structure" and has significant overcapacity.<sup>82</sup> The government plans to address these problems altering both industry concentration and geographic distribution. In regard to concentration, the 5YP calls for an increase in industry concentration from the current level of 48%<sup>83</sup> to 60% by 2015 and 70% by 2020. This will be accomplished by placing restrictions on various aspects of production such that smaller or less efficient producers will be eliminated from the marketplace or absorbed through M&A activity<sup>84</sup>. In regard to geographic distribution, which is being altered to improve logistics and address environmental (pollution) issues, some steel companies will be ordered to relocate to coastal regions. These regions will include<sup>85</sup>:

- Caofeidian Port in Hebei province
- Zhanjiang in Guangdong province
- Fangcheng Port in the Guangxi Zhuang autonomous region

While these changes, and many others put pressure on the steel producers within the Chinese steel industry, they are not the only forces at work.

### *Porter's Five Forces*

Given the above examination of industry structure and current trends, in conjunction with items of common knowledge, it is now possible to create a Porter's Five Forces analysis of the Chinese steel industry. There is, however, one exceptional aspect of this analysis: unlike common (U.S. based) analyses, the fact that all companies are subject to government mandate, government goals (specifically the new 5YP) must be considered among the forces affecting the industry.

The following Porter's Five-Forces analysis uses minus-one (-1) or minus-two (-2) to indicate that a particular force is detrimental to companies in or considering this industry. Zero (0) indicates a neutral force that is included for completeness or because it may have significance in the future. Finally, a force rating of one (1) or (2) indicates a force that is beneficial to companies in or considering this industry. Scores above zero indicate an attractive industry, while scores below zero indicate an unattractive industry.

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<sup>82</sup> Ibid.

<sup>83</sup> Ibid.

<sup>84</sup> Ibid.

<sup>85</sup> Ibid.

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**Threat of Substitutes:** Steel is a fundamental building material, and is used in a variety of other applications such as military (armor), marine (shipbuilding), and automotive. While there are some things (such as plastic skins on cars) that can be done to reduce steel usage, there is no substitute for this material. **Estimated force level: +2 (very attractive).**

**Threat of New Entrants:** China currently has a significant overcapacity in steel production, and because of the controls inherent in the Chinese government system, there is no possibility that new entrants will be allowed into this industry. **Estimated force level: +2 (very attractive).**

**Supplier Power:** Suppliers of the two primary inputs, iron ore and energy, operate in the world commodity market. While China has significant supplies of both iron ore and coal, the demand by this industry exceeds the country’s ability to meet it. Consequently, suppliers in this market have tremendous power. **Estimated force level: -2 (very unattractive).**

**Buyer Power:** Steel is a commodity item and products are largely identical from one manufacturer to another. This means that buyers can shop for the lowest price. However, due to the strategic (national security) nature of the steel industry, the Chinese government will not allow unbridled competition. **Estimated force level: -1 (unattractive).**

**Rivalry:** In the case of the Chinese steel industry, there are complications to consider with respect to rivalry. In a free market, rivalry between competitors using commodity inputs to manufacture commodity outputs should be very high. However, due to the planned nature of some aspects of the Chinese market, rivalry in this industry is highly influenced by governmental involvement. The introduction of the 12<sup>th</sup> 5YP includes planned industry consolidation. This means that the top steel producers do not have to worry about rivalry until the industry concentration reaches 60%. However, the non-top-ten producers must focus on either becoming attractive acquisition targets or facing liquidation. Due to these distortions, this force is almost meaningless within the context of this industry. **Estimated force level: 0 (neutral).**

	<b>Threat of Substitutes</b> <ul style="list-style-type: none"> <li>+2 – There is no substitute.</li> </ul>	
<b>Supplier Power</b> <ul style="list-style-type: none"> <li>-2 – Commodity suppliers can sell their goods anywhere. Buyers are price takers.</li> </ul>	<b>Rivalry</b> <ul style="list-style-type: none"> <li>0 -Neutral</li> </ul>	<b>Buyer Power</b> <ul style="list-style-type: none"> <li>-1 – Commodity item with government influence to maintain appropriate price levels.</li> </ul>
	<b>Threat of New Entrants</b> <ul style="list-style-type: none"> <li>+2 – Government controls prevent the entrance of new firms.</li> </ul>	

Table 7 Porter's Five Forces

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Within the possible range of -10 to +10, the attractiveness of the Chinese steel industry rates as 1; barely above neutral. However, because of the significant government interaction with this industry the outcomes are fairly predictable: Major players are in a good way and minor or inefficient players are going away.

### Conclusions from the Chinese Steel Industry Profile

The Chinese Steel Industry is the largest steel industry in the world. It is a large, competitive, and fragmented industry with a mixture of state owned and private companies. It is decentralized, and has a wide geographic dispersion although it tends to be in northeastern part of the country in order to be near the iron ore mines. Because of its size and national importance, government management and planning have and will continue to play a large role in its development. In this latest (12<sup>th</sup>) 5YP the government will be working with the largest steel companies to both increase industry concentration and move the concentration towards sea coasts and large rivers in order to reduce pollution, reduce logistics costs, and increase efficiency. In the process of increasing the industry's concentration, overcapacity issues will be addressed.

The primary risks facing the Chinese steel industry are risks to input prices. In particular, much of the high-iron-content ore used by the steel industry must be imported, and world energy prices have been and will continue to rise. While the ore issue affects China more than some other steel producing nations, the energy cost issue is a global issue that will affect all steel companies.

The Chinese steel industry, already the largest in the world, will probably become even larger and more efficient in the next few years.

### Wuhan Iron and Steel Company (WISCO)

The Wuhan Iron and Steel (Group) Corporation (WISCO) is an iron and steel producer located in Wuhan China. According to the WISCO website, WISCO is located northeast of the center of the city, on the southern shore of the Changjiang River, and covers an area of approximately 21.2 square kilometers<sup>86</sup>. Again according to the WISCO website:

Wuhan Iron and Steel (Group) Corporation (hereinafter referred to as WISCO), commenced its construction from 1955, and put into production on Sep 13, 1958, is the first giant iron and steel complex established after the founding of the People's Republic of China and one of the backbone enterprises under the leadership of the Central Government and the State Council.<sup>87</sup>

...

Main steel products are hot rolled coils/sheets, hot rolled section steel, hot rolled heavy-duty rails, medium plates, cold rolled coils/sheets, galvanized sheets, tinned sheets, cold rolled oriented and non-oriented silicon sheets, color coated sheets, high

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<sup>86</sup> Ibid.

<sup>87</sup> [http://www.wisco.com.cn/wisco\\_en/brief/aboutus.shtml](http://www.wisco.com.cn/wisco_en/brief/aboutus.shtml), accessed 6/16/2011 9:50 AM

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speed rolled wires and etc. which is in total several hundreds of varieties, among which, cold rolled silicon sheets, automobile sheets, bridge steel, pipeline plates, pressure vessel steel, container steel, wire for tyre cords, high performance construction steel and so on...<sup>88</sup>

For reference, the WISCO website also notes the approximate market capitalization and structure of the group:

The register capital of WISCO is 4.74 billion RMB, and the total estimated capital of 2005 is 72.2 billion RMB (incl. Echeng Iron & Steel Company, but excl. Liuzhou Iron & Steel Company). WISCO staffed approximately 83,735 employees in its headquarters, among which, 18,900 are involved in main steel business. The group corporation now has 20 wholly-owned affiliated companies, 7 share-holding companies, 4 branch companies, 2 factories directly under WISCO's leadership, 2 collectively-owned enterprises, 1 listed share holding company, i.e. Wuhan Iron and Steel (Group) Corporation, limited, 12 wholly-owned companies entrusted to a second level companies for the management, and 11 share-holding companies.<sup>89</sup>

In Western business lingo, WISCO could be described as a multi-divisional company with significant vertical and horizontal integration. A partial example of the vertical would include mining of iron ore, the production of coking coal, the design and manufacture of mining and mill equipment and control systems, and power generation. A partial example of the horizontal integration would include architectural engineering, plastics manufacturing, automation and technology development, and logistics.

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<sup>88</sup> Ibid.

<sup>89</sup> Ibid.