The economy of heat

Nature has been almost too kind to Brazil

A pine tree in a Finnish forest takes 50 years before it can be pulped and milled into paper. A eucalyptus tree in Espírito Santo, on Brazil's coast, is ready in seven. Growers in Petrolina, in Brazil's north-east, harvest grapes twice a year, twice as often as their competitors in France. Sadia, a meat producer, needs no electricity to heat its chicken houses, unlike its competitors in colder climates. Brazil has more than its fair share of the world's sun, soil and water, and in many of the products based on those ingredients, including soya, sugar and beef, it may become pre-eminent.

Eyevine

Brazil's new driving force

This natural advantage revives an old anxiety. For much of the 20th century countries at the periphery of the rich world lamented their dependence on commodities (for Brazil it was sugar, coffee and rubber) and yearned to become modern industrial economies. Beginning with Getúlio Vargas, a succession of strong presidents frogmarched Brazil into the industrial age, often with little regard for cost or competitive advantage. The partial opening of the economy in 1990 by the debonair Fernando Collor, who was later impeached for corruption, shocked industry into modernisation.

Now Brazilians worry about slipping back into their commodity-dependent role. Brazil's success in selling raw materials and other basic products pushes up the real, which makes other Brazilian exports less competitive and exposes industry to cheap imports, especially from China. This is leading to talk of “deindustrialisation” and “Dutch disease”. “We're competitive where nature has helped,” says Eugênio Staub, head of Gradiente. He does not count his company's televisions and mobile phones among the beneficiaries.
So far there is little evidence of wholesale deindustrialisation. The share of exports based on natural resources did rise sharply between 1989 and 2005, but half the gain came from petroleum, and manufacturers of medium- and high-technology goods also increased their shares slightly. A study by BNDES, the national development bank, concluded that there was no general shift in production to natural-resource-based industries.

But the real has stayed strong, and worries have grown. Last year the trade surplus in manufactures fell for the first time since 2000, notes Edgard Pereira, chief economist of IEDI, an industry association. The March revision of GDP figures showed that services had a bigger share and industry a smaller one than previously thought. Domestic consumption and investment are growing at a healthy pace but manufacturing is not keeping up, in part because demand is being filled by imports. Labour-intensive products such as shoes and clothing are under the most pressure. The (protected) car industry is booming, thanks to easier credit. But this year the strong real forced Volkswagen to scrap its plan to use Brazil as the export base for Europe of its compact Fox model. The country is in little danger of becoming an open-air greenhouse. But its economy may be starting to specialise, which is both painful and exhilarating.

Sweet smell of success
Luckily, the economy of heat is diverse. The showcase is ethanol. Brazil's variety, based on sugar cane, is cheaper than anyone else's and has encouraged a lot of innovation beyond the

basic commodity. “With biofuels we're suddenly at the forefront,” says Fernando Reinach of Votorantim Novos Negócios, which runs a venture-capital fund that invests in ethanol technology.

This is a turnaround for the sugar business, previously notorious for exploited labour, insolvency and pollution. Ethanol got started after the oil-price shocks of the 1970s, when dictators induced the car industry to convert from petrol that Brazil could no longer afford. The Proálcool programme ended with a hangover around 1990 as oil prices fell and cane growers switched back from ethanol to sugar, infuriating drivers of ethanol-only cars.

But it left behind a system for distributing ethanol to petrol stations which suddenly looks like a national treasure, thanks to two recent developments. One is the Brazilian invention of flex-fuel cars which can run happily on any combination of ethanol and gasoline. Introduced in 2003, these cars, which enjoy a small government subsidy, cost no more than single-fuel models and now account for 83% of all new cars sold in Brazil.

The second is the belated realisation the world over that fossil fuels overheat the planet, are controlled by dodgy regimes and cost too much. In January President George Bush announced an American version of Proálcool—he wants to cut petrol consumption by one-fifth—and has since signed an agreement with President Lula to spread production and consumption of ethanol worldwide.

Too commodity-dependent? 6

Brazil's top export products, 2006

Product	Value, $bn	% of exports
Transport equipment	20.4	14.9
Metallurgical products	14.7	10.7
Oil and fuel	13.0	9.5
Mineral ores	9.8	7.1
Soyabeans & derivatives	9.3	6.8
Chemicals	9.1	6.6
Meats	8.5	6.2
Sugar and ethanol	7.8	5.7
Machinery & equipment	7.7	5.6
Electrical equipment	5.8	4.2
Paper and pulp	4.0	2.9
Footwear and leather	4.0	2.9

Source: Ministry of Development, Industry and Trade

It will take a while for any other country to copy Brazil, where ethanol already accounts for 40% of the fuel used by cars. The United States insists on producing most of its ethanol from home-grown maize, which is more expensive than Brazil's cane-based version and burns up about seven times more fossil fuel per unit of energy produced. No other country can match Brazil's distribution network, so in the short term ethanol will be mostly an additive to fuel, not the main ingredient.

Even that is enough to cause a fever. Brazil currently produces 18 billion litres of ethanol a year of which it exports 4 billion litres, just over half of worldwide exports. By 2013 consumption in Brazil is expected to double. Global ethanol trade could rise 25-fold by 2020.

If these calculations are correct, Brazil will need $90 billion of investment in new mills, plus $2 billion for pipelines, railways and storage. It already has 357 mills and is planning another 136 at a cost of $14.5 billion, according to Datagro, an industry consultancy. The investors are mostly Brazilian, but also include Louis Dreyfus and Tereos of France and Cargill of the United States. If anything there is an excess of enthusiasm. “A lot of money is chasing too few opportunities,” worries David Bunce of KPMG.

To become a staple in the world's energy diet ethanol needs to be commoditised, with global standards of purity and a vibrant futures market. But the industry rejects the stigma of commodity status. Workers in the new mills wear white coats, and laboratories are springing up beside them. Biocell is one of several biotech companies looking for a way to convert the currently unused two-thirds of the cane plant into ethanol. Alellyx, which Mr Reinach claims is the only company tweaking sugar-cane DNA, has started field trials of a variety with 80% more sucrose—the raw material for sugar or fuel—than the standard sort. Researchers are also working on drought-resistant varieties that will grow far beyond the São Paulo heartland.

Coming of age

Corporate Brazil is coming of age in other ways too. A new personage, the Brazilian multinational, has appeared. Companhia Vale do Rio Doce (CVRD), privatised in 1997, last year became the world's second-largest mining company when it acquired Inco, a Canadian nickel producer. Gerdau has become the biggest producer of long steel products in the Americas (and has vaulted trade barriers) by buying operations in nine countries, including the United States. Embraer is the Boeing of the regional-jet market. Last year, boosted by the CVRD acquisition, Brazil for the first time invested more abroad than foreign companies did in Brazil.

Brazilian bosses reckon they have outsmarted a difficult economy by cutting costs, consolidating their business and professionalising their management. If a recent book, “Sucesso Made in Brasil”, by Donald Sull and Martin Escobari, is to be believed, they have evolved special skills for surviving chaos and seizing opportunities. Between 2003 and 2005 sales of publicly quoted companies grew three times faster than the economy as a whole. Many of these companies are a long way from mining or farming. Last year's merger of Submarino and Americanas created one of the world's biggest e-commerce operations. Some businesses can be found nestling close to Brazilian multinationals, in the way that growing companies cosy up to American universities. Cordoaria São Leopoldo started out making shoelaces and now produces cables to anchor Petrobras's deep-water drilling platforms. Graúna makes aircraft parts for Embraer and is beginning to export.

Sometimes outsmarting Brazil means getting away from it altogether. Part of what drove Gerdau abroad was Brazil's low growth and its high cost of capital. Manufacturers now realise that the cheap dollar is here to stay and that the exchange rate is less volatile than it used to be, says José Roberto Mendonça de Barros of MB Associados, a consultancy. So they are outsourcing production, especially to China. Gradiente, which produced almost its entire output in Brazil three years ago, now outsources 40% of it, mainly to China. In 2005 Brazil's largest shoe manufacturer, Azaléia, shut a factory employing 800 people in the southern state of Rio Grande do Sul and started producing in China.

But for most companies there is no escape. Of the 72,000 industrial enterprises with more than ten employees, only 1,200 compete by differentiating their products, according to IPEA. They account for a quarter of turnover in the corporate sector but just 13% of jobs. A middle group of 15,000 firms making standardised products that compete mainly on price accounts for 63% of sales and nearly half of employment. The remaining firms have “serious problems of productivity and invest very little”, says João Alberto De Negri of IPEA.

In addition to economic growth, Brazil's industrial health depends on three things. The first is whether innovation will spread beyond a tiny minority of firms. Spending on research and development amounts to only 1% of GDP, of which well over half is done by universities. The OECD average is more like 2% of GDP, and two-thirds of that is done by industry.

The second is the outcome of the Doha round of multilateral trade talks. Brazil's agriculture would be the biggest gainer from an ambitious settlement, but its manufacturing would be less protected.

The third and most important is what happens to custo Brasil. As technology changes, even Brazilian ethanol may start to be weighed down by it.

Fonte: The Economist, v. 383, n. 8524, A special report on Brazil, p. 8-10, 14 April 2007.