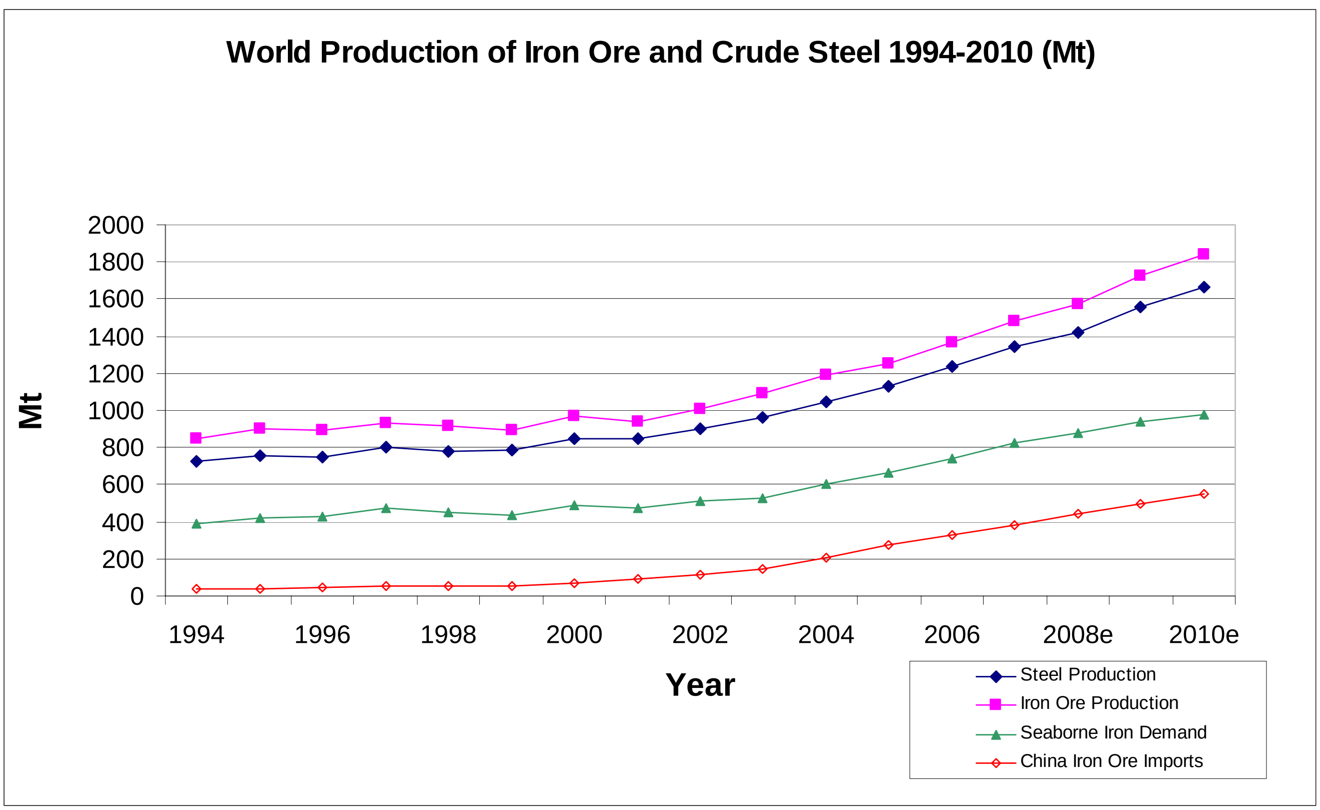
Update: 2008 April 30

IRON ORE INDUSTRY TRENDS AND ANALYSIS

World production of iron ore increased again to another all time high in 2007 at 1,480 million tonnes and crude steel production increased to 1,340 million tonnes, 7% higher from a year earlier. Growth remains strong and the market consensus is that it will remain strong over the next five to seven years. Some market analysts believe that this current cycle will duplicate the growth seen after the Second World War that continued until the 1973 oil crisis. The 1946-1973 growth was driven by the USA and its population of some 250 million people. The current growth period is being driven by China and to a lesser extent India with a population totalling almost 3 billion. In addition, market analysts note the growth of what they refer to the "next billion", some 12 to 15 countries; including the Middle East, Indonesia, Philippines, Malaysia, Turkey, Poland, Chile, Argentina, etc.; that has been underestimated by the overall market. This is balanced by warning from other analysts that fundamentals may be over dramatised and that a significant recession may led to a glut in the commodities market. Iron and steel remain part of the core basic industry essential for economic growth. Despite, theories that the new economy would be clicks, bricks mortar and steel remain fundamental.

China remains as the major driver of the commodities market with spectacular annual growth in imported iron ore from 14 million tonnes in 1991 to almost 384 million tonnes imported in 2007. Forecasts have this growth rate slowing, however exactly when and at what level China's demand will plateau is subject to much speculation. Market competition remains fierce and shortage of certain commodities (coking coal) may actually lead to a shut down of a blast furnace. There is discussion that the theoretical structural shortage in the steel industry due to raw materials shortage of supply (iron ore, scrap, coke) and logistical constraints is becoming an actual steel shortage.



Source: UNCTAD, IISI, Macquarie, Credit Suisse

STEEL

Any analysis of the iron ore industry must include virtually the industry's only customer - the world crude steel industry. Although iron ore is used in pigment production, pipe coating, heavy aggregates, magnets and even as an additive to animal feed, almost 99% of iron ore production is consumed by the steel industry. The steel industry has undergone rather dramatic changes in the 1990's that continues. Producers have had to make decisions with increasing globalisation, falling prices, market distortions, reduction of trade barriers and opening markets, rising protectionism, development of new technologies, changes in customers structures and the continued problem of over-capacity.

World growth of iron ore and steel generally expands and contracts inline with world economic growth. However, although annual growth in world iron ore production has averaged 1.8%, over the past twenty years; during the same period western world exports of iron ore have increased 3.5% per year. This indicates a strong move towards quality as poor quality production has shutdown due to poor economics. Steel producers demand high quality iron ore products and rely on an increasing export market to meet this demand. Exports are dominated by two countries; Brazil and Australia. However, India has increased its exports dramatically over the past few years to almost 90 million tonnes. As much of this output is reportedly marginal and high cost, the debate is whether or not the level of export output can be sustained. It appears to have reached a plateau in 2007 and the India government and several steel companies have expressed increasing concern about potential future shortages of iron ore and over-capacity of the country's infrastructure.

Globalisation is the most significant issue affecting the iron and steel industries and it has forced significant changes in attitude. In the past, steel and iron ore were considered strategic industries. All countries had to have a steel mill and iron ore deposit, which were considered essential to industrial growth and the wealth of a country. Most producers have had to jettison the emotional baggage that comes with the attitude that steel is a core industry basic to the growth development of a country's wealth and power. The growing international trade and extensive merger and acquisition activity has seen takeovers and alliances that would have been unheard of just ten years ago. Production of steel will generally follow the year to year change in world industrial production and demand, and expected economic growth rates.

The world steel production increase to 1,340 million tonnes in 2007 represents very strong demand in Asia as well as moderate to strong demand elsewhere in the world. Although steel is produced in virtually every country, six countries or regions dominate and account for almost 80% of world crude steel production and their imports of iron ore dominate the seaborne trade.

World Steel Production

Country/Region	2007 Crude Steel Production (Mt)	% of World Total	2007 Imports of Iron Ore (Mt)	% of World Total
European Union – 15	177	13.2	148	17.9
USA	99	7.3	11	1.4
Japan	121	0.0	139	16.9
PR of China	489	36.4	384	46.7
S Korea	51	3.8	49	5.9
Russia/Ukraine	115	8.5	12	1.6
Sub-total	**1,052**	**78.5**	**741**	**90.3**
World Total	**1,340**	**100.0**	**823**	**100.0**

Estimates vary dependent upon source: Source IISI, AME, Roskill, Credit Suisse

The top six form the primary and most important customers for the iron ore exporting nations and account for more than 90% of seaborne iron ore imports. Consolidation in the Iron Ore Industry has become even more focussed as three companies, VALE (formerly CVRD), BHP Billiton Iron Ore (BHPBIO) and the Rio Tinto Iron Ore unit (RTIO) control more than seventy-five percent (~78%) of the seaborne trade. Nearly all iron ore is used to make steel, but not all steel is made from iron ore. Steel is produced via three processes.

The blast furnace remains the principal iron-making route while the basic oxygen furnace (BOF) remains the principal steel-making method accounting for 60% of production. Open hearth furnaces, once the only method of steel making, have been made virtually obsolete, driven out by environmental, operational and cost factors. It still accounts for 5% of steel production, but is expected to disappear as a method of steel-making in the near future. The electric arc furnace (EAF) steel making process accounts for 35% of world steel production. It uses mostly scrap steel (90+ %) as feedstock. Increasingly, directly reduced iron (DRI) or hot briquetted iron (HBI) have become an important feedstocks for the EAF process. However, both of these processes use iron ore.

The steel market has developed some unusual aspects over the past few years. Initially the Former Soviet Union was a major supplier of quality scrap steel, depressing prices throughout the 1990's and into early 2003. However, its supplies of quality scrap have been greatly reduced. It is important to realise that the EAF process does not improve the quality of steel produced. The quality of the input steel is the same as quality of the output of the steel produced by the EAF method. USA exports of scrap to China over the past two years, due to premium prices paid by Chinese steel mills, caused regional shortages of scrap.

Asia now produces 691 million tonnes or almost 53% of the world's steel production compared to 35% of world output in 1993. China leads this growth and is the world's largest steel producer at 489 million tonnes of annual production. Analyst forecasts have China's steel production increasing to more than 600 million tonnes by 2010 with the seaborne trade of iron ore increasing to more than 1,000 million tonnes over the same period. Despite large planned increases in iron ore production by the VALE, RTIO and BHPBIO, infrastructure capacity issues and the availability of heavy equipment may delay or impede realisation of these plans.

Perhaps one of the most important words to consider when reviewing the steel (and iron ore) industry is infrastructure. The development in China and India has been directly related to the development of new infrastructure and the related move from a rural to more urban economy. This change has seen a change to a more western world diet and increase in consumable goods. The focus of market analysts on Brazil, Russia, India and China, the "BRIC" countries has perhaps overshadowed the growth in the remainder of the world. This is referred to by market analysts as the growth of what they refer to the "next billion", some 12 to 15 countries; including the Middle East, Indonesia, Philippines, Malaysia, Turkey, Poland, Chile, Argentina, etc. Growth is being driven, rather than in the past by market economy countries, by the developing countries or the world or almost two-thirds of the world's population.

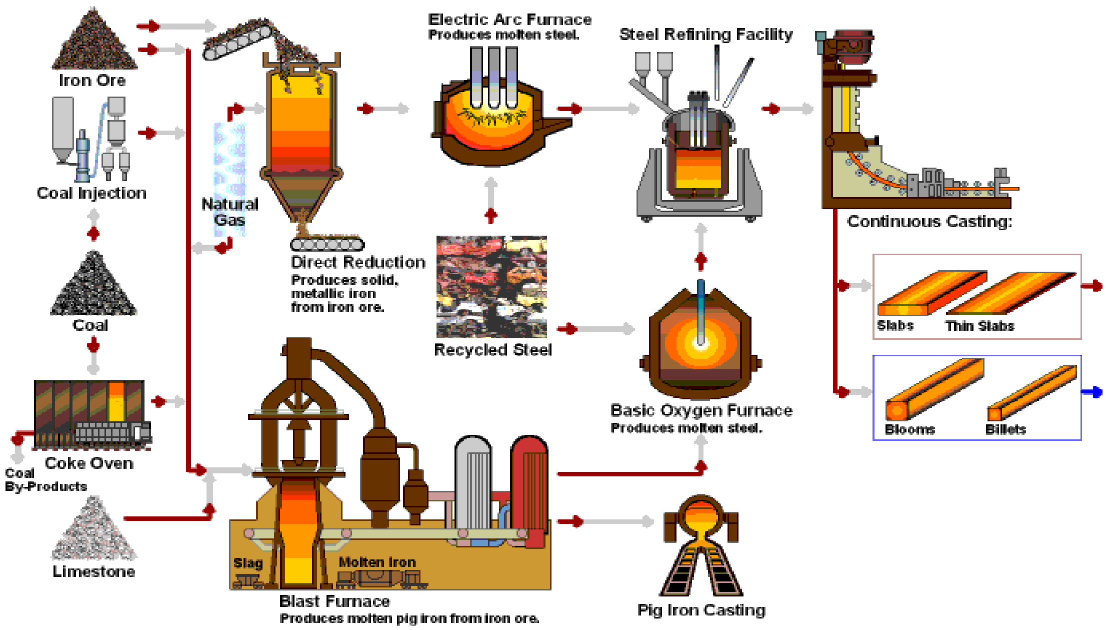
In addition, there has been press discussion of the lack of infrastructure investment in the USA. A bridge collapse in Minnesota in August 2007 highlighted a realisation that much infrastructure needed repair and replacement due to lack of investment and years of over-capacity stressing the original designs. Immediately after the bridge failure, which killed 14 people, inspections revealed that several other bridges exhibited similar bowing of the steel plates that led to the bridge collapse. "Engineering" estimates reported that potentially tens of thousands of small and medium structures (bridges, etc.) required major renovation and replacement. All of this work would require significant steel. Several analysts stated significant investment was needed to start immediately.

Mergers and takeovers in the steel industry have seen considerable consolidation over the past ten years. Over-capacity and, in the case of state-owned companies, heavy government subsidies slowed the much needed rationalisation of the industry. Consolidation started creating dominant groups within one country; such as ThyssenKrupp Stahl, which resulted from the merger of four large steel companies within Germany. Consolidation continued with British and Dutch steel interests forming Corus and the creation of Arcelor from Luxemburg, Spanish and French groups. In Japan, Kawasaki and NKK merged to form JFE and in Slovakia, US Steel bought Kosice.

This relatively small purchase of a Slovakian steel producer by an American country perhaps highlighted the end of protectionist aura that had previously surrounded the industry. In addition, strategic alliances have been created between partners that a few years earlier would not have been thought possible. More recently Mittal and Arcelor, the two largest steel companies merged after a lengthy takeover battle. Despite the consolidation, the top five steel producers control less than 20% of world output.

Rumours and speculation dominate news stories. Tata, the Indian conglomerate, won the takeover battle for Corus the Anglo-Dutch Group and the German steel producer Salzgitter sought to buy the Canadian Algoma Steel. It was reported that Salzgitter decided not to pursue the Canadian company after speculation increased its share price to such a premium that the purchase no longer made economic sense. The Essar Group from India then bought Algoma. The Scandinavian steel group SSAB bought IPSCO. It is expected that mergers, takeovers and general consolidation of steel-makers will continue.

The Steel Making Process



Source: IISI, Steel.org

IRON ORE

World iron ore production totalled 1,480 million tonnes (normalised to 63% Fe) in 2007, as iron ore companies stretch production to meet demand. As with many reported economic figures, they are subject to revision, clarification and correction. In the "BRIC" countries (Brazil, Russia, India and China), various economic indicators including levels of output are difficult to quantify.

Although iron ore production is widely spread occurring in almost fifty countries, the bulk of world production came from just five countries. The five largest producers Brazil, Australia, China, India and the former Soviet Union account for almost 80% of the world total.

Production and Exports of Iron Ore by Principal Countries, 2007				
	Production (Mt)	% of total	Exports (Mt)	% Export Market
Country				
Brazil	332	23.4	267	34.6
Australia	294	20.7	261	33..8
China	311 Note 1	21.9	0	0
Russia	101	7.1	12	1.6
India	165	10.9	86	11.1
Ukraine	71	5.0	20	2.6
USA	52	3.7	10	1.3
South Africa	41	2.9	30	3.9
Canada	34	2.4	28	3.6
Sweden	23	1.6	19	2.5
Sub-total	1406	95.0	733	94.9
World total	**1480**	**100.0**	**772 note 3**	100.0

Note 1: Normalised to ~64% Fe equivalent, official output 707 Mt production at 29% Fe but significant question as to actual iron content of production; Russian and Ukrainian exports are dominantly internal to CIS countries and former Eastern block countries; India sold ~78 Mt to China on a spot market basis in 2005; spot prices have been extremely variable throughout the year.
Note 2: Shipments not production, some 6-7 Mt are traded on Great Lakes between steel consumers
Note 3 Total exports including seaborne and non-seaborne trade
Preliminary Estimates

Source: Tex Report, Roskill, Skillings, Citi, Credit Suisse

Iron ore producers historically fell into two basic categories, captive producers and exporters. Captive producers were those owned by steel companies and generally sold its production exclusively to their owner(s)-customer. Exporters sold to a number of customers and were subject to external market demand, improving sale product quality and in some cases developing new deposits to meet changing demand despite reserves in existing operations. Producers were dominantly captive in the past, but this has and will continue to change. Steel producers may maintain a minority or strategic interest in iron ore companies, but want flexibility of supply. The resource sector of the economy, particularly the metals markets have been cyclical. Despite the general move to free markets, some steel producers are moving back to owning or controlling more of their raw material sources.

ArcelorMittal and TataCorus are two companies that have announced efforts to secure 80% of raw materials requirements through owned mines or through favourable long-term contracts. Mittal South Africa, formerly Iscor, has a cost plus 3% supply agreement with Kumba Resources after Iscor divested of its iron ore assets in 2001. Kumba is the public company that resulted in the divestiture of Iscor's mining assets. Both TataCorus and ArcelorMittal announced exploration and development agreements in Senegal, Liberia and Cote d'Ivoire. Chinese steel companies have also been aggressive in Africa and more recently Sinosteel announced a possible takeover of Midwest, a potential Australian producer.

Iron ore is predominantly sold via long-term contracts that specify certain volumes that the steel producer must take. In both Asia and Europe, steel producers formed buying groups and prices are negotiated annually in so-called mating seasons. The initial price settlement in the mating season is very important as it traditionally sets the basis or benchmark for other company's negotiations. In Asia, BHPBIO and RTIO had been the traditional price setters, while VALE generally set the benchmark for European sales. In the past, the first company to settle on price will gain volume at the expense of other producers. More recently, VALE has been the company setting benchmark prices in both hemispheres. China has stated that, as the largest importer of iron ore, it should be the trendsetter and establish the benchmark price.

China has been the primary driver behind demand growth and the recent impressive increase in iron ore prices. Its imports in 1990 totalled just 14 million tonnes. This increased to a staggering 384 million tonnes in 2007. Perhaps even more staggering is that imports are forecast to increase to more than 500 million tonnes by 2010. China imported more than 153 million tonnes in the first four months of 2008. This represented a 15% increase over the same period in the previous year. More importantly the Tex Report states the average cost of these tonnes were more than $134 DES to China. The 2007 long-term benchmark for ores from Brazil was slightly more than $45 per tonne and from Australia more than $52 per tonne into China on an FOB Basis.

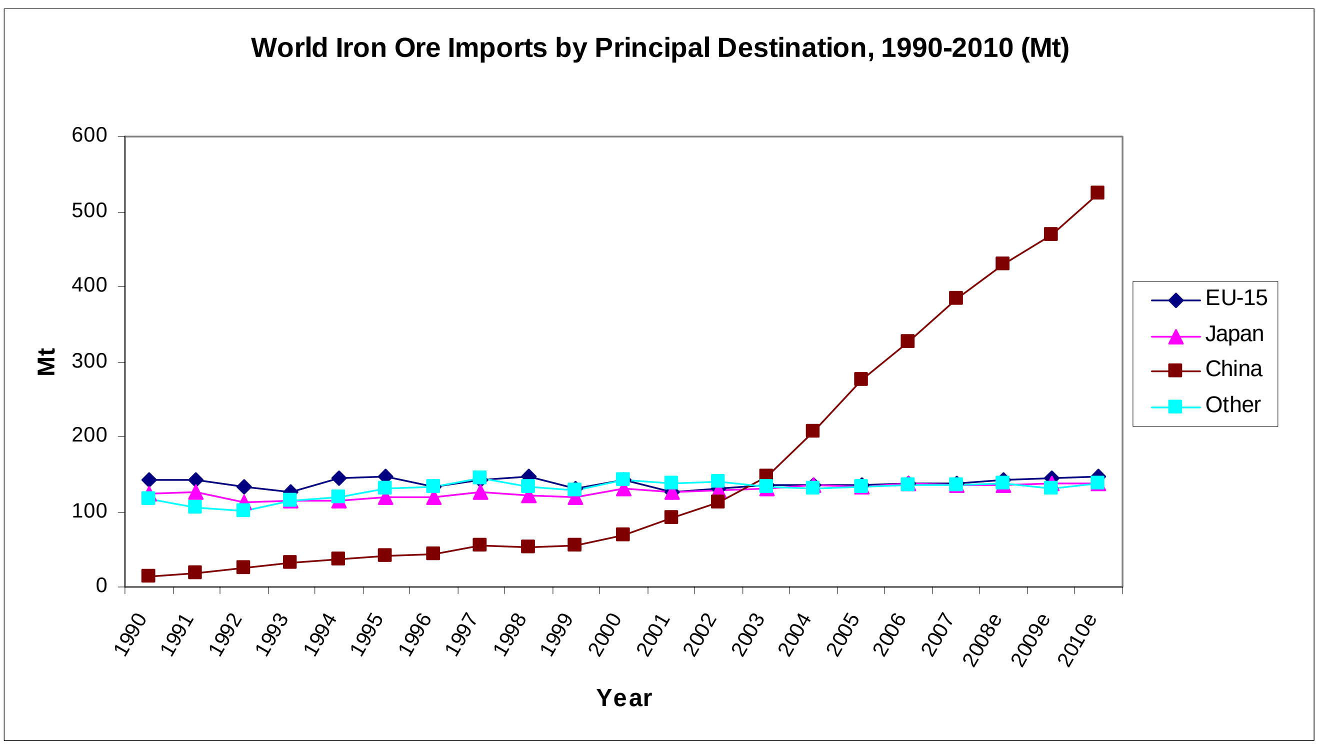
When shipping costs are added, the cost per tonne of iron ore for the first two months 2008; assuming that half the ore and shipping costs are via long-term contract; into China are:

Australia:	~$75 per tonne DES
Brazil:	~$150 per tonne DES
India:	~$200 per tonne DES

Source: Skillings, Tex Report, Company Estimates
Note: India, Australia and Brazil account for ~87% of China's iron ore imports

Including shipping costs, but excluding the 2008 price increase which comes into effect 01 April, Brazilian ores cost China's steel companies almost $75 per tonne more than Australian ores, while Indian ores cost almost $125 per tonne more. It is important to note that all of India's sales to China are on a spot basis. Although a minor part of the iron market before 2000, it has exploded to some 15-25% of the seaborne market in 2007. This inequality has led the Australian producers; BHPBIO in 2005 and RTIO in 2008; to demand a freight equalisation premium for its iron ores.

China's demand has obscured consistent moderate to strong increases in demand within other market and growth economies. Importantly the focus on China's growth has perhaps underestimates world iron ore import demand outside of China, Japan and the European Union (EU-15). While the EU and Japan's growth remains flat, indicative of their mature economies, most forecasts have the rest of the world's steel output and iron ore consumption (outside of China) contracting slightly over the next five years.



Source: UNCTAD, Roskill, Skillings

The relationship between steel mills and iron ore producers has historically been adversarial. From the viewpoint of the iron miners, the steel companies unfairly demanded improved product characteristics, while the real price for iron ore declined over 50% between 1982 and 2002. However in the 1990's, the world's steel industry was effectively in survival mode as the list of many famous names sought bankruptcy protection or worse went bankrupt. In early 1999, BHPBIO and RTIO announced that they would jointly market their iron ore production. Although the attempt failed, the effort did shock the Japanese Steel Mills (JSM) buying group. The International Iron and Steel Institute and Eurofer, representing the European steel producers objected strenuously to the proposed takeover of Rio Tinto by BHP Billiton. It argues that three producers controlling almost 80% of the seaborne export trade has led to massive prices increases with a virtual tripling of prices since 2002.

More recently, China as the world's largest iron ore importer has attempted to take over the role of the market leader. This has met with mixed success as the Chinese government attempts to mitigate the price increases and maintain quality control on imported iron ore. China had demanded that the price of iron ore fall by approximately 10% in 2006, then argued for no price increase before finally accepting the settled benchmark of a 19% increase in price for fines (sinter feed) and lump. Pellet prices declined by 3% indicating a possible oversupply of pellets in the market. Quality issues in some pellet production are also rumoured. In December 2006, Baosteel agreed to a 9.5% price increase with VALE. This surprised many in the industry who believed that the Chinese were too inexperienced to takes the role as the market leader and setter of the benchmark.

Iron Ore Price Benchmark Comparison

Prices – European Benchmark	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Vale Itabira Fines (US¢/dmtu – FOB)	27.7	28.9	29.1	31.04	36.45	62.51	74.39	81.46	134.41
Vale Carajas Fines (US¢/dmtu – FOB)	28.8	30.1	29.3	31.95	37.90	65.00	77.35	84.70	140.60
Vale Carajas Lump (US¢/dmtu – FOB)	33.94	35.18	34.31	37.36	44.46	79.58	94.70	103.70	Not settled
Vale Carajás Pellets (US¢/dmtu – FOB)	49.9	52.4	50.4	54.93	63.60	118.57	115.01	121.08	226.02
Prices – Japanese Benchmark									
Mt Newman/Hamersley Lump US¢/dmtu – FOB)	36.26	37.43	35.56	38.73	45.93	78.77	97.73	102.64	Not settled
Mt Newman/Hamersley Fines US¢/dmtu – FOB)	27.35	28.52	27.83	30.34	35.99	61.73	73.46	80.42	Not settled

Source: IISI, Skillings, Roskill

Note: the Carajás lump price in 2007-2008 is for comparative purposes, Vale no longer quotes its price as existing contracts are being wound down

The surprise appeared to indicate a significant change in China's attitude towards the iron ore market. It allowed business to negotiate on the world market with little visible political influence. Rhetoric and rumours are the norm as analysts attempt to forecast the state of the market and determine future prices. In 2007, prices forecasts from one analyst went from 10% to 25% to 35% to 60% through a six month period. Many still believe that there will be a "crash of iron ore prices once an over-supply is achieved pointing to all the planned capacity additions. It is perhaps easy to see why some see a return to low prices. It was just a little more than five years ago that a cape size time charter was $6,500 per day and iron ore was at an all-time low in real terms. As in other commodities, many planned projects fail to be developed and rarely do analysts or companies document mine closers. The iron ore industry may be continuous but mines eventually run out of ore.

Pricing, Products and Markets

Year to year prices can be variable and comparing prices can be complex. Prices are quoted in dry iron ore units (% Fe), either dry long ton units (dltu) in Japan and dry metric tonne units (dmtu) in Europe. In the last few years, Japan has moved to negotiating in dmtu.. To add to the confusion, European prices are sometimes quoted CIF (cost/customs, insurance and freight) or DES (delivered ex-ship) to European ports, while Japan quotes prices are FOB (free on board) to the mine's terminal port. Steel mills will seek out specific characteristics of different iron ore products to maximise productivity in the blast furnace and also reduce costs.

Dependent upon the specific blast furnace, different characteristics will have different levels of importance. These characteristics can be physical, chemical and metallurgical. As most blast furnaces utilise various iron ore products from various different iron mines to complement and maximise productivity, steel mills place different importance on specific characteristics. These characteristics can be iron content, reducibility, grain size, moisture content and/or levels of deleterious elements. Penalties can be severe for high concentrations of deleterious elements such as phosphorus, base metals, sulphur, alkalis, silica, alumina and titania oxide. Although prices are calculated in dmtu, negotiations and contract settlements will be in natural metric tonne units (nmtu). In addition, shipping rates also play a significant part of the negotiation process.

In 2005, the announced price increase for iron ore sale products between VALE and Nippon Steel was 71.5%. The increase was justified by a weakening US dollar, extremely strong steel demand and corresponding strong demand for iron ore. The 71.5% price jump was trumped by the 86.67% increase in Carajás pellets and Carajás lump into Europe rose 79%. This increase in the price of lump has allowed Carajás lump to pass the Brockman lump in price per Fe unit. Previously, Carajás was discounted to the Australian lump, primarily due to excessive fines (-6.3 mm) generation. Iron ore producers also noted strong steel prices over the past few years were justification for both the iron price increase and the 120% increase in coking coal. Despite price increases, the steel mills state that steel prices have only increased to 1980's price levels and also note that prices during the period 1990-2003 were artificially low.

In 2006, the announced price increase between VALE and ThyssenKrupp was 19% for fines (sinter feed) and a 3% reduction in the price of pellets. Despite criticism in the press by China that this was not a benchmark, other companies quickly settled prices along the now established benchmark. The decrease in the price for pellets was explained by an oversupply and the disproportionate 2005 increase for pellets. The increase for the price of lump was settled by Pohang Iron and Steel (POSCO) and Rio Tinto also at 19%.

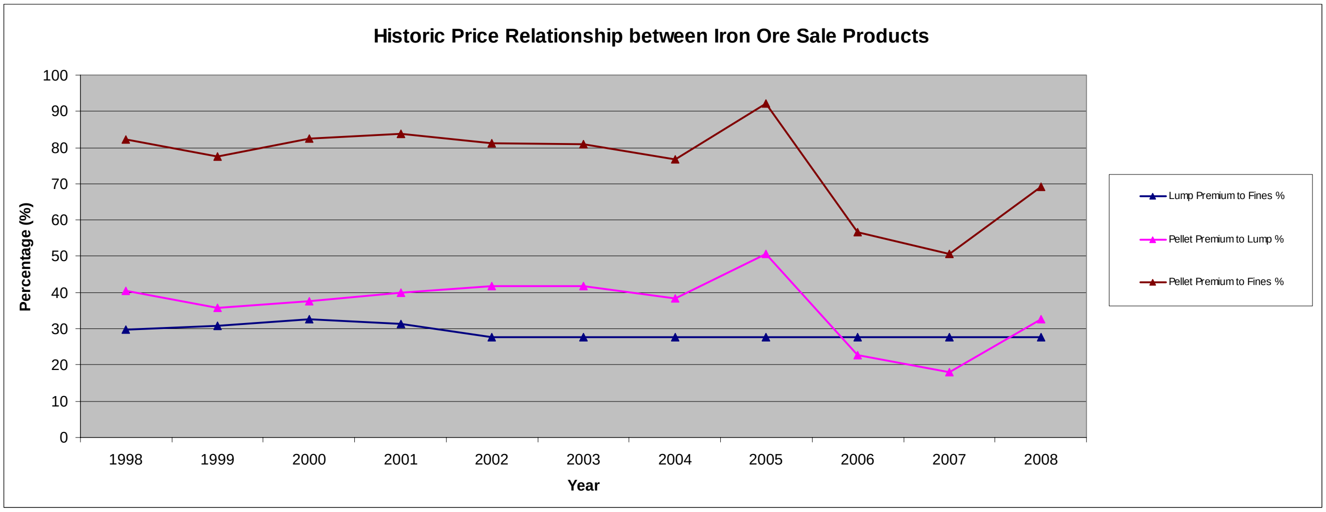
This has changed the historic ratio of prices between fines, lump and pellets. Historically, the premium in price of lump to fines was ~27-30%, while the pellet to lump premium was ~35-40%. In 2005 through 2007, the ratios in percentage terms changed dramatically, initially increasing and then dropping sharply. The ratios no longer follow the historic trend. In 2007, pellets are now ~ US¢19 per dmtu more expensive than lump, which is above the historic premium of ~US¢15 per dmtu but half of the premium seen in 2005 of ~ US¢40 per dmtu. Lump is now priced at a ~ US¢22 premium to the fines benchmark, which is also above the historic premium of ~ US¢9-10 per dmtu. This may have established a new trend with a ~US¢20 difference per dmtu between the benchmark prices. In 2008, the settlement for fines at 65-71% and the larger increase for pellets at 86.67% appears to have moved the ratios to the historical trend. However this assumes that the lump benchmark is settled in the range of a 65-71% increase.

In 2008, rhetoric was intense and rumours were rife. As in 2005, press reports had iron ore companies reportedly asking for more than 50% price increases for fine ores at pre-meeting meetings. At the launch of formal meetings, this opening salvo now reportedly increased to more than 70% by some reports and up to 100% by others. As in the past, iron ore buyers and sellers were critical of the press speculation and are somewhat critical of analyst's speculation on prices as they have no experience in the price negotiations.

In February, the benchmark price for iron ore fines was settled between VALE and Nippon Steel. Prices for the Itabira fines rose 65%, while the Carajás fines managed a 71% increase in price. The Europe increase was the same 65% for the Itabira fines and 66% for the higher quality Carajás fine ores.

The pellet price was settled at 86.67% between VALE and ILVA. As ILVA has a joint venture with VALE and owns 50% of the pellet plant, there was again some confusion whether this settlement should be considered a benchmark. Samarco also settled its pellet price increase at 86.67% but for direct reduction (DR) pellets with Nu Iron. VALE also settled its DR grade price at an increase of 86.67% with a consortium of Middle Eastern steel producers.

The 2008 price increases has more or less returned the historic price relationship between fines, lump and pellets back to the historic norm. In percentage terms, the benchmark Australian lump has sold a 27-30% premium to fine ores. Pellets sold at a historic premium to lump of 35-40% and to fines of 70-80%. There was also a value-in-use premium for each product that was more a function of a cost per dmtu. However, this value-in-use assumed that one could increase sinter output or change overall burden composition based on annual price changes, which is not always a real option. As lump competes with pellets, a manufactured product, primarily on price, the higher increase in the price of pellets should bode well for the long-term lump market.



Source: Company Reports, Roskill

To date, BHPBIO and RTIO have refused to settle with buyers, unless its receives both the 71% quality price settlement as seen for Asian Carajás fine ores and also a "freight equalisation" premium as well. This freight premium is rumoured to be some $20 to $40 per tonne for 2008. Other press speculation has the Australian producers getting an imminent ~85% settlement for Australian lumps and fines. Rhetoric remains strong and the price increases have resulted in a perhaps kneejerk response by Chinese steel companies with several consortiums circling the world looking at iron deposits virtually everywhere.

BHPBIO and RTIO have stated the past that the large price increases (2005=71.5%; 2006=19%; 2007=9.5%, 2008=65-87%) would not attract significant new entrants to the iron ore industry. They argue that development of a quality iron ore deposit and entry into the market is a difficult task due to the inherent barriers associated with finding and developing a quality iron ore deposit. The comment makes clear that not all iron ore deposits are equal but currently virtually every junior company has an iron ore exploration project and major mining companies are stating a desire goal to exploit the non-LSE quoted commodity sector with iron ore as a major focus of the goal.

The difficulty and importance of developing a quality sale product is not well understood by the mining industry. Given the lack of new iron ore developments over the past several decades, this is perhaps understandable. Comprehensive analytical, physical and metallurgical testing of potential sale products are key components of the potential exploitation of any iron ore deposit and establishing a long-term customer base in a demanding market.

New developments have been announced in Australia led by the Fortescue Metals Group Limited and its aggressive plans to produce an initial 25 million tonnes of iron ore by 2008. This quickly was increased to 45+ million tonnes. In Brazil, the launch of a new iron ore company called MMX Mineração & Metálicos S.A. which plans to produce 37 million tonnes of iron ore in the near future. Unlike other iron ore producers, MMX also plans to produce pig iron. It recently sold its two main iron ore projects to Anglo American for more than $5 billion.

Other companies in Australia, Canada and other parts of the world have announced smaller but equally ambitious projects. Many of these projects have made considerable, and possibly speculative, assumptions regarding: ability to actually produce a quality product; use of third-party infrastructure; marketability and saleability of its product; the future price of its sale product; development timetable; expected capital and operating costs.

Again the key to development of new iron ore projects and incremental expansion of existing producers is "infrastructure". In 2005, announced and estimated expansion of VALE, BHPBIO and RTIO appeared able to meet market demand and projects such as the Fortescue Metal Group project were considered to be non-starters. Comparing actual 2007 output levels to those originally forecasted in 2005 resulted in a 30-60 million tonne shortfall. Even as late as October 2007, forecasts had 2007 iron ore output from VALE and RTIO at 20-25 million tonnes higher than was actually achieved.

Fortescue states that it is planning on producing at an annual capacity of 55 million tonnes and would at some future point in time increase output to more than 100 million tonnes. Given that it took RTIO started at 5 million tonnes in 1966 and by 1999 output was some 60 million tonnes, there has been significant skepticism in Australia that these figures achievable.

Fortescue has announced that it is 90% complete on its rail line and port facility and will ship its first sales product in Q2 2008. Fortescue had challenged BHPBIO in court and although won legal concession that it could access BHPBIO's rail, it started construction on its own rail line and port facility as BHPBIO appealed to higher courts. In 2000, RTIO successfully defeated a legal challenge by North Limited's Robe River that attempted to access the RTIO rail for its West Angeles iron ore deposit. After the lengthy legal challenge, the Supreme Court ruled that the rail line was a core part of RTIO's competitive advantage and operating assets. This appears to be a direct contradiction to the more recent BHPBIO-Fortescue ruling.

Existing infrastructure relating to direct shipping ores and other large scale development is for the most part exceptionally under-valued by analysts and the financial markets. This can be clearly seen both in the nominal versus actual capacity of rail lines and port facilities. In the Tex Report, BHPBIO's rail line has a nominal capacity of 60 million tonnes but actual capacity of more than 100 million tonnes. Exceeding design capacity has seen a direct significant increase in costs. Eventually, a second rail line would be required to improve productivity and bring costs back in line.

Many companies in Australia, Africa, South and North America have made sweeping statements about the time to develop infrastructure, primarily rail and port facilities. Others have made statements about common carriers stating that existing rail lines must carrier their ores to port for as yet un-negotiated terms and conditions. For example, the Quebec North Shore and Labrador Railroad (QNS&L) owned by the Iron Ore Company of Canada (IOC) has an unconfirmed capacity of between 32 to 42 million tonnes per annum. Neither of these figures has been publically confirmed by QNS&L. Currently it transports nominal capacity of 18 million tonnes per annum for its own account and 6 million tonnes per year for Wabush.

More recently, IOC has announced plans to increase capacity to 22 million tonnes and then expanding to 25 million tonnes. The increase in 4 million tonnes of capacity will cost $475 million or almost $120 per tonne of incremental capacity. This surprisingly does not include any increase in pelletizing capacity. Importantly this takes future use of the rail line to the lower end of the maximum capacity range. VALE disclosed that its recent increases in its iron ore output has cost some $112 per tonne of capacity. Other greenfield and brownfield projects have also seen considerable cost inflation.

Several junior companies have stated that Quebec North Shore and Labrador Railway must carry their ores, once in production, to port in its role as a "common carrier". To date, QNS&L has not stated publically that it agrees with this assessment. It did state in a complaint filed in 1994 under the National Transport Act that "*its mandate as a common carrier was to link the northern cities of Schefferville and Labrador City by a passenger-train service…*". In 2000, Wabush Mines and QNS&L each made a submission to the Canada Transportation Act Review Panel. In the submission, Wabush requested "running rights" on the rail so that it could control and improve its efficiency and cost competitiveness. QNS&L acknowledged its position as a common carrier but under a more limited definition, but strongly opposed granting Wabush "running rights". References were made to an original application to the Review Panel in 1962.

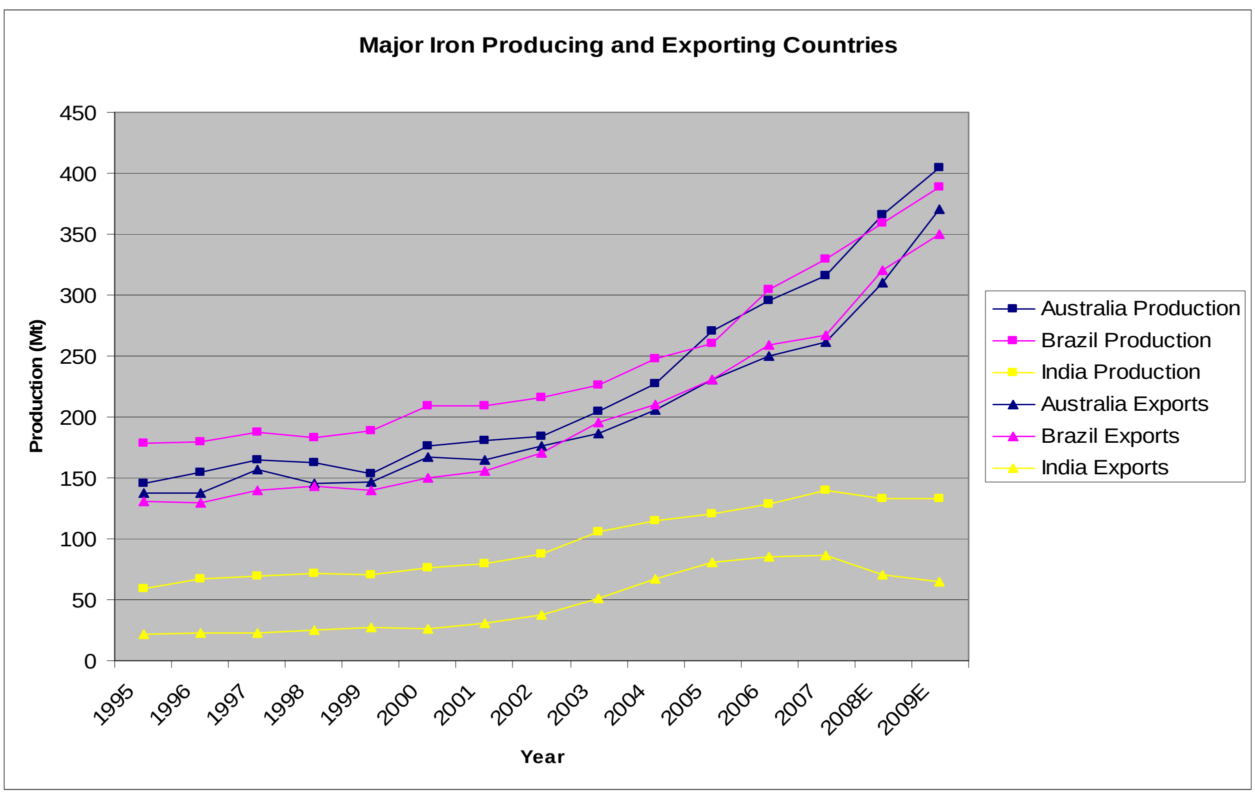
The QNS&L railway was originally built to move ores from Schefferville and Sept Isles. IOC is majority-owned by RTIO and in Australia; it fought a legal challenge to access its rail line stating that it was an essential part of its core competence and integral part of its infrastructure and competitive advantage. It is not yet clear whether or not these companies will be successful in accessing and using the infrastructure, both rail and port facilities, in a timely and cost-effective manner.

However, for an iron ore producer to be successful in the long-term, integration and optimisation of its infrastructure is essential to ensure that it is the low cost quartile. This can be seen in the public port facility in Newcastle Australia. Although, the public-government owned facility has allowed numerous coal producers to save on the capital costs of rail and port facility, significant delays and logistical challenges have seen the capacity of this facility stretched beyond normalcy. The demurrage charges and waiting times for bulk carriers is seen in the following picture, where 60 bulk carriers wait in a queue. This is also one of the reasons why spot shipping rates peaked at more than $90 per tonne for iron ore shipped from Brazil to Asia in late 2007. Although the spot rate represents just 15-25% of the market, it can be a powerful indicator of long-term price trends.

Cape-sized Bulk Carriers (60) of Newcastle Coal Terminal, Australia, November 27, 2007 Source: www.julianhewitt.com

As testimony to the staggering growth of China's steel industry, an armada of 60 bulk carriers wait patiently off Australia's Newcastle Harbour to receive coal and iron ore payloads. In May 2007, the line of ships at off Newcastle Harbour stretched to a record 79 vessels. Photo: James Croucher, The Australian

Three countries, Brazil, Australia and India dominate the seaborne trade of iron ore.



Source: Merrill Lynch, Macquarie, Roskill, UNCTAD

Most of the recent growth in India exports has been spot sales to China and much has been from production that is of reportedly questionable sustainability. Various press articles have reported commentary from several large Indian steel companies who lobby for a ban on spot sales and additionally want a ban on all iron ore exports. Their arguments focus on the growth rate of Indian steel production and the requirement of the iron ore for internal consumption. Forecasts have India producing an additional 150 million tonnes of steel annually by 2015.

In March 2007, the Indian government introduced a Rs 300 (US$ 6.78) per tonne export tax on iron ore. This tax was not well received by Chinese steel mills who believe that it was unfairly imposed on them and refused to pay it. The steel companies argued that prices should not change and that the iron ore companies should bear the cost. China received the great majority of India's iron ore exports primarily as the spot sales rather than under long term contracts. This tax was reduced to Rs 50 (US$ 1.20) for iron ore fines with iron content less than 62% Fe. The tax remains on other iron ore exported products. In 2008, other export taxes have been rumoured and threatened. It was proposed that a 15% ad valorem tax would be put on all iron ore exports, but has not been implemented and remains a hotly debated issue.

India remains the wildcard in attempting to accurately forecast the iron market's future. It has been repeated several times over the past few years that its export growth cannot be sustained. Despite the statement that much of the new production is high cost and marginal and is only profitable due to the high premiums received in the spot market, exports continue to increase. Major Indian companies, Tata Iron and Steel and the Steel Authority of India Ltd. (SAIL), want to restrict iron ore exports saying that the iron ore is needed to meet local demand. This rapid expansion in production has seen casualties as Kudremukh Iron Ore Company Limited was ordered by the India Courts to cease iron ore production due to environmental violations. As stated forecasts have India expected to increase steel output by some 150 million tonnes sometime in the next decade. If accurate, India would either have to reduce exports of iron ore dramatically or increase internal production.

MiningNews.net reports that analyst estimates over the past few years by market analysts for Chinese iron ore imports have changed dramatically and increased from an expected importation of 250 million tonnes of iron ore by 2015 to more than 500 million tonnes by just 2009. Each year volumes increase and the years that these volumes will be seen are adjusted downwards. Past estimates of demand growth that were thought to be wildly optimistic have proven to vastly underestimate market demand. China imported almost 384 million tonnes in 2007. Cost per tonne of imports has increased to more than $128 per tonne. In 2007, it was discussed at length that that China's growth has slowed considerable and perhaps peaked and that domestic production, although of poor quality, would provide the much needed iron ore credits. Much of this discussion was from both China and steel companies who believed that the market is coming into a supply-demand balance and want to see prices come down.

Competition amongst iron ore producers is fierce. In the past, steel mill buying groups have kept prices low by playing on the competitive and antagonistic behaviour of producers. Until very recently, prices dropped constantly in real terms while iron ore products were expected to meet tighter and more consistent quality specifications. Many captive iron ore producers were jettisoned as steel producers focused on higher quality iron ores that were expected to become more efficient producers with a better quality iron ore, while receiving a lower return for their sale product.

Despite China's apparent record iron production in 2007 of 707 million tonnes, import demand increased 15% to more than 153 million tonnes in the first four months of 2008. This appears to have still confounds many analysts and forecasts. Although the 2008 price benchmark settlement process is not yet complete, price forecast for 2009 have increased dramatically to a consensus 14% in 2009. Credit Suisse and Citibank estimate 20% and 30% price increase, respectively.

Credit Suisse has come forward stating that it does not expect to see any weakness in the iron ore price until 2013 at the earliest. Despite what appears to be a bullish statement, Credit Suisse has been remarkably accurate over the past few years. It is even more remarkable to realise that at the start of 2007, the consensus for 2009 was initially a decrease of 5-10% and then an increase of 5% for 2009 near the end of 2007. Most recently, the CRU has stated that the iron ore market will peak in 2009 and moderate price decreases will start in 2010 with a long-term downward trend. Thus, not everyone sees continued stronger for longer.

The move to importing quality ores was made more efficient due to more open and efficient shipping markets. Shipping rates in the fifteen year period from 1983-1998 steadily decreased. In 1998, ocean freight rates fell quite dramatically, which reduced the cost advantage that the Australian producers held in the Asian markets. This allowed Brazil's VALE to make significant market penetration into the Asian markets. Shipping rates have increased due to the increase in oil prices and tight capacity for bulk ore carriers.

Average Spot Iron Ore Freight Rates, 1993 to 2007
(Capesize vessels 130,000-170,000 dwt; $/t)

Year	W.Africa[2]-Continent	Brazil-Continent	Canada-Continent	Australia-Continent	Norway-Continent	Brazil-China/Japan	Australia-Japan
1993	3.6	5.6	5.2	7.4	2.9	9.2	…
1994	4.1	6.4	6.3	9.0	3.2	10.3	…
1995	5.4	7.6	7.2	9.9	3.9	13.5	…
1996	4.2	5.6	5.3	7.0	3.0	9.1	4.4
1997	4.2	6.2	5.5	7.5	3.2	10.7	5.0
1998	2.8	4.5	4.0	6.0	2.4	6.5	3.7
1999		4.7	4.0	6.7	2.5	6.9	3.7
2000		7.5	6.2	10.9	3.5	11.7	6.3
2001		5.4	4.6	7.8	2.5	8.4	4.3
2002		5.4	4.4	7.0	2.5	8.7	4.1
2003		8.3	6.6	10.7	3.5	14.1	6.8
2004		19.7	16.0	21.1	7.7	33.1	15.6
2005		17.5 note 1 15.9	12.1 note 1 11.9	16.3	6.9 note 1 6.7	30.1	12.6
2006		17.4		14.8	5.8	25.6	10.3
2007		30.2 note 2		30.2 note 2	11.5 note 2	55.6 note 2	22.7 note 2
2008 Q1		32.1		35.6	12.3	66.8	27.4

Note 1: proposed long-term contract rate includes unloading at terminal port (~$1.75/t)
Note 2: spot rate at end of first quarter
Source: Drewry Shipping Consultants, SSY, Clarksons, Macquarie

However, over the past few years, short-term/spot freight rates increased two and three-fold due to the attempt to meet China's demand, before sharply decreasing at the end of 2007. There appeared to be a hiccup in the spot shipping market as prices, which had peaked in December 2007, collapsed by the end of January 2008 to slightly more than half of the peak. They now rival the highs set in late 2007. Spot rates from Brazil to China peaked at $94 per tonne and by the end of January 2008, the spot rate averaged $51 by the first week in February 2008. A recent time charter rate topped $235,000 per day for a South Korea to France shipment with a return to China via Brazil.

It is important to realise that the great majority of shipping rates for all bulk commodities are negotiated through long-term contracts. These rates fix an exporters and importers cost over a period of time, on average ten years. The prices have an inflator for fuel increases and other third party costs such as port fees based upon an agreed formula. Dependent upon market conditions, spot rates can also be significantly lower than long-term rates.

In 2005, BHPB did not settle sales agreements in line with the benchmark iron ore price. This gauntlet was picked up in 2008 by Rio Tinto. The companies argued that Australian iron ores shipped into Asian markets should receive a premium price due to the additional cost of shipping from India or Brazil. This premium, or rather discount, has existed in the market historically as pellet prices had a shipping equalisation component in the negotiated price. This can be seen in the pellet price comparison tabulated below.

Pellet Price Comparison

Pellets Prices – European Market	2001	2002	2003	2004	2005	2006	2007	2008
IOC Pellets (US¢/dmtu – FOB)	51.53	48.30	53.22	64.50	120.06	115.86	122.58	228.82
VALE Tubarao Pellets (US¢/dmtu – FOB)	50.10	47.36	52.00	61.88	115.51	112.04	117.96	220.20
LKAB Pellets (US¢/dmtu – FOB)	54.08	49.95	55.62	69.25	128.00	122.20	131.00	244.54
VALE Carajás Pellets (US¢/dmtu – FOB)	52.40	50.40	54.93	63.60	118.57	115.01	121.08	226.02
Samarco Pellets (US¢/dmtu – FOB)	49.25	46.68	51.36	60.86	113.62	111.40	117.29	218.95

Source: Tex Report

VALE has different benchmark prices into the European or Asian market that are tabulated below. This price structure is not without critics as customers in the Middle-East complain that they are expected to pay European benchmark prices while paying close to Asian freight rates.

VALE Iron Ore and Pellet Reference Prices

	EUROPE (DMTU)							ASIA*			
YEAR	Standard Sinter Feed (SSF)	Carajás Sinter Feed (SFCJ)	Carajás Lump (CJL)	Tubarão Blast Furnace Pellets (BFP)	Tubarão Direct Reduction Pellets (DRP)	São Luís Blast Furnace Pellets (BFP)	São Luís Direct Reduction Pellets (DRP)	Standard Sinter Feed (SSF)	Carajás Sinter Feed (SFCJ)	New Tubarão A Lump Ore (NTA)	Blast Furnace Pellets (BFP)
1993	28.14	29.09	33.09	43.64	46.91			25.42	25.92	26.32	41.69
1994	25.47	26.47	30.47	43.64	46.91			23.01	23.51	24.77	41.68
1995	26.95	28.38	33.38	49.14	52.82			24.34	24.84	26.73	46.93
1996	28.57	30.00	35.25	52.40	56.33			25.80	26.30	28.07	50.05
1997	28.88	30.15	35.25	52.10	56.01			26.08	26.58	28.07	49.76
1998	29.69	31.00	36.29	53.56	57.58			26.82	27.32	28.90	51.15
1999	26.96	27.59	32.28	46.46	49.94			23.87	24.37	25.95	44.38
2000	27.67	28.79	33.94	49.24	52.93			24.91	25.41	27.45	47.03
2001	28.92	30.03	35.18	50.10	53.86			25.98	26.48	28.34	47.85
2002	28.62	29.31	34.31	47.36	50.91			25.36	25.86	26.92	45.23
2003	31.04	31.95	37.36	52.00	55.90	52.96	56.93	27.64	28.14	29.32	49.66
2004	36.45	37.90	44.46	61.88	66.52	63.60	68.37	32.79	33.29	34.78	59.10
2005	62.51	65.00	79.58	115.51	126.06	118.57	130.43	55.34	56.18	61.28	112.04
2006	74.39	77.35	94.70	112.05	122.28	115.01	126.52	65.85	66.85	72.91	108.68
2007	81.46	84.70	103.70	117.96	128.74	121.08	133.20	72.11	73.20	79.84	114.42
2008	134.41	140.60	N/A	220.19	242.22	226.02	248.63	118.98	125.17	N/A	213.59

Notes: US¢ / Fe Unit

*DLTU until 2004
*DMTU since 2005

Source: Company Website

Spot shipping rates worldwide are subject to considerable variability. Producers or consumers that underestimate or do not cover their contract positions have been forced to access the spot market, both iron ore and shipping, to meet obligations. In many instances, the freight rate and spot iron ore price can more than double the long-term contract value. Port and handling capacity at many of Asia's ports have been severely stretched and it is reported that ships have waited several weeks to unload their cargo. This bottleneck has been alleviated more recently, but shipbuilding is at and is expected to remain at capacity for the near future. However, it is important to realise that dependent upon market conditions, spot rates have been cheaper than long-term rates over significant periods of time. Effectively, iron prices are a two-part negotiation; one of iron ore price and one related to the freight rate.

Lower and possibly more stable shipping rates for iron products are expected in the near future. Long-term rates are estimated to be similar to the average of spot rates reported for 2005 and the historically low rates of the 1990s are stated never to be seen again. However, a major recession could change this prognosis quite quickly. The shipping and mining industries have always been cyclical, but the length, peaks and troughs within the cycles also vary.

New builds are primarily replacing old tonnage as safety and environmental legislation in Europe will very probably force all shipping companies to use double-hulled or reinforced bulk carriers by 2012. Tankers must meet this requirement earlier. Similar legislation has been tabled in Japan and the USA, despite fierce lobbying by ship owners. Rates should rise to allow companies to repay significant capital outlays for new safer double-hulled and or reinforced fleets. This will be offset by cost savings on insurance premiums that have risen dramatically in the 1990's to accommodate past ship wrecks and oil spills. These 'preventable' accidents have lead to increased demand for safer and better quality ships. Additional cost savings will also be realised due to more efficient designs, cost effective propulsion systems and faster loading and unloading times.

Currently VALE, BHPBIO and RTIO have expansion plans to increase iron ore output significantly. By the end of the decade, RTIO plans to increase output by 46 million tonnes and BHPBIO by 80 million tonnes. VALE recently announced plans to increase output by a further 150 million tonnes to 450 million tonnes per year. Both Vale and RTIO fell more than 10 million tonnes short of expectations in 2007, so these expansions may be delayed. In the cases of BHPBIO and RTIO, infrastructure appears to be at capacity and planned expansions will require new rail and port capacity. The increases would add to the big threes already dominate market position. Currently they control 78% of the seaborne trade in iron ore. Including all reported planned projects; iron ore output is expected to increase 508 million tonnes by the end of the decade.

Corporate Control of Iron Ore Production and Exports, 2007 (% of world total)		
	Production	**Seaborne Trade**
VALE	19.9	39.6
Rio Tinto	12.2	24.4
BHP Billiton	8.4	14.2
Total	**40.5**	**78.2**

Source: Tex Report, Macquarie

Despite this increased output, demand and supply is expected to remain closely aligned. As in other commodities, mine closures or operation problems or reduction in output is rarely announced as are new developments. The major iron ore producers have stated that they will attempt to avoid a market over-supply. VALE and BHP Billiton have stated that they would be willing to produce below their full capacity utilization rates in order to maintain a balanced market in case there is a significant drop in demand. Despite these statements, there are several companies seeking to develop on-the-shelf resources. Profitable development and expansion of these projects will be dependent upon the quality of the resource potential.

Over the past two decades, steel companies have focused their purchases on iron ore products with specific characteristics to maximise productivity in the blast furnace. The strength of the buyer (steel companies) allowed them to force the iron ore companies to develop a better quality product with low deleterious elements and specific metallurgical properties. More recently, the iron ore producers, primarily the big three, have limited their sale products to several standardised products. Output from a specific mine is limited and considerable blending occurs. Quality remains consistent, however the shift in power has moved to the sellers (iron ore producers). China is less concerned with quality presently, however this will change in the very near future. The move towards quality iron ore products remains a constant in the future. This bodes well for Baffinland as a high grade lump and sinter product will be well received by the steel producers, particularly European steel mills.

Analyst reports and published reports continue to debate the future of the iron ore markets, particularly the supply and demand of the various iron ore products. In the late 1970's and early 1980's, the future of the Blast Furnace was questioned and it was hypothesised that the EAF process using recycled scrap steel and directly reduced iron as feedstock would become the dominant method of steel production. The challenge is that the EAF process does not improve the quality of the feed stock and if poor quality scrap was used, a poor quality product was produced.

In addition, DRI products, primarily pellets and some lump, have limited suitable resources due to the extremely tight quality specifications of the feed stock. DRI and HBI products total some 55 million tonnes of the total world production of iron ore or less than 5% of output. Several processes are being or have been developed to perhaps replace the blast furnace as the primary method to produce hot metal (pig iron). These processes include the HISmelt, Corex, MBF, DIOS, AISI, CCF, Tecnored, Romelt and AusIron. Of these processes, only the Corex has developed a commercially viable operation.

Primary Competitors in the World Markets

Company	Location	2007 Shipments (Mt)	Product	Primary Customer
VALE				
North System	Brazil	296	Fines, Pellets, Lump	Europe, Asia, USA
South System	Brazil		Fines, Pellets, Lump	
MBR	Brazil		Fines, Pellets, Lump	
Samarco	Brazil		Pellets, Fines	
Rio Tinto				
Hamersley Iron	Australia	178	Fines, Lump	Asia, Europe
Robe River	Australia		Fines, Lump	Asia, Europe
Iron Ore Company	Canada		Pellets, Fines	USA, Europe
BHP Billiton Iron Ore				
	Australia	126	Fines, Lump	Asia, Europe
Samarco (not included in total)	Brazil		Pellets, Fines	
LKAB	Sweden	24	Pellets, Fines	Europe
SNIM	Mauritania	11	Fines, Pellets, Lump	Europe, Asia
CVG	Venezuela	24	Fines, Pellets	Europe, Local
Kumba	South Africa	32	Lump, Fines	Asia, Europe

Note: shipments include non-seaborne iron ore trade; above producers are dominant into European Markets Source: Annual Reports, Skillings

Iron ore prices are set each year in complex negotiations led by one of the three dominant iron ore producers RTIO, BHPBIO or VALE and the steel producers. These prices form the basis for prices received by other producers, based upon deleterious elements, moisture content, degradation index (fine generation during handling), and how the ore behaves in the blast furnace. European prices are often quoted CIF (or DES), including cost, insurance and freight to European ports, while Japan prices are quoted FOB, free on board to the mine's terminal port. Penalties can be severe for high concentrations of deleterious elements such as phosphorus, base metals, sulphur, alkalis, silica, alumina and titania oxide or for failing to meet physical specifications such as percentage of fines or ultrafines.

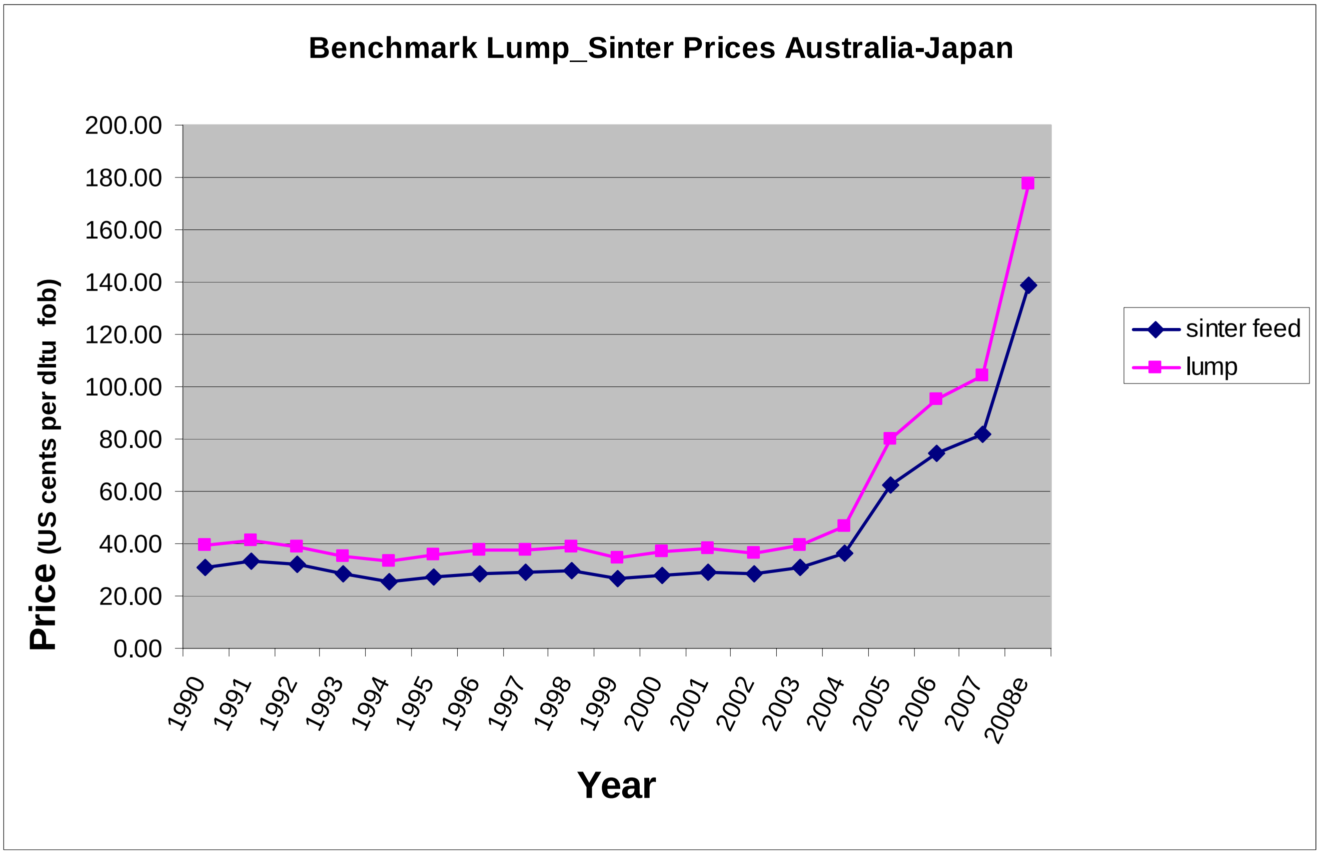
Historically, reported 'hidden' price discounts applied to long-term contracts that were difficult to document. These discounts were applied to the negotiated price when contract volumes exceeding specific amounts. Over the past 20 years, these discounts have disappeared except in China, where it has been reported that RTIO, VALE and BHPBIO were initially discounting (2-3%?) to achieve market penetration. The discounting, although now virtually non-existent, remains a leverage tool and a sign of the relatively closed market of the iron ore trade. It also emphasises the importance of a quality iron ore product and a strong technical understanding of the market issues.

Prices for iron ore sale products settle based upon the benchmark price for fines, lump and pellets. Those products with higher levels of impurities, moisture or higher generation of fines in lump ores or ultrafines in fines will be discounted from these benchmarks. Many steel mills accept certain deleterious elements to acquire a specific property in an iron ore product. The steel mills want consistency and predictability in iron ore products for their blast furnaces.

As stated previously, iron ore production is in three forms; pellets, lump and fines for sinter feed. Fines (-6.3mm) are used as sinter feed the most common burden for blast furnaces. Sinter is friable and cannot be transported far thus sinter plants are close to steel mills. Pellets are highly variable in composition, as individual steel mills will request the specific characteristics and composition required. Many mining operations have pelletising plants at the mine site or near its terminal port.

Japanese steel mills have pelletising plants on-site, but will also import pellets with very specific composition. Growth in China has seen considerable pellet capacity added, but it will require imported concentrate to feed the plant. VALE is increasing pellet capacity to deal with the increasing ultrafines generated in its operations. Lower iron content and reduced quality of sinter feed and the lower availability of quality lump ores have renewed the expectation that pellets will begin to take market share. Pellet plants are capital and energy intensive, but it remains the only method for creating a blast furnace charge from fine grained iron ores (ultrafines or concentrate; grain size < 250 µm).

There is also considerable debate over what China will do to decrease its reliance on imported ores. As much of China's iron ores are not amenable to easy upgrading, pelletising may not reduce import demand. There has been speculation that China would buy ultrafines/concentrate on the open market, particularly from potential future Australia producers.



Source: UNCTAD, Macquarie, Roskill

Lump, simply defined, is naturally occurring 'pellets' requiring simple crushing and screening before shipment. It must meet strict minimum chemical characteristics, generally 62+% Fe, as it is not processed and forms a direct charge to the blast furnace. More importantly it must meet specific physical characteristics. Once crushed to –31.5mm+6.3mm (-1¼ inch +¼ inch) in size, it must not degradate during handling. It commands a premium to fines (-6.3mm) and does not require grinding and processing that is required to produce pellets. All blast furnaces use a variable combination of sinter, lump and/or pellets as input or direct charge. Individual blast furnaces are extremely variable in their direct charge composition. Generally, the US steel producers use 85+% pellets in their blast furnaces while the rest of the world uses sinter feed (65+%) as a dominant burden charge.

The majority of blast furnaces increasingly blend and mix the types of ores used as direct charge to reduce swelling, increase throughput, reduce energy cost, reduce coke consumption and generally improve the steel making process while reducing pollution and environmental concerns. Although, specific charge mixes can vary dramatically, the average blast furnace mix is estimated as follows:

Average Charge Mix in the Blast Furnace (circa 2001)

Region	Lump	Pellets	Sinter
USA	1%	86%/91%	11%/8% note 1
Europe	15%	19%	66%
Japan	19%	16%	65%

Note 1: Includes briquettes, iron nodules and others/actual sinter production ~8%

Source: Ullmans, Company Estimates

There remains considerable variation in the "average" burden mix. Most USA steel producers consume 100% pellets.

Lump has a significant price advantage over pellets, being almost 30% cheaper. Despite this advantage, there are strong views amongst the world's steel mills on cost and productivity advantages of the various blast furnace charge mixes. Three steel producers have currently and in the past used more than 40% lump in their blast furnace mix while maintaining high levels of productivity. In the 1980's, The Tata-Corus Redcar mill used 40+% lump in its blast furnace burden. More recently Argentina's Siderar and Germany's Salzgitter have used more than 40% lump while maintaining hot metal productivity. However, use of quality lump at 15-20% of the blast furnace mix appears more the norm to ensure high productivity while utilising the cost saving of the cheaper burden feed.

There remains an increasing demand for a new quality lump ore supply. Two of the main sources, the BHPBIO and RTIO's Brockman lump ores in the Pilbara of northwest Australia are being depleted. As mining depths increase, the ores are becoming softer and moisture content increases. Output is shifting to the Marra Mamba lump ores, but they are softer, have a lower lump content, are lower grade and contain approximately 8-10% moisture. This translates to an approximate 10% loss in the value of each tonne of ore shipped as Marra Mamba replaces Brockman as the primary Australian source of lump iron ore. Brazil is running out of lump ore and is expected to stop shipping Carajás lump product into Europe by 2008-2009 and there will be limited South System lump after 2012-2013. It is noted that on its website, VALE stopped publishing the price of Carajás lump and has replaced it with MBR lump. MBR Lump is priced at a discount due to its lower quality and longer distance to market.

Primary Sources of Seaborne Traded Lump Ore

Source	**% Lump/Fines**	**% Fe**	**Comments**
Brockman, Australia	45/55	63.0	Major supply of lump for 35 years, lump being mixed with Marra Mamba ores
Yandi, Australia	5/95	58.0	Primarily sinter feed
Marra Mamba, Australia	35/65	60.5	Low P, softer ore, lower Fe levels
Carajás, Brazil	5/95	64.5	Ore platy and subject to degradation
Sishen, South Africa	60/40	66.0	High alkali ore, demerit in price, although penalty has been reduced for lump from 28% in 1992 to 14% in 1999. Fines demerit has remained constant at 20%. It is not known what the current demerit is, if any despite an increase in the overall alkali content.

Source: Annual Reports, Skillings

In 1983 lump output totalled 107.5 million tonnes, representing 44.8% of the seaborne trade and 25% of total world iron ore supply. By 1999, lump output totalled just 77.1 million tonnes, representing just 19% of the seaborne trade and 7.6% of world output. The market should quickly absorb any new supply of lump at the expense of pellets. In addition, lump will supplement the burden mix where the producer is unable to maintain sinter output. Sinter plants cannot increase output in the short-term to deal with increased demand and pellets require expensive processing to produce.

In the early 1980's, many iron ore producers, mainly North American, forecasted that pellets would dominate future growth in the iron ore market. This has failed to materialise due to several factors: the high energy cost of grinding the fine grained taconite/itabirite ores to produce concentrate/ultrafines, the high energy required the pelletising process; the high capital cost of building a pellet plant; and the stringent and consistent specifications of feed required to produce a quality pellet. Many of the coarser higher grade iron ores (40-50%) do not always produce a quality pellet.

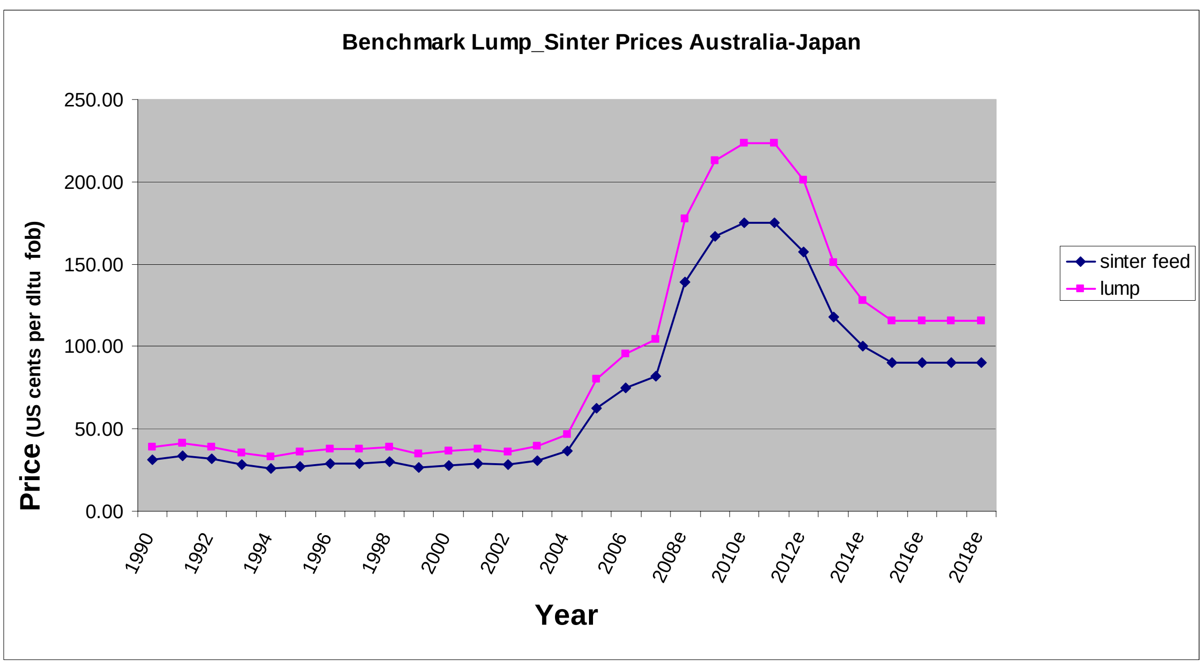
Importantly, only hematite (Fe_2O_3) or magnetite (Fe_3O_4) can be easily physically beneficiated. Ores that are dominantly goethite (FeOOH) or limonite (α-FeOOH) cannot. These minerals reportedly form much of the China's iron resources and can only be upgraded through the calcining or sintering process. This is not a cost effective beneficiation method at the mine site and only occurs at the steel mill. Sintering remains the most efficient and effective process for making a direct charge to blast furnace, the initial part of the iron and steel making process.

Price increases have not yet slowed demand for iron ore products in the short-term as virtually all iron ore production has been bought and steel mills, particularly the Chinese, have been scouring the world for new sources of quality iron ore. Chinese companies have been seeking raw material investment opportunities, particularly in Africa.

Forecasting long-term prices continues to be a challenging task. Short-term market changes such as build up in steel inventories for car manufacturers cause some analysts to revise their estimates several times in 2007. Each new economic or industrial statistic is examined for as a future indication of where the market is headed.

The speculation of the long-term price appears to have a consensus agreement that it will settle somewhere between the 2005 and 2007 benchmark prices. It is expected that this "long-term price" will be "achieved" with prices reaching a plateau and then decreasing moderately. This plateau is forecasted to be reached by the majority of market analysts somewhere between 2011 and 2015. More recently the CRU has forecast that prices will reach a peak in 2009 and will start a moderate decline in price beginning in 2010. Although, the CRU believes that supply-demand equilibrium will be achieved earlier that the consensus, it does not forecast a drastic decline in prices. It sees a more moderate decline and apparent more stable long-term equilibrium in both supply-demand and prices.

Below is a consensus estimate of various estimates of lump and fines prices over the next 10 years. There was some fill-in-the-blanks wherever no estimate was available for an analyst's estimates.



Source: AME, Credit Suisse, Citibank, Others & Company Estimates

Ignoring specific arguments about price premiums for specific iron ore products (lump, pellets and fines/sinter feed), there is a common conclusion that the steel mills will continue to seek quality ores and those producers with quality sale products will and continue to prosper.

Baffinland Iron Mines Corporation

GLOSSARY

Blast Furnace	A furnace for the smelting of pig iron from iron oxides; combustion is intensified by a blast of air and/or other inert gases
Beneficiation	The process of separating, concentrating and classifying ore by particle size and or some other characteristic (e.g. specific gravity, magnetic susceptibility, surface chemistry, etc.) in order to obtain the mineral or metal of interest.
CIF	Cost/customs, insurance and freight. Price of a bulk commodity delivered to a customer's terminal port. Price includes shipping cost and is the common quoted price to bulk commodities sold in Europe. Also known as C&F.
Concentrate	Very fine grained (less than 0.15 mm or 150 µm) particles of iron ore (ultrafines) generated by mining, grinding, handling and transporting of iron ore, with no practical direct application in the steel industry, unless the material is aggregated into pellets through an agglomeration process. In many iron ore deposit, it is necessary to grind the mineralization finely to liberate the iron minerals.
DRI	Direct Reduced Iron. Process that converts iron ore into DRI or HBI using natural gas or coking coal without melting. DRI or HBI by-pass the blast furnace stage in the steel making process.
DWT	Deadweight tonnes. The measurement unit of a vessel's capacity for cargo, fuel, oil, stores and crew, measured in tonnes or 1,000 kilograms. A vessel's total deadweight is the total weight that the vessel can carry when loaded to a particular load line.
Fe Unit	A measure of the iron content in the iron ore that is equivalent to 1% iron content in 1 tonne or iron ore. The two most commonly used units are the dry long tonne unit (dltu) or 22.4 pounds and dry metric tonne unit (dmtu) or 10 kilograms (22.046 pounds). The dry measure discounts the internal moisture of the iron ore being shipped.
Fines (Sinter Feed)	Refers to iron ore with particles in the range of 0.15 mm and 6.3 mm in diameter. Suitable for sintering.
FOB	Free on board. Price of a bulk commodity delivered to producer's terminal port. Price excludes shipping and is the common quoted price to bulk commodities sold in Asia.
Hematite	An iron oxide mineral whose composition is Fe_2O_3 and stoicheiometric maximum iron content is 69.94% iron (Fe).
HBI	Hot Briquetted Iron. Direct reduced iron that has been processed into briquettes. Instead of using a blast furnace, the oxygen is removed from the ore using natural gas and results in a substance that is 90-92% iron. Because DRI (direct reduced iron) may spontaneously combust during transport, HBI is preferred when the metallic mineral must be stored or moved.
Long Ton	A unit of measure in bulk commodities equivalent to 2,240 pounds.
Long Tonne Unit	A unit of measurement used in the iron ore industry for the sale of iron ore. It is equal to 1% iron content in a long ton of ore or 22.4 pounds. Quoted a dry long ton unit (dltu).
Lump	Iron ore with the coarsest particle size in the range of 6.3 mm and 50 mm, with the preferred range between 6.3 mm and 31.5 mm.
Magnetite	An iron oxide mineral whose composition is Fe_3O_4 and stoicheiometric maximum iron content is 72.36% iron (Fe).
Mineral Deposit	An identified in-situ mineral occurrence from which valuable or useful minerals may be received. Mineral deposit estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence of mineralization and on the available sampling results.

Mineral Reserve	That part of a measured mineral resource or indicated mineral resource which can be extracted legally and at a profit under economic conditions that are specified and generally accepted as reasonable by the mining industry and which is demonstrated by a scoping study or feasibility study.
Mineral Resource	Under CIM Standards, a concentration or occurrence of natural, solid, inorganic or fossilized organic material in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge. Mineral Resources fall under the following categories: measured mineral resource; indicated mineral resource; and inferred mineral resource.
Ore	The concentration of metals and their chemical compounds within a body of rock that can be exploited profitably under current economic conditions.
Pellet Feed (ultra-fines)	Very fine grained (less than 0.15 mm or 150 µm) particles of iron ore generated by mining, grinding, handling and transporting of iron ore, with no practical direct application in the steel industry, unless the material is aggregated into pellets through an agglomeration process
Pellets	Agglomerated ultra-fine iron ore particles of a size and quality suitable for particular steel making processes. Pellets generally range from 8 mm to 18 mm in size with the preferred size between 12.5 mm and 15 mm.
Pig Iron	Melted iron produced in the blast furnace
Reducibility	The reduction of iron oxide to eventual pig iron through the liberation of oxygen.
Seaborne Market	Comprises the total iron ore trade (imports and exports) between countries using ocean bulk vessels.
Sinter Feed (Fines)	Refers to iron ore with particles in the range of 0.15 mm and 6.3 mm in diameter. Suitable for sintering.
Sintering	Refers to the agglomeration of small particles into a coherent mass by heating without melting.
Specularite	A variety of hematite characterized by aggregates of silvery, metallic, specular hematite flakes or tabular, anhedral crystals. Also referred to as specular hematite.
Ton	Short ton (2,000 pounds).
Tonne	A unit of measure equal to 1,000 kilograms or approximately 2,204.6 pounds
Ultra-fines	Very fine grained (less than 0.15 mm or 150 µm) particles of iron ore generated by mining, grinding, handling and transporting of iron ore, with no practical direct application in the steel industry, unless the material is aggregated into pellets through an agglomeration process. In many iron ore deposit, it is necessary to grind the mineralization finely to liberate the iron minerals. Also referred to as concentrate.