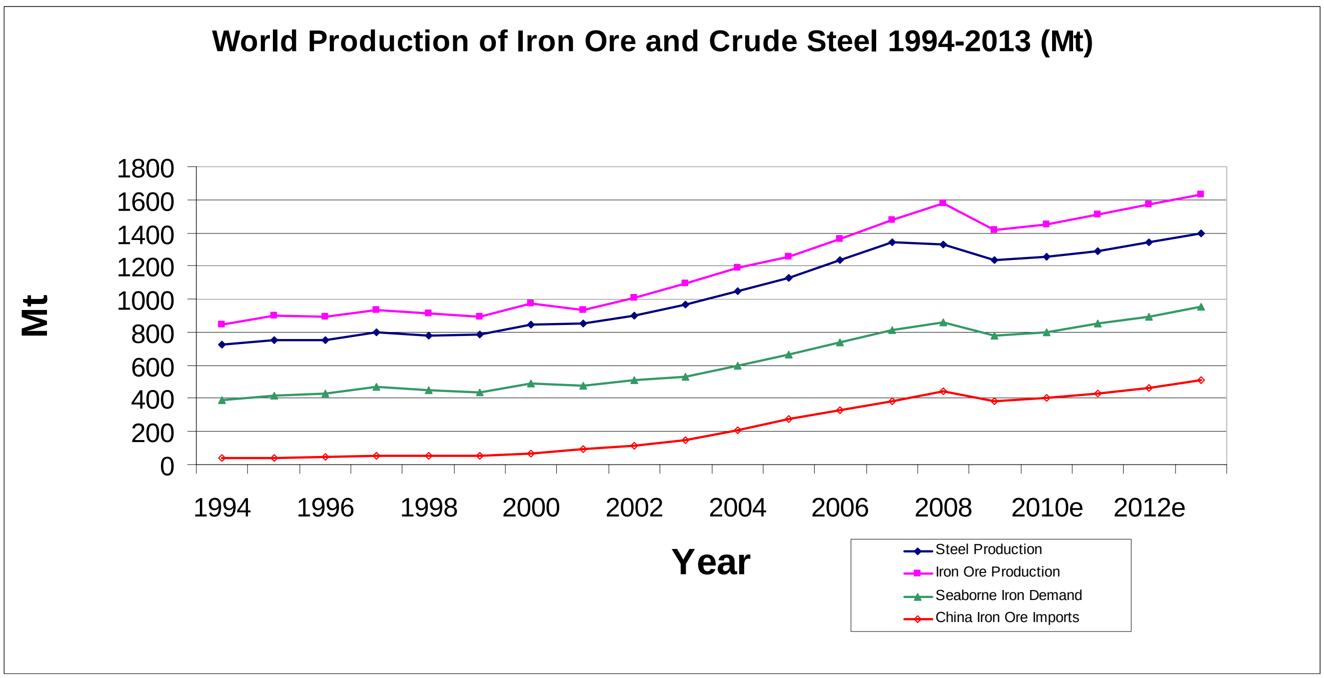
Update: 2009 August 31

IRON ORE INDUSTRY TRENDS AND ANALYSIS

World production of iron ore increased in 2008 at 1,576 million tonnes but crude steel production dropped to 1,329 million tonnes, down 1.2% from a year earlier. These numbers tell only a partial story as the world saw a stunning collapse of the credit markets that dramatically affected commodities, but also the shares of virtually all mining companies. Iron ore production in the fourth quarter dropped almost 25% as demand collapsed. A major investment fund stated in November 2008 that commodity prices were already in the trough of a deep recession, but mining stocks were at severe depression levels. Despite what appears to be significant buying opportunity for assets at cents on the dollar for prices companies were willing to pay just three to six months ago, virtually all companies appear too stunned to take advantage. Most are in a survival mentality and are slashing budgets to weather expected crash in demand and the resultant world-wide recession. “Stronger for Longer” has become the “Drive to Survive”.

In the first six months of 2009, world steel production was down 21% from the same period in 2008. A rather interesting press comment was that the collapse in the financial market has affected output and not consumer demand as the lack of credit has prevented from companies continuing or expanding production. Significant staff and capital expenditure cuts are now commonplace and optimistic forecasts have normalcy returning to the world markets only in 2010 or possibly 2011.



Source: IISI, Macquarie, Credit Suisse, AME

STEEL

Analysis of the iron ore industry must include virtually the industry’s only customer - the world crude steel industry. World growth of iron ore and steel generally expands and contracts inline with world economic growth. World markets collapsed in starting in mid-2008 and continuing to the end of the year. A collapse of confidence in the credit markets were acerbated by the failure of a large investment bank and the bailout of many giant financial institutions.

The world steel production decreased to 1,329 million tonnes in 2008, down 1.2% from 2007 but down more than 21% in the first half of 2009. The global economic crisis continues to stun the commodities and basic industries as the world slipped into a major recession. Even this dramatic fall is perhaps understated in month to month comparables as Japan’s steel production was off almost 35% and European steel production was down more than 43% to June 2009.

Baffinland Iron Mines Corporation

This stunning collapse in production is expected to test capacity, particularly in the new entrants, of the European Union. The EU-12, composed of Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia, has been hard hit by the financial crisis. The original EU-15 is also challenged as many companies are operating at less than 50% capacity in the first half of 2009. It has been forecast that inefficient capacity throughout the world need to close; there is some question whether some efficient producers may not survive the current downturn.

In early 2009, various analyst' estimates have world steel production contracting between 10 and 13%, which is perhaps still too optimistic. However, European and US steel groups have announced the start-up of several blast furnace and the return of demand, albeit still some 20% below 2008 levels. Despite the hope for a quick rebound, the consensus only has the steel and iron ore industries returning to 2007_2008 levels of production only by 2012. The breakdown of credit markets remains a difficult "fix".

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	2008 Crude Steel Production (Mt)	% of World Total	2008 Seaborne Imports of Iron Ore (Mt)	% of World Total
European Union – 15	174.0	13.1	141.6	16.3
North America	130.9	9.8	20.7	2.4
Japan	120.4	9.1	140.0	16.1
PR of China	502.7	37.8	444.1	51.2
S Korea	53.7	4.0	48.8	5.6
Russia/Ukraine	107.9	8.1	12.9	1.5
Sub-total	**1089.6**	**81.9**	**822.5**	**93.2**
World Total	**1,329**	**100.0**	**867**	**100.0**

Estimates vary dependent upon source: Source AME, Roskill, Credit Suisse. Merrill Lynch

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 (BHP Billiton) and the Rio Tinto Iron Ore unit (Rio Tinto) control more than seventy-five percent 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. This practise ended in 2007-2008, which led to some spikes in the prices of scrap locally around the world.

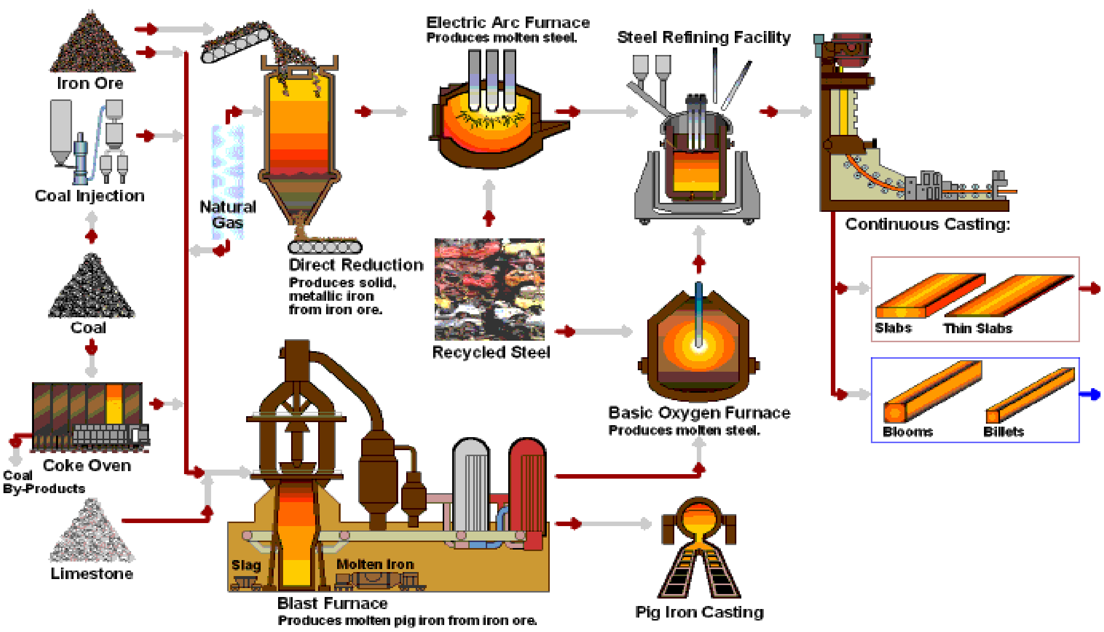
Asia now produces 751 million tonnes of crude steel or more than 56% of the worldwide steel production compared to 35% of world output in 1993. China leads this growth and is the world's largest steel producer at 503 million tonnes of annual production.

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 is called the "next billion". This refers to the population of 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. Several of these country's economies were not "hit as hard" as the more mature countries (USA, EU-15, Japan).

The need for infrastructure and development will continue in the developing world and in the developed world as rehabilitation and replacement of infrastructure is require. Most small and medium sized bridges were designed to last ~40 years. This makes one wonder about the last date of rehabilitation or significant repair as one passes a bridge that was built in 1964.

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 in the 1990's. Starting in 2003, increased demand for steel suspended rationalisation of some of this capacity as most steel company production was "flat out" in attempts to meet demand.

The Steel Making Process



Source: IISI, Steel.org

The financial crisis has been hard on the world steel industry as it and other basis industries mimic world growth. For the month of December 2008, Japan announced that its GDP had contracted 12.3% on an annualized basis. Europe stated that it expected 2009 would see the steepest economic decline since 1974. As stated, world steel production in the first half of 2009 was devastated:

Crude Steel Output (' 000 tonnes)			
	Jan-June 2008	Jan-June 2009	% Change (YoY)
EU 27	109,552	62,187	-43.2
Other Europe	16,725	13,178	-21.2
CIS	65,134	44,102	-32.3
North America	69,541	35,823	-48.5
South America	24,493	15,896	-35.1
Africa	9,131	7,136	-21.8
Middle East	8,345	8,375	0.4
Asia	390,867	360,261	-7.8
Oceania	4,408	2,304	-47.7
Total (66 countries)	**698,195**	**549,262**	**-21.4**

Source: WorldSteel

It is important to realise that these and other indicators lag the current market. There are positive indicators in the raw materials markets as well:

- China imported 297 million tonnes in the first half of 2009;
- From March through July, China has imported more than 50 million tonnes in each month, indicating continued growth of imports and the probable collapse of domestic production;
- Demand for steel and raw materials is there, world-wide, however, credit markets are broken. Parts of the world have reportedly reverted to a cash economy, which does not work well for capital projects that involve steel.
- The Baltic Dry Shipping Index, probably the best indicator of demand, has been increasing at a surprising rate and appears to have stabilized in a range of $30,000 to $40,000 per day for time charters.
- Chinese port stocks of iron ore are shrinking and approaching normal levels. Normal levels are now defined as 60-70 million tonnes
- Government stimulus efforts are world-wide and there are efforts to fix the credit markets.
- Many USA and European steel groups have increased production and are operating at 80-85% capacity. In Q1 2009, many had been operating at 40% capacity or lower.

These will take time to work through the system and one will expect normalcy to return to markets in late 2010 or 2011. There remains the spectre of a deeper recession and further negative impacts cause a possible cascade failure of markets.

IRON ORE

World iron ore production totalled 1,576 million tonnes (Chinese production normalised to 63% Fe) in 2008, as iron ore companies stretch production to meet demand. As with many reported economic figures, they are subject to revision, clarification and correction. Demand appeared overheated through the first half of the year as increases to benchmark iron ore prices were settled at 65-96%. Unlike previous years, there were major differences in prices agreed by companies. Rio Tinto and BHP Billiton achieved a short-lived “freight premium” as its iron ores were cheaper on a landed (CIF/DES) basis compared to iron ores from VALE. VALE also broke with tradition and attempted to negotiate a second increase in an attempt to establish a single FOB price for its iron ores.

World production would have been much higher as iron ore and steel production were cut 20 to 30% in the fourth quarter for 2008. The producer and consumer discipline will go a long way to normalize pricing in the 2009 benchmark negotiations. In mid-2009, benchmark iron ore prices were settled at -28.2% for VALE’s iron ore fines to -32.9% for Rio Tinto and BHP Billiton iron ore fines. Direct charge material lump and pellets prices were down -44.47 and -48.3% respectively.

It is expected that reduction in the premium for the direct charge material versus the fines price will be short-lived. As most of the blast furnaces operated at significantly reduced productivity (~50-70% of optimal production), sinter plant production would supply most of the require blast furnace burden and thus demand for lump and pellets would be extremely low.

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, 2008

	Production (Mt)	% of total	Exports (Mt)	% Export Market
Country				
Brazil	348	22.1	282	31.8
Australia	350	22.2	309	34.8
China	318 [Note 1]	20.2		
Russia	100	6.3	25	2.8
India	192	12.2	101	11.4
Ukraine	72	4.6	23	2.6
USA	52	3.3	10	1.1
South Africa	45	2.9	32	3.6
Canada	33	2.1	26	2.9
Sweden	25	1.6	17	1.9
Sub-total	1535	97.4	825	92.9
World total	**1576**	**100.0**	**888** [note 3]	100.0

Note 1: Normalised to ~64% Fe equivalent, official output 772 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.
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, AME, Skillings, IISB, Credit Suisse

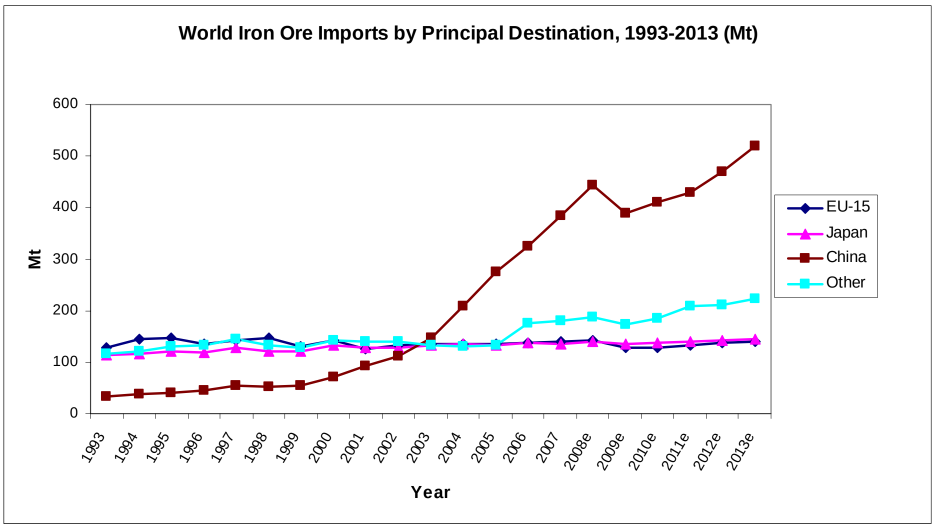
Historically, iron ore producers fell into two basic categories, captive producers and exporters. Captive producers were those owned by steel companies and generally sold its production exclusively to their owner(s)-customer. Exporters sold to a number of customers and were subject to external market 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. 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, Canada and Cote d'Ivoire. Chinese steel companies have also been aggressive pursuing iron ore projects in Africa, Australia, more recently in Canada and the rest of the world.

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, BHP Billiton and Rio Tinto 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. Historically (pre-2004) spot iron ore sales were minor and the majority of iron ore was sold on through the benchmark system. This is changing and it is expected that the system will survive, but will morph into a system that has prices linked to an Index, how this Index will evolve can only be guessed at.

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 444 million tonnes in 2008. China's demand had obscured consistent moderate to strong increases in demand within other market and growth economies. However, China remains the driver of the iron ore industry. It imported 297 million tonnes of iron ore in the first half of 2009. It appears to have an unyielding appetite for growth and iron ore consumption. The high cost nature of its domestic iron ore industry appeared to cause its collapse and this added to iron ore import growth. Simply, China is a country that has limited and generally poor quality iron ore resources.

In late 2008, the collapse in demand in both the steel and iron ore markets has led to perhaps wild speculation about the depth and breadth of the current recession. The current downturn is rather unique in history as the financial crisis has been combined with a loss in confidence. The credit collapse dramatically affected steel demand and the resultant demand for iron ore. The steel service and distribution centres stopped all orders in the fourth quarter as credit markets virtually ceased to function. These centres, which in many cases are owned by the steel companies, supply credit to customers on 30 to 90 day terms. The lack of bank and commercial credit to these centres collapsed the ability of these important 'middlemen' to function. The markets are still not functioning correctly as credit is reportedly difficult to obtain to non-existent.



Source: AME, Roskill, Skillings

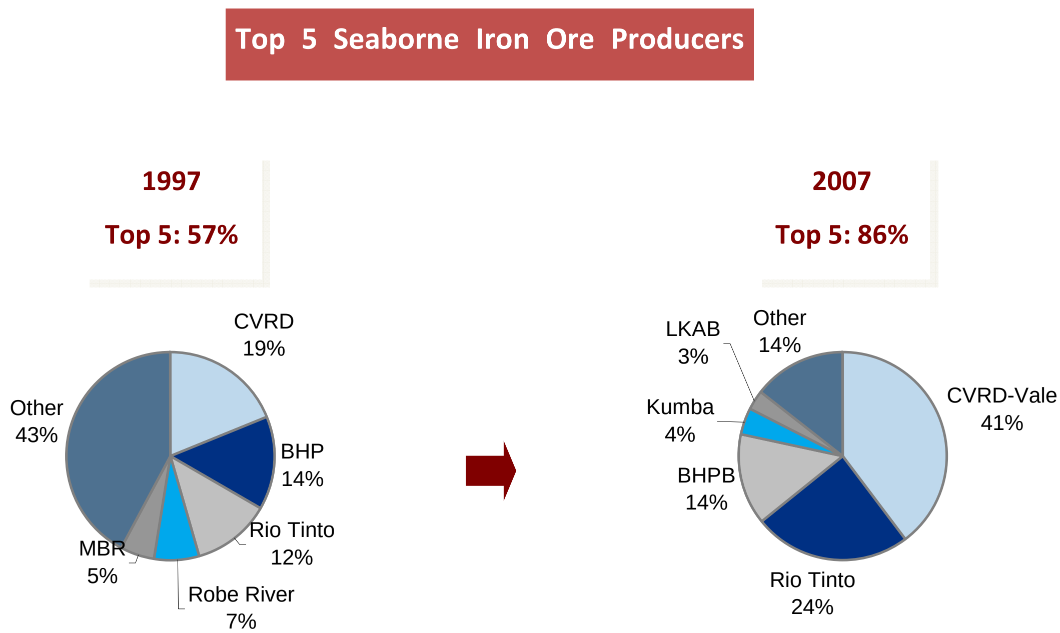
It is expected that iron ore production will also contract in 2009 some 15 to 20% as the demand for steel and iron ore collapsed in late 2008 and early 2009. Demand for iron and steel remains well below 2007-2008 levels but is improving. Many announced major iron ore expansion projects have been delayed indefinitely. Producers have shown remarkable discipline and cut existing production as well.

The relationship between steel mills and iron ore producers has historically been and remains adversarial. Given that virtually all iron ore is used to make steel, it is surprising that there is not a more sympathetic relationship. From the viewpoint of the iron miners, the steel companies unfairly demanded improved product characteristics, while the price for iron ore in real terms 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, BHP Billiton and Rio Tinto 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 400% increase of prices since 2002. The strong objections to the initial BHP Billiton-Rio Tinto takeover and now the proposed marketing joint venture appear a bit hollow. At the turn of the century, Vale bought Ferteco, Samatri, Caemi-MBR and Samarco. Rio Tinto bought Robe River through its purchase of North. This consolidated the iron ore industry, particularly the seaborne trade.

The potential BHP Billion takeover of Rio Tinto collapsed in late 2008, as the impact of the credit collapse led the world into a major recession. The debt load of the 2007 purchase of Alcan threatened to overwhelm Rio Tinto and the company was forced into asset sales and a major investment by the Chinese parastatal Chinalco. Chinalco would purchase the minority stake of specific assets and increase its equity interest in Rio Tinto through the purchase of a convertible debenture. The deal saw the sale of assets, such as the minority interest in Hamersley Iron, that would have been considered inconceivable just a few months earlier.

As metal markets rebounded, the convertible debenture and other parts of the deal became unacceptable to the market and the deal collapsed. Rio Tinto immediately announced a rights issue and also a marketing joint venture with BHP Billiton. This marketing JV or a facsimile thereof was initially discussed, announced and terminated in 1999. The deal collapsed officially at the time due to the inability of the two companies to agree on valuation of its iron ore assets. The 2009 JV will see a $5.8 billion payment from BHP Billiton to Rio Tinto to "equalise" the joint venture assets.



Source: Tex Report, AME, Roskill, UNCTAD, BMO Capital Markets

In comparison, the consolidation in steel industry has the top five producers at some 19% market share. The iron ore industry remains highly concentrated. The credit crisis caused BHP Billiton to withdraw its Rio Tinto bid and the credit crisis and dramatic drop in commodity prices has caused many major mining companies to obtain funding by making deals that only six months previously would have been thought foolish. The financial strain on many companies that purchased assets at the top of the market makes one question these management decisions.

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. In December 2006, Baosteel agreed to a 9.5% price increase for 2007 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.

Baffinland Iron Mines Corporation

Iron Ore Price Benchmark Comparison

Prices – European Benchmark	2001	2002	2003	2004	2005	2006	2007	2008	2009
Vale Itabira Fines (US¢/dmtu – FOB)	28.9	29.1	31.04	36.45	62.51	74.39	81.46	134.41	96.51
Vale Carajas Fines (US¢/dmtu – FOB)	30.1	29.3	31.95	37.90	65.00	77.35	84.70	140.60	100.95
Vale Carajas Lump (US¢/dmtu – FOB)	35.18	34.31	37.36	44.46	79.58	94.70	103.70	203.76	113.15
Vale Carajás Pellets (US¢/dmtu – FOB)	52.4	50.4	54.93	63.60	118.57	115.01	121.08	226.02	116.85
Prices – Japanese Benchmark									
Pilbara (Mt Newman/Hamersley) Lump US¢/dmtu – FOB)	37.43	35.56	38.73	45.93	78.77	97.73	102.64	201.69	112.00
Pilbara (Mt Newman/Hamersley) Fines US¢/dmtu – FOB)	28.52	27.83	30.34	35.99	61.73	73.46	80.42	144.66	97.00

Source: IISI, Vale Website, Company Estimates
Note: the Carajás lump price in 2007-2009 is for comparative purposes, as Vale no longer quotes its price as existing contracts are being wound down
Pilbara is a blended Brockman-Marra Mamba ore

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. This "open market attitude" changed in 2008 as Chinese government leaders pontificated about the need to cheaper raw material and commodity prices to allow China's continued growth. The China Iron and Steel Association (CISA) took over lead negotiations and to date has not settled a benchmark price with Rio Tinto, BHP Billiton or VALE.

The CISA announced a settlement with Fortescue Metals Group Limited that saw fine iron ore reduced -35.0% and lump iron ore was down -50.4%. A significant caveat was the deal was tied to a financing package that would provide Fortescue with up to $6 billion in financing. Although claiming to be "China's Benchmark, numerous press reports have Baosteel and other Chinese steel groups having agreed to pay the "other Benchmark" that was settled with the Japanese steel groups.

Chinese companies have been seeking investment opportunities and are a major influence in metals markets. This influence is best exemplified by the investment in Rio Tinto. In its efforts to raise capital and reduce the massive debt taken on by its purchase of Alcan, Rio Tinto has negotiated a combined investment and sale of minority assets to Chinalco, the large state-owned aluminium company. The ~$20 billion investment was controversial as it was viewed as negative long-term to Rio Tinto shareholders. This is due to the side attributes to the deal where Rio Tinto and Chinalco would have formed a joint venture for the marketing of 30% of the Hamersley Iron output. Criticism saw Chinalco as a nominee of the Chinese government and negative to iron ore price growth.

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.

From 2004 to 2008, iron ore prices increased more than 400%, a staggering fact, but significantly smaller than for many other commodities. Annual price increases were:

2004=18.6%,

2005=71.5%

2006=19%;

2007=9.5%,

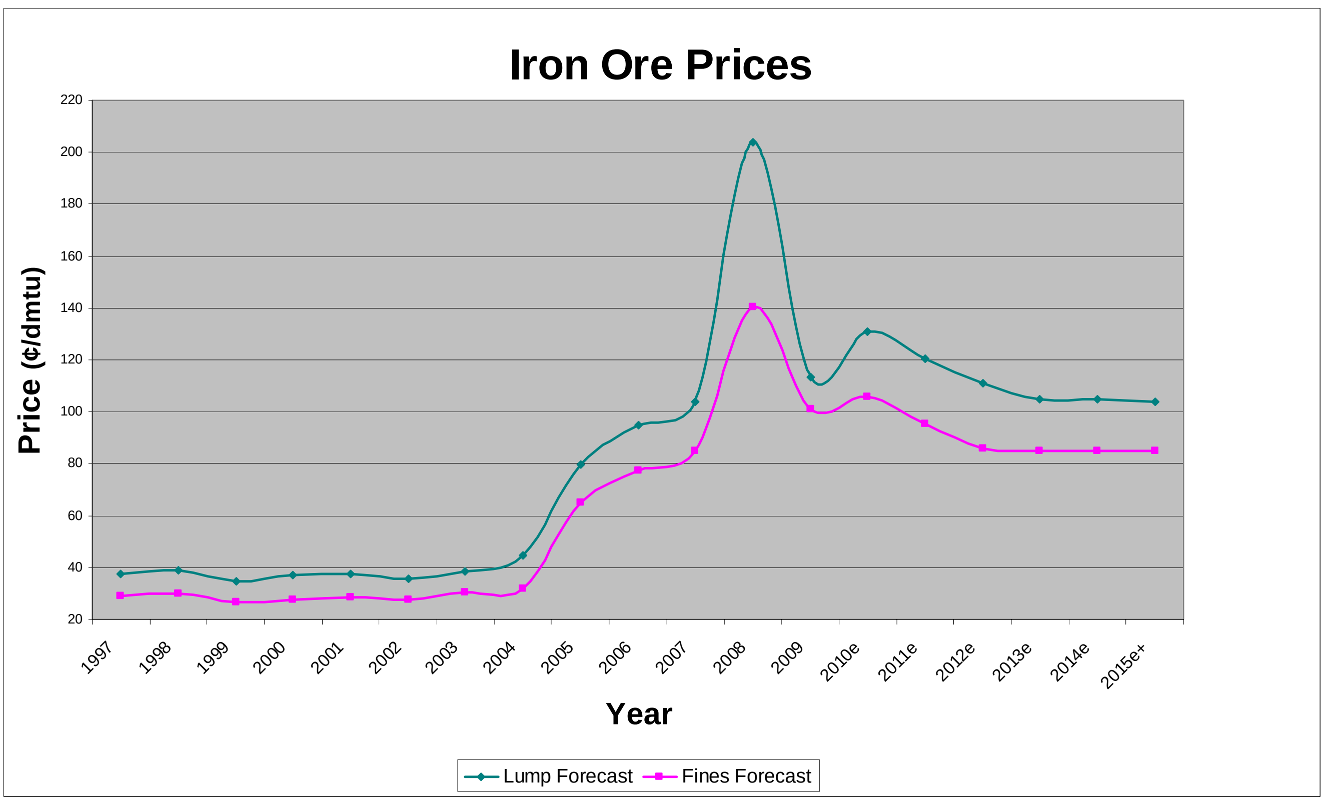
2008=65% to 96.5%.

This changed in 2009 as a major recession put pressure on all commodity prices and iron ore prices dropped 28.2% for VALE fine iron ore to a 48.3% drop in price for pellets.

2009=-28.2% to -48.3%

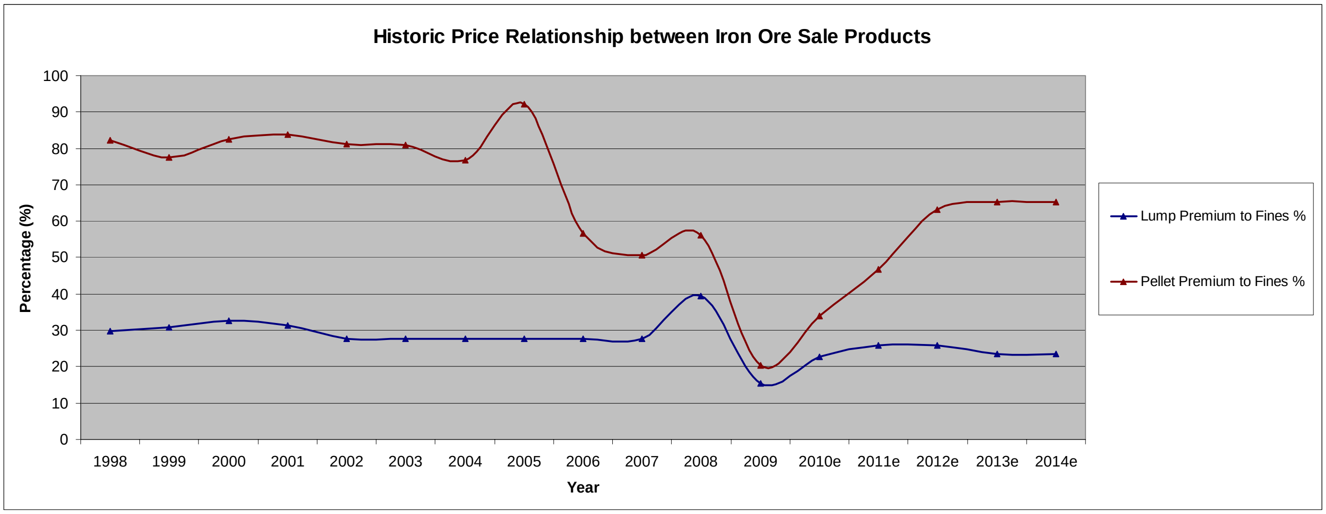
In 2008, rhetoric was intense and rumours were rife. In February 2008, the benchmark price for iron ore fines was settled between VALE and Nippon Steel. Prices for the Itabira fines rose 65%, while the Carajás fines managed a 71% increase in price. The Europe increase was the same 65% for the Itabira 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 and pellets back to the historic norm. However this relationship was disrupted in 2009.



Note: ¢/dmtu Carajas Reference Prices European Basin Source: AME, Credit Suisse, & Company Estimates

In percentage terms, pellets sell at a historic premium to fine ore of 70-80%, while lump ore is sold at a 20-30% premium to fines. 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 (immediate) 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: AME, Credit Suisse, Citibank, Others & Company Estimates

In 2008, Rio Tinto settled with Asian steel companies, achieving a 79.88% increase in the fine ore price and a 96.5% increase in its lump ore price. This price increase included the 'freight premium' sought by Australian producers since 2005. Rio Tinto and BHP Billiton had 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	2002	2003	2004	2005	2006	2007	2008	2009
IOC Pellets (US¢/dmtu – FOB)	48.30	53.22	64.50	120.06	115.86	122.58	228.82	118.30
VALE Tubarao Pellets (US¢/dmtu – FOB)	47.36	52.00	61.88	115.51	112.04	117.96	220.20	113.84
LKAB Pellets (US¢/dmtu – FOB)	49.95	55.62	69.25	128.00	122.20	131.00	244.54	126.42
VALE Carajás Pellets (US¢/dmtu – FOB)	50.40	54.93	63.60	118.57	115.01	121.08	226.02	116.85
Samarco Pellets (US¢/dmtu – FOB)	46.68	51.36	60.86	113.62	111.40	117.29	218.95	113.20

Source: Tex Report

There has always been a freight component in iron ore pricing as can been seen above. The closer to the terminal market that the producer is; the higher FOB price that the end consumer or steel company would pay. The freight premium component in the Rio Tinto settlement was estimated to be 12¢ per dmtu or approximately $7.50 per tonne of ore shipped. After the increase was announced, VALE began to lobby for an additional increase to its benchmark price into Asia. It argued that it would have only one benchmark price on a FOB basis. This would result in an approximate 10-12% additional price increase for iron ores shipped into the Asian markets. Reaction from Asian customers was not favourable.

The world-wide recession and economic collapse saw Rio Tinto in May 2009 agreeing with the Japanese a -32.9% decrease in its Hamersley fine iron ore price and a -44.5% decrease in the price of it lump iron ore. VALE also settled with a smaller -28.2% decrease in its fine iron ore and a decrease of -48.3% in the price of its pellets. All but the Chinese steel companies have agreed to these benchmark prices. It is rumoured that as the spot price of iron ore increased, many Chinese steel groups were buying and had agreed to Benchmark prices.

The Benchmark has undergone significant criticism and it under pressure. BHP Billiton, the lead promoter of an Iron Ore Index Price in line with other metals that are quoted and traded on the London Metals Exchange, announced that it had been selling some 23% of its iron ore under traditional benchmark sales and some 30% was being sold using a mixture of quarterly, spot and index-based prices. The remaining 47% of its iron ore production likely was being sold on the spot basis to Chinese customers.

In the first half of 2009, strong rumours had all three of the major producers selling almost all of their production on a spot basis. CISA reported that that in the first half of 2009, some 83% of the iron ore imported into China was on a spot price basis. In 2009, sales into Japan, EU-15 and the USA collapsed. Although, BHP Billiton led the charge into market-based pricing, the promotion that spot sales would be more transparent than sales under the Benchmark was not completely accurate. One of the primary criticisms about the Benchmark has been the lack of transparency. Discussions with the Metal Bulletin whose Iron Ore Index is the most quoted stated that the spot iron ore index remains a single conduit that of India to China. Even though Rio Tinto BHP Billiton and VALE were all selling almost exclusively on a spot basis, few or no trades were reported. Thus, transparency remains lacking. It is probable that the Benchmark will survive but not in its current form.

Much has been made of Index-based pricing of iron ore. However the broad attributes indicate that much growth is needed. The MB Iron Ore Index is based upon:

Price	**US$ per metric tonne, CFR China**
Iron Content	Base 62%; Range 58%-66%
Silica	**Base 2.0% Maximum 6%**
Alumina	Base 2.0% Maximum 6%
Combined Sliica/Alumina	**Maximum 8.0%**
Phosphorus	Base 0.05% Maximum 0.10%
Sulphur	**Base 0.02% Maximum 0.05%**
Loss on Ignition (%DW)	Base 4.7% Maximum 9.8%
Moisture	**Base 8.0% Maximum 10.0%**
Granularity	Base size>90%<6.3mm, Minimum size,10%<0.15mm
Traded Cargo Size	**Minimum 30,000, Maximum 350,000 tonnes**
Delivery Port	Base Qingdao-Rizhao-Lianyungang normaised
Delivery Period	**Within 8 weeks**

Source: Metal Bulletin

It is expected that the Index will grow and morph into something resembling the index for thermal coal. While it is important to realise that iron ore is not only valued on iron content, the price is calculated based upon iron content.

Prior to 2004, only high quality iron ores received the full Benchmark price, while other ores were discounted based upon physical and chemical attributes. This is noted in the prices received prior to 2004 for Australian ores:

Ore Type	Brockman		Marra Mamba		Pisolite	
	Lump	Fines	Lump	Fines	Lump	Fines
Fe %	64.0	63.0	62.0	61.0	58.5	58.0
LOI %	2.5	2.8	6.6	6.8	9.3	9.8
Benchmark %	100%	100%	97%	95%	92%	91%

Source: Skillings

In addition, discounts were more significant for physical attributes, primarily grain size. Pellet feed (average grain size MS50 less than 150 microns) attracted a 15% discount to that of sinter feed or fine iron ore (grain size greater than 250 microns).

BHP Billiton and Rio Tinto have stated the past that the large price increases since 2004 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. The last Greenfield iron ore development was the giant Carajás in Brazil in the early 1980's. This development had major funding from the World Bank, which effectively subsidised the railway. Major capital expenditures remain a significant deterrent to development. Comprehensive analytical, physical and metallurgical testing of potential sale products are also key components of the potential exploitation of any iron ore deposit and establishing a long-term customer base in a demanding market.

The new iron ore development by the Fortescue Metals Group Limited and its aggressive plans saw it produce an initial 18 million tonnes of iron ore in 2008. However, its expansion plans to 55 million tonnes then to 100+ million tonnes have been hit hard by the financial crisis. It completed a significant funding with a Chinese group, Hunan Valin Iron & Steel that saw it buy $446 million in treasury shares and also purchased $433 million in shares from Harbinger Capital Partners for a total effective 17.5% holding in Forestcue.

In 2008, Anglo American bought the Minas Rio and Amapa iron ore projects from MMX Mineração & Metálicos S.A. for almost $7 billion. Plans are to produce 26.5 million tonnes of iron ore in the first phase of the project with further future expansions in 26.5 million tonnes per annum increments to almost 80 million tonnes per annum. Unlike other iron ore producers, MMX also planned to produce pig iron. The pig iron assets were kept by MMX.

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, BHP Billiton and Rio Tinto 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 Rio Tinto at 20-25 million tonnes higher than was actually achieved.

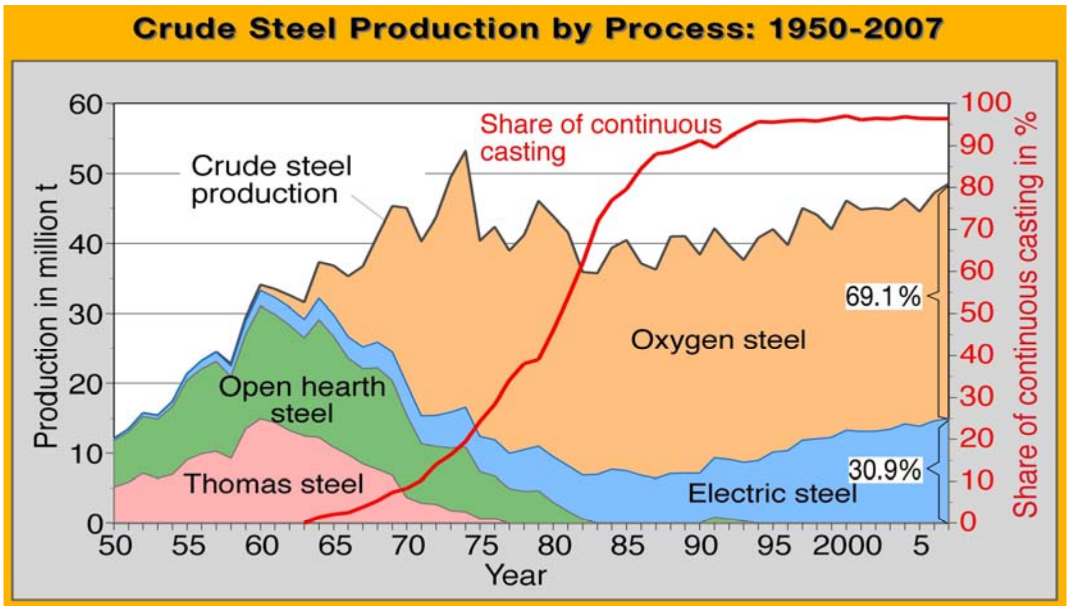
Fortescue states that it is planning on producing at an annual capacity of 55 million tonnes by 2011 and would at some future point in time increase output to 100-200 million tonnes. Given that it took Rio Tinto started at 5 million tonnes in 1966 and by 1999 output was some 60 million tonnes, there has been significant skepticism in Australia that these figures achievable. Recent statements by Fortescue state that it will meet its 55 million tonne target in its 2009/2010 production year.

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, BHP Billiton's rail line has a nominal capacity of 60 million tonnes but actual capacity of more than 100 million tonnes has been achieved. Exceeding design capacity has seen a direct significant increase in costs. Eventually, a dual (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. There have also been many groups that have acquired past iron ore producers and have made positive statements about the value of existing infrastructure and its existence to speed up development. This is partly correct, but it is extremely important to examine why an existing producer closed. Starting in the 1960's, several steel making processes were made obsolete. Today, the Blast Furnace/Basic Oxygen Process and Electric Arc Furnace processes for 98+% of steel making.

Germany and Japan were the first to switch to the blast furnace as the primary production of hot metal and the basic oxygen furnace as the method for production of steel. Some iron ore production that was closed in the 1970's and 1980's was better suited as open hearth furnace feed rather than as feed to the blast furnace.

This can be seen in the development of Crude Steel production in Germany.



Source: VDEh, Stahl-Zentrum

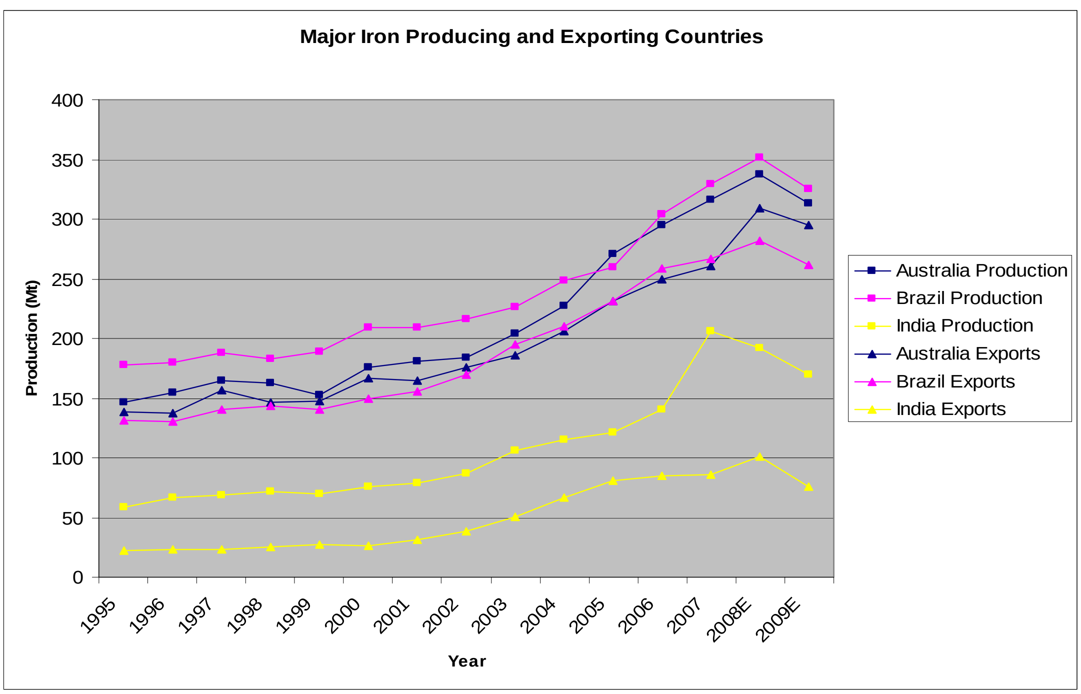
For an iron ore producer to be successful in the long-term, integration and optimisation of its infrastructure is essential to ensure that it is the low cost quartile. There are advantages in the near-term for using "public" or common infrastructure. This can be seen in the public port facility in Newcastle 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; however limited transparency in the market makes it a difficult indicator to read.

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

Use of the Newcastle coal port facility for many coal producers was very attractive initially. In a recent event a plan to increase the efficiency of the coal port, the world's largest, was thrown into doubt after the Australian Competition and Consumer Commission scrapped its approval. The approval was revoked after one of the participants in the management plan failed to agree to the detailed framework and phased long-term solution to the infrastructure challenge.

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



Source: Merrill Lynch, Macquarie, Roskill, UNCTAD

Most of the 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. 2008 forecasts had India producing an additional 150 million tonnes of steel annually by 2015.

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, both near and long-term. 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.

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 and 772 million tonnes in 2008, import demand continues to increase with 444 million tonnes of iron ore imports in 2008. In the first half of 2009, China imported 297 million tonnes, with monthly imports exceeding 50 million tonnes a month from March through July 2009. Chinese domestic iron ore production, always high cost, appeared to collapse in 2009 as spot iron ore prices collapsed. It is unclear if this high cost marginal production can return to the market.

The mantra "stronger for longer" has shifted to "drive to survive", as even bullish groups now see a hard but relatively short duration recession. It is difficult to forecast the next six to eighteen months, but given the remarkable cliff that saw steel companies operating at 40-50% capacity when combined with lower prices meant that steel companies had a third of the revenue from the previous year. Expansion projects consumed cash, so one wonders if many steel companies in Europe, the USA, or rest of the world will survive the next few months never mind next few years. Recovery of confidence may take considerable longer.

Prices have remained remarkably positive with an average reduction in the fine iron ore price of just ~30%. Direct charge material (pellets, lump) saw larger decreases 45-48% and the premiums for these products are at record lows. This is due to short term demand issues. Steel companies operating at 50% capacity can use 100% sinter and would have no demand for direct charge material. Rhetoric remains strong as steel producers are reeling from a collapse in demand that has been unprecedented. Steel companies are seeking reductions and stability in raw material prices that will allow them and their customers to plan and develop on a more 'rational' basis.

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.

Baffinland Iron Mines Corporation

Average Spot Iron Ore Freight Rates, 1993 to 2009 (Capesize vessels 130,000-170,000 dwt; $/t)					
Year	**Brazil-Continent**	**Australia-Continent**	**Norway-Continent**	**Brazil-Asia**	**Australia-Asia**
1993	5.6	7.4	2.9	9.2	…
1994	6.4	9.0	3.2	10.3	…
1995	7.6	9.9	3.9	13.5	…
1996	5.6	7.0	3.0	9.1	4.4
1997	6.2	7.5	3.2	10.7	5.0
1998	4.5	6.0	2.4	6.5	3.7
1999	4.7	6.7	2.5	6.9	3.7
2000	7.5	10.9	3.5	11.7	6.3
2001	5.4	7.8	2.5	8.4	4.3
2002	5.4	7.0	2.5	8.7	4.1
2003	8.3	10.7	3.5	14.1	6.8
2004	19.7	21.1	7.7	33.1	15.6
2005	17.5 note 1 15.9	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	35.2	37.4	13.2	72.2	28.5
2008 Q4	*8.4*	*10.0*	*3.8*	*15.3*	*6.5*
2009 H1	13.3	12.6	5.6	25.3	10.4

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, Gibsons

The May 2008 time charter average rate topped $220,000 per day, while in November 2008, the average plummeted to $2,500 per day. 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 five to 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.

Spot shipping rates worldwide are subject to considerable volatility. 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. Handling capacity at many of Asia's ports has been severely stretched and it is reported that ships have to wait regularly for several weeks to unload their cargoes. This volatility has been subject to extreme short-term events over the past five years as evidenced in the following graph:

Daily Chart for Cape/Panamax/Handymax Ships

(Average of 4 Time Charter Daily Spot Rates)

Source: DryShips Inc.

This bottleneck has been and will be alleviated by the additional shipping tonnage that is expected to come onto the market. However, flexibility is now the key attribute in shipping. 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. 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 and elsewhere 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.

Companies that had a majority of shipping coverage saw this become a significant financial liability. The lack of steel demand devastated demand for raw materials and ships were idled. Although, charterers did not have to pay fuel and port costs; there remained liable for the per day time charter rate. Many companies paid millions of dollars to "park" the ship and the worldwide cost of this negative demurrage is estimated to be billions of dollars. It also changed the way companies look at shipping contract coverage. Flexibility is the new mantra and those companies that delayed entering into long-term contracts ended up having a significant advantage. There were several stories in the press and others "rumoured" that saw companies paying tens if not hundreds of millions of dollars to settle shipping contracts.

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 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
2009	96.51	100.95	N/A	113.84	125.23	116.85	128.54	85.43	89.87	99.42	110.43

Notes: US¢ / Fe Unit

*DLTU until 2004
*DMTU since 2005
Source: VALE Company Website

Currently VALE, BHP Billiton and Rio Tinto have expansion plans to increase iron ore output significantly. By the end of the decade, Rio Tinto plans to increase output by 46 million tonnes and BHP Billiton by 80 million tonnes. VALE recently announced plans to increase output by a further 150 million tonnes to 450 million tonnes per year. It is expected that the recession will delay these expansions. In the cases of BHP Billiton and Rio Tinto, 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. The current recession has severely limited the ability to finance development projects. At a recent conference, bankers commented that there is funding available for good projects; it was that there are very few good projects.

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 has varied in production delays and capacity issues saw blending of more than fifty sale products into ten to twelve sale products challenged. However the shift in power has moved to the sellers (iron ore producers). China appears to be 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.

Baffinland and Its Market

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	2008 Production (Mt)	Product	Primary Customer
VALE				
North System	Brazil	308	Fines, Pellets, Lump	Asia, Europe, USA
South System	Brazil		Fines, Pellets, Lump	
MBR	Brazil		Fines, Pellets, Lump	
Samarco	Brazil		Pellets, Fines	
Rio Tinto				
Hamersley Iron	Australia	154	Fines, Lump	Asia, Europe
Robe River	Australia		Fines, Lump	Asia, Europe
Iron Ore Company	Canada		Pellets, Fines	USA, Europe
BHP Billiton Iron Ore				
	Australia	118	Fines, Lump	Asia, Europe
Samarco (not included in total)	Brazil		Pellets, Fines	
LKAB	Sweden	21	Pellets, Fines	Europe
SNIM	Mauritania	13	Fines, Pellets, Lump	Europe, Asia
CVG	Venezuela	20	Fines, Pellets	Europe, Local
Kumba	South Africa	37	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 were set each year in complex negotiations led by one of the three dominant iron ore producers Rio Tinto, BHP Billiton 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 Rio Tinto, VALE and BHP Billiton were initially discounting 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 will settle in the future on an Index that will be based upon a modified benchmark price for fines, lump and pellets. I expect that the Index will develop into a quarterly or possibly monthly price adjustment. As in the past, it is expected that regional Benchmarks prices will develop, very probably with a mixture of FOB and CIF pricing. In the 1990's, Australian ores shipped into the European market were sold on a CIF basis. This saw an initial FOB price settled in Japan with Australian producers then the CIF price settled for the European market. This is expected to make a rebound, particularly for companies with their own ships or long-term close alliances with shipping companies. Despite the expectation of increased transparency with Index-related pricing, it is possible that even less transparency will develop as iron ore prices and freight rates are combined.

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 Index 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.

Importantly, iron ores are becoming finer and finer. To remove deleterious elements, additional processing of iron ore is required and additional concentrates are arriving on the market. The average size of iron ore fines is decreasing and now hovering at or below 0.5 mm. The decreasing average size and the increasing amount of sub-150 micron material (generally considered to be pellet feed) have seen many steel groups looking at pre-agglomeration prior to sintering or the building of pelletising plants.

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 < 150 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 and are generally poor quality, 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.

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 BHP Billiton and Rio Tinto'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, higher moisture/LOI levels
South System, Brazil	5/95	64.5	Increasing P, softer ore
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.

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 around the 2007 Benchmark prices. Most analysts have established a long-term forecast of prices that exceeds the prices Baffinland used in its Definitive Feasibility Study. Baffinland used 84.7 ¢/dmtu for its fines and 103.7 ¢/dmtu for its lump iron ore. We have not adjusted these figures, however comparison to other estimates show Baffinland to be very conservative in its price forecast.

Baffinland's metallurgical testwork and blast furnace use of trial cargoes have confirmed the exceptional quality of the Mary River iron ore deposits. Its lump iron ore has excellent metallurgical, chemical and physical attributes. Transport and handling characteristics cause no problems and there was less than 4% undersize (less than 6.3 mm in size) at the discharge port. This was achieved without screening at the temporary loading facilities at Milne Inlet. Contract specifications generally allow for 11 to 13% undersize material and most steel companies will re-screen the ore before charging the blast furnace. This will result in more lump for your dollar particularly once the material reached the blast furnace. The quality and excellent physical attributes of the ore will make it a highly attractive, if not a direct, substitute for pellets. The long delay in use of the lump ore also allowed the steel companies to learn of an additional attribute. Despite sitting at the receiver's port for almost 10 months, there was minimal generation (less than 1% additional) of undersize material (less than 6.3 mm).

The excellent physical attributes were also evident in the iron ore fines. The average grain size of the trial cargo was between 3 to 4 mm. The trial cargo saw excellent productivity in the making of sinter, while improving the quality and performance in the blast furnace. The coarse nature of the Mary River fine iron ore will make it a sought after feed for most steel companies sinter burden. This will allow many to improve sinter productivity and also increase the quality of the hot metal.

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.

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.