

Fire and Iron II

n our last Letter, we briefly summarized the historical background of the transition reforms and listed the chief challenges that China will encounter in order to progress along its path to social and economic growth. In the light of this general outline, let us now examine the investments in our portfolio that are more vulnerable to the dynamics of the Chinese economy, i.e., iron ore and steel. This Letter will examine in greater detail the impacts on the iron ore sector. In the next one, we shall specifically analyze our investments in the steel sector. However, firstly, we should recall three important ideas raised in the previous Letter:

- (i) For historic reasons derived from the Chinese reform model, an important part of the production system has developed alongside the direct planning and indicative control exercised by Central Government. A large number of independent and widely dispersed production units used to compete among themselves and to respond to cost and price signals for economic survival.
- (ii) Social demands significantly influence public policy mak-

ers, and employment is a priority in the Government agenda.

(iii) In response to the challenge to advance in its economic development cycle, where capital expenditures must be replaced by consumption, China seeks to produce goods of greater value added, thereby stimulating the share of consumption of greater quality in aggregate expenses.

These three factors contribute to understanding part of the recent growth dynamics of China's steel sector. In ten years, it has doubled its share of the global steel production market. In 2004, after producing 273 million tons per annum (Mta), 22.7% over the preceding year, China became a net exporter of steel products and the largest manufacturer worldwide with a 26% share of the market. Projections show that by 2010, China will produce approximately 470 Mta of steel, or 35% of total world production (see chart 1).

Unlike the rest of the world where the concentration of the steel sector disciplines supply, China's industry is still very fragmented and production has

Our Performance

During this guarter, the Dynamo Cougar shares increased in value by 25.1%, reverting the previous semester's loss. The Fund's accumulated return for the year to date was 14.8% compared to Ibovespa's 20.6% and the IBX's 28.5%. Since the Fund started operations in September 1993, Dynamo Cougar has recorded a return of 31.0%^{pa} over the IGP-M and 36.4% ^{pa} in US dollars. During this same period, Ibovespa gained 9.4% pa in IGP-M and 13.9% pa in US dollars.

There was little change in the Fund's main investments, with the exception of the substitution of part of Belgo position for Gerdau. We also increased the exposure of our portfolio to the consumer goods sector. The news in this context was the purchase of Pão de Açúcar.

Throughout the quarter, we reduced the Fund's cash level to approximately three percent. The main reason for this was due to a more favorable overall reading of the business environment. This

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Statistics show that 47 companies worldwide produce over five Mta. Four are Japanese and are responsible for 74% of their country's production, another four are American and produce 55% of the output of the US, two Korean companies hold 80%, and seven EU countries hold 87% of their local market. Thirteen Chinese companies on the top of the list represent only 44% of China's total production. In China, approximately 200 Mta of steel are produced by 870 small and medi-

Our Performance

included a stabilized macroeconomic system, controlled inflation, decreasing interest rates with credit at a high, all of which induced greater optimism in companies with a talent for spotting growth opportunities in their respective sectors.

During the last quarter, the long steel sector was the main culprit responsible for the Fund's negative performance. We said that the negative investor reaction to the misgivings caused by Chinese behavior was somewhat excessive. The fact is that, over this quarter, on average Belgo and Gerdau shares increased by over 40%. Together with the iron ore sector, they were responsible for approximately 60% of the Fund's good results over this period. We remain confident about the long steel segment, which we shall discuss at length in the next Letter.



Source: Tex Report, Dynamo

um companies employing over three million workers. These small units are not scale efficient, consume excess energy, and harm the environment.

As has been the case throughout the world, Chinese Government is striving to focus these companies supply discipline, productivity growth, and reduce pressure on the demand for raw materials. Last July, the National Commission for Reform and Development launched a guideline policy package for the steel industry, basically limiting additional capacity increases, imposing requirements hampering the entry of new producers, and creating incentives towards a more efficient production and logistic chains. At no time did the Commission order closing down the capacity even of highly inefficient producers, clearly an indication of its concern with the job situation. If productivity in less efficient areas is only 37 ton/ worker, a ten Mta cut would lead to the dismissal of 270 thousand employees. For this reason, the balancing of supply and demand in this sector must be gradual and occur in line with its concentration policy. At the first moment, government incentive towards this sector's increased concentration could further enhance production, since some mediumsize producers will seek to increase their capacity and become candidates for the role of consolidator in this process.

Although slowing down, the domestic demand for steel is still robust. Fixed asset investments grew by 26% year-over-year to June and industrial production 16.6%, which may indicate an increased steel consumption of around 15%, based on historic correlations. Chief among these consumers are the residential construction (urbanization) and infrastructure segments.

To summarize, the more optimistic projections estimate a Chinese steel industry production of about 420 Mta in 2007, a 148 Mta increase over 2004, close to 55% of this year's production.

Assuming that China's steel production remains on this growth curve, as we believe it will, what are the implications for iron ore producers, particularly, for CVRD and Caemi? Let us examine the steel production structure more closely.





Source: IISI, Arcelor

Basically, there are two types of steel production processes: electric furnaces and blast furnaces (oxygen burning). Electric furnaces require less capital and labor, use more energy, and are less detrimental to the environment. They are more flexible since they can be turned on and off based on costs and availability of raw materials. Blast furnaces have lower operating costs and are matchless for large-scale high quality steel flat production. They require huge investments and continuous production. Thus, a basic requirement is the steady and predictable availability of raw materials. This is why long-term iron ore and coke contracts are so sought after.

Long steels (rods, bars, sections, wire) are utilized by the construction and infrastructure industry. Flat steels (slabs, sheets) are used by the automobile industry and the transformation industry in general. Originally, the electrical process utilized 100% scrap metal to produce steel bars. The blast furnaces utilized pig iron (iron ore and coal) to produce flat products, exclusively. Recent technological advances have resulted in more flexibility among processes and consumption of materials. Today, electric furnaces can produce ingots (flat steel) using up to 35% percent of good quality pig iron in the process (direct reduction). Blast furnaces can use up to 30% of scrap to manufacture bars. In other words, in the shortterm, a margin exists for substitution of iron ore by scrap in the blast furnaces. In the long-term, in theory, the substitution of raw materials could be substantial since it would allow the producer to choose between electric and blast furnace technology.

In China, 85% of production is by blast furnace and only 15% by electric furnace, although 65% of production is long steels. Market conditions and the business environment favor blast furnace production, for the following reasons: low cost of capital, abundant manpower, availability of coke and iron ore reserves, shortage of scrap metal, and reduced energy availability, allied to smaller environment-related pressures. Since the supply of long products is saturated, expansion for the next few years will concentrate on flat steels, using pig iron in blast furnaces. In other words, given the current pattern of technology and the profile of demand, China's expansion of production will rely mainly on iron ore supplies, increasingly, on high quality iron ore.

Estimates show that China's iron ore production is also increasing to meet additional steel production needs, but local iron ore is of poor quality. If the country wishes to efficiently progress along a higher added value product chain, it will be obliged to continue importing better quality iron ore from Brazil and Australia¹. *CVRD/Caemi's* market share of Chinese iron ore imports increased from 11% in 1997 to 21% in 2004 and is expected to reach 25% by 2007.

Iron ore imports from China increased from 55 Mta in 1999 to 203 Mta in 2004. Projections show that the demand for iron ore will increase by almost $20\%^{pa}$ by 2007, when it will reach the 357 Mta mark². Given the investments of recent years and the projects being announced by Chinese steel companies, we believe that this figure could rise to 430 Mta by 2010. Global steel industry investments point to some US\$65 billion in 2005, 18.1% over 2004 that, in turn, increased by 14.3% over 2003. These investments will reach the production stage around 2007-2008, thus

⁽¹⁾ The quality of iron ore is chiefly based on its iron content. Brazilian iron ore has a 65-67% iron content, the highest in the world, the Australian 57-64%, and the Chinese 30-35%. Lower quality iron ore requires greater degrees of processing to partially compensate for underperformance in blast furnaces.

⁽²⁾ Data obtained from Macquarie Research. Merrill Lynch estimates 349 Mta and CSFB 352Mta.

assuring increased iron ore demands over the next few years. In other words, the world iron ore market, that is already very tight companies operating at full capacity and inventories in the ports are too low – shows very interesting prospects.

Clearly, this scenario will induce capacity expansions in addition to newcomers to the market. However, the barriers to entering the mining sector are considerable: high cost of project development, need for quality reserves, concentrated market where the three major producers hold over 70% of the share, access to logistics and capital, shortage of equipment and services. Supply discipline has been imposed by economic costs imperatives and physical restrictions. The 200% increase in Chinese demand over the last four years took even the most optimistic by surprise, in an industry where project delivery schedules are lengthy.

Just as an example, from 2000 to 2005, in tons, the global iron ore market, impelled chiefly by Chinese demand, grew by 1.3 times the growth of the preceding thirty years. The

world demand by 2010 is projected at around 865 Mta, an increase in one decade of 2.5 times the growth of the last thirty years (see chart 3).

As iron ore supply responds too slowly, urgent orders are handled by a spot market, estimated at 50 Mta, which successfully survives at the expenses of this un-





Source: CVRD, Dynamo

balanced economic environment, thanks to the steel industry's recent high profit margins. It is our belief that, in the near future, long-term suppliers will replace this spot market. For Chinese iron ore companies, the marginal expansion cost curve is very steep. India, by its turn, has huge high quality iron ore reserves, although

Dynamo Cougar x IBX x Ibovespa Performance up to september/ 2005 (in R\$)

	Dynamo		Ibovespa						
Period	Cougar	IBX							
60 months	331.88%	203.09%	95.70%						
36 months	223.57%	276.24%	266.56%						
24 months	109.50%	123.30%	94.07%						
12 months	30.23%	47.42%	34.51%						
3 months	25.11%	26.76%	24.45%						
NAV/Share on 30/09/2005 = R\$ 99.05417371									

it is currently impeded by logistics problems. The former has no quality iron ore and the latter is experiencing government export restrictions. Thus, to meet a good portion of these future iron ore needs, the big three, CVRD/Caemi, BHP, and Rio Tinto, which already hold over 70% of the transoceanic iron ore market, have announced major expansions of their mines in addition to new projects.

As part of its 2005/2008 projects, CVRD intends to expand production by 79 Mta, Rio Tinto by 58.7 Mta, and BHP by 33.4 Mta, an increase of 35%, 42%, and 30% of their current installed capacities, respectively. Even if

> some the newcomers' projects are successful, estimates show that most of the additional capacities (close to 80%) are likely to be filled mainly by CVRD, BHP, and Rio Tinto. Moreover, the world trend to consolidation of the steel sector is likely to favor the big iron ore pro-

ducers, since scale gains, delivery reliability, and quality of supply will become increasingly important.

In addition to its higher volume production, CVRD also has the lowest marginal cost of expansion, US\$24/ton, against Rio Tinto's US\$32, and BHP's US\$82³. In other words, CVRD will further increase its share in a market that

⁽³⁾ The higher cost for BHP arises from its substantial investments in logistics (port and railway), essential for streaming out its marginal production.



will expand without losing price discipline, since these new projects are being developed at significantly high costs.

China's demand for better quality is increasing, a move compatible with the country's aim to advance along a higher value added steel product chain, and to seek improved furnace production efficiency. CVRD is the transoceanic leader in pellets, which enhance furnace efficiency, reduce CO_2 emissions, and substitute lumps that are increasingly scarcer⁴. In addition, the response to pellet supply has been slower than to that of iron ore.

Another key aspect that offsets iron ore costs for the steel industry has been the recent drop in international shipping prices. Since it peaked in December 2004, the Baltic Freight Index dropped by 45%. Even after 71.5% price increase, CIF cost of Brazilian iron ore placed in China dropped by 10% in US dollars, which should significantly improve the mining companies' negotiating position for next year⁵. Furthermore, iron ore still represents a minimal fraction of steel company costs. A 15% FOB cost increase represents only US\$5.5/ton, i.e., merely 1.5% of the average cash cost incurred by Chinese steel companies and 1.2% by European companies (seechart 4).

Another interesting iron ore feature is that, due to the world concentration of supply, with over 70% of the transoceanic market dominated by three producers, its price is agreed in direct buyer-seller negotiations, and not traded in Future Markets, as in the case of all other commodities. In other words, iron ore prices are not influenced by financial or speculative flows, as occurs with other commodities, like agriculture and metals, particularly those where future markets are less liquid. Formation prices from iron ire arise

exclusively from relative scarcity in the physical market and from the bargaining power of the agents in their annual negotiation meetings. Thus, iron ore prices tend to be more 'fundamentalist' and less volatile. In an environment of concentrated supply and a tight market (spot prices prevail over longterm contracts), the iron ore companies have an important negotiating advantage, one that will probably increase if China (the world's biggest buyer) decides to join the annual price negotiation round.

In summary, our view of the bases for our iron ore investments remained positive, even when the market made a more pessimistic reading. Anchored on the price settlement of 71.5% of the previous year's, with no updated price reference (annual negotiations), analysts resisted to update the signals of supply and demand fundamentals, and insisted on projecting price drops for 2006. At

⁽⁴⁾ Lumps are non-agglomerate ores that go directly into the blast furnaces since they require less processing. Pellets are thin spherical agglomerate ores, are more structurally uniform, and are a greater added value product in the mineral chain.

⁽⁵⁾ In December 2004, the cost of freight to China was US\$50.60 per ton, while the iron ore price was US\$20.65. In September this year, the cost of iron ore increased to US\$35.44, while shipping costs dropped to US\$28.74. In other words, the cost of iron ore shipped to China, dropped by 9.9% per ton (Tex Report data).

that time, both CVRD and Caemi stocks dropped by 30%, when we took the opportunity to raise our combined position to approximately 15% of the Fund. Since then, the analysts have revised their price projections based on the evolution of the facts explained above. During the year, CVRD and Caemi shares recovered and appreciated by 39% and 60%, respectively. It is our belief that this sector's fundamentals will remain firm for a few more years, thus postponing the process of price reductions, which we believe will occur gradually over time. Some models even project a new level of iron ore price in perpetuity. Thus, we believe that changes in the scenario have not been fully perceived and we still see an interesting safety margin for investment in these stocks.

Rio de Janeiro, May, 5th, 2006.

Dynamo Cougar x Ibovespa x FGV-100 (in US\$ dollars)

(DYNAMO COUGAR*		γ	FGV-100**		IBOVESPA***			
P Period	Quarter	Year to Date	Since 01/09/93	Quarter	Year to Date	Since 01/09/93	Quarter	Year to Date	Since 01/09/93
1993	-	38.78	38.78	-	9.07	9.07	-	11.12	11.12
1994	-	245.55	379.54	-	165.25	189.30	-	58.59	76.22
1995	-	-3.62	362.20	-	-35.06	87.87	-	-13.48	52.47
1996	-	53.56	609.75	-	6.62	100.30	-	53.19	133.57
1997	-	-6.20	565.50	-	-4.10	92.00	-	34.40	213.80
1998	-	-19.14	438.13	-	-31.49	31.54	-	-38.4	93.27
1999	-	104.64	1,001.24	-	116.46	184.73	-	69.49	227.58
2000	-	3.02	1,034.53	-	-2.63	177.23	-	-18.08	168.33
2001	-	-6.36	962.40	-	-8.84	152.71	-	-23.98	103.99
1 st Quar/02	13.05	13.05	1,101.05	3.89	3.89	162.55	-2.76	-2.76	98.35
2 nd Quar/02	-19.15	-8.60	871.04	-22.45	-19.43	103.60	-31.62	-33.51	35.63
3 rd Quar/02	-22.31	-28.99	654.37	-31.78	-45.04	38.90	-44.17	-62.88	-24.28
4 th Quar/02	29.76	-7.86	878.90	38.00	-24.15	91.67	45.43	-46.01	10.12
1 st Quar/03	4.47	4.47	922.65	4.63	4.63	100.55	5.39	5.39	16.06
2 nd Quar/03	27.29	32.98	1,201.73	38.16	44.55	177.07	34.33	41.58	55.91
3 rd Quar/03	19.37	58.73	1,453.83	24.72	80.29	245.56	22.34	73.20	90.74
4 th Quar/03	22.18	93.94	1,798.51	35.98	145.16	369.91	39.17	141.04	165.44
1 st Quar/04	4.67	4.67	1,887.16	2.35	2.35	380.16	-1.40	-1.40	161.72
2 nd Quar/04	-4.89	-0.45	1,790.04	-8.66	-6.51	339.30	-11.31	-12.56	132.11
3 rd Quar/04	35.12	34.52	2,453.91	23.73	15.67	443.56	21.13	5.92	181.16
4 th Quar/04	22.17	64.35	3,020.19	25.32	44.96	581.16	21.00	28.16	240.19
1 st Quar/05	-1.69	-1.69	2,967.41	-1.66	-1.66	569.87	1.06	1.06	243.80
2 nd Quar/05	5.41	3.62	3,133.23	2.98	1.27	589.80	7.51	8.65	269.60
3 rd Quar/05	32.32	37.12	4,178.29	25.21	26.80	763.71	31.63	43.01	386.50
	Average	e Net Asse	et Value for	· Dynamo C	ougar (Last	t 36 month	s): R\$ 338,0	084,078.2	22

(*) The Dynamo Cougar Fund figures are audited by Price Waterhouse and Coopers and returns net of all costs and fees, except for Adjustment of Performance Fee, if due.

(**) Index that includes 100 companies, but excludes banks and state-owned companies.

(***) Ibovespa average.

Please visit our website if you would like to compare the performance of Dynamo funds to other indices: www.dynamo.com.br

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