Two centuries after Brazil’s gold rush, the country is still considered an Eldorado for the extraction of mineral wealth. Unlike the settlers attracted mainly by gold, however, investors today are attracted by commodities that have become precious because of their value for industrial development, such as iron a raw material for steel, which are used in a wide range of products, from heavy construction equipment to durable goods. For example, a metric ton of iron ore, which in 2002 cost US$15, now is worth about US$100 — a six-fold increase.

The exponential increase in consumption of these commodities by emerging economies like China, together with growth of the Brazilian economy by 6% a year, has raised 2010 production and investment prospects for minerals mining to levels that prevailed before the global financial crisis. Despite the uncertainty caused by proposed new regulation — which envisages creation of a regulatory agency and more government interference in mineral exploration — Brazil's resources make it one of the most attractive countries for mining investment in Latin
America, behind only Chile and Mexico.

“Over the next five to ten years there will be a boom in iron ore, lithium, and gold, which have already reached record levels of appreciation,” says Tim Chen, CEO of Top Ventures Investments SA, a Brazilian investment and management projects holding company. The company recently signed an agreement with Georadar Levantamentos Geofisicos SA, a provider of technical services to mining and oil, for gold exploration in Paracatu (Minas Gerais state), which has had known gold deposits since the 18th century, and contains estimated gold reserves of more than 20 million ounces.

The Brazilian Mining Institute (IBRAM) foresees higher mining production for at least three years. Gross fixed capital formation in the mining sector is projected at US$57 billion between 2010 and 2014, comparable to levels before the crisis. This estimate is confirmed by the National Bank for Economic and Social Development (BNDES), which forecasts that through 2013 R$16 billion (US$8 billion) a year will be invested in the production of ferrous and nonferrous metals.

“The prospects are good that production is returning to pre-crisis levels, which bodes well for the near future,” says Pedro Sergio Landim de Carvalho, manager of the BNDES Department of Basic Petrochemicals. BNDES disbursements for the mining industry also provide a measure of what is happening: they increased from R$362 million (US$180 million) in 2004 to R$4.5 billion (US$2.5 billion) last year — a fourteen-fold increase. “The data indicate that the market for minerals is recovering. Also, there is a very good level of confidence for investment in mining in Brazil,” says Miguel Nery, director general of the National Department of Mineral Production (DNPM) of the Ministry of Mines and Energy.

Healthy investments in mining and metallurgy are not new. From 1996 to 2007, the metallurgy industry’s share in total investments in mining and processing nearly tripled, from 5% to 13%, according to a study by Regis Bonelli, an economist at the Brazilian Institute of Economics (IBRE) of the Getulio Vargas Foundation (FGV). Extraction of metallic minerals jumped from 3% to 8% of the total.

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**Mining sector**

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<tbody>
<tr>
<td>Iron (ton)</td>
<td>31.6</td>
<td>36.5</td>
</tr>
<tr>
<td>Nickel (ton)</td>
<td>3.5</td>
<td>6.7</td>
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<tr>
<td>Alumina (ton)</td>
<td>1.5</td>
<td>1.0</td>
</tr>
<tr>
<td>Bauxite (ton)</td>
<td>2.5</td>
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<tr>
<td>Aluminum (ton)</td>
<td>2.2</td>
<td>2.2</td>
</tr>
<tr>
<td>Phosphate (ton)</td>
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</tr>
<tr>
<td>Gold (ton)</td>
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<tr>
<td>Manganese (ton)</td>
<td>-</td>
<td>0.3</td>
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<tr>
<td>Vanadium (ton)</td>
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<td>0.3</td>
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<tr>
<td>Coal (ton)</td>
<td>-</td>
<td>0.1</td>
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Source: IBRAM.
China and the World Cup
“The mineral ore markets will become increasingly heated, driven mainly by the Chinese,” says Antonio Lannes, IBRAM manager of economic data. “Domestic demand is also up and will consume about 15% of total production. The rest will be exported.” If Chinese steel consumption already approaches the standard of developed nations, it is impossible to even imagine the demand for metals when every Chinese has a car in the garage, suggests Geraldo Mellone, analyst at Bresser Resources Administration. He points out that out of 1.3 billion Chinese, 800 million still live in rural areas.

The expansion in supply and investment in minerals has also benefited from the public works of the Growth Acceleration Program (PAC) and infrastructure projects related to the 2014 World Cup and the Olympic games in 2016. These will push up demand for iron ore, nickel, and copper.

All this makes current mining and metallurgy growth sustainable. This year mining production in Brazil is expected to reach US$35 billion, well above last year’s US$24 billion. From 2000 to 2008, the sector recorded growth of 250%. Mining and metallurgy are already responsible for 5% of gross domestic product (GDP), according to IBRAM.

“Brazil is a major producer of mineral commodities that has established itself as a global player and has attracted the attention of foreign capital,” Nery notes. “This year we expect to see new investments in mineral surveys. We are confident that mining will be a very important sector for the Brazilian economy.”

Another reason for the increasing interest of foreign investors is the insufficiency of domestic phosphate production, one of the few minerals Brazil still imports — about two million metric tons a year, half of domestic consumption. Although it is one of the largest grain producers in the world, Brazil is not self-sufficient in extraction of the phosphate and potassium used in the production of fertilizers. Although there are projects underway in the states of Goias, Santa Catarina, Minas Gerais, Ceará, and Tocantins, phosphate production is still not sufficient to meet domestic needs. “Self-sufficiency in potassium will be a little harder because we have only one active mine in Sergipe state, though there are untapped reserves in the Amazon,” says Lannes.

Ranking High
In its ranking of the most attractive countries for foreign investment in mining, the Fraser Institute, a Canadian economic research unit, shows Brazil as in second behind Chile, though Mexico, Peru, and Colombia are almost equally well positioned. “Venezuela, Bolivia, and Ecuador have been wiped off the map for investments, mainly...
because of excessive government interference. And Brazil has become even more attractive, increasing the chances of new foreign investment in the sector. Unfortunately, it is hard to understand why the government wants to radically change the rules for the sector, including increased taxation of mining companies and more red tape for renewing concessions,” says Helio Botelho Diniz, vice president of operations for Forbes & Manhattan in Brazil, a Canadian consortium of 10 companies that has been in Brazil since 2004, mainly investing in nickel, potassium, phosphate, and gold mining, though more recently in oil and gas.

Undoubtedly, Brazil has immense potential to expand the mining and petroleum business. “The stability of the economy and the rules attract more projects,” Diniz said. With geology similar to that of Canada and Australia, two other mining giants, Brazil is far from receiving the same volume of foreign investments. But, for Diniz, “so far everything is going the right way. We hope that the regulatory framework does not spoil everything.”

Forbes & Manhattan raised funds abroad to start the Potássio da Amazônia company, its biggest project in Brazil, which starting in 2016 is expected to produce two million tons of potassium a year — one quarter of the country’s needs; Brazil currently imports 90% of the eight million metric tons it needs annually. The total cost of the project along the Amazon River is estimated at US$2 billion. The consortium’s second largest project is a gold operation in Altamira (Pará state), a US$300 million investment that is projected to produce three to six tons of gold a year by 2013. Two other company projects, in Minas Gerais and Paraíba states, deal with phosphate.

Brazil’s abundance of mineral reserves, and business opportunities, partly offsets a significant downside, which is the lack of infrastructure to transport what is produced.
“We are lagging behind in ports and railways. This makes life very difficult for small mining companies, almost forcing them to sell what they produce to the Vale company, which has its own logistics to get products to ports,” Tim Chen says. Therefore, the Chinese, although their interest in Brazil’s iron ore is growing, will also seek partnerships in Chile and Peru. “While product quality there is not as good as Brazil, those neighbors have access to the Pacific ocean, which benefits the flow of production,” Chin says.

The federal government is seeking to solve the infrastructure problems, especially those related to the flow of production, Nery emphasizes. The PAC calls for expansion of railways, ports and dams, he says, and “the BNDES is financing several projects to ensure the transport needed.”

**Search for Quality**

Another factor that will benefit the expansion of iron ore mining and processing in Brazil is the likely closure of inefficient steel plants in China and Russia, BNDES manager Carvalho thinks. Internationally Brazil is already highly cost-competitive in the production of long and flat steel, and it has become even more attractive for new steel mills because of the high quality of Brazil’s iron ore. It is estimated that about steel production could fall by some 300 million metric tons for lack of competition and excess production; global production capacity is 2 billion metric tons, but demand is just 1.4 billion tons. “Units that operate on the margin are being closed and more efficient ones are being opened,” Carvalho says.

Accordingly, BNDES will finance about R$5 billion (US$2.8 billion) of new projects in the steel
industry. Among several projects underway are the second stage of the Usiminas company operation in Santana do Paraiso (Minas Gerais state), which will increase the capacity of the largest steel producer in Latin America by about 50%; an Alcoa unit to mine bauxite in Juruti (Pará state); and Vale’s partnership with the Korean company Dongkuk to build a steel mill costing US$7 billion in Ceará state (Companhia Siderurgica Pecém), which will have a capacity of 3 million tons in the first phase, and up to 6 million tons in a second phase. Vale also has a steel mill project costing R$11 billion (US$6 billion) in Espírito Santo state that is expected to produce 5 million metric tons once operations start in 2014.

Steel production will rise from 43 million metric tons in 2009 to 49 million tons in the first half of 2011 with the inauguration of both stages of the Atlantic Steel Company (CSA), which Vale is building with Germany’s ThyssenKrupp in Rio de Janeiro state. It is projected that by 2014 steel production in Brazil should reach 53 million tons.

Undoubtedly, Brazil has immense potential to expand the mining and petroleum business.

High Prices
Prices should remain high and markets tight, analysts estimate. Mellone, for instance, says, “The mines opening are farther away and therefore the trend is that prices will stay high. Prices will hardly go back to US$20 a metric ton. Soon there will be ore shortages as steelmakers in Europe and the US recover gradually.” After a pause in new mining projects due to the global crisis, in recent months such projects have resumed and will begin to produce results in about four years.

Therefore, ore supply will return to normal only in 2013 and 2014, when prices should fall.
Meanwhile, demand remains greater than supply and prices will continue high, around the current US$100 a ton,” Mellone says. The fact that little additional supply of ore is expected this year and next will benefit Brazilian mining companies, especially Vale, which lost market share during the crisis to its international competitors, BHP and Rio Tinto.

Confident of the promising scenario for mining and metallurgy in both the short and long term, Vale has announced that it intends to close 2010 with production of 315 million tons of iron ore, slightly above the 300 million tons in 2008 and considerably better than the 250 million tons in 2009. The company also plans to raise its output by almost a third — adding 90 million tons in Carajás (Pará state) alone starting in 2013. Within six or seven years, Vale also expects to have in production the Simandou mine in Guinea, the company’s first investment in West Africa and one of the best sources of iron ore.

“If mining companies were already profitable when iron ore was US$20, imagine how they are doing at US$100 a tone,” Mellone says. The extraction cost per ton in Brazil is about US$15 to US$20 per ton, so “At the current price, iron ore is an excellent investment. Mining companies want a ride on that high profitability.” Investors have clearly noticed: the price of Vale shares has risen from R$3.50 in 2001 to today’s R$44.

Place for All?
Carlos Eduardo Mellis, who is responsible for project financing for the Itau BBA investment bank, has a slightly different take on the near-term market for iron ore: “It seems a very positive scenario, but it remains to be seen whether there will be room for all in the boat.” The 10 or so new projects have the potential to add about 200 million tons to current production of iron ore, not counting the 90 million ton increase Vale plans.

Although the growth rate since the late 1990s has been 8% a year — twice the rate of the global economy — trade in iron ore is driven mainly by economic development in emerging countries, particularly China. Weeks
ago, the Anglo-Australian BHP Billiton and Rio Tinto, second and third largest producers of iron ore in the world, took another step toward creation of a joint venture worth US$116 billion. Their plan is to produce together more than 350 million tons of iron ore, surpassing Vale, the world’s largest producer. That would amount to more than one-third of global trade in iron ore and about two-thirds of China’s imports, China being the largest buyer of iron ore in the world. One of the goals of the partnership is to cut costs.

**Momentum in the States**

The mining industry is expanding into places that had no tradition in mining, such as Bahia state, currently the fifth largest mineral producer in Brazil and soon to reach the fourth position with the entry of new projects planned through 2012.

Four years ago the Company Bahia Mineral Production (CBPM) targeted development of metallic minerals, particularly gold, iron, nickel, and zinc. Bahia has the most potential for new mines, says Rafael Avena Neto, CBPM technical director. Besides the recently inaugurated Mirabela nickel mine, which will be the third largest open sky nickel mine in the world, CBPM is expanding production at the mine in Caetité that is the sole producer of uranium in Brazil. In 2012, the largest iron mine in the state will also begin operations in Caetité, in Santa Luz the Yamana gold mine will begin production, and in Maracas the Largo vanadium mine will open, both of the latter in areas leased by CBPM.

The government of Bahia state has been investing in infrastructure. For example, the East-West railway is strategic for mining development in the state. Its 1,500 kilometers of track connect 32 municipalities, several of them producers of minerals. The corridor will transport 18 million tons of iron ore alone.

Pará is by far the state that attracts the most investments in minerals. By 2014 it is expected to have pulled in US$40 billion in investments in mining, mineral processing, and transportation. Vale will be doubling iron ore production in Carajás; according to the Federation of Industries of Pará (FIEPA), Vale’s Canaã mine will reach its production peak of 90 million metric tons in 2015. Another project already underway is the US$6 billion Aços Laminados do Pará (ALPA) plant in Maraba, which will have the capacity to produce 2.5 million tons of rolled steel plates. Operations should begin by the end of 2013. According to Vale, the project will add value to the iron ore extracted from mines in Carajas. ALPA will be an integrated system with rail access to receive iron ore from Carajás, and a river terminal being built on the Tocantins River.
By 2014 Pará state is expected to have pulled in US$40 billion in investments in mining, mineral processing, and transportation.