



Iron ore – A new world market?

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Iron is probably the metal longest known and used by man. It has also been the most important socially and economically.

The struggle to control the richest deposits and the markets of iron ore has been a decisive factor in most military conflicts.

This Commodity report analyzes central aspects of the global iron ore industry today and some of the factors that will determine the future structure of iron ore mining.

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In 1924 Clarke and Washington, two American geochemists, published a famous analysis of the world's total deposits of iron-ore. Their estimates indicated that the earth's outer shell (16 km thick) contains about 5 per cent iron. However, very little of this gigantic amount of iron is deemed extractable at present world market prices. Despite this and an ever increasing consumption, iron ore reserves known today will last far into the next century.

Iron in the earth's crust is generally combined with oxygen. The most important iron deposits consist mainly of iron-oxides. Magnetite and haematite are the two primary ores to be found.

Magnetite has a theoretical iron-content of 72.4 per cent. However due to impurities the ore never quite reaches this level of iron content. Of the great iron ore reserves in the world the following are magnetites:

- The Lappland fields in Sweden
- Magnitnaya Gora, Kustanay, and the Kursk Magnetic Anomaly in the Soviet Union.

Lesser magnetite deposits are found in the USA, mainly in the north east. These played an important role during the mid 19th century but have now only a regional significance.

Haematite has an iron content of approximately 60 per cent and is found in the following mining areas:

- Lake Superior region in the USA
- Itabira in the province Minas Gerais in Brazil
- Western Australia

Small quantities of haematite have also been mined in England where they played an important role in the country's industrialization.

Limonites or hydrated iron-oxides are another type of iron ore, found in the sedimentary strata. Theoretically limonite has an iron-content level approaching 60% but normally the iron-content lies somewhere between 25-35%.

All these different types of iron ore contain other elements, some desirable,

some not. Historically phosphorus has been a problem. In the production of wrought iron the phosphorus content was of no great importance but in the manufacturing of steel, using the Bessemer principle, the phosphorus could not be removed. The result was a brittle and unmalleable metal. This difficulty was solved (Thomas and Gilchrist) by using a basic lining instead of the acid lining used earlier. The basic process now allowed iron ore with a high phosphorous content to be used in both basic Bessemer (Thomas) converters and Martin ovens. During the last few decades the oxygen conversion process has become more and more common. This process can be adapted to phosphoric ores but is more suitable for ores with a low phosphorus content.

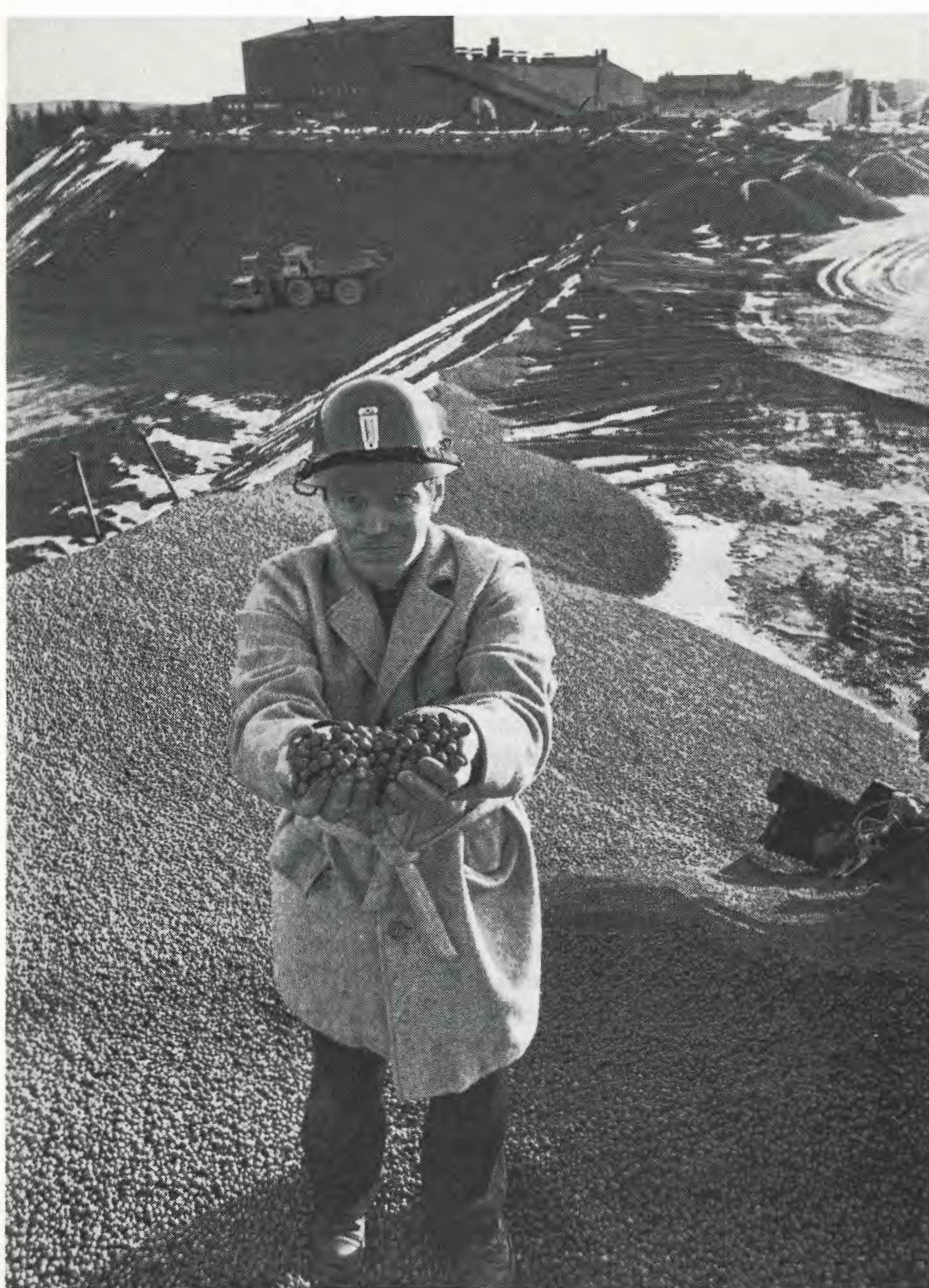
Besides phosphorus, iron ore contains various other impurities such as silicon, sulphur and aluminium oxide. During the 50s and 60s technical advances in processing iron ore have eliminated many of the problems these impurities presented.

Different beneficiation processes have also made it possible to exploit low content iron ores at a profit. This has resulted in a fast and dramatic restructuring of the iron ore industry in the capitalist world.

The pellet revolution

During the 2nd World War the iron ore industry experienced a violent growth. Smelter furnaces consumed incredible amounts of ore in the production of different types of steels requested by the war industry. The need to import ore grew quickly, especially in the USA. Between 1940-45 American companies produced 673 million tons of iron-ore from the Lake Superior fields. This meant that approximately 50% of the then known domestic iron ore reserves had been mined. By the end of the war the domestic reserves were predicted to be exhausted by the mid 60s. Panic spread amongst the Ameri-

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Pellet technology developed by US iron and steel companies has made it possible to mine low grade iron ore reserves at a profit. This has made the industrialized countries less dependent on iron ore imports from the Third World. Photo shows pellets ready for export from LKAB's Kiruna mine.

them as the second milestone in the history of the pellet industry. Table 5 shows the pace and extent of the conversion to pellet technology.

The political economy of the pellet industry

Another important explanation to the rapid growth of this new technology was a law concerning iron ore mining, passed in Minnesota in 1964. Through the so called Taconite-amendment mining companies were guaranteed long-range tax cuts and economic assistance in all stages of the production process. This was an important subsidy to the US steel industry, quite comparable to the US government sale, after World War I, of state built steel mills at bargain prices to US steel companies.

The national strategic necessity of direct US investments in iron ore fields outside North America decreased considerably as the US steel industry developed and took control of the new pellet technology. However, direct US investments abroad have continued during the 1960s and 70s, especially in Australia and Canada. The aim of these investments has been not only to secure long term supplies of iron ore to the US steel industry, but also to control the price formation on the capitalist world market of iron ore and, indirectly, to determine the future structure of the world steel industry.

In 1978 the US Department of Justice opened an investigation into this type of market monopolization. Suspicions were directed towards US Steel, Cleveland Cliffs, Pickands-Mather, Hanna Mining and Ogelbay Norton, in short all the leading iron ore companies in the USA. Without any official explanation the investigation was called off in the spring of 1980. A probable explanation is that increasing interimperialist rivalry over European and Japanese steel exports to the US have made the defence of American national interests stronger than upholding the official anti-trust ideology.

can iron ore and steel companies. To safeguard their raw material requirements the companies developed a new long-term strategy.

- Investment in foreign iron ore reserves (primarily in Latin America)
- Research and development to find methods to utilize the large domestic deposits of taconite ores. These ores have a very low iron ore content and are found in combination with very hard quartz.

Traditionally iron ore, after a degree of crushing, had been transported directly from the mines to the smelter furnaces (so called direct-shipping-ores). The low content taconite ore demanded further crushing and processing to keep down the transportation costs. By raising the iron ore content from 25 per cent to 65 per cent and at the same time adding

other elements such as lime, which were otherwise introduced during a separate process, US steel companies in the mid fifties succeeded in solving this problem.

In 1955, after many years of experimentation and research, the Marmoraton Mining Co Ltd, a Canadian subsidiary of Bethlehem Steel, delivered one ton of pellets. A year later Reserve Mining followed with their first delivery. Hereby, through the advancement of pellet technology, the commercial viability of low content taconite ores was realised, greatly multiplying the US companies domestic reserves. At the present rate of consumption these reserves are expected to last at least 200 years.

In 1960 Armco Steel made the first full-scale test using a burden of 90 to 100 per cent pellets. The results were so good that the US steel industry hailed

New mining projects demand very large investments. This has given finance capital a key role in determining where and when mines will be opened up. Photo shows construction of an internationally financed railroad for ore export from Gabon.

Reserves

The Soviet Union has the incomparably largest individual reserves of iron-ore. However, the lack of transport facilities and an inhospitable climate make these deposits difficult to mine, especially in relation to reserves in Australia, Brazil and Canada. But Soviet production increases steadily and with its vast reserves the Soviet Union will certainly consolidate its position as the world's leading iron ore producer.

If we look at the other iron ore producers, we find that the most important

reserves are found in Australia, Brazil, Canada and South Africa, the four most important "safe" links in the imperialist raw material chain.

Of the three competing imperialist centres (Europe, Japan and the USA), the USA has by far the strongest position. It has considerable domestic reserves, though these are low on iron ore content, and large reserves accessible from its neighbour, Canada. Europe has large deposits in Sweden and France, but is becoming more and more dependent on imports from Africa and Latin America. Japan has the weakest position, but through an aggressive raw materials policy it has been able to secure large reserves in Australia and Latin America. However, in the event of a blockade or a major military conflict Japan as well as Europe would face severe problems in securing stable supplies of iron ore.

Production and consumption

The socialist countries show a balance between domestic production and consumption (Tables 2,3). This is mainly due to the Soviet Union, which is the main exporter to the other socialist countries.

Within the imperialist zone the pattern is different. Here the Third World exports and the industrialized countries consume. A certain increase in consumption has occurred in the Third World since the mid-60s, reflecting a slow increase in steel production in some Third World countries.

The main global tendency within the iron ore industry is clear: the capitalist industrialized countries are becoming weaker in relation to the socialist countries and, to a lesser extent, to the Third World.

To confirm and clarify this geopolitical tendency we must also analyze how the iron ore companies control the world market.

Table 1. World reserves of iron ore 1980

| | in billion tons Fe | in % of total |
|-------------------------------------|--------------------|---------------|
| A. Third world | | |
| Brazil | 16.33 | 17.5 |
| India | 5.62 | 6.0 |
| Venezuela | 1.27 | 1.4 |
| Others | 5.81 | 6.3 |
| A. Total | 29.03 | 31.2 |
| B. Capitalist industrialized | | |
| Canada | 10.89 | 11.7 |
| Australia | 10.7 | 11.5 |
| USA | 3.63 | 3.9 |
| Sweden | 2.0 | 2.1 |
| France | 1.63 | 1.8 |
| South Africa | 1.09 | 1.2 |
| Others | 2.63 | 2.8 |
| B. Total | 32.57 | 35.0 |
| C. Socialist countries | | |
| Soviet Union | 28.12 | 30.2 |
| China | 2.72 | 2.9 |
| Others | 0.64 | 0.7 |
| C. Total | 31.48 | 33.8 |
| Total reserves (A + B + C) | 93.0 | 100.0 |

Source: P Crowson, Non Fuel Minerals Data Base, London 1980.



**Table 2. World production of iron ore
1966 and 1976
(in % of world production)**

| | 1966 | 1976 | Growth 66/76 |
|------------------------------------------------|--------------|--------------|-----------------|
| Third World | | | |
| Brazil | 3,7 | 8,0 | 11,6 |
| Chile | 2,0 | 1,2 | - 1,5 |
| India | 4,3 | 4,9 | 4,8 |
| Liberia | 2,7 | 4,0 | 7,5 |
| Peru | 1,2 | 0,8 | - 1,0 |
| Venezuela | 2,9 | 2,6 | 2,5 |
| Others | 4,4 | 2,8 | |
| Total | 21,2 | 24,3 | 4,9 |
| Industrialized capitalist countries | | | |
| <i>Europe</i> | | | |
| France | 8,9 | 5,2 | - 2,0 |
| FR Germany | 1,5 | 0,4 | -10,8 |
| Great Britain | 2,2 | 0,5 | -10,5 |
| Italy | 0,2 | 0,1 | - 6,4 |
| Luxembourg | 1,1 | 0,2 | - 0,8 |
| Sweden | 4,5 | 3,5 | 0,9 |
| Total | 20,9 | 12,6 | - 1,8 |
| of which EEC | 13,9 | 6,4 | - 4,3 |
| <i>North America</i> | | | |
| Canada | 5,9 | 6,4 | 4,3 |
| USA | 14,7 | 9,3 | - 1,2 |
| Total | 20,6 | 15,7 | |
| Australia | 2,0 | 10,8 | 23,7 |
| Japan | 0,4 | 0,1 | - 10,7 |
| South Africa | 1,1 | 1,8 | 8,7 |
| Total | 45,0 | 40,9 | 2,4 |
| Socialist countries | | | |
| China | 5,0 | 5,7 | 4,9 |
| USSR | 25,7 | 27,3 | 4,1 |
| Others | 3,1 | 3,8 | |
| Total | 33,8 | 34,8 | 3,7 |
| TOTAL % | 100,0 | 100,0 | 3,4 |

Source: Rumberger-Wettig, *Rohstoff Eisenerz*, Forschungsinstitut der Friedrich Ebert Stiftung, Bonn 1979.

**Table 3. World Consumption of iron ore
1966 and 1976
(in % of world consumption)**

| | 1966 | 1976 | Growth 66/76 |
|------------------------------------------------|--------------|--------------|-----------------|
| Third World | | | |
| Brazil | 1,7 | 2,8 | 8,2 |
| India | 2,3 | 1,7 | 0,6 |
| Others | 1,5 | 2,1 | - |
| Total | 5,5 | 6,6 | - |
| Industrialized capitalist countries | | | |
| <i>Europe</i> | | | |
| France | 6,9 | 5,1 | 0,3 |
| FR Germany | 6,4 | 5,8 | 2,4 |
| Great Britain | 4,9 | 2,9 | - 2,1 |
| Italy | 1,6 | 2,3 | 6,8 |
| Others | 8,4 | 8,5 | - |
| Total | 28,2 | 24,6 | 2,0 |
| of which EEC | 25,2 | 20,3 | 1,1 |
| <i>North America</i> | | | |
| Canada | 1,5 | 1,7 | 4,6 |
| USA | 21,8 | 14,1 | - 1,1 |
| Total | 23,3 | 15,8 | - |
| Australia | 1,2 | 1,3 | 4,2 |
| Japan | 7,3 | 14,1 | 10,4 |
| South Africa | 0,6 | 0,8 | 6,5 |
| Total | 60,6 | 56,6 | - |
| Socialist countries | | | |
| China | 6,6 | 7,9 | 5,1 |
| USSR | 21,7 | 22,7 | 3,8 |
| Others | 5,6 | 6,2 | - |
| Total | 33,9 | 36,8 | 4,2 |
| TOTAL % | 100,0 | 100,0 | 3,4 |

Note:

The most up to date statistics available (for 1978) clearly show the same main tendencies as observed in RMR tables for the 1966 to 1976 period. Cf Annales des Mines, Novembre-Décembre 1980, pp 53. In this study production of iron ore in 1978 was respectively (in%): 37,2% for capitalist industrialized countries, 37,7% for socialist countries and 25,1% for the Third World. In a coming issue of RMR we will publish detailed statistics on the 1976-1981 period.

Prices

A major part of the iron ore never reaches the »free market». Instead it goes directly from the mine to the steel mills. In 1966 iron ore from these so called *captive mines* accounted for about 30 percent of world production. In 1976 this figure had increased to 70 percent and 1980 to about 80 percent. The remaining ore production comes from *mixed mines*, where a certain part of the ore goes to

the market, and *market mines*, where the whole production is sold on the world market.

The captive mine can either be owned by one or several vertically integrated steel companies, or by several ore companies in a so called joint venture. The integrated steel companies never disclose the prices they pay for the iron ore from their own captive mines. The joint ventures normally sell

a significant part of their production within the framework of *long term contracts* up to 5, 10 or even 15 years. Prices in these long term contracts are not normally made public. Even state owned producers in the Third World participate in joint ventures and sell part of their production through secret long term contracts.

Ore from mixed mines or market mines is sold at *market prices* determined at yearly negotiations between producers and consumers (steel mills). Unlike most other base metals and precious metals there is no official quotation for iron ore on the metal markets in London and New York. The results of the yearly negotiations indirectly influence the long term contracts, which normally have a clause giving the business partners the right to new price negotiations.

The main part of all iron ore sold on the market is sold "cif" (cost, insurance, freight) to determined harbours. As the main consumers lie far from the producers, freight costs play an important role in price setting. The shifting quality of the ores complicates price negotiations makes price setting difficult in relation to other metals and ores.

As can be seen from table 4, the price of iron ore has, with the exception of a few short periods of recovery, been declining in the postwar period, both relatively and in absolute terms. This has favoured the integrated steel mills but created important losses for the owners of market mines. A major cause for the difficulties of iron ore exporters is that contracts for the sale of iron ore are normally made in dollars. Considering the strong *long term trend* of a weakening dollar, which will probably continue despite the present recovery, countries and companies that accept the dollar as a basis for their ore exports are likely to face even greater problems in the coming years.

Table 4. Deflated unit values of iron ore exports 1960-1978
(estimated iron content, 1970 US dollars per ton fob)

| | 1960 | 1965 | 1970 | 1975 | 1978 |
|--------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| World | 18.3 | 16.5 | 13.9 | 12.4 | 10.4 |
| Third world | 16.2 | 14.0 | 12.1 | 11.0 | 9.3 |
| Algeria | 18.3 | 15.1 | 17.6 | 14.4 | 10.4 |
| Angola | 17.5 | 12.8 | 12.3 | 11.0 | — |
| Brazil | 17.4 | 14.3 | 11.3 | 10.5 | 10.0 |
| Chile | 12.6 | 12.6 | 11.6 | 8.6 | 7.9 |
| India | 15.4 | 13.6 | 12.4 | 10.0 | 8.5 |
| Liberia | 20.5 | 11.9 | 10.6 | 14.9 | 8.8 |
| Malaysia | 16.8 | 14.8 | 12.8 | 9.5 | 9.8 |
| Mauritania | — | 16.4 | 13.3 | 10.7 | 9.0 |
| Peru | 12.6 | 14.0 | 11.2 | 8.5 | 10.1 |
| Philippines | 17.5 | 16.8 | 16.1 | 8.0 | 13.0 |
| Sierra Leone | 14.8 | 12.4 | 8.7 | 9.3 | — |
| Venezuela | 17.1 | 15.5 | 14.2 | 12.9 | 7.5 |
| Others | 14.6 | 13.5 | 10.9 | 12.3 | 6.7 |
| Industrialized capitalist countries | 18.8 | 17.7 | 15.2 | 13.2 | 11.3 |
| Australia | — | 11.5 | 13.8 | 10.7 | 9.7 |
| Canada | 20.7 | 19.5 | 19.1 | 14.5 | 15.2 |
| France | 14.8 | 12.5 | 9.5 | 11.2 | 9.4 |
| Norway | 19.2 | 15.3 | 17.5 | 24.8 | 16.4 |
| South Africa | 25.6 | 13.3 | 12.6 | 11.0 | 9.8 |
| Spain | 17.4 | 11.4 | 10.7 | 10.2 | 6.8 |
| Sweden | 18.8 | 16.9 | 13.5 | 18.8 | 10.0 |
| USA | 23.5 | 22.3 | 17.6 | 20.3 | 24.4 |
| Others | 18.9 | 35.3 | 18.6 | 8.9 | 8.8 |
| Socialist countries | 27.4 | 23.6 | 16.3 | 14.8 | 11.5 |
| USSR | 27.4 | 23.6 | 16.4 | 14.8 | 11.5 |
| Others | — | — | 16.0 | 14.8 | 12.4 |

Sources: Eisen und Stahl, Metal Bulletin Yearbook, Mining Annual Review, 1961-80.

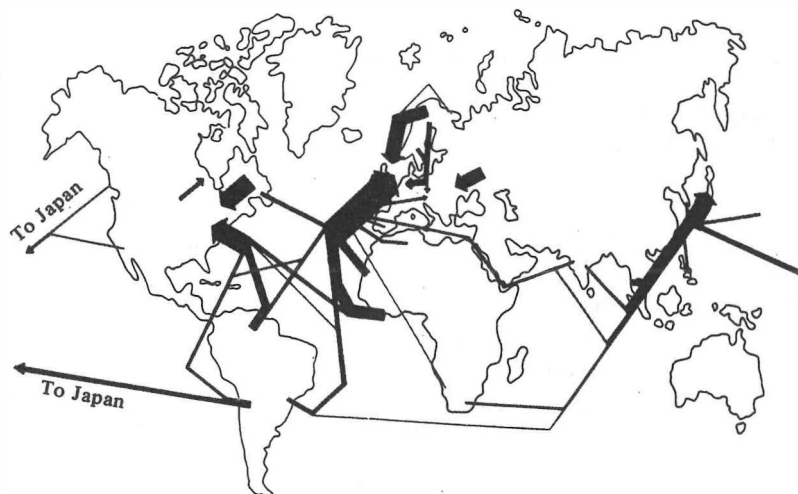


Table 5. World production of pellets 1960-1978
(million tons)

| | 1960 | 1965 | 1970 | 1975 | 1978 |
|----------------------------------------|-------------|-------------|--------------|--------------|--------------|
| World | 16.1 | 46.5 | 118.2 | 159.1 | 185.9 |
| Third World | 0.0 | 1.0 | 8.4 | 16.9 | 23.2 |
| Brazil | 0.0 | 0.0 | 0.8 | 4.2 | 6.5 E |
| India | 0.0 | 0.0 | 0.5 | 0.8 | 0.8 E |
| Liberia | 0.0 | 0.0 | 2.2 E | 4.3 E | 4.0 E |
| Mexico | 0.0 | 0.0 | 0.7 | 2.9 | 6.5 E |
| Peru | 0.0 | 1.0 | 3.8 | 4.2 E | 2.5 E |
| Others | 0.0 | 1.0 | 4.3 | 4.7 | 5.4 |
| Capitalist countries | 16.1 | 45.6 | 98.1 | 113.9 | 116.4 |
| Australia | 0.0 | 0.0 | 6.5 | 9.5 | 9.5 |
| Canada | 1.2 | 10.3 | 25.3 | 24.5 | 19.2 |
| Japan | 0.6 | 1.8 | 3.4 | 7.0 | 4.9 |
| Norway | 0.0 | 0.3 | 1.3 | 2.8 | 2.6 E |
| Sweden | 0.4 | 1.0 | 4.9 | 8.5 | 7.0 E |
| USA | 13.9 | 32.1 | 56.3 | 60.8 | 72.2 |
| Others | 0.0 | 0.0 | 0.4 | 0.7 | 1.0 |
| Socialist countries (excl USSR) | 0.0 | 0.0 | 10.6 | 27.2 | 45.0 |
| USSR | 0.0 | 0.0 | 10.6 | 27.2 | 45.0 |

Source: Same as for Table 4.

The Düsseldorf Connection

"The iron ore business is a small and secretive world in which people in the business claim to know everyone else by first names, a world in which it has until now been considered unnecessary (perhaps ungentlemanly would be a better word) to publish prices. Nearly 300 million tons of iron ore were traded last year by fewer than 25 mining companies." (...)

"This is the time of the year when the coterie of iron ore traders begin to think about prices for the coming year. After returning from their summer holidays they will be gravitating towards Düsseldorf where the negotiatioin season will start unofficially and carry on almost until December." (...)

"West Germany has two important ore purchasing organizations working on behalf of the 40m tons a year West German steel industry (the biggest in Europe). They will meet and talk with the leading Brazilian suppliers." (...)

"Eurofer, the "club" of the west European steelmakers, has a raw materials committee which considers the iron ore trade from time to time. So far, however, it has shown no inclination to break the West German-Brazilian price leadership."

"An important price rise which will affect consumers and the public at large is expected to take place later this year or early in 1982 without any announcement or examination outside the trade." (...)

"The first that anyone is likely to hear about the new, higher prices is likely to be when they are put forward by the steelmakers to their customers as reason for raising the prices of steel products."

Quoted from "Price battle looms", an article by Roy Hodson in Financial Times 1981-07-08.

**Table 6. The 20 largest iron ore companies in the capitalist world
(share of world production in 1966, 1971 and 1976)**

| Company | Controlled by/ Based in | Mines in | Share in % | | |
|--------------------------------------------------------------------------------|--------------------------------------------|----------------------------|--------------|--------------|--------------|
| | | | 1966 | 1971 | 1976 |
| Cia Vale do Rio Doce (CVRD) | Brazilian state 80%, priv 20% ¹ | Brazil | 3,6 | 5,1 | 8,7 |
| The Hanna Mining Co. | Do/USA ² | USA, Canada, Brazil | 9,3 | 5,6 | 7,1 |
| Hamersley Iron Pty Ltd. | Joint venture ³ | Australia | 0,3 | 4,0 | 6,2 |
| US Steel Corp. | Do/USA ⁴ | USA, Canada | 15,1 | 8,3 | 5,6 |
| The Cleveland Cliffs Iron Co. | Do/USA | USA, Canada, Australia | 4,1 | 2,2 | 5,2 |
| Mount Newman Mining Co., Pty., Ltd. | Joint venture ⁵ | Australia | — | 3,7 | 4,8 |
| LKAB | Swedish state | Sweden | 7,2 | 4,6 | 3,8 |
| Pickands Mather & Co. | Moore McCormack/USA ⁶ | USA, Canada, Australia | 6,0 | 3,9 | 3,5 |
| CVG Ferrominera Orinoco CA | Venezuelan state 100% ⁷ | Venezuela | — | — | 3,0 |
| Acieries Reunies de Burbach- Eich-Dudelange (ARBED) | Do/Luxembourg ⁸ | France, Luxembourg, Brazil | . | . | 2,5 |
| Total "Big Ten" | | | 45,6 | 37,4 | 50,4 |
| Exploration & Bergbau GmbH South African Iron & Steel Corp. Ltd. (ISCOR) | Do/FR Germany ⁹ | Liberia, Brazil | 1,3 | 1,3 | 1,8 |
| Reserve Mining Co. | Do/South Africa ¹⁰ | South Africa | — | 1,1 | 1,8 |
| Cia. de Abero del Pacifico S. A. (CAP) | Do/USA | USA | 4,0 | 1,8 | 1,8 |
| Société Nationale Industrielle & Minière (SNIM) | Chilean state, priv ¹¹ | Chile | — | 1,4 | 1,7 |
| LAMCO Joint Venture | Mauretanian state 100% ¹² | Mauretania | — | 1,7 | 1,7 |
| Broken Hill Pty., Co., Ltd. | Joint venture ¹³ | Liberia | — | 1,9 | 1,6 |
| Marcona Corp. | Do/Australia | Australia | — | 2,4 | 1,7 |
| Minero Peru Comercial (MINPECO) | Joint venture ¹⁴ | Australia, New Zealand | 2,6 | 3,2 | 1,5 |
| Voest Alpine | Peruvian state 100% ¹⁵ | Peru | — | — | 0,9 |
| | Do/Austria ¹⁶ | Austria | . | . | 0,7 |
| Total "Big twenty" | | | 53,5 | 52,1 | 65,5 |
| Others | | | 46,5 | 47,7 | 34,5 |
| Total world production of iron ore (million tons actual weight) | | | 412,9 | 510,4 | 570,2 |

Sources: Iron and Manganese Ores, a World Survey, Metal Bulletin 1977, Skillings Mining Review 1967, 1972 and 1977, Eisen und Stahl, Vierteljahresheften 1969, 1974 and 1978.

The iron ore companies

A comparison between the geographical pattern of production shown in Table 3 and the pattern of production between different companies gives us the possibility to confirm and explain some of the major changes in the iron ore market after World War II:

● Firstly *the relative decline of the USA as an iron ore producer and the*

weakening position of US iron ore companies. This change has two main reasons:

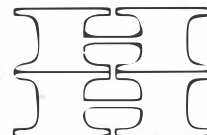
a) Nationalisation of American assets in Chile, Peru and Venezuela. The state owned companies in these countries have all taken their place among the 20 leading producers during the period 1971-76.

b) The iron ore deposits in North America are becoming poorer and the compa-

nies that primarily mine their ore in the USA, such as Reserve Mining, have despite the breakthrough in pellet technology experienced a particularly sharp decline.

However, after the decline between 1966-71 (the period of nationalizations in the Third World) some American companies have made a comeback. This applies especially to Hanna Mining and to Cleveland Cliffs. By investing in

Cia Vale do Rio Doce (CVRD), Hanna Mining Company and Hamersley Iron Pty., Ltd, are the three leading iron ore companies in the capitalist world.



Notes:

¹ The exact details concerning ownership are very difficult to obtain. In april 1980 the CVRD was shaken by a scandal when it was revealed that the board of directors, apparently with the support of the minister of finance, had sold large amounts of CVRD shares on the Rio stock exchange. If this information is correct it would mean a further privatisation of the world's leading iron ore producer. This denationalisation strategy is most probably initiated by CVRD's largest creditors, mainly US banks, as well as its main customers in the US, Europe and Japan. Brazil is not a member of the Organization of Iron Ore Exporting Countries, but this is apparently not enough for US monopoly capital. To guarantee a totally world market oriented iron ore industry in Brazil, the CVRD must be completely privatized. A strategy fully in line with US policy vis-a-vis other Third World export organizations.

² The company has mainly management contracts, in other words it administers and runs iron ore mines for different customers, primarily steel mills. The German Exploration & Bergbau and the Swedish-American LAMCO JV also belong to this category.

In Brazil Hanna controls 49% of Mineracoes Brasileiras Reunidas (MBR), which in 1976 produced 13,3 million tons of iron ore. Hanna's share was 6,7 million tons. Hanna, in cooperation with a number of American steel companies

(National Youngstown, ARMCO and Wheeling) controls the Iron Ore Co. of Canada, which in 1979 was the world's fifth largest iron-ore producer.

³ CRA Ltd (Conzinc Riotinto of Australia Ltd. 80% controlled by Rio Tinto - Zinc, London) Private Australian interests 11,5% Marubeni, Mistubishi (Japanese Sogo-Shosas), and six Japanese steel companies 6,2%

⁴ The assets of US Steel in Venezuela were nationalised in 1974.

⁵ CSR Ltd (former Colonial Sugar Refining through Pilbara Iron Ltd, 68% controlled by CSR) AMAX (USA) 25% Mitsui-C Itoh Iron PTY Ltd (70/30%) 25% BP (England) through Selection Trust (100% controlled) and Seltrust Iron Ore Ltd. 5%

⁶ Through Pickands Mather MMC has management contracts or ownership in the following mining companies: Eire Mining Company management (USA) Wabush Mines (Canada) 5,2% Hibbing Taconite Company (USA) 15,0% Savagae River Mines (Australia) 36,0%

⁷ See note 4.

⁸ A group of steel companies in Luxem

bourg and France. Controls important reserves of low content so called minette ore in Lorraine, and 60% of the Brazilian company SA Mineracao de Trindade (SAMARCO).

⁹ See note 2. The company runs Bong Mining Co in Liberia, and Ferteco Mineracao SA in Brazil. The latter is controlled by a group of FRG steel companies: Thyssen AG, Hoesch Huttenwerke and Friedrich Krupp Huttenwerke. The same group has an important interest in Bong Mining (31%) together with the Italian Finsider group. The Liberian state controls 50%.

¹⁰ The company controls high quality reserves and has been an aggressive exporter during the last years.

¹¹ CAP is the only integrated iron/steel maker in Chile.

¹² Nationalised in November 1974

¹³ Libeth (Bethlehem Steel, USA) 25% LAMCO (Liberian - American - Swedish Minerals Company) 75%

in which the Liberian state controls 50% and Liberian Iron Ore Limited (LIO) 50%. LIO is 74.8 controlled by Swedish capital mainly Gränges AB.

¹⁴ Controlled by Utah Construction Co (USA), a wholly owned subsidiary to General Electric.

¹⁵ Created in July 1975 after nationalisation of the mines of Marcona Corp.

¹⁶ Leading Austrian steel maker.

joint ventures in "safe" countries, such as Canada, Australia and to a certain extent Brazil, these companies have been able to increase their share of world production.

● Secondly *the shift in iron ore mining to three new countries: to Australia and Canada*, where production is maintained mainly through cooperation between private capital from the USA, Europe and Japan, and to *Brazil* where iron ore ex-

traction is carried out through cooperation between the state and private capital (national and transnational).

● Thirdly *the growth of state owned iron ore companies in the third world*. Their share amongst "the big 20" has risen from 3.6% in 1966 to 14.3% in 1976.

Taken together these three interrelated trends make it most probable that the relative strength of the US and Euro-

pean companies will continue to decline.

The rapid increase in production in Australia and Canada will create problems for the state owned companies in the Third World. This will force the Third World countries to take collective action against the transnational companies (see information on APEF on page 59). The outcome of this struggle will be decisive for the iron ore market throughout the 80s.

Australia and Brazil – a threat to Swedish iron ore mining?

The iron ore mines in the Lappland fields of Sweden have given their owners large profits over a long period of time (pp 60) and have made Sweden one of the leading iron ore exporting countries in the world. During the 1970s, however, the price of iron ore has steadily declined, turning LKAB into a company running at a loss. Various state investigations, the media and even the mine-workers union have described this situation as "inevitable", due to "increased competition from Australia and Brazil where mining costs are lower". This is at best a half truth, hiding a complicated economic and political struggle to restructure and control the global iron ore market, a struggle where post war Swedish governments and policy makers have been exceptionally passive. There are many reasons for this passivity, but the most important is undoubtedly that an open discussion of the future of Swedish iron ore mining would inevitably have to touch on Sweden's overall role in the world capitalist system. The policy makers know that they have no possibility to guarantee the long term survival of the Lappland fields within the world capitalist system.

But they are not prepared to brake with this system just to save the Swedish iron ore industry.

Finance capital and the restructuration of the world iron ore market

New mining projects demand vast investments (see Table 7). Today private companies have no possibility whatsoever to open up new iron ore fields by means of their own capital. Not even national governments have been willing to make investments of this scale. Thus it is not "Brazil" or "Australia" that are threatening LKAB and iron ore mining in Sweden. Behind the national export statistics we find joint ventures, normally made up

of a number of private companies and controlled by several banks in a consortium. The banks have close contacts with both the mining companies and the government of the country where the mine is located. This pattern applies even when the state is the majority share holder, one example being the Companhia Vale do Rio Doce (CVRD) in Brazil.

To show how the system functions we can quote from *Adventure in Iron Ore* by Alan Trengrove, a book on "Australia's" Hamersley Holdings, today one of the leading iron ore producers in the world. Trengrove explains how the project was planned and financed:

"The United States was the obvious place to seek the money, and Kaiser's bank, The Bank of America – the biggest in the world – the logical starting point. The Bank of America subsequently attracted eleven other banks into a consortium which probed every every aspect of the projected ore operation and decided to put up the money."

"The signing of the contracts provided the last essential ingredient in Hamersley's arrangements with a United States consortium of banks to borrow 120 million US dollars. This was two thirds of the capital the company would need to establish the direct shipping ore project and build a pellet plant. In 1965 no Australian company had ever tried to borrow such a large sum of money. Certainly, no group of local institutions could have been found to lend that amount..."

Trengrove also gives us some information on the political aspects of the Hamersley project. In April 1965 the Australian Minister of Finance visited the USA to participate in a seminar on Australia arranged by Chase Manhattan Bank. During the visit he «called at Washington

and obtained unofficial, but important assurances that all Australian projects would proceed".

This is a clear documentation of how the US government and US banks, in close collaboration, gave the go ahead to an iron ore mine that would export its entire production, mainly to Japan but also to Europe, where it would compete with ore from LKAB.

Hamersley is not an isolated example. In a major study of the world iron ore market: *The changing world market for iron ore*, by G Manners, the author shows how finance capital has played a central role in restructuring the market after World War II. According to Manners:

"At the international scale, the importance of 'soft low-interest loans from the World Bank, from the Development Assistance Committee of the Organization for Economic Cooperation and Development (OECD) and from national governments cannot be overstressed as a decisive factor in the evolving world geography of iron and steel production."

In the case of LKAB, the connection to the steel industry is particularly important. In 1957 Gränges, a private company, sold LKAB to the state, for 900 million Swedish crowns (pp 60).

The Gränges board of directors invested the major part of this money into Liberian iron ore fields (the LAMCO project) and the building of a steel mill in Oxelösund in Sweden. Despite the fact that Gränges thereby had to compete directly with LKAB in ore sales, the two companies maintained their cooperation within Malmexport AB, the organization marketing Swedish iron ore exports, primarily to the German Federal Republic.

In our opinion the explanation to this contradictory policy is that neither LKAB nor Gränges (LAMCO) have sought the necessary governmental backing needed for an offensive price policy within APEF (see page 59). The Swedish

government has accepted to retain the iron ore mines in Lappland as raw materials enclaves of the Liberian type. This has made them just as dependent on the world market as most market mines in the Third World.

However, the situation has now become so serious that even key decision makers have to admit that the present price level is a threat to Swedish iron ore mining. At a symposium arranged by

Metal Bulletin in Amsterdam in March 1979, Lars Frisk, the managing director of Malmexport AB, declared:

"Nevertheless, the cutting of costs is a matter of life and death for LKAB just as it is for several other mining companies. However, the mere chasing of costs is not sufficient. A considerable and gradual increase in the level of inter-

national iron ore prices is necessary in order to restore reasonable profitability to LKAB and most iron ore mines in the world."

The future of Swedish iron ore mining is thus completely dependent on the will of Swedish policy makers to support *the policial measures* necessary to challenge the pricing policies of transnational finance capital. ■

Table 7. Major iron ore projects in the 1980s (10 million tons/year or more)

| Country | Company/Mine | Completion | Ownership and control | Remarks |
|-----------|------------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Algeria | SNS/Gara Djebilet | 1986-7 | 100.0% State | 10-12 million tons/year |
| Australia | Hanwright | | 33.3% Texasgulf Inc (USA) 33.3% Hancock-Wright Partners (Australia) 33.3% Group of Japanese companies | Investment of A\$ million 550 to produce 12.5-15 million tons/year |
| Brazil | Amazonia Mineracao/ Carjás project | 1984-5 | CVRD plus major Japanese steelmakers ¹ | Investment of 2,58 billion dollars . 35 million tons/year |
| | Mineracao Serra Geral | 1983 | 51.0% CVRD 24.5% Kawasaki 24.5% Seven Japanese steel and trading companies | Investment of 120 million dollars. Deferred at present 10.5 million tons/year |
| | *Mineracaoes Brasileiras Reunidas (MBR)/Aguas claras | 1985-6 | 51.0% EBR (80% private Brazilian, 20% Japanese companies) 49.0% Hanna Mining (USA) | Mine expansion from 10 to 20 million tons/year |
| Gabon | SOMIFER/Belingá | 1980s | 51.0% Government 20.0% Bethlehem Steel (USA) 14.0% Dutch-German-Italian steel consortium 10.0% French consortium 5.0% Government of Rumania | 15 million tons/year |
| Guinea | Mifergui/Nimba | 1980s | 50.0% Government of Guinea 26.0% Governments of Libya, Nigeria and Rumania 7.0% SONAREM (Algeria) 7.0% Japan Mifergui Co (consortium of 4 Japanese companies) 4.0% INI, Spain 4.0% Solmer, France 1.0% Sierra Minera, Spain 1.0% COFEI, Spain | 15 million tons/year Investment of 200 million dollars |

Source: Mining Magazine, January 1981, Mining International Yearbook 1981