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## INDUSTRY OVERVIEW

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*Investors should note that Hatch, an experienced consultant in the metals and mining industry, has been engaged to prepare an iron ore and diabase industry report, for use in whole or in part in this Prospectus. Hatch prepared its report based on Hatch's in-house database, independent third-party reports and publicly available data from reputable industry organizations. Where necessary, Hatch contacts companies operating in the industry to gather and synthesize information about market, prices and other relevant information. Hatch has assumed that the information and data which it relied on are complete and accurate.*

*Hatch has provided part of the statistical and graphical information contained in this Industry Overview. Hatch has advised that (i) some information in the Hatch's database is derived from estimates from industry sources or subjective judgments; and (ii) the information in the database of other mining data collection agencies may differ from the information in Hatch's database.*

*We believe that the sources of the information in this section are appropriate sources for such information and have taken reasonable care in extracting and reproducing such information. We have no reason to believe that such information is false or misleading or that any part has been omitted that would render such information false or misleading. Investors should also note that no independent verification has been carried out on any facts or statistics that are directly or indirectly derived from official government and non-official sources. Our Company, the Sole Global Coordinator, Joint Bookrunners, Joint Lead Managers and Joint Sponsors, any of the Underwriters, any of their respective directors and advisors or any other persons or parties involved in the Global Offering make no representation as to the accuracy of the information from official government and non-official sources.*

### INTRODUCTION TO IRON ORE

Iron ore is the main source of iron for the world's iron and steel industries. It is an essential component used in the production of steel. Approximately 98% of the global supply of iron ore is used in steelmaking.

Iron ore refers to rock that contains a sufficient level of iron minerals that can be mined economically for iron. Iron ore is mainly composed of compounds of iron and oxygen (iron oxides) mixed with gangue, or impurities that are not generally utilized commercially. The most common types of iron ore are magnetite and hematite. Other iron ore types that are naturally occurring include limonite, siderite, goethite, pyrite, chamosite and greenalite. When heated in the presence of a reductant, iron ore will yield metallic iron (Fe). Iron ore is graded according to size as "lumps" or "fines" based on whether the individual particles have a diameter of more or less than six millimeters. Iron concentrate is the valuable fines that are separated commercially from iron ore in the form of rock with gangue by crushing, grinding, and beneficiation and can be agglomerated before being used in an iron making blast furnace or a direct reduction furnace. Iron ore is used directly as lump ore, or as concentrates or fines converted into pellets or sinter.

Iron is produced from iron ore by one of three methods, namely, the blast furnace method, the direct reduction process (e.g. DRI, HBI), or the direct smelting process. The latter two methods are often grouped together and referred to as "alternative iron making" processes, as they are relatively under-developed.

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## INDUSTRY OVERVIEW

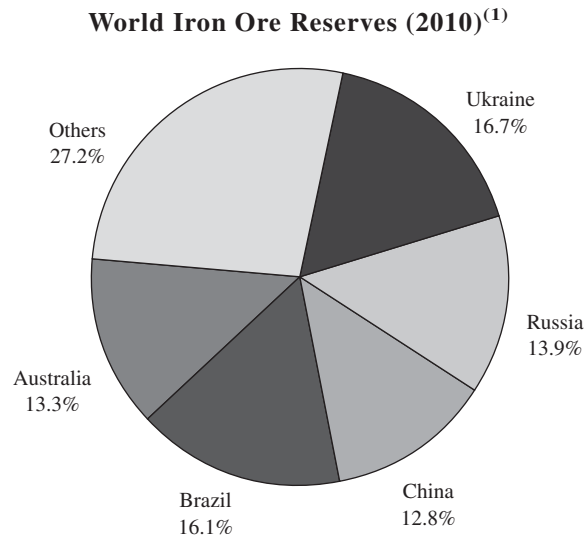
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### OVERVIEW OF THE IRON ORE INDUSTRY

#### *Global Iron Ore Industry*

##### **Iron ore reserve**

In 2010, global crude iron ore reserves were estimated to be at 180 billion tonnes, according to the U.S. Geological Survey (USGS) and Hatch. Although there are iron ore deposits distributed globally, the top five countries (Ukraine, Russia, China, Australia and Brazil) collectively account for approximately 72.8% of the world's reserves. The following chart sets forth the distribution of iron ore reserves globally in 2010 as estimated:



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*Source: USGS*

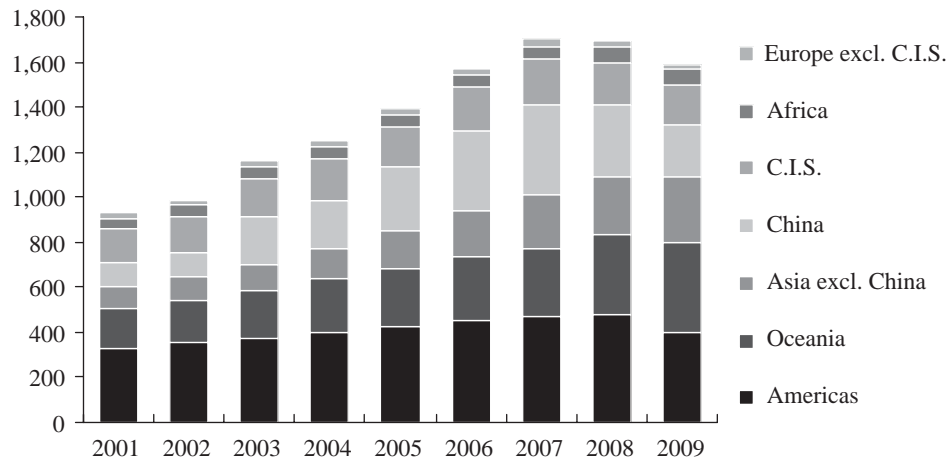
(1) In terms of iron ore. Reserves are that part of resource base which is economically extractable and recoverable.

## INDUSTRY OVERVIEW

### Iron ore production

According to the United Nations Conference on Trade and Development (UNCTAD), global iron ore production increased from 930 Mt to 1,588 Mt in the period from 2001 to 2009, representing a CAGR of approximately 6.9%. The following chart sets forth the iron ore output of major iron ore producing regions from 2001 to 2009:

**World Iron Ore Production 2001-2009 (in Mt)**

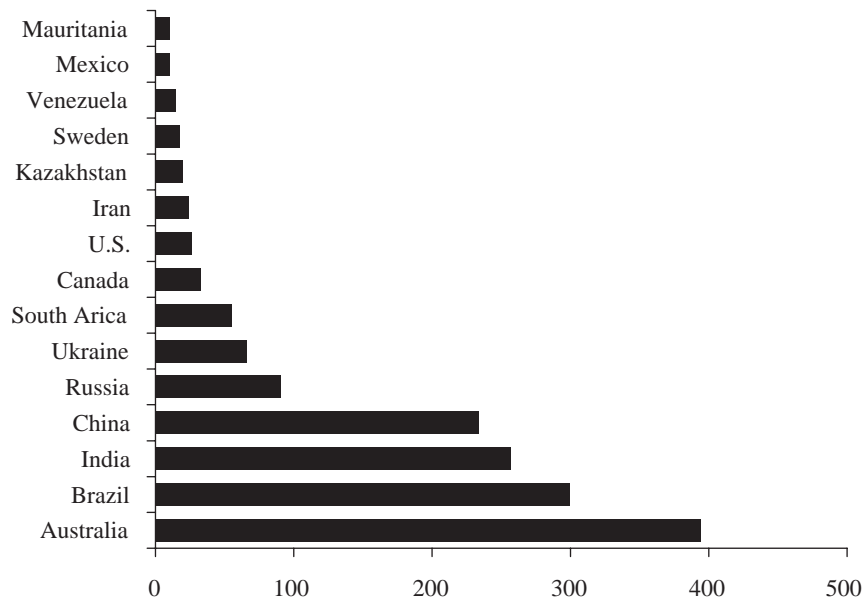


Source: UNCTAD

Note: Chinese iron ore production is converted by UNCTAD on a comparable grade basis of 63% Fe

The following chart sets forth the iron ore output of the top 15 iron ore producing countries in 2009:

**Iron Ore Production of the Top 15 Iron Ore Producing Countries in 2009 (in Mt)**



Source: UNCTAD

Note: Chinese iron ore production is converted by UNCTAD on a comparable grade basis of 63% Fe

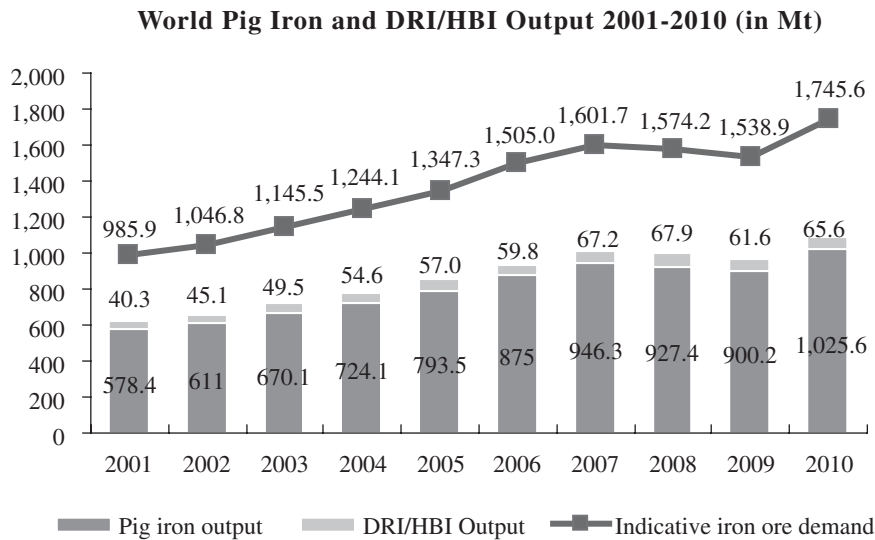
## INDUSTRY OVERVIEW

### Iron ore demand

Iron ore is mainly used as blast furnace feedstock to produce iron but can also be used (after agglomeration) in direct reduction furnaces to produce directly reduced iron and hot briquetted iron (DRI/HBI). Most of the iron produced in a blast furnace (pig iron) is then transferred to the basic oxygen conversion process in integrated steelworks, whereas DRI/HBI is used mainly as a substitute for ferrous scrap in electric arc furnaces.

According to the World Steel Association (WSA), from 2001 to 2010, global pig iron and DRI/HBI output increased from approximately 619 Mt to 1,091 Mt, representing a CAGR of approximately 6.5%. In comparison, global iron ore output grew at a CAGR of approximately 6.9% from 2001 to 2009.

Unlike iron ore production, the production of pig iron and DRI/HBI is mainly geographically concentrated in Asia, Europe and the C.I.S. The pig iron and DRI/HBI output in these areas accounted for approximately 80.0% of the world's total from 2001 to 2010. The following chart sets forth the pig iron and DRI/HBI output of different regions from 2001 to 2010:



Source: WSA and Hatch estimates

Note: Iron ore demand is calculated as 1.6 times pig iron and DRI/HBI output

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## INDUSTRY OVERVIEW

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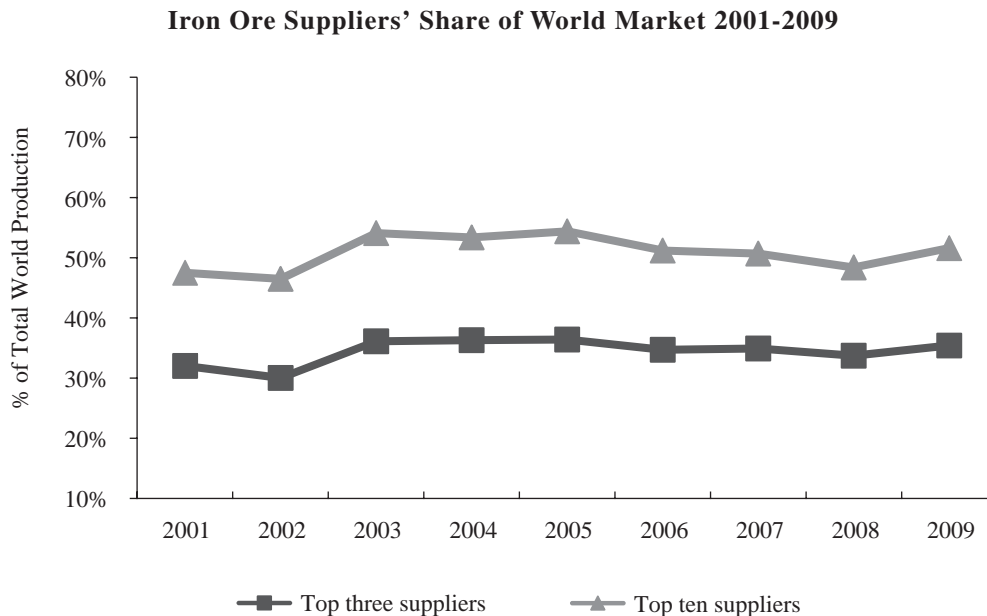
### Iron ore trade and competition

Since most of the world's accessible iron ore deposits are not located in the same countries where the majority of steel production facilities are found, iron ore is a highly traded commodity. Approximately 950 Mt of iron ore, or approximately 60.0% of total global production, was internationally traded in 2009, up 7.4% from 2008.

According to UNCTAD, Australia and Brazil together accounted for over 65.8% of the world's iron ore exports in 2009. China and Japan accounted for approximately 66.8% and 11.2%, respectively, of the world's iron ore imports in 2009.

The global iron ore industry has gradually consolidated since the 1970s and is dominated by the three largest global suppliers, namely, Vale S.A. ("Vale", formerly Companhia Vale do Rio Doce), Rio Tinto Limited ("Rio Tinto") and BHP Billiton Limited ("BHPB"). These companies together accounted for 35.4% of world production in 2009. The top ten iron ore producers controlled approximately 51.6% of the total world production in 2009, down from approximately 54.4% in 2005. The top ten and top three iron ore suppliers' respective world market share has slightly shrunk since 2005 as many new producers, including a large number of relatively small enterprises, entered the market to take advantage of the high prices. Nevertheless, the top three iron ore suppliers accounted for approximately 60.8% of the seaborne trade in 2009.

The following chart sets forth the iron ore suppliers' share of the world market from 2001 to 2009:



Source: Hatch and UNCTAD

Note: Chinese iron ore production is converted by UNCTAD on a comparable grade basis of 63% Fe

## INDUSTRY OVERVIEW

### PRC Iron Ore Industry

#### Iron ore reserves

According to USGS, China ranked fifth globally in terms of iron ore reserves, accounting for approximately 12.8%, or 23.0 billion tonnes, of global iron ore reserves in 2010. According to the NBSC, China's iron ore reserves were primarily situated in the northeastern, northern and southwestern regions of China, which together accounted for approximately 78.5% of China's total iron ore reserves in 2009.

China's iron ore reserves distribution in 2009 is set forth below:



Source: NBSC

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## INDUSTRY OVERVIEW

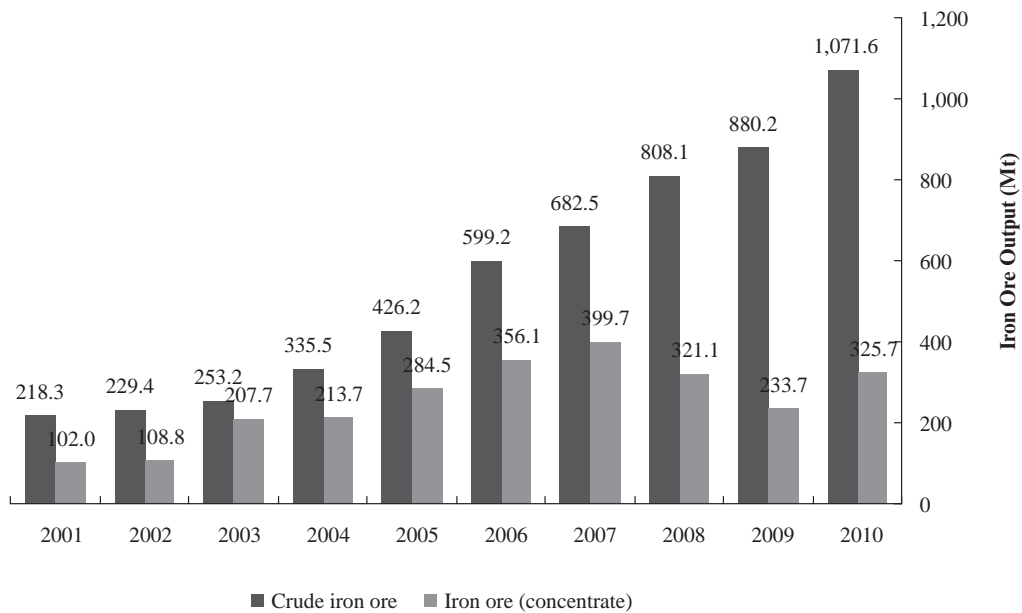
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### Iron ore production

According to NBSC and Hatch, China is one of the world's leading producers of iron ore on a gross tonnage basis. Iron ore (run of mine) production reached approximately 1,072 Mt in 2010, representing a CAGR of approximately 19.3% since 2001 and representing an increase of approximately 21.6% compared to 2009. However, as the iron content (or ore grade) of China's resources is generally lower than the global average, China's iron ore output figures are usually adjusted downwards to enable reasonable comparisons with other countries.

According to UNCTAD's estimates, on a comparable grade basis (Fe content of 63%), Chinese iron ore production was approximately 326 Mt in 2010, up approximately 39.4% from 2009. The following chart sets forth China's iron ore output from 2001 to 2010:

**PRC Iron Ore Output 2001-2010 (in Mt)**



Source: NBSC and UNCTAD

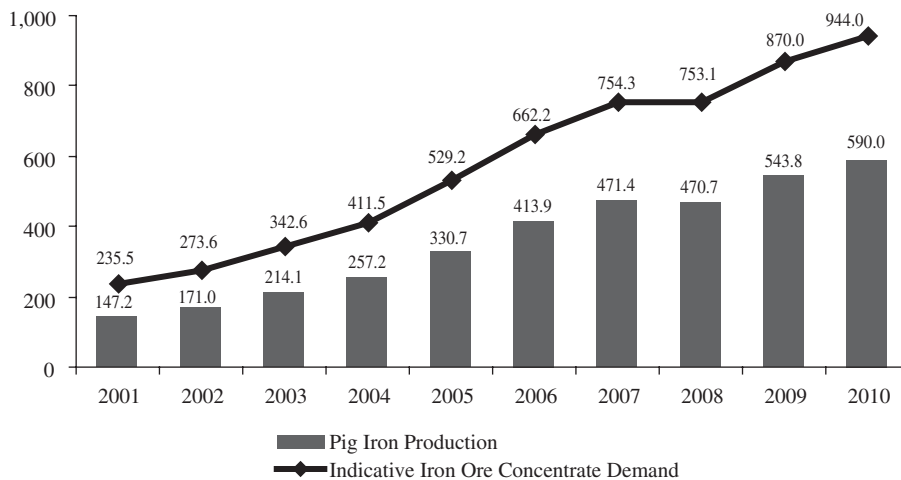
## INDUSTRY OVERVIEW

### Iron ore demand

China is the largest steel consuming country in the world. According to WSA, China consumed approximately 44.9% of worldwide finished steel in 2010. China is one of the fastest growing countries in terms of iron ore demand and the main driver behind the growth of the global iron ore sector.

While DRI/HBI output in China is extremely limited, accounting for no more than 0.02% of the total output of China's iron output in 2010, pig iron output increased from 147 Mt in 2001 to 590 Mt in 2010, representing a CAGR of approximately 16.7%. The following chart sets forth China's pig iron output and indicative iron ore demand from 2001 to 2010:

**PRC Pig Iron Output and Indicative Iron Ore Demand 2001-2010 (in Mt)<sup>(1)</sup>**

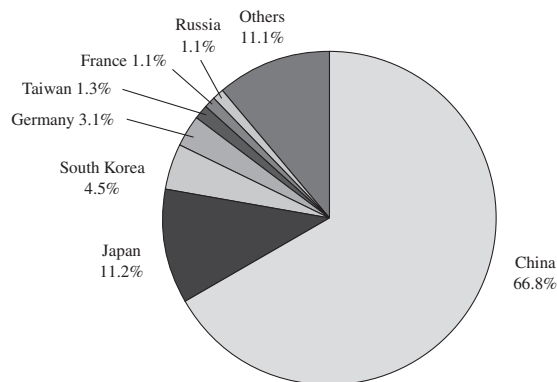


Source: NBSC and Hatch estimates

(1) Iron ore demand is calculated as 1.6 times pig iron output. DRI/HBI output is not included as there are no available official statistics.

With its substantial demand for iron ore, China was the largest iron ore importer in the world in 2009. The following table sets forth the global market share of the leading iron ore importers in 2009:

**Largest Iron Ore Importers Worldwide (2009)**



Source: UNCTAD



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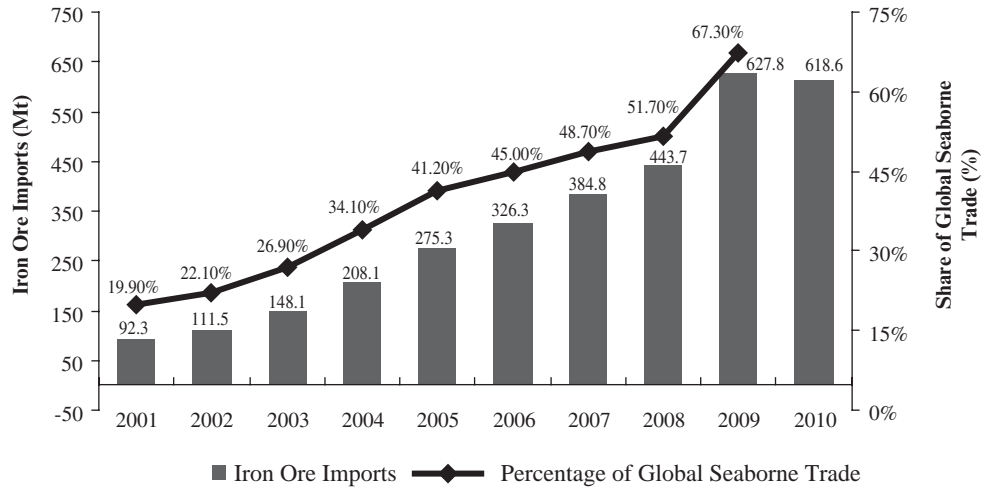
## INDUSTRY OVERVIEW

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### Iron ore trade and competition

China continues to be the main destination for global iron ore shipments. Iron ore imports into China have grown steadily for almost the past decade, from approximately 92.3 Mt in 2001 to approximately 618.6 Mt in 2010. The following chart sets forth China's iron ore import volumes from 2001 to 2010 and share of global seaborne trade from 2001 to 2009:

**PRC Iron Ore Imports 2001-2010**



Source: China Customs

## INDUSTRY OVERVIEW

Australia, Brazil and India are the three main countries from which China imports iron ore. Iron ore imports from these three countries accounted for 79.6% of total iron ore imports into China in 2010. China also imports iron ore from other countries, including South Africa, Ukraine, Russia, Canada, Indonesia, Mauritania, Peru and Kazakhstan. However, iron ore imports from each of these countries into China accounted for less than 2% of total iron imports into China in 2010. The following table sets forth the breakdown of countries from which China imported its iron ore in 2008, 2009 and 2010:

**Sources of PRC Iron Ore Imports 2008-2010 (in Mt)**

	2008		2009		2010	
	Import volume	Percentage of total PRC iron ore imports	Import volume	Percentage of total PRC iron ore imports	Import volume	Percentage of total PRC iron ore imports
Australia .....	183.4	41.3%	261.9	41.7%	265.3	42.9%
Brazil .....	100.6	22.7%	142.4	22.7%	130.9	21.2%
India .....	91.0	20.5%	107.3	17.1%	96.6	15.6%
South Africa .....	14.5	3.3%	34.1	5.4%	29.5	4.8%
Iran .....	5.1	1.2%	6.9	1.1%	14.6	2.4%
Ukraine .....	4.6	1.0%	11.6	1.8%	11.6	1.9%
Others .....	8.4	1.9%	10.3	1.6%	8.3	3.2%
Indonesia .....	6.8	1.5%	6.4	1.0%	7.7	1.2%
Peru .....	5.3	1.2%	6.0	1.0%	7.4	1.2%
Chile .....	3.6	0.8%	5.7	0.9%	6.6	1.1%
Russia .....	5.8	1.3%	9.7	1.5%	6.4	1.0%
Kazakhstan .....	3.2	0.7%	5.9	0.9%	6.2	1.0%
Venezuela .....	3.2	0.7%	3.0	0.5%	5.2	0.8%
Canada .....	3.7	0.8%	8.7	1.4%	4.3	0.7%
Mauritania .....	2.5	0.6%	6.1	1.0%	4.2	0.7%
North Korea .....	1.9	0.4%	1.8	0.3%	2.1	0.3%
Total imports .....	443.7	100.0%	627.8	100.0%	618.6	100.0%

Source: China Customs

According to the Ministry of Land and Resources (MLR), China's iron and steel production is expected to remain reliant on imported iron ore despite the fact that domestic iron ore production capacity is forecast to increase, albeit at a reduced rate, to 1,100 Mt by 2015 from 940 Mt in 2010.

### PRC Iron Ore Production Capacity

The Chinese iron ore industry is highly fragmented and is dominated by small sized producers. According to the CISA, the iron ore output from small and medium-scale mines in 2010 was 881 Mt, which accounted for approximately 82% of total iron ore output in China. The remaining 18% of China's iron ore output was produced by large-scale mines, most of which belong to state-owned steel companies. According to the CISA, iron ore mines are classified by their annual production capacity of iron ore. Large-scale mines have a production capacity greater than 2,000 ktpa. Medium-scale mines have a production capacity of between 600 ktpa to 2,000 ktpa. Small-scale mines have a production capacity of less than 600 ktpa.

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## INDUSTRY OVERVIEW

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The major iron ore producers in China in 2010 were as follows:

### Major Iron Ore Producers in China (2010)

Company	Location	Iron ore output (kt)
1. Anshan Steel .....	Liaoning	45,561
2. Hebei Steel Group .....	Hebei	26,424
3. Panzhihua Steel .....	Sichuan	20,911
4. Benxi Steel .....	Liaoning	17,686
5. Taiyuan Steel .....	Shanxi	13,814
6. Baotou Steel .....	Inner Mongolia	13,384
7. Shougang Group .....	Hebei	10,809
8. Ma'an Shan Steel .....	Anhui	8,706
9. Hanxing Mining.....	Hebei	7,019
10. Wuhan Steel .....	Hubei	5,558
<b>Total top ten major producers<sup>(1)</sup> .....</b>		<b>169,872</b>
<b>Total China .....</b>		<b>1,071,550</b>

Source: CISA and Hatch estimates

- (1) Major producers refer to those members of the CISA with the largest volumes of iron ore output. All of the major iron ore producers listed are state-owned.

The major iron concentrate producers in China in 2010 were as follows:

### Major Iron Concentrate Producers in China (2010)

Company	Location	Iron concentrate output (kt)
1. Anshan Steel .....	Liaoning	15,607
2. Panzhihua Steel .....	Sichuan	7,496
3. Benxi Steel .....	Liaoning	6,513
4. Hebei Steel Group .....	Hebei	5,651
5. Taiyuan Steel .....	Shanxi	5,509
6. Baotou Steel .....	Inner Mongolia	4,940
7. Shougang Group .....	Hebei	4,602
8. Wuhan Steel .....	Hubei	3,855
9. Jiuquan Steel .....	Gansu	3,254
10. Hanxing Mining .....	Hebei	2,716
<b>Total top ten major producers<sup>(1)</sup> .....</b>		<b>60,143</b>

Source: CISA and Hatch estimates

- (1) Major producers refer to those members of the CISA with the largest volumes of iron concentrate output. All of the major iron concentrate producers listed are state-owned.

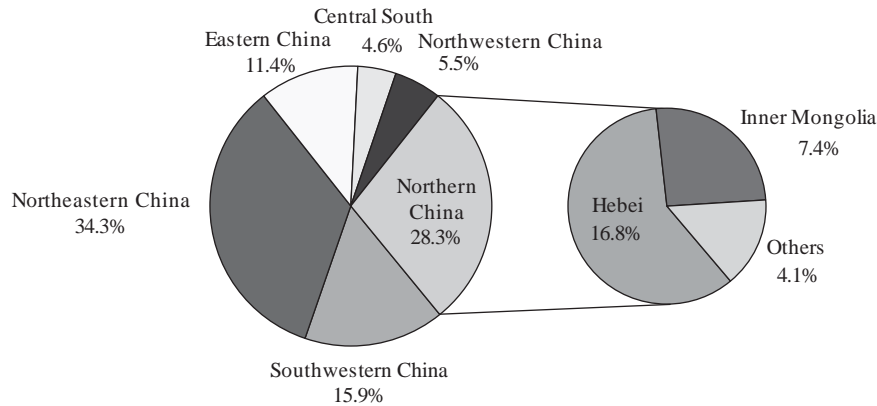
# INDUSTRY OVERVIEW

## Hebei Iron Ore Industry

### Iron ore reserves

China's iron ore reserves are mainly found in Liaoning, Hebei and Sichuan Provinces. These three provinces collectively account for approximately 63.3% of China's iron ore reserves in 2009. According to the NBSC, Hebei Province had the second largest iron ore reserves in China at 3,570 Mt in 2009, representing approximately 16.8% of national reserves in the same year. The following chart sets forth the geographic distribution of iron ore reserves in China in 2009:

**Geographic Distribution of China's Iron Ore Reserves (2009)**

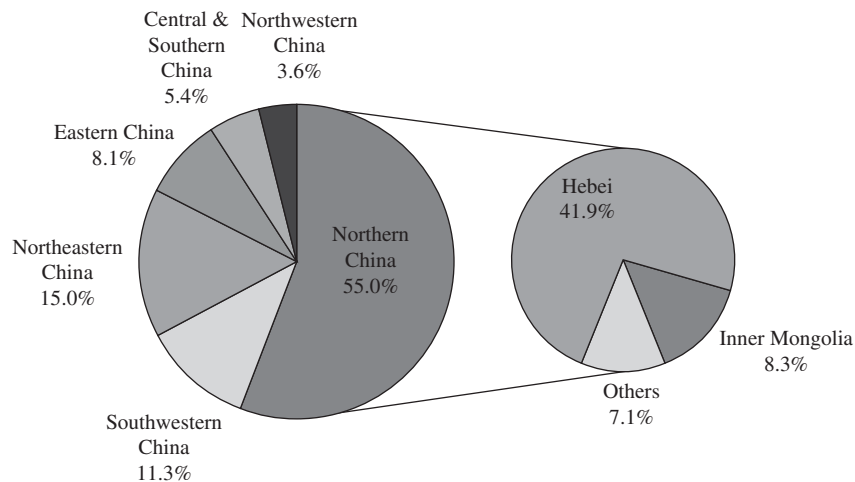


Source: NBSC

### Iron ore production

According to the NBSC, the northern region of China contributed approximately 55.0% of China's total output of iron ore in 2010. According to the NBSC, Hebei Province was the largest producer of iron ore in terms of iron ore output in China in 2010, with an iron ore output of approximately 446 Mt, which represented approximately 41.9% of the total iron ore output in China and a CAGR of approximately 25.6% from 2001. The following chart sets forth the regional iron ore output in China in 2010:

**China's Iron Ore Output by Region (2010)**



Source: NBSC

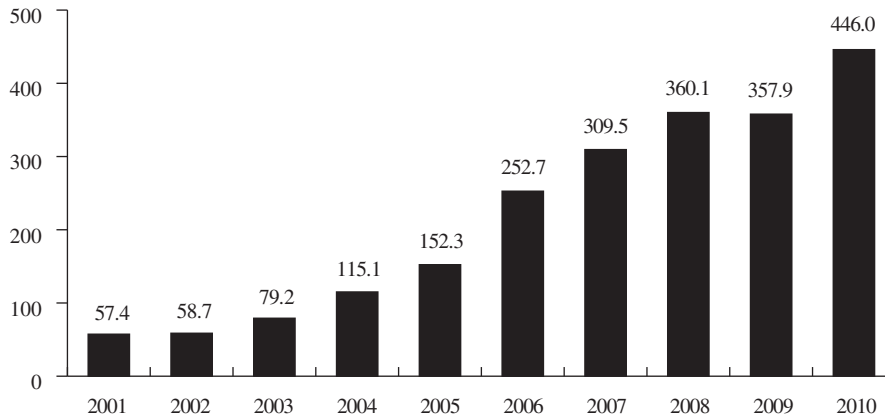
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## INDUSTRY OVERVIEW

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The following chart sets forth Hebei's iron ore output from 2001 to 2010:

**Hebei's Iron Ore Output 2001-2010 (in Mt)**



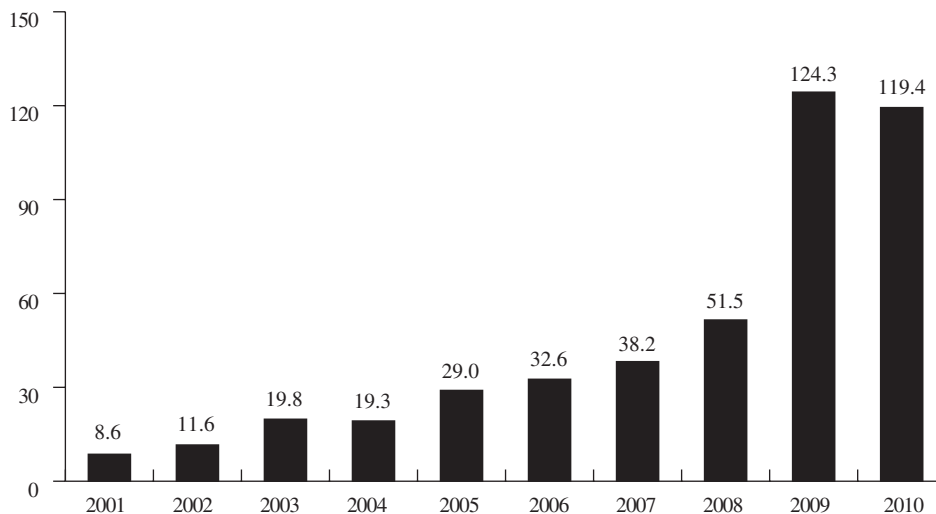
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Source: NBSC

### Iron ore demand

Local iron ore output in Hebei Province has been insufficient to meet local demand over the past several years. Despite being one of the top iron ore producing regions in China, Hebei Province remained the largest net importer of iron ore in China. Hebei Province imported 119.4 Mt of iron ore in 2010 compared to 8.6 Mt in 2001. This situation is unlikely to change in the near future due to the high cost in developing mines and the rapid increase in steel production in Hebei Province. The following chart sets forth Hebei's iron ore imports from 2001 to 2010:

**Hebei's Iron Ore Imports 2001-2010 (in Mt)**



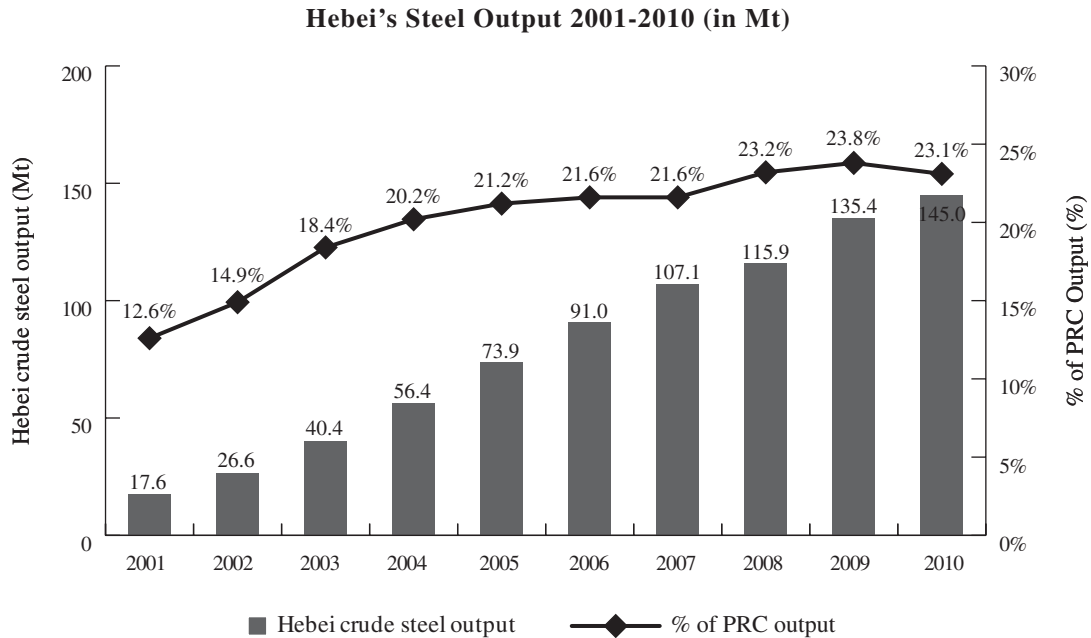
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Source: China Customs

## INDUSTRY OVERVIEW

### Hebei crude steel production

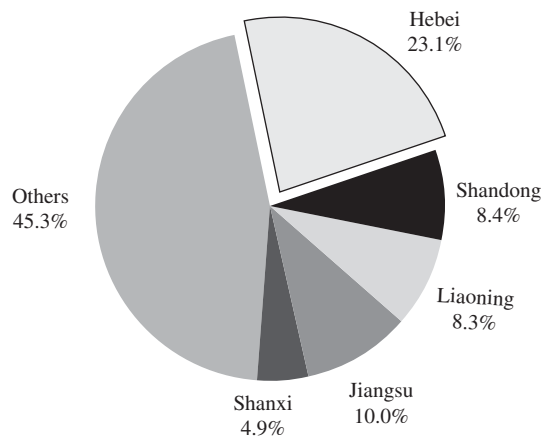
The growth in steel production in Hebei Province averaged approximately 26.4% per annum between 2001 and 2010, reaching approximately 145 Mt in 2010. As the largest steel producing province in China, Hebei Province produced approximately 23.1% of China's raw steel in 2010. The following chart sets forth Hebei's steel output from 2001 to 2010:



Source: NBSC

In 2010, China produced 590 Mt of pig iron. The top five regions in China in descending order of output were Hebei, Shandong, Liaoning, Jiangsu and Shanxi. The following chart sets forth Hebei's crude steel production as a percentage of total crude steel output in China:

### Chinese Crude Steel Output by Province in 2010



Source: NBSC

## INDUSTRY OVERVIEW

In 2009 and 2010, the top three steel producers in Hebei Province were as follows:

### Raw Steel Production of the Top Three Producers in Hebei Province (in kt)

	2009		2010	
	Volume	% of Hebei	Volume	% of Hebei
1. Hebei Steel Group .....	40,239	29.7%	52,860	38.2%
2. Hebei New Wuan Steel Group .....	16,711	12.3%	18,595	13.4%
3. Beijing Jianlong Group .....	8,382	6.2%	8,825	6.4%

Source: NBSC

Hebei Steel Group, which is located in Hebei Province, is China's largest steel enterprise and the world's fifth largest steel producer. Hebei Steel Group had a total steel output of 52.9 Mt in 2010, accounting for approximately 38.2% of total steel production capacity in Hebei Province in the same year.

### Competition

According to MMAC and Hatch, Hebei Province has the largest number of iron ore mines in China. There were approximately 2,700 small-scale iron ore mines in Hebei Province as of 31 December 2009. The iron ore output of Hebei Province was approximately 446 Mt in 2010.

According to the Hebei Metallurgical Mining Industry Association, large-scale iron ore mines in Hebei Province are generally owned by state-owned enterprises. Key iron ore producers in Hebei Province include Hebei Steel Group, Shougang Group and Hanxing Mining. Hebei Steel Group, Shougang Group and Hanxing Mining produced 26.4 Mt, 10.8 Mt and 7.0 Mt, respectively, of iron ore in 2010. Together, these three state-owned iron ore producers collectively accounted for approximately 9.9% of Hebei's total iron ore output in 2010. The table below provides information on the top ten iron ore mines in Hebei Province, based on estimated resources:

### Top 10 Iron Ore Mines<sup>(1)</sup> in Hebei Province (as of 31 December 2009)

Ownership	Resources <sup>(2)</sup> (thousand tonnes)
1. State-owned .....	1,069,481
2. State-owned .....	931,148
3. State-owned .....	887,390
4. State-owned .....	421,327
5. State-owned .....	380,689
<b>6. Privately-owned (the Yanjiazhuang Mine) .....</b>	<b>311,760<sup>(3)</sup></b>
7. State-owned .....	255,631
8. State-owned .....	221,982
9. Privately-owned .....	162,300
10. State-owned .....	119,703

Source: Hatch

- (1) Other than the Yanjiazhuang Mine (the Company's mine), the iron ore mines listed in the table above are held by Independent Third Parties.
- (2) Resources represent a concentration of naturally occurring solid, liquid, or gaseous material in or on the Earth's crust in such form and amount that economic extraction of a commodity from the concentration is currently or potentially feasible.
- (3) The estimated resources of the Yanjiazhuang Mine of approximately 311.8 Mt converts into approximately 260.0 Mt of total proved and probable reserves, which are a subset of resources, as stated in the Independent Technical Report and was then compared with iron ore resource data of Hebei Metallurgical Mining Industry Association.

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## INDUSTRY OVERVIEW

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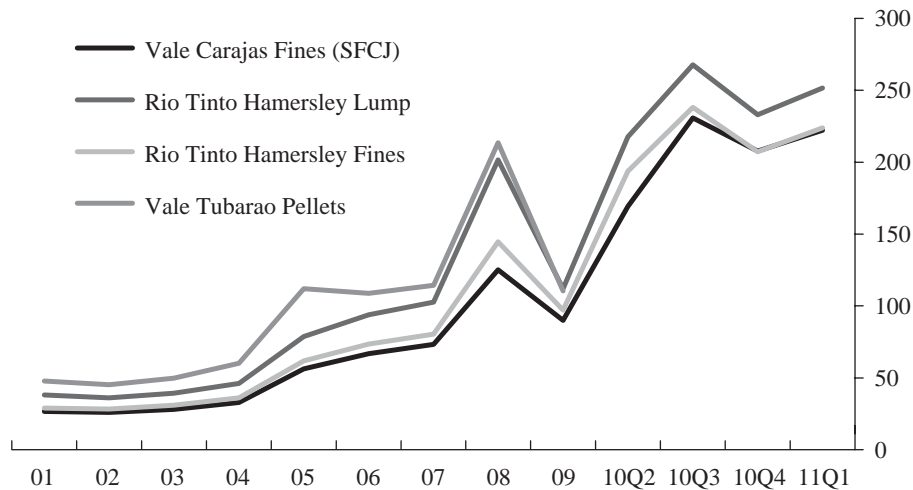
### Iron Ore Prices

#### International iron ore prices

Iron ore prices are generally negotiated directly between buyers and sellers and have historically been set mostly on an annual basis. In the past, the benchmark level for price negotiations was usually the first major sinter fine contract signed and announced by one of Vale, BHPB or Rio Tinto with either a major European or Asian steelmaker. However, there has been a shift away from annual benchmark pricing by iron ore producers to more flexible pricing options since early 2009. In March 2010, Vale, BHPB and Rio Tinto all announced that they would favor quarterly or shorter-term pricing systems over annual benchmark pricing. A quarterly semi-negotiated price has been the norm since the second quarter of 2010.

Historically, the prices of iron fines and lumps shipped from Australia to Asia grew at a CAGR of approximately 25.8% between 2001 and 2008. In 2008, these prices reached a peak of US¢144.7/dmtu and US¢201.7/dmtu for iron fines (58% Fe) and lumps (65% Fe), respectively. As a result of the global economic downturn, prices retreated due to reduced demand in the second half of 2008 before stabilizing. The global economic downturn led to a decrease in iron ore demand and iron ore prices. The 2009 international iron ore benchmark prices declined by approximately 28% to 44%, depending on the ore source. However, with the strong recovery in demand led by China and shift of contract pricing mechanism, the iron ore benchmark prices reached a historical high in the third quarter of 2010.

#### International Iron Ore Contract Prices in Asia 2001-2011 (Unit: US cents/dmtu)



Source: Hatch

#### Notes:

1. FOB prices for Asia (excluding China in 2009 and 2010).
2. US cents/dry long tonne unit before 2003; US cents/dmtu for 2004 and thereafter.
3. Due to iron ore pricing having changed to a quarterly pricing model, pellet prices ceased to be disclosed by buyers or sellers after 2009. Further, the companies noted above changed their disclosure of iron ore contract prices from annual prices to quarterly prices during the second quarter of 2010 and, as such, no quarterly information is provided for 2010 Q1 in the chart above.
4. Vale Carajas Fines represents fines produced by Vale in Carajas. Rio Tinto Hamersley Lump represents lump produced by Rio Tinto in Hamersley. Rio Tinto Hamersley Fines represents fines produced by Rio Tinto in Hamersley. Vale Tubarao Pellets represents pellets produced by Vale in Tubarao.
5. Vale Carajas Fines, Rio Tinto Hamersley Lump, Rio Tinto Hamersley Fines and Vale Tubarao Pellets are major prices indicators for international iron ore contract prices.
6. Notwithstanding the March 2010 shift in pricing methodology from annual to quarterly benchmarking, for the purposes of this table, prices before such date may generally be compared to prices after such date.



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## INDUSTRY OVERVIEW

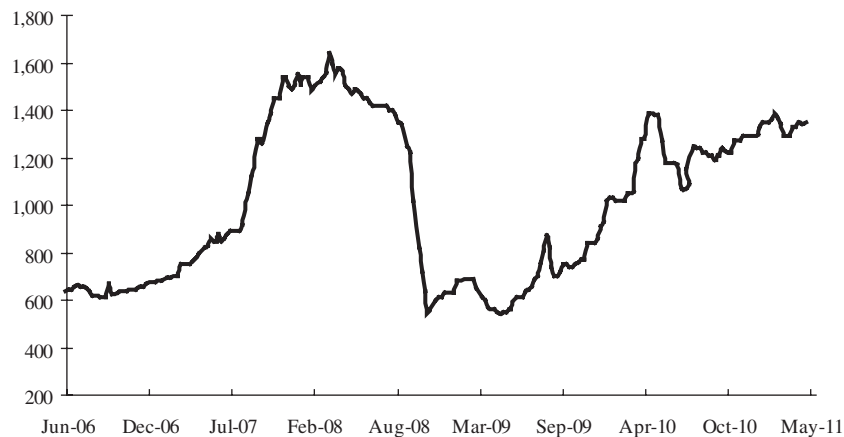
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### Domestic PRC iron ore prices

There are three main methods of pricing iron ore in China. The first method involves pricing set by steel manufacturers that own mines. Each company has its own transfer pricing practice but iron ore is usually sold at a percentage discount to the then prevailing market prices. The second method involves mining companies and steel manufacturers entering into offtake agreements where both parties commit to a certain quantity. The transaction price is usually based on the market price, but can also be sold at a small discount or premium. The third and the most common pricing method in China is spot pricing.

Globally, most iron ore transactions are conducted using long-term contractual arrangements, which were historically priced on an annual basis, but are now increasingly priced at shorter time intervals. According to Hatch, the recent changes in the benchmark pricing system may increase the volatility of iron ore prices. However, as iron ore demand in China has historically exceeded domestic supply and this significant shortfall is expected to continue, according to Hatch, iron ore producers will continue to benefit from strong demand until a market shift occurs in the supply and demand fundamentals. In China, a large spot market exists and PRC steel producers procured approximately 36% of all their iron ore requirements on a spot basis in 2009. Currently, India is the third largest iron ore supplying country to China, after Australia and Brazil, and its iron ore products are sold to customers in China at spot prices. Iron ore imports from India accounted for approximately 21% of China's total iron ore imports in 2008, 17% of China's total iron ore imports in 2009 and 15.6% of China's total iron ore imports in 2010. According to Hatch, whether on a benchmark or spot basis, iron ore prices are likely to rise in line with demand; moreover, the continued rapid growth of China's steel industry will likely be accompanied by an equivalent increase in domestic iron ore prices. The chart below indicates the trend of CIF landed iron ore prices at the Qingdao port in China:

**Iron Ore Fines CIF Prices at Qingdao Port 2006-2011 (Unit: RMB/tonne)**



Source: Mysteel, Steelhome

Note: Brazil 65% Fe, wet base, CIF

### Hebei iron ore prices

Since Hebei Province is the largest iron ore producing and consuming province in China, the prices for iron ore in Hebei Province are usually viewed as key references of the domestic spot market, and have usually been higher than those of Liaoning's and Sichuan's spot market prices given comparable Fe content.

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## INDUSTRY OVERVIEW

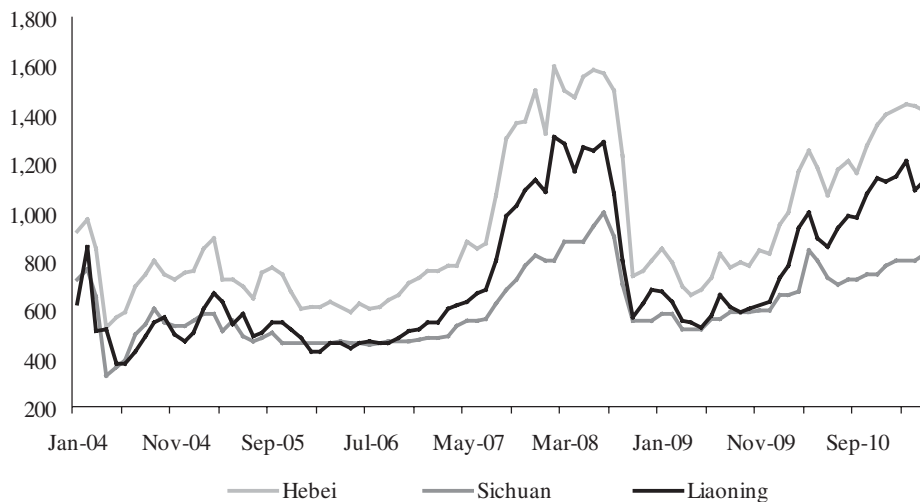
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Prices for iron concentrate in Hebei Province fluctuated between RMB600 to RMB800/tonne during 2004-2006. Since the second quarter of 2007, prices for iron concentrate began to increase and peaked at approximately RMB1,580/tonne in July 2008, driven by robust steel demand from the infrastructure and real estate industries, among others.

However, when the global financial crisis emerged, shrinking demand caused a sharp drop in prices in the third quarter of 2008 and reduced prices for iron concentrate back to the levels between 2004 and 2006. Since the second quarter of 2009, China's domestic iron ore prices have been improving and showed an upward trend through the first quarter of 2011, and retreated slightly in the second quarter of 2011.

The following chart sets forth the iron concentrate prices in the Chinese domestic market from January 2004 through January 2011:

**Iron Concentrate Prices in Chinese Domestic Market 2004-2011 (Unit: RMB/tonne)**



Source: *Mysteel and Steelhome*

- (1) Hebei Province (Tangshan): 66% Fe, dry base, ex-work price and inclusive of VAT.
- (2) Liaoning Province (Beipiao): 66% Fe, wet base, ex-work price and inclusive of VAT.
- (3) Sichuan Province: 59% Fe between January 2004 and December 2007, 60% Fe since January 2008, dry base, ex-work price and inclusive of VAT.
- (4) The VAT was 13% before 1 January 2009 and 17% for the periods thereafter.

Due to the global economic slowdown in the second half of 2008, there was a decrease in demand for iron ore products globally, including in China. However, despite a decrease in the second half of 2008, iron ore prices began to stabilize in June 2009 in Hebei Province, as well as in other regions in China as a result of the stimulus policy of the PRC Government and an increase in fixed asset investments in China. The PRC Government's reconstruction plans for the areas affected by the Sichuan earthquake in May 2008 have also boosted overall demand for iron ore and steel products. For additional information regarding policies and regulations that may influence and increase the overall demand for iron ore and steel products in China, including Hebei Province, see "— Policies and Regulations Supporting Growth in the PRC Mining and Steel Industries."

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## INDUSTRY OVERVIEW

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### **POLICIES AND REGULATIONS SUPPORTING GROWTH IN THE PRC MINING AND STEEL INDUSTRIES**

Facing the rapid development of China steel and mining industries, the PRC Government has focused on establishing and implementing policies to regulate the development of these industries, their impact on the environment and international trade.

#### *Policies for the Development of the PRC Iron and Steel Industry*

##### **Development policy for the PRC iron and steel industry**

Since 2003, China has imposed adjustments and controls at a micro level over the steel industry. The State Council promulgated the “Interim Provisions for Promoting Adjustment on the Industrial Structure” (Guo Fa [2005] No. 40) (《促進產業結構調整暫行規定》(國發[2005]40號)) in 2005 and the “Notice of State Council on Accelerating and Pushing the Structural Adjustment of Industries with Excess Capacity” (Guo Fa [2006] No. 11) (《國務院關於加快推進產能過剩行業結構調整的通知》(國發[2006]11號)) in 2006 and the NDRC issued the “Development Policy for Iron and Steel Industry” (NDRC Decree No. 35) (《鋼鐵產業發展政策》(國家發改委第35號令)) in 2005 (the “Development Policy”).

The Development Policy provides that the state shall restrict the export of primary products which consume lots of energy and result in a large amount of pollution, such as coke, ferrous alloy, pig iron, scrap, steel billets and ingots. The Development Policy encourages iron and steel enterprises to manufacture high-strength steel and hot rolled ribbed bars of Grade III (400MPa) and above.

China’s State Council approved the “Steel Industry Support Plan” in principle on 14 January 2009 and promulgated the “Adjustment and Revitalization Plan for the Steel Industry” (《鋼鐵產業調整和振興規劃》) on 20 March 2009 to support the steel industry. The details of the plan include the following: (i) steel consumed in construction projects in China is expected to constitute approximately 50% of total steel consumed; (ii) emphasis on promoting corporate restructuring and promoting industry consolidation; and (iii) focus on the exploration of iron resources and ensuring production safety to improve domestic iron production.

#### *Policies for the Development of Mine Exploration and Mining*

##### **Policy and regulation of mine exploration and mining**

In addition to the development of the iron and steel industry, the Development Policy also gives directives related to raw materials. The Development Policy encourages large-scale steel enterprises to explore and develop iron ore resources, although a mining permit must be obtained for the mines. New mining projects with iron ore reserves of 50 Mt or more are subject to verification or approval by the NDRC.

In 1999, the Ministry of Finance and the MLR jointly issued the “Measures on Administration of the Use Fee and Payment for Exploration Rights and Exploitation Rights” (《探礦權採礦權使用費和價款管理辦法》), which provides that the exploration rights utilization fee must be calculated for the year of exploration and paid annually according to the block area at a price of RMB100 per km<sup>2</sup> each year starting from the first year of exploration through the third year of exploration. In addition, RMB100 per km<sup>2</sup> for every additional year starting from the fourth year of exploration must be paid, up to RMB500 per km<sup>2</sup> each year. The mining rights utilization fee must be paid annually according to a mine area of RMB1,000 per km<sup>2</sup>.

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## INDUSTRY OVERVIEW

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As early as September 2000, six ministries, including the MLR, jointly issued the “Several Opinions about Further Encouraging Foreign Investment in Exploitation and Mining of Non-oil-or-gas Mineral Resource” (《關於進一步鼓勵外商投資勘查開採非油氣礦產資源的若干意見》), which provides for the further development of the exploration and mining rights market of domestic non-oil-or-gas mineral resources and the encouragement of foreign investment in exploration and mining of non-oil-or-gas mineral resources, particularly in the western regions of China.

In December 2003, the Information Office of the State Council issued a policy, “China’s Policy on Mineral Resources” (《中國的礦產資源政策》) and mentioned that China will mainly rely on the development of domestic mineral resources to meet the demand of modern construction requirements. The PRC Government encourages the exploration and development of mineral resources demanded by the market, particularly mineral resources found in the western regions of China, in order to improve the availability of domestic mineral products.

In January 2004, the State Council officially issued the “Regulations on Production Safety Permits” (the State Council’s Decree No. 397) (安全生產許可證條例) (國務院令(第397號)), which stipulates that the State has adopted the requirement for production safety permits for certain enterprises. Mining enterprises are not permitted to engage in any production activities until production safety permits have been obtained.

The State Council issued in 2006 the “State Council’s Decision on Enhancing Geological Work” (Guo Fa [2006] No. 4) (《國務院關於加強地質工作的決定》) (國發[2006]4號), which further expresses that China will enhance the exploration and mining of mineral resources.

While continuously enhancing the exploration and mining of mineral resources, the State Council has also issued, from time to time, policies to regulate the development and utilization of mineral resources.

The MLR issued in December 2007 the “Notice on Adoption of Uniform Numbering of Exploration Rights across the Country” (《關於實行全國探礦權統一配號的通知》), which stipulates that as of 1 January 2008, the creation, modification, extension and continuance of exploration rights, as well as geological investigation, are subject to the registration and approval by the exploration rights registration authority after which an exploration permit number is electronically generated.

On 3 March 2008, the State Council published the “Regulation on Administration of Qualification for Geological Exploration” (中華人民共和國國務院令(第520號)《地質勘查資質管理條例》), which became effective on 1 July 2008 and stipulates that the geological exploration units are not permitted to conduct any geological exploration activities for their consignors until the relevant mineral resource exploration or mining permits have been duly obtained.

On 3 March 2008, the MLR issued the notice on “National Plan on Geological Exploration” (《全國地質勘查規劃》), containing the objectives planned for geological exploration in China by 2010 including major breakthroughs in mineral exploration, large increases in the availability of domestic mineral resources, establishment of backup areas in the western regions of China for the exploration and development of important resources and increases in newly-identified iron ore reserves by 5,000 Mt.

The MLR officially issued the “National Mineral Resources Plan (2008-2015)” (《全國礦產資源規劃》) on 31 December 2008 in an attempt to promote the substitutability of mineral resources. The “National Mineral Resources Plan (2008-2015)” stipulates that the national newly-added iron ore ensured reserve will amount to 3,000 Mt from 2008 to 2010 and further expanded to 6,000 Mt from 2011 to 2015. Meanwhile, iron ore production will be increased to 940 Mt in 2010 and to 1,100 Mt in 2015.

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## INDUSTRY OVERVIEW

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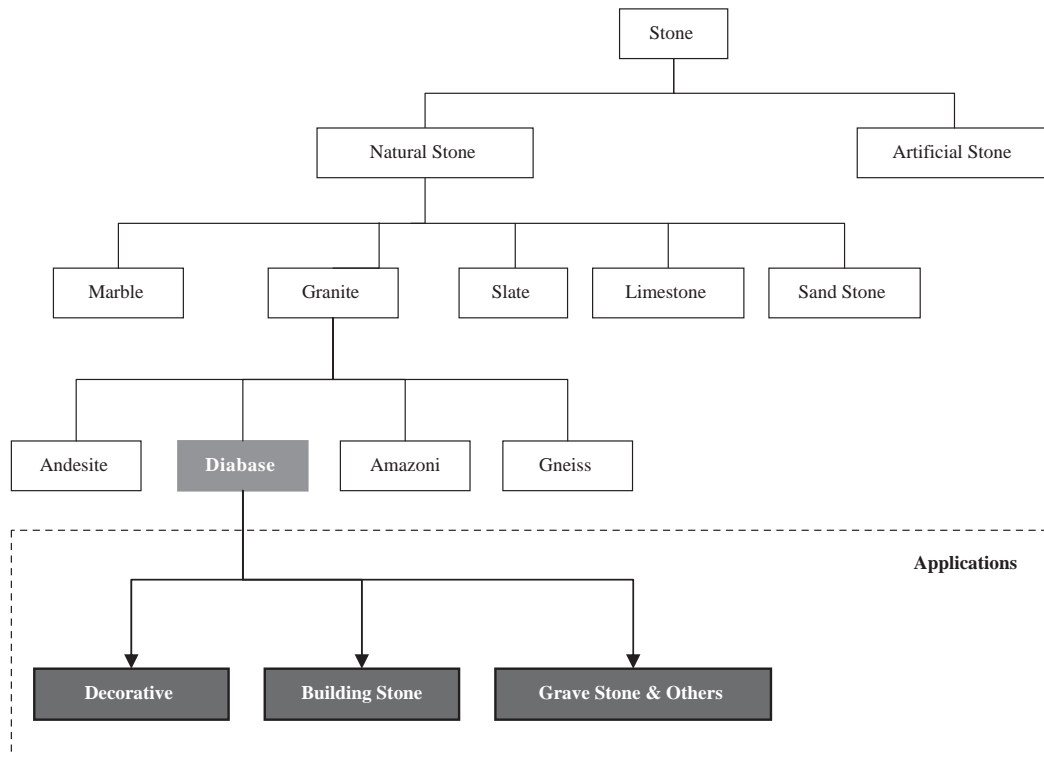
### *12th Five-Year Plan of Hebei Province (2011-2015)*

The “12th Five-Year Plan” of Hebei Province (河北省國民經濟和社會發展第十二個五年規劃綱要) (the “Plan”) was passed on 21 March 2011. The Plan emphasizes the importance of efficient exploitation of mine resources. Under the Plan, Hebei Province’s government intends to further centralize the overall administration of mine resources, punish inefficient mining and increase recovery rates and extraction rates of mine resources. The Plan also emphasizes the importance of production safety and environmental protection in mining operations. Mining enterprises should, among other matters, implement comprehensive examinations for material hidden defects in tailings storage facilities and should also implement land reclamation plans.

### INTRODUCTION TO DIABASE

Diabase, a type of granite, is a stone material used primarily in the construction industry and for decoration purposes due to its qualities of hardness and toughness. A mafic, holocrystalline, intrusive igneous rock equivalent to volcanic basalt or plutonic gabbro, the stone is generally deep blue and black in color. Facing slabs composed of finished diabase are typically named “China Black” after their origin and color. There are many types of diabase, one of which is gabbro-diabase.

Diabase is commercially classified in the granite family of stone products. Granite is a common and frequently-occurring type of intrusive and felsic igneous rock, and is classified according to color, which ranges from pink to dark gray or even black, depending on its chemical composition and mineralogy. Because granite is massive (lacking internal structures), hard and tough, the stone is frequently used for construction purposes. The average density of granite is 2.75 g/cm<sup>3</sup>. The following chart sets forth the variety of stone, including diabase, and diabase’s applications:



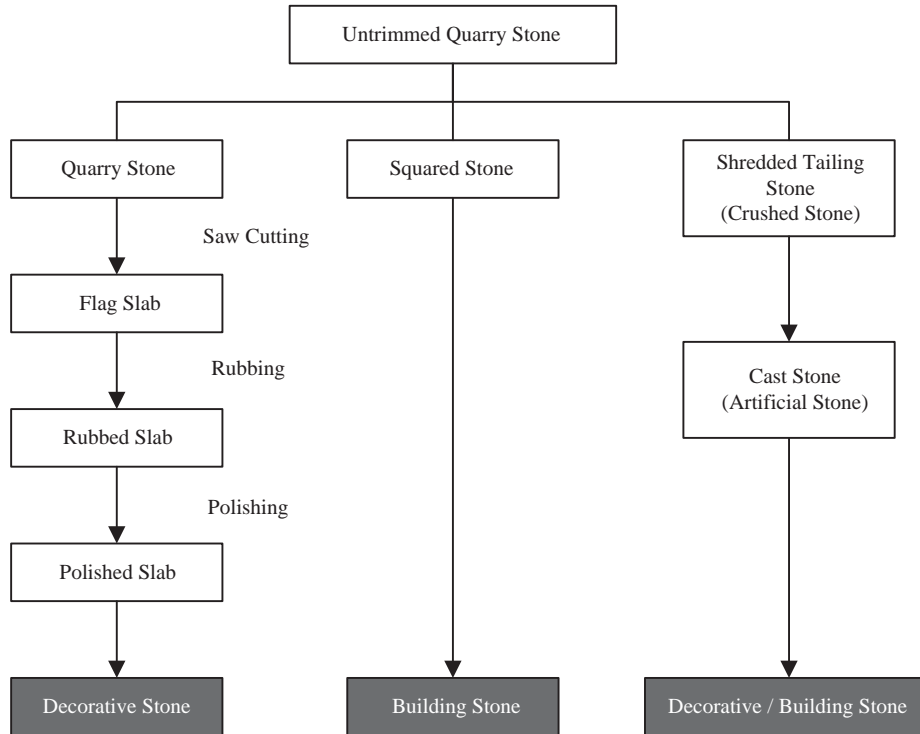
Source: Hatch

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## INDUSTRY OVERVIEW

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Diabase, along with gabbro-diabase, exhibits market characteristics similar to granite and each product can be generally substituted for each other. Diabase and other granite products are generally processed into stone slabs and used for decoration, construction, stone artwork and stone carvings and incorporated into other crust stone products directly. Stone such as diabase and granite is generally produced in the following manner:



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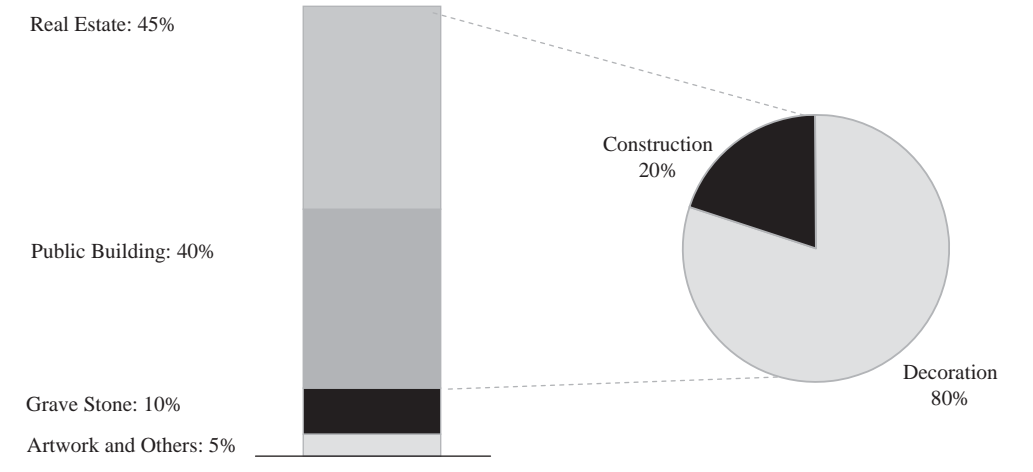
Source: Hatch

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## INDUSTRY OVERVIEW

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Diabase is a type of granite product and it is processed into smooth and rough products with decorative applications. It is inter-substitutable with other granite and stone products for many applications. Granite can be used in a wide variety of applications relating to interior and exterior decoration and construction. The following chart indicates the decorative applications of different stone products:



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Source: CSMA and Hatch

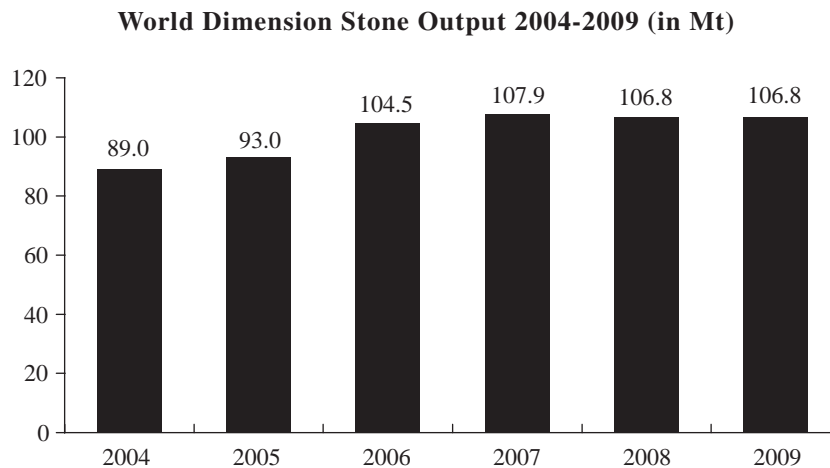
### **Global Stone Industry**

#### **Stone resources**

According to USGS, global stone resources can sufficiently meet foreseeable global demand. China, along with India, Brazil, South Africa, Spain, France, Korea, Finland, Norway, the United States, Italy, Portugal and Germany are rich in granite resources.

#### **Global stone production**

According to Hatch, global dimension stone output grew steadily from 89.0 Mt in 2004 to 106.8 Mt in 2009. The following graph sets forth the world dimension stone output from 2004 to 2009:



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Source: USGS

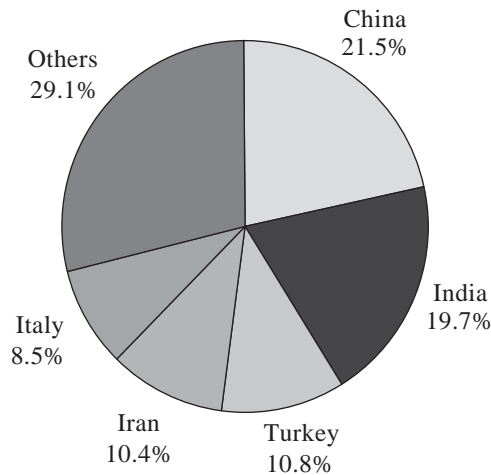
Note: Data from 2008 and 2009 are from Interuazionale Marmi e Macchiue Carraon S.p.A. (IMM)

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## INDUSTRY OVERVIEW

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China, India, Iran, Turkey and Italy are the top five stone producing countries in 2009. The accumulated stone production of these five countries accounted for 70% of the world total production. The following graph sets forth the top five quarry stone producing countries by output in 2009:



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Source: Hatch

### Global stone trade

Stone products are traded globally. Global granite import has increased to 23.7 Mt in 2009 from 14.0 Mt in 2004, representing a CAGR of 9.2%.

Korea, USA and China are the world's top three quarry granite importers. China, India, Brazil and Italy are key quarry granite exporters.

### *PRC Stone Industry*

#### Stone resources

According to CSMA, preliminary estimates for the identified PRC national granite reserve exceeded 2.4 billion m<sup>3</sup> in 2007. However, CSMA estimates that the total granite reserve in China is greater than 10 billion m<sup>3</sup>.

China is one of the world's largest stone product importers. China has also been the world's largest stone producer and largest stone exporter since 2005. Granite and marble products constitute a significant portion of the PRC national total stone output. The top three stone producing provinces in China are Fujian, Guangdong and Shandong.



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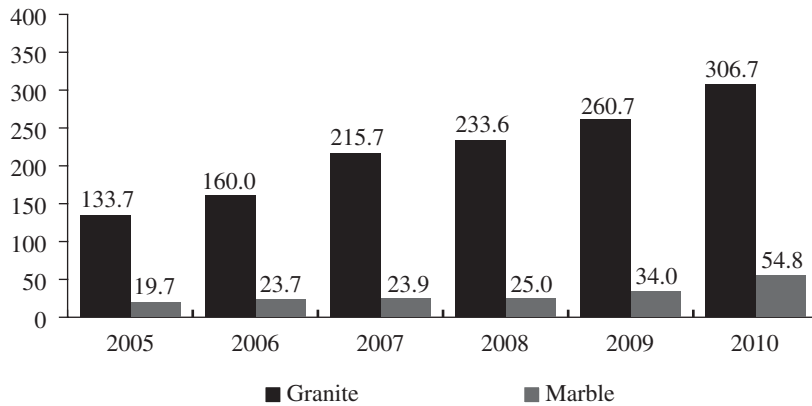
## INDUSTRY OVERVIEW

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### Stone production

Total production of granite and marble slab products from state-owned enterprises and non-state-owned enterprises in China with annual sales revenue exceeding RMB5 million reached 306.7 million m<sup>2</sup> and 54.8 million m<sup>2</sup>, respectively, in 2010. The following chart sets forth granite and marble slab output in China from 2005 to 2010:

**China Granite and Marble Slab Output 2005-2010 (in million m<sup>2</sup>)**



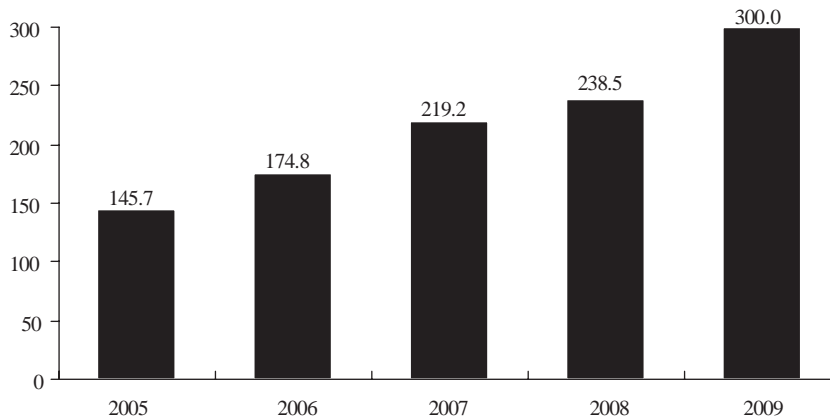
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Source: CSMA

### Stone consumption

In 2009, consumption of stone products such as granite and marble in China was 300.0 million m<sup>2</sup>, an increase of 25.8% year-on-year and representing a CAGR of approximately 19.8% compared to consumption of 145.7 million m<sup>2</sup> in 2005. The following chart sets forth stone consumption in China from 2005 to 2009:

**China Stone Consumption 2005-2009 (in million m<sup>2</sup>)**



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Source: CSMA, China Customs and Hatch

Note: Consumption of limestone, slate and sandstone is not included

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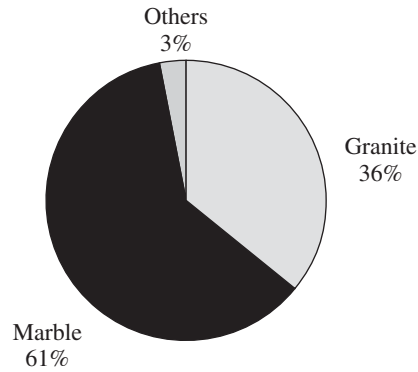
## INDUSTRY OVERVIEW

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### Stone trade

China leads the world in terms of stone product imports. China imported approximately 8.1 Mt and 12.3 Mt of stone products in 2009 and 2010, respectively. The largest stone product imported into China was marble, comprising over 60% of the stone import tonnage in China in 2009 and 2010. The following chart sets forth the China stone imports in 2010:

**China Stone Imports in 2010**

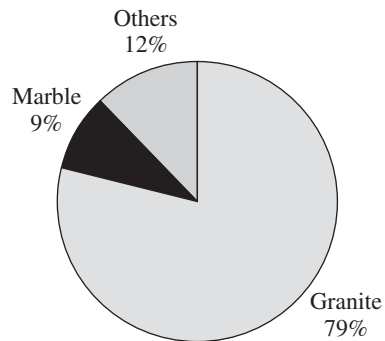


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*Source: China Customs*

China is also the world's largest exporter of stone products. During the past five years, China exported more stone products than it consumed. The following chart sets forth the China stone exports in 2010:

**China Stone Exports in 2010**



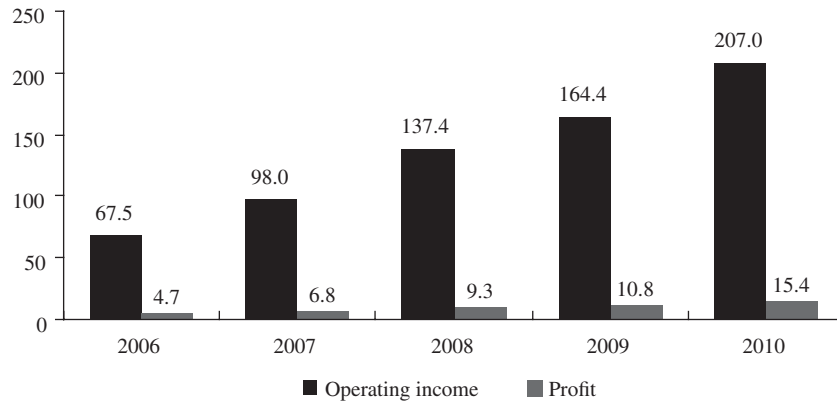
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*Source: China Customs*

## INDUSTRY OVERVIEW

In 2010, the operating income of Chinese stone industry reached RMB207 billion, an increase of 25.9% over the previous year. The following chart indicates the operating income and profit of the stone industry in China from 2006 to 2010:

**Operating Income and Profit of China's Stone Industry 2006-2010 (in RMB billions)**



Source: CSMA

### Stone industry competition in China

The stone industry in China is fragmented. According to CSMA, there are over 50,000 stone mining and processing companies in China. The table below sets forth key Chinese stone producers in 2008 (the latest available data):

**Key Chinese Stone Producers (2008)**

Company Name	Province	Capacity (Thousand m <sup>2</sup> )
Universal Marble & Granite Group <sup>(1)</sup>	Guangdong	3,000
Alpine Stone Inc <sup>(1)</sup>	Guangdong	3,000
Kangli Stone Group <sup>(1)</sup>	Guangdong	2,000
Dong Cheng Stone Products Company <sup>(2)</sup>	Guangdong	1,000
Fujian Xishi Group <sup>(1)</sup>	Fujian	1,000
Fujian Quanzhou Nanxing Marble Co., Ltd <sup>(1)</sup>	Fujian	2,000
Fujian Dongsheng Stone Industrial Inc. <sup>(1)</sup>	Fujian	2,000
Shandong Guanlu Group <sup>(2)</sup>	Shandong	1,000

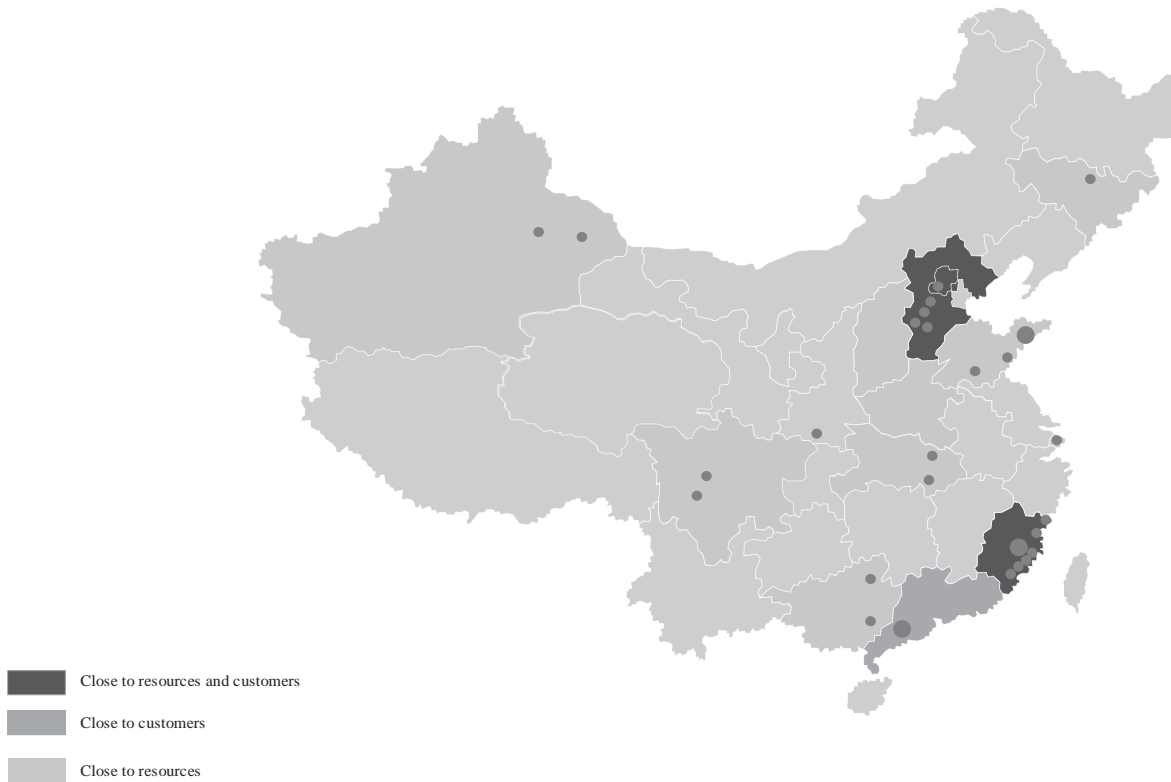
Source: CSMA

(1) Production value of company is over RMB1.0 billion.

(2) Production value of company is over RMB0.4 billion.

# INDUSTRY OVERVIEW

## Distribution of Chinese Stone Industry Clusters



### Stone prices

According to interviews with stone process and trading companies in Shanxi and Beijing, the prices for standard China Black products (600mmx600mmx20mm) were relatively stable at RMB150 per m<sup>2</sup> during 2005-2009.

The price of the standard China Black products (600mmx600mmx20mm) increased by approximately RMB50 to RMB200 per m<sup>2</sup> in the three months ended 30 September 2010.

The market prices for “Hebei Black” diabase in 2009 are set forth below:

Products	Specification (mm)	Price (RMB/m <sup>2</sup> )	Producer	Released Date
China Black				
Flame-Treated Slab ...	1800x600x20	150	Hebei Huaming Stone Co.	19 October 2009
	2400x700x20	300	Hebei Huaming Stone Co.	19 October 2009
China Black .....	600x600x20	150	Hebei Shuangwang Stone Co.	11 October 2009
China Black				
Rubbed Slab .....	1600x800x30	350	Hebei Shuangwang Stone Co.	1 October 2009
China Black .....	600x600x20	150/200	Shuntong Stone Co.	12 September 2009
China Black .....	700x700x20	200	Hebei Shuangwang Stone Co.	27 July 2009
China Black .....	1800x600x40	330	Hebei Shuangwang Stone Co.	12 June 2009

Source: Hatch

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## INDUSTRY OVERVIEW

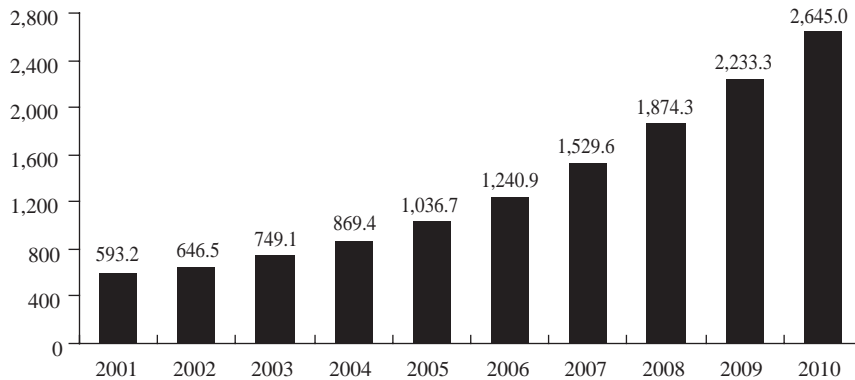
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### Factors affecting the stone market

As stone products such as granite are often used in decorative applications relating to the construction and decoration of property, market trends in the construction and real estate development industries can influence the stone market.

In 2010, the Chinese value-added of construction industry was approximately RMB2,645 billion, an increase of 18.4% from 2009 according to the data published by NBSC, representing a 2001-2010 CAGR of approximately 18.1%. The following chart indicates the value-added of the construction industry in China from 2001 to 2010:

**Chinese Value-added<sup>(1)</sup> of Construction Industry 2001-2010 (in RMB billions)**



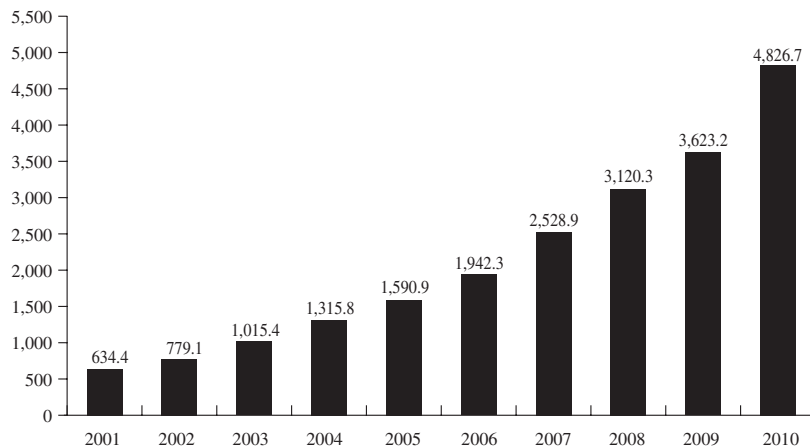
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Source: NBSC and Hatch

(1) Value added of an industry represents gross industrial output less industrial intermediate input plus value added tax.

In 2010, the total amount of real estate development investment in China grew to RMB4,826.7 billion, an increase of 32.2% from 2009, representing a 2001-2010 CAGR of 25.3%. Of this total investment amount, the investment in commercial residential buildings in China was RMB3,403.8 billion, an increase of 32.7% from the previous year. The following chart indicates the amounts invested in real estate development in China from 2001 to 2010:

**Investment in Real Estate Development 2001-2010 (in RMB billions)**



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Source: NBSC

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## INDUSTRY OVERVIEW

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### SOURCE OF INFORMATION

#### *Hatch Report*

Hatch, an experienced consultant in the metals and mining industry, has been engaged to provide the Hatch Report for use in whole or in part in this Prospectus.

The research and writing of the Hatch Report was a desktop exercise carried out by experienced Hatch professionals who have extensive knowledge of the iron ore and diabase sector. Hatch utilizes its in-house database, independent third-party reports and publicly available data from reputable industry organizations to prepare the Hatch Report. Where necessary, Hatch's researchers contact companies operating in the industry to gather and synthesize information about the market, prices and other relevant information.

In preparation of its Hatch Report, Hatch has assumed the completeness and accuracy of the information and data that it has relied on. Hatch has confirmed that it is not aware of anything which could possibly lead it to believe that this assumption is unfair, unreasonable or incomplete.

Hatch operates according to strict international standards of moral, legal and professional conduct. Hatch guards its reputation for independence and confidentiality with great care. Hatch has more than 15 years of project experience in the PRC and has successfully undertaken assignments on over 150 projects with a capital value in excess of US\$3.0 billion.

This Prospectus contains information extracted from the Hatch Report in sections such as "Summary", "Risk Factors", "Industry Overview", "Business" and "Financial Information." The sources cited in this "Industry Overview" section are in the form provided in the Hatch Report, unless otherwise noted.

We have paid Hatch a total of RMB495,000 in fees for the preparation of the Hatch Report during the Track Record Period. We believe these fees are reasonable for the preparation of an industry report by an independent third-party consultant.

#### *Others*

We have not engaged USGS, MMAC, MLR, NBSC, CISA, WSA, China Customs, CSMA, Steelhome and Mysteel, when preparing data quoted in this Prospectus. Data from these sources were not prepared on a commissioned basis by us.