



Initiative for Policy Dialogue Working Paper Series

October 2008

The Impact of Public Policies in Brazil Along the Path From Semi-Stagnation to Growth in a Sino-Centric Market

Antonio Barros de Castro

Industrial Policy

No part of this working paper may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording, or by information storage or retrieval system, without permission from the Initiative for Policy Dialogue.

**THE IMPACT OF PUBLIC POLICIES IN BRAZIL ALONG THE PATH
FROM SEMI-STAGNATION TO GROWTH IN A SINO-CENTRIC
MARKET¹**

Antonio Barros de Castro

Director of Planning, Banco Nacional de Desenvolvimento Econômico e Social (BNDES)

Introduction

This chapter is devoted to the analysis of the interaction between public policies and patterns of growth in Brazil over the last three decades. We begin the analysis when the period of fast industrialization ends and major macroeconomic imbalances emerge. We also discuss the effects of the various macroeconomic cures in terms of patterns of industrial growth. Brazil is possibly the only Latin American country which has emerged from the stabilization cures and liberalization shock with a live and diversified industrial structure. However, at the end of the tunnel of “semi-stagnation” the international scene has dramatically changed with the emergence of China as a powerful major producer and exporter (including to the markets of other industrializing countries). Hence new challenges, but also new opportunities, have arisen in the Brazilian industry. As industrial policies played a crucial role in the early industrialization phase, they are likely to be important – albeit on a different level – in the adjustment to a sino-centric world.

The Long March Towards Overcoming Semi-Stagnation

From 1947 – when the systematic recording of domestic accounting was initiated – until 1980 the Brazilian economy grew at an average annual rate of 7.5%. At that time, the average growth of Asian and Latin American developing countries was 5.7%,² while the Japanese economy, the unquestioned growth record-holder, achieved an average expansion of 8% per annum.

From 1981 until recently, growth has been kept somewhat below 3% per annum, except for some short-term expansive peaks. In this 26-year period of modest and unstable growth, two sub-periods can be identified.

In the first long and turbulent phase, running from 1981 to 1999, the immediate

reasons why the Brazilian economy proved unable to achieve robust growth were quite clear. A blend of the so-called debt crisis and high inflation from 1980 to 1994 clearly explains the modesty and the instability of growth. In 1994, however, the *Plano Real* defeated inflation, consequently eliminating the most flagrant cause of the Brazilian economy's incapacity to grow on a sustainable basis. Despite that, a period of strong deterioration of the balance of payments began, allowing the current-account deficit to reach 4.0% of the GDP in 1998. Under this framework, aiming to consolidate the victory against inflation, as well as finance and reschedule the foreign debt amid successive international crises, the monetary authorities chose to keep the nominal interest rate at extremely high levels. In this way a phenomenon emerged that is rare in history: exceptionally high interest rates were maintained year after year over a long period. As a consequence, public indebtedness grew rapidly, exports (damaged by an appreciation of the exchange rate) were kept practically stagnant, and credit (both domestic and international) remained severely constrained. In other words, despite the victory over a chronically high level of inflation, powerful factors combined to make steady growth ultimately impossible.

After 1999, however, with the successful transition to a free-floating exchange rate policy and the progressive recovery of the fiscal scene (the primary surplus sprang from -0.88% of the GDP in 1997 to 2.92% in 1999), a new panorama came into view. It is true that the quality of the resources used to improve the fiscal situation was very controversial: an increase in tax collecting, which highlighted vices in the tax system,³ as well as the questionable expedient of reducing public investment. Still, the mere quantitative confrontation with the public deficit, combined with improvements such as the Lei de Responsabilidade Fiscal⁴ [the Fiscal Responsibility Law] reestablished the possibility of solid growth.

On the other hand, it is important to highlight that the end of the 1990s coincided with

the end of a cycle of structural reforms. But the connection between these reforms and economic growth – with the exception of commercial liberalization – is something legitimately controversial. Without getting deeply into the topic, which would be a digression from the core of this work, it is worth mentioning that Brazil was one of the Latin American countries which mainly went through structural reforms.⁵

Changes in public policy and advances made on the reforms agenda did not come unaccompanied, however. At this point, it was already possible to note that the thriving and diversified industry inherited from the period of rapid growth had passed the test of the economy's trade liberalization carried out in the 1990s. This does not mean that there were no losses, especially in the industrial fields with high technological density; it means that the Brazilian industry, in large measure, preserved the diversity inherited from the period 1950-1980.⁶ Moreover, the metal-mechanical industry, already referred to as the *Brazilian industrial fortress*,⁷ was invigorated by the liberalization episode. This contrast between the Brazilian economy and the other Latin American economies was accentuated, as the latter had been forced by liberalization to specialize, either in the extraction/processing of raw products or in the labor-intensive steps involved in the conclusion of industrial processes.

The responses to the liberalization challenge were to a considerable degree spontaneously decided by the industrial enterprises. Thus, they freely chose a revision of management procedures, made severe labor cuts, and fostered modernization, together with quality improvement of products, and (some) changes in equipment. The magnitude of this restructuring process (which came at very high cost to employment) can be evaluated by the exceptional pace of growth in labor productivity estimated for the transformation industry during the 1990s: something between a minimum of 5%, according to the national accounts, and a maximum of 8% per annum, according to the Pesquisa Industrial Mensal's (PIM) Monthly Survey of Mining and Manufacturing, issued by the Brazilian Institute of

Geography and Statistics (IBGE).⁸ It is obvious, however, that this restructuring did not spread all over the industrial apparatus. In fact, firms in the basic inputs sector (steel, etc.), among others, didn't need any technological improvement to be kept near a state-of-the-art level.

Considering all the improvements observed at the macroeconomic level, as well as the intense modernization of the manufacturing companies, the persistence of low growth from 1999 onward is no longer easily explainable. Furthermore, the expansion initiated months after the substantial devaluation following the January 1999 transition to the floating exchange rate policy seemed to indicate that the economy had recovered its capacity to grow. As a matter of fact, expectations about the performance of the economy remained very optimistic until March 2001 (when the expansion completed a 6-quarter period). Immediately afterwards, however, an exceptional conjunction of adversities put a sudden end to the expansive outbreak.

The stop to the expansion at that time combined problems originating in the country itself, such as the suddenly revealed incapacity to satisfy electrical energy demand, with others coming from abroad, such as Argentina's collapse – which showed a contraction of 4.4% in 2001 and 10.9% in 2002. The mood of the business community turned pessimistic and firms, especially those in the industrial sector, were led to conclude that the domestic market was still subject to harsh contractions – just as it had been in the last two decades of the 20th century. In fact, the difficulties faced in 2001, followed by new crises in 2002 and 2003, showed that the economy had not yet found its path to expansion. And the overall situation would still suffer the threatening deterioration that occurred towards the end of President Fernando Henrique Cardoso's second term in office, when inflation rose to an annual rate of 29% in the last quarter of 2002.

Besides jeopardizing investments, worsening expectations made it very hard at that

point to handle the public debt issue. It had been some time since financial resource holders had demanded extremely high interest rates (and very short terms) for refinancing a rapidly increasing volume of debts. In addition, the proportion of dollar denominated public debt reached 50% in June 2002 and remained above 50% until February 2003. At that point, many questioned the sustainability of the advances recently accomplished at the macroeconomic level, even believing that the situation had reached a point of no return.

However, the new government, which took office in January 2003, faced the incipient inflationary burst with severity and efficacy, managing to quickly resume control over the situation. It is not easy, however, to evaluate the cost of the victory over the so-feared inflationary setback. It is true that trust within the financial establishment was largely regained. The problem, however, was that after two years of extremely modest growth (the economy grew 1.3% in 2001 and 2.7% in 2002), the first year of the new government showed a 1.1% growth rate! Moreover, families' consumption was reduced by 0.7% in 2003. Similar results unquestionably contributed to reducing the initial enthusiasm for the new government; in particular, weakening strong initial support from non-financial enterprises.

It is important, however, to call attention to other important (and positive) changes that occurred in the difficult period that the economy experienced from 2001 to 2003.

First, let us point out that the renewed frustration with the economy's performance – combined with the substantial increase in the exchange rate – pushed manufacturing firms towards a broad-based reorientation of their strategies. An important result was a much greater focus on foreign markets. Such focus, in turn, was not only about searching for spaces in markets more stable than the domestic one. Data related to foreign sales indicates that, at least since 2003, various segments of Brazilian industry realized that they were able to conquer new markets abroad. There is no doubt that the floating exchange rate, which facilitated the depreciation of the *real*, contributed to the surge of exports. However, it is also

important to emphasize that the increase in productivity which took place during the previous decade, as well as certain stimuli provided by public sector policies, were also behind the outstanding results achieved.

Many accept that trade liberalization decisively contributed to an authentic change in competitive dynamics in the Brazilian market for manufactured goods, forcing firms to close the gaps with foreign competitors in terms of both costs and product quality. Having nearly done that, however, firms discovered that such advances did not suffice. That is to say, the effort made in upgrading products and processes, even if more effective than passive restructuring (limited to cutting waste and personnel), was not sufficient to hold market positions since in several segments new products were quickly being introduced to the market. Hence the necessity to acquire innovative capability in order to compete. To this end, an increasing number of companies initiated an effort to redefine existing products and create new products, markets, and business models.⁹

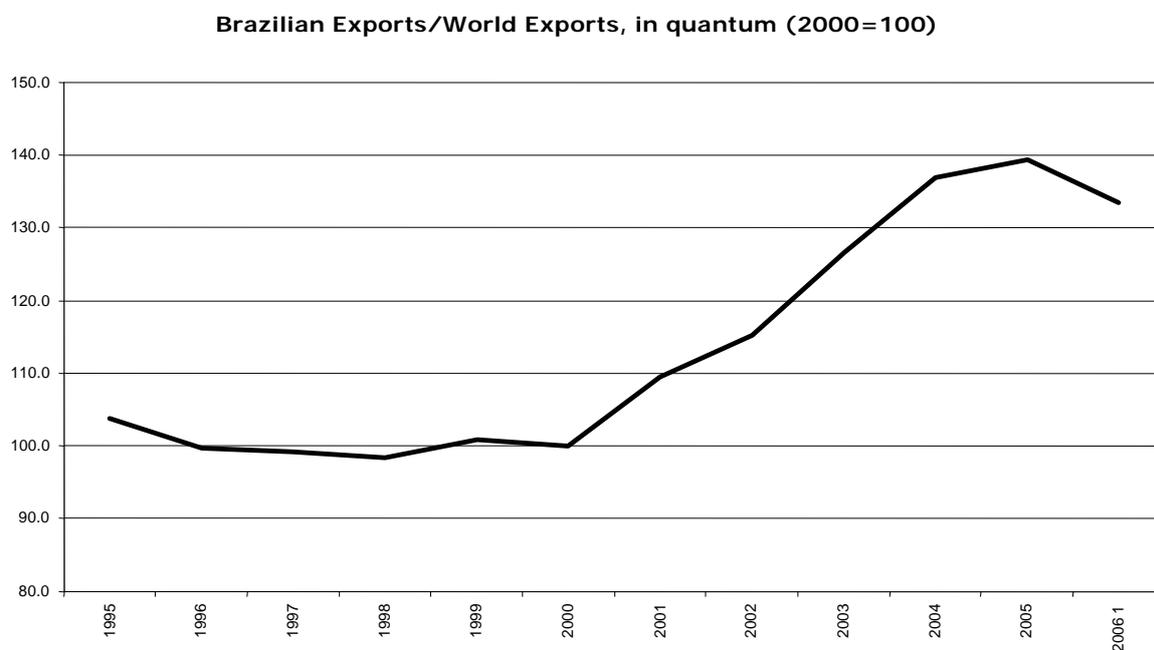
In that, paradoxically, the legacy of over 20 years of semi-stagnation seems to have fostered the adoption of new and more creative standards of behavior. After all, during the mini growth cycles experienced by companies over the previous two decades new opportunities were, in many instances, opened up, but could not be properly exploited: would-be innovations were on hold, waiting for a favorable economic climate to be introduced.¹⁰

With the rapid expansion of exports and an increase in investments (including investments in intangibles), a new framework began to emerge. Specifically, the Brazilian economy, which already had a powerful export agribusiness,¹¹ proved increasingly able to compete for spaces in several manufacturing markets. In summary, macroeconomic conditions, which had undeniably been improved (and could be made even more buoyant by further growth), were removing the problem of high market instability. At the same time,

exports and investments allowed for the development of new growth opportunities.

Figure 10.1 shows the extraordinary performance of Brazilian exports, even when compared with the strong growth in worldwide exports. It must be added that foreign direct investments also seemed to react to the incipient expansion of the Brazilian economy. In fact, in the year Brazil most closely neared new and vigorous growth (2004), foreign direct investments in the country leaped from US\$ 10.1 billion to US\$ 18.2 billion.

Figure 10.1



Sources: IMF and Funcex

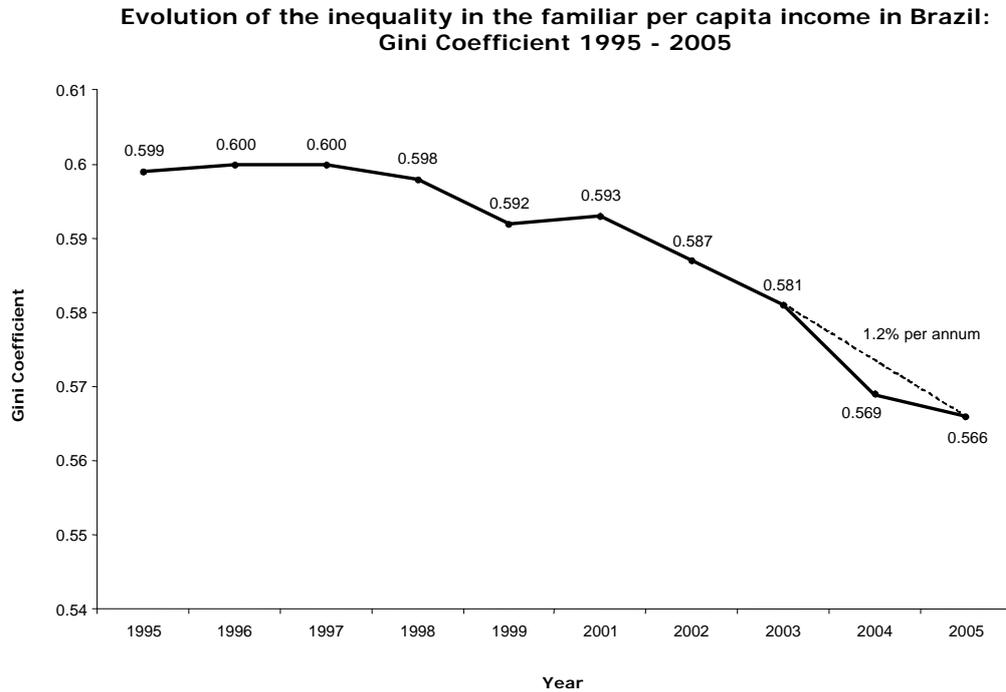
The improved conditions for an effective resumption of economic growth depended on other factors, which are worth highlighting.

First, let us point out that in severely fighting inflation and controlling the public debt (which dropped from 52.4% to 44.9% of the GDP between December 2003 and December 2006), the new government revealed that price stability had become (or was becoming) a permanent goal for the country. In other words, price stability had become a sort of “public

good,” changing from the status of a government task out of many to a state duty. This change contributed to the tranquility of the transition from the Cardoso to the Lula administration. After all, the new government brought new players to power, many of whom came from union activism or historically radical leftist groups, as well as a political party that was extremely critical of the country’s institutions and policies.¹²

Many detected inconsistency in the new government’s preservation of the macroeconomic policy agenda, as well as in the relevance given to the issue of price stability. The administration’s deep commitment to social inclusion, however, made it clear that continuity at the macroeconomic level was being combined with the deepening of changes in a direction consistent with the expectations held with respect to Lula’s government. We refer in particular to the fact that the reduction in inequality initiated by the end of Cardoso’s second term was intensified by the new government. In this respect let us consider two indicators. Inequality, measured by the Gini Index, dropped 4.6% from 2001 to 2005 (Figure 10.2 below), whereas the ratio between the incomes perceived by the fifth of the population who were richest and the fifth who were poorest declined 21% in the same (brief) period of four years.¹³ In any case, the massive inclusion of the poor in the consumption of manufactured goods (as demonstrated by several indicators) by widening the market’s pyramid base could be preparing the terrain not only for higher growth, but for growth of a different kind (a topic to be discussed below).

Figure 10.2



Still the Semi-Stagnation?

The crop of successes harvested in 2004 appeared to many to have put the economy on track for a new expansion cycle. This was not only due to brisker growth. In 2004, when the GDP displayed a respectable increase of 5.7%, it also showed traces of a new pattern of expansion. For instance, the volume of exported manufactured articles grew 26.1%, while their prices went up by 5.9%, indicating that the exporting companies could strongly expand their foreign sales, despite a rise in the average price of their products. Gross capital formation rose 9.1% in that year, indicating that the economy was creating additional capacity at a pace much superior to its own (and substantial) rate of growth. In other words, the expansion started to spill over into the future.

Furthermore, simultaneous with the leap in manufactured goods' export rate was a yearly jump in imports of intermediary goods (21% at constant prices), indicating that companies were intensively taking advantage of the openness of the economy to nurture their

production and export expansion. A figure illustrating the vigor of the export offensive: in 2004, Brazil was responsible for 48.5% of Argentine imports of electrical and electronic goods.¹⁴

We list below (in Table 10.1) the segments which most contributed to industrial growth in 2004. The list clearly reveals the leading presence of industrial sectors, which were relatively sophisticated from a technological point of view. It should be underlined that the contribution to growth given by the three first sectors (automotive vehicles, machines and equipment, electronic material, and communication equipment) is far superior to their weight in the structure of industry, highlighting their important role as “engines of growth.” By contrast, the modest contribution to industrial growth of natural resources processing activities should also be noted. This means that, in flagrant contrast to what was going on in several other emerging economies, manufacturing activities – with growth of 8.5% in 2004 – were, in more than one sense, heading the expansion.

Table 10.1

Sectors that contributed to the formation from 75% to 80% of the growth rate of the industry in 2004

Sector	Contribution	Accumulated Contribution	Weight ¹
Automotive vehicles	30.4	30.4	9.2
Machinery and equipment	11.7	42.1	6.5
Electronic material and communication equipment	7.6	49.7	3.9
Food	5.5	55.2	12.0
Other chemical products	5.4	60.6	7.0
Metal products - excluding machines	4.0	64.6	3.6
Office machines and information technology equipment	3.4	68.0	0.9
Rubber and plastic	3.4	71.4	3.9
Textile	3.3	74.7	3.0
Cellulose and Paper	3.2	77.9	3.7
Other	22.1	100.0	
Total	100.0		53.7
Memo:			
Industry Growth Rate		8.3	
Real Effective Exchange Rate (93=100)		134.8	

¹ Weight from 1999-2001, updated by using the variation of the production in volume.

On the other hand, as agribusiness and mining businesses continued to prove to be highly dynamic, there were plenty of reasons to expect that the country might be able to embark on a steady route of expansion. Seen from this point of view, the economy's good standing could have been considered a preview of what was coming. Within this framework, the "unlocking" of corporate strategies – particularly in the investment sphere – started to be seen as a major task for public policies. In contrast to the agenda which had prevailed until then and was centered on monetary policy and structural reforms, this meant an enormous change. Ultimately, the main challenge at this point had become to adjust the actual expansion pace of the economy to meet the potential of its enterprises.

Despite the substantial widening in the range of policy actions suggested by this change, it is important to call attention to the fact that the new agenda did not consider any discretionary intervention related to the governance of the direction of growth – for example, in terms of sectoral composition of output and investment.

In spite of all that, the growth impulse born in the second half of 2003 faded away in 2005 and 2006: apparently Brazil exchanged a mediocre and brutally unstable growth trajectory for a modest, yet relatively stable one (as shown in Figure 10.3).

Table 10.2

Evolution of Inflation (Retail Prices), 2000-2006			
Year		Developing Countries	Brazil
2000	▼	4.0	▼
2001	▼	4.7	▼
2002	▼	3.3	▼
2003	▼	4.2	▼
2004	▼	4.4	▼
2005	▼	5.6	▼
2006		5.5	3.1

Sources: IMF, IBGE and Brazilian Central Bank

And the slowdown occurred in an economy displaying current-account surpluses of around 1.5% of GDP per annum and in the process of eliminating the last remaining traces of the turbulence experienced at the transition from Cardoso to Lula.¹⁵

Moreover, notice that such a disappointing performance occurred against the background of a vigorous international growth. If from 1980 to 2000 the average growth of the developing economies was 3.2% per annum, from 2000 to 2005 this pace leaped to an average of 5% per annum.¹⁶ The bottom line is that notwithstanding the stabilization at the macroeconomic level, resources and human competency accumulated in both the agribusiness and the now internationally exposed “industrial fortress.” Notwithstanding the sophisticated financial system that the country possesses¹⁷ Brazil appears to be unable to keep the rhythm of growth of the most successful industrializing countries. What are the causes of this? What is hindering the “spectacle of growth” announced by President Lula?

Limits to Growth *versus* New Course of Growth

Part of the explanation certainly lies in the macroeconomic management: ~~Lula's~~ the monetary policies have yielded aberrantly real interest rates and more recently have contributed to currency appreciation. The Central Bank seem to have been guided by what they saw in the rearview mirror and behaved as in the past when the economy several times tottered on the edge of the abyss.

Moreover, a large group of economists was convinced that in the second half of 2004, the economy was bumping up against the ceiling of its productive capacity. Therefore, it was thought, demand had to be restrained. However, such an understanding omits issues of extreme importance.

At that moment the “third oil shock” had already begun, together with brutal price

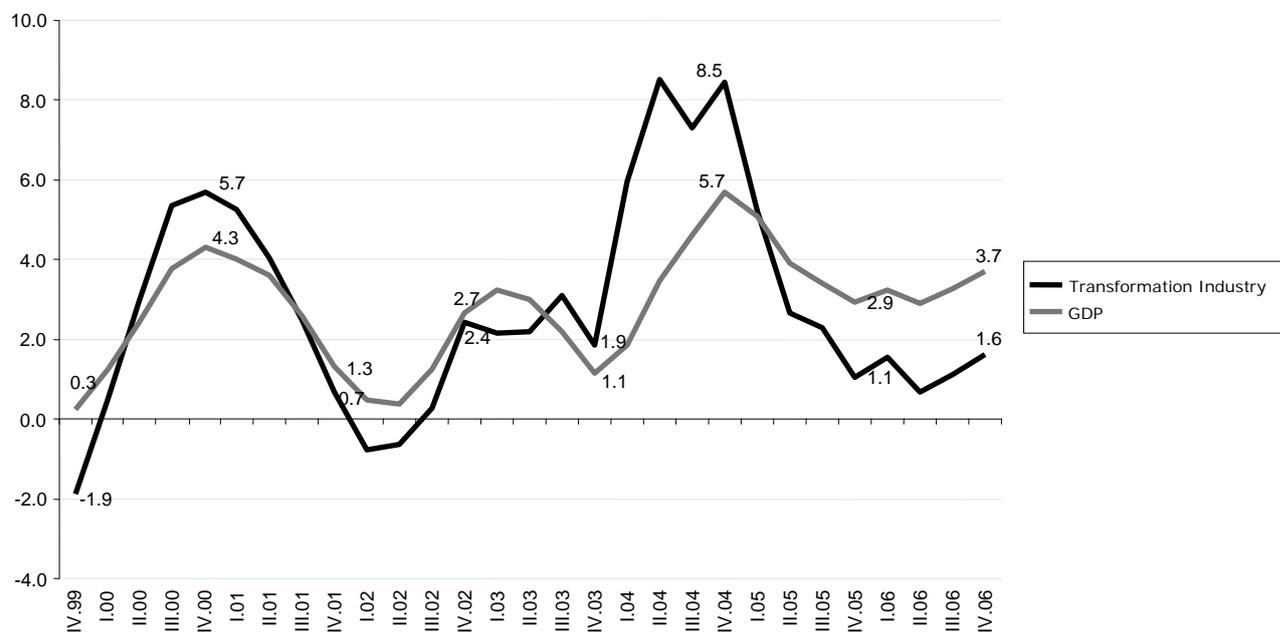
increases in several commodities. This time, however, the commodity price shock was accompanied – and cooled off – by “Chinese prices,” as far as manufactured goods are concerned. Among the most immediate results of this important and historically unique episode, one should note the moderate increase in the inflation rate (see Table 10.2). This table reveals Brazil’s remarkable behavior: its rate of inflation in 2006 is no more than a third of the level reached in 2003! At the same time, with the aim to cool off inflationary pressures, the nominal interest rate was raised from 16% to 19.75% per annum.

<Table 10.2>

The orientation that prevailed was fundamentally based on the conventional procedures to evaluate the growth potential of economies. But the Brazilian economy was, at that moment, emerging from 25 years of semi-stagnation. Further, the overall rate of investment was rising and the manufacturing industry was displaying a truly unpredicted competitive strength.

Once the expansion impetus ceased, the economy faced exchange rate appreciation, with imports being boosted by the substitution for intermediary and durable consumption goods domestically produced. At the same time, the rate of growth of manufacturing industry fell substantially more than that of the GDP (see Figure 10.4). This is a phenomenon typical of the Brazilian business cycles, but we believe it also contains some structural components.

Figure 10.4 Growth of the GDP and of the Transformation Industry (rate [%] accumulated in four quarters)



Source: IBGE, Quarterly National

Table 10.3

Sectors which contributed to the formation from 75% to 80% of the industry growth rate in 2006

Sector	Contribution	Accumulated Contribution	Weight
Office machines and information technology equipment	23.3	23.3	1.4
Extractive industry	16.4	39.7	7.0
Machines, devices and electric material	10.1	49.8	3.6
Machinery and equipment	8.5	58.3	6.7
Food	6.6	64.9	11.4
Beverages	5.9	70.8	2.6
Basic Metallurgy	5.4	76.2	5.9
Other	23.8	100.0	
Total	100.0		38.6

Memo:

Industry Growth Rate	2.7
Real Effective Exchange Rate (93=100)	98.3

¹Weight from 1999-2001, updated by the variation of the production in volume.

It is interesting in particular to compare the leading sectors in 2006 with those of just two years earlier (compare Tables 10.1 and 10.3). First, the number of “leading sectors” – accounting for around 80% of total growth – shrinks from ten to seven. Second, and more importantly, the extraction and processing of natural resources acquires a much greater weight. Interestingly, office machines and information technology equipment lead in their contribution to growth, reflecting the success of a governmental program named *Computador para Todos* [*Computers for All*]. By contrast, it must be noted that the contributions of automotive vehicles and machines and equipment (the cornerstones of the old “Brazilian industrial fortress”), which represented 42.1% of the country’s industrial growth in 2004 (Table 10.1), were drastically lower in 2006.¹⁸

In fact, we suggest these changes in the sectoral composition of output are likely to highlight longer-term tendencies whereby the “post stabilization” patterns of growth emerging in the early part of the new century are becoming unviable due mainly to the changing conditions of the international economy, in particular the impact of Chinese booming exports. Let us briefly consider them.

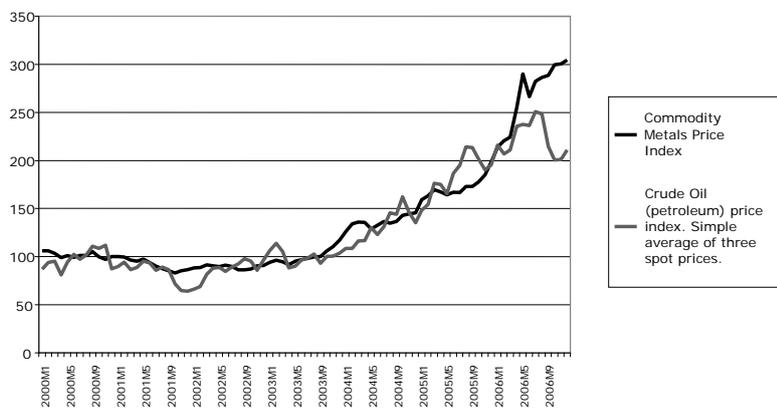
Part II – Growth in a Sino-Centric Market

Tendencies in the Sino-Centered Economy

A first phenomenon regards the price hike of both oil and metals (see Figure 10.5). Chinese growth has a major role in that. For the sake of illustration let us recall that the Chinese economy contributed approximately half of the increase in the demand for copper and aluminum between 2002 and 2005, while being responsible for 29% of the global economy’s growth over the same period.¹⁹ If Chinese catch-up is not aborted (as the Brazilian catch-up

was), the Chinese demand for raw materials will continue to grow quickly: it is estimated that the consumption of metals, for example, will only decelerate as average income reaches \$15,000 - 20,000. This implies that the pressure over the world's natural resources is likely to continue for many years – a tendency that certainly becomes even more acute if India is included in the picture. Therefore, at least as far as oil and metals are concerned, we are not facing a mere bubble.²⁰

Figure 10.5: Oil and Metals Prices Indices, 2003 = 100



Source: IMF

Second, concerning manufacturing production, China has emerged as a powerful, highly dynamic, low cost producer and exporter. Chinese competitiveness is reinforced by a rapid pace of assimilation of new technologies and productivity growth. Moreover, Chinese growth finds a further conducive condition in the undervalued currency – which is apparently there to stay for some years to come.

All of this entails new constraints on the patterns of industrialization and the growth possibilities of other industrializing countries. The peripheral manufacturing industries can no longer rely on the implicit protection that was historically provided by the high wages paid in developed countries. And interestingly, the problem cannot be mitigated by restricting

imports: even in a relatively closed economy like the Brazilian one, the prices of several products are dictated more and more by the mere *possibility* of importing them from China.

Third, the two foregoing sets of phenomenon had and have important consequences for resource-rich developing economies.

On the one hand, they drive an improvement on the terms of trade of resource exporting countries. For an illustration see Table 10.4, where the terms of trade are proxied by the relative prices of exports and imports. Compare, for example, oil-rich Venezuela with resource-poor Central American countries.

The other side of the same coin is the likely possibility that countries well-endowed with natural resources but also with a significant industrial base catch the so-called “*Dutch disease*” entailing substantial exchange-rate appreciation (and/or elevation of nominal wages). In turn, this reduces or even turns negative the return from sales of domestic products that do not benefit from the hunger for natural resources, and leads to a substitution of imported goods that is difficult to reverse.²¹

Table 10.4

**Latin America and the Caribbean: Terms of Interchange
(2000 = 100)**

Countries	2003	2006
Argentina	107.2	111.8
Brazil	97.0	102.4
Chile	102.8	186.9
Colombia	95.2	124.5
Mexico	98.8	107.6
Peru	102.2	150.1
Venezuela	98.7	188.9
Central America	92.6	87.3
Latin America and the Caribbean	98.6	117.5

Source: CEPAL, Balance Preliminar de America y el Caribe, 2006

Implications for the Brazilian Case

The changes triggered by the trade liberalization of the early 1990s were (finally) being translated into positive results in the first years of this century. In other words, from the industrial point of view, we could say that the Brazilian manufacturing industry not only survived the liberalization shock but was (almost spontaneously) back on a growth track along patterns which appeared to be a sort of open economy version of the old import-substitution newly industrialized country (NIC) model,²² – itself an acknowledged success from the second half of the 1960s to the first shock of the oil crisis (1973-4).²³

However, a major emerging challenge – ignored until very recently – was China which, as far as manufacturing is concerned, was taking a course similar to the Brazilian one: a) organizationally based on a somewhat similar combination of subsidiaries of multinational companies and domestic firms and, even more importantly, b) based on broadly similar patterns of production largely based on the production of goods originally developed in industrialized countries.²⁴ Moreover, unlike Brazil, the Chinese model displays both a precocious and an aggressive export orientation.

As a consequence, a sizable part of the Brazilian industry was and is doomed to face serious problems.

First, Chinese industry still has a substantial advantage in terms of labor costs which persist (even if slowly shrinking) as both wages and manufacturing productivity have been growing in China at double digit rates.

Second, but related, China has developed growing advantages regarding the scales of production and infrastructures – China invests about 10.5% of its GDP in the latter.

Third, China provides the intrinsic attractiveness of offshore investment to multinational corporations (MNC), and the Chinese government has conditioned the

implantation of multinational branches in the country upon the acceptance of local partners. Such a policy, combined with the extremely high overall domestic investment rate (supposedly higher than 40% of GDP) has certainly contributed to the rapid dissemination of modern technology in the country.

Fourth, the low wages prevailing in China have apparently contributed to a bias toward cost reduction, as far as the search for innovation is concerned.

Finally, macroeconomic conditions are also important. The *renmimbi* devaluation (in relation to the dollar) meant that that the *renmimbi*'s actual average exchange rate dropped, between 2004 and 2006, 29% in relation to the Brazilian currency. Chinese imports became, in principle, 29% cheaper in Brazil. (Note that in the case of Brazil an explosion of imports followed at a staggering 47% growth rate per year.)

The effective devaluation, combined with proactive policies shaping investments, by the provinces, cities, and other Chinese political entities, has decidedly thickened Chinese industrial value chains well beyond the traditional specialization in the assembly stage.²⁵

The overall outcome is that China's points of competitive strength are spreading into new segments and across new sectors. In fact China is presently completing a *sui generis* and comprehensive process of import substitution.

In the Brazilian case, until very recently the domestic market has been subject to the ups and downs of the country's long lived macroeconomic turbulence. At the same time, in contrast to the earlier import substitution regime of industrialization, some industrial firms began practicing more innovative patterns of behavior, frequently associated with the expansion of the export markets.²⁶

There is a sort of paradox here. Given the international circumstances, the Brazilian economy began to pay a price for having developed and somehow consolidated (in the 1990s) a highly diversified industrial system which is increasingly bound to compete with the

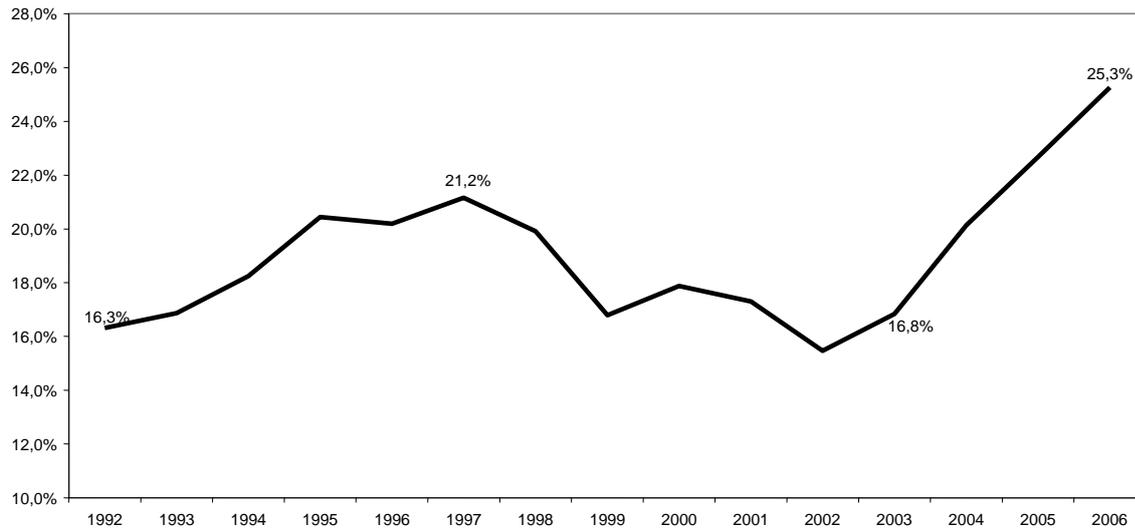
Chinese one. Conversely, several other Latin American economies were able to adapt to the deep changes brought about by the 21st century quite easily. The more natural resources they had, and the more they had previously renounced manufacturing – since commercial liberalization – the easier such an adaptation was. Ultimately, in such cases, there was practically no choice to be made. In other words, those economies that had already accepted the role of raw-material providers prior to the emergence of China had all the more reason to stick to this route as China arose.

In Brazil, however, the issue presents itself quite differently. After successfully restructuring in the 1990s, it is difficult to even imagine that the economy could adapt to a sort of classical international division of labor. From the industrial point of view, Brazil relies today on competencies accumulated and matured through time, often under adverse conditions. At the same time, the country has the world's fifth largest population, of which 90% is considered urban. It is therefore hard to imagine a resource-based pattern of development.

Given this overall framework, it is quite clear that the second liberalization (see Figure 10.6) now being experienced by the Brazilian economy poses a number of challenges. It is easy to forecast that a new round of industrial restructuring is necessary. But here we face an important question which has to do with the very nature of economic adjustments spurred by changing relative prices such as those we are now observing, which reward natural resources and punish manufactured products. Do we require, predominantly, a reallocation of factors across different sectors and different products? Or should changes in relative prices be confronted primarily through the development of existing capabilities, in many cases in the same sectors and firms? Economists usually favor the former answer which, in turn, relies on a view of readily available solutions and technologies, which can be acquired “off the shelf,” so to speak. This is a misleading view, however. Rather, capabilities

are relatively idiosyncratic resources which are incrementally accumulated, changed, and refined over time.²⁷

Figure 10.6: Degree of Openness of the Brazilian Economy: Exports + Imports/GDP*



Sources: Secex/MDIC, IBGE, and Banco Central

*GDP measured at a constant exchange rate, at the average level of 2004-2006.

The Brazilian economy has been accumulating modern skills and capabilities for about five decades. This effort has actually resulted in noticeable outcomes in some areas within the electromechanical field and in the exploitation of deep waters oil. In the aeronautics industry, as well, Brazil is on the international technological frontier. Given that, the new setting could become an exceptional opportunity to build upon old points of strength and develop new ones. In the process, policies are bound to play a very important role.

The National Program for the Acceleration of Growth (PAC) as the Preamble for a New Agenda of Policies and Some Conclusions

We have already mentioned that a few years after the success of (macro) stabilization policies, attention slowly returned to industrial and technological policies. The policy package announced in March 2004 (Política Industrial, Tecnológica, e de Comércio Exterior), meritorious as it was from some points of view, could not meet the new international challenge. Its basic aim was the strengthening of sectors that generate and disseminate technical progress (semiconductors, software, capital equipment, and pharmaceutical products) - together with non specified support for innovative initiatives. And its major implicit assumption was that the leadership in the industrial field was still held by the United States-European-Japanese triad. This, however, was not anymore a hard fact.

Moreover, the modest growth exhibited in 2005 (2,3%, later corrected to 2,9%) contributed to transforming the demand for growth into a public outcry. This led to the launching of a program for the acceleration of growth (the PAC).

The prominence attributed to large infrastructural projects in the new growth program was already present in previously announced - but never implemented - plans. This is somewhat understandable: while the Brazilian economy was under threat of imminent insolvency – and with the government diligently trying to reduce the role of the state – no program requiring a major involvement of the state ~~itself~~ had much chance of being executed. In addition the infrastructure inherited from the phase of rapid growth was already seriously deteriorated.

Seen by many as a mere repackaging of previously existing projects, PAC may come to be an important step forward beyond a historical phase in which the government's political energy was primarily invested in the effort to promote macroeconomic adjustments and structural reforms. In order to meet its goals, the program intensively turned to the investment

capacity of the remaining state-owned companies. This change faced great initial resistance, especially from those who used to see state-owned enterprises as inhabitants of a limbo from which they would only find their way out when privatized.

Further, by making use of the very companies it controls, the government got directly involved in energizing the economy and promoting growth. Consequently, public investment regained attention amongst the government policies. Moreover, by demanding programs and projects from public agencies, as well as by establishing goals and deadlines for their fulfillment, the PAC resurrected the role of technical skills in the public administrations, that had remained idle or were even lost during the semi-stagnation long period. As a matter of fact, investments in infrastructure constitute the sort of activity that pre-supposes – and induces – a long-term view.

One of the goals of the PAC is the cooperation and convergence of public and private strategies: out of the total estimated investment included in the PAC (R\$ 504 billion), nearly 40% is supposed to come from the private sector. In short, the PAC – even if it is to experience only a partial implementation – will be contributing to the elimination of merely reactive and predominantly non-cooperative behaviors between the public and private spheres. If so, it will contribute to the building of a new governmental culture, which could well be expanded to similar programs in science and technology, health, and other fields.

But the program is undeniably dominated by the government's concern in recovering investment and consequently “unblocking” (in the official discourse) growth.²⁸ Indeed, eliminating the bottlenecks inherited from semi-stagnation, as well as the widely spread fear of investment, continues to be a necessary goal. However, the emergence on the international scene of the devastatingly competitive and extraordinarily voracious Chinese economy has added new challenges to and new opportunities for public policies.

The bottom line is that the Brazilian industrial structure can no longer afford a sort of

linear (and “incrementalist”) catch-up, since the process is at least partly preempted by the fast Chinese catch-up, crowding out other industrializing countries on both the international market and their own domestic markets. Hence merely raising investment and expanding the infrastructure is a necessary but not sufficient condition to face the challenge. The Brazilian economy need to redefine its global insertion, taking into account both its revealed advantages and its potential for new developments.

At least in two fields new chances are quite noticeable: ethanol and oil and gas. Both intensively require hardware – together with a broad range of services. This may be thought of as very promising new frontier for the Brazilian industry. The market itself is providing strong signals in this direction. But long term targets, governmental coordination and intense cooperation between state agencies, existing companies, new private investors, technological institutes and universities are necessary to the proper exploration of the new opportunities. In fact singular strategies in each field (ethanol and oil), together with the opportunities born from overall growth might offer the industrial system the necessary new opportunities for both surviving and developing capabilities adjusted to a sustained path of growth in a sinocentric world market.

Notes

- ¹ The author is grateful to Francisco Eduardo Pires de Souza for his criticism and suggestions.
- ² This statistic represents the weighted average of the growth rate of 15 Asian and Latin American economies between 1950 and 1980. See Maddison (1992).
- ³ The Brazilian tax system, conceived in 1967, suffered – with the passing of time and successive crises – such a number of modifications and corrections that it admittedly became an inconsistent collection full of distortions.
- ⁴ Other advances would unquestionably be necessary. See Khair, et al. (2006).
- ⁵ See Fraga (2004). The article is about the impact of the structural reforms in Latin America, and places Brazil as second in the depth of reforms experienced among the seven strongest regional economies. As for the indicators the author used to examine the reforms, see Lora (2001).
- ⁶ See Castro (2001) and Kupper (2004).
- ⁷ The expression was coined by João Furtado in the article “O comportamento inovador das empresas industriais.” In Velloso (2004).
- ⁸ See Gonzaga Mibielli (2000).
- ⁹ The first broad investigation of the competitive strategies of Brazilian manufacturing industry is found in De Negri and Salerno (2005).
- ¹⁰ See Castro 2005.
- ¹¹ Agribusiness will not be the focus here, but it is important to point out that this large and diversified sector was a pioneer in growing by incorporating technical progress. See Barros, et al. (2002).
- ¹² A similar combination of discontinuity, at the political level, with continuity in the broader orientations of economic policy, seems to have happened in Latin America only in the Chilean transition to democracy.
- ¹³ Data was obtained from Paes de Barros R.,M. Foguel,and G. Ulysseu (eds.) (2007), *Desigualdade de renda no Brasil: Uma análise da queda recente*, IPEA.
- ¹⁴ Data on imports are from FUNCEX. Data on export shares of electrical and electronic goods are from Sectorial Economic Investigations (IES) (2007), *Valor*.
- ¹⁵ For more about the relation between instability and (low) growth in Latin America, see Zettlemeier (2006).
- ¹⁶ See World Bank (2006).
- ¹⁷ We refer here to growth potential, that is, not to how much the economy grew in the past (and/or as a function of production), but due to the resources and competences that can be mobilized for growth – including, and highlighting, the knowledge accumulated at the level of enterprises, research institutes, and governmental teams.
- ¹⁸ The changes mentioned here were identified and commented on in Castro and Pires (2006).
- ¹⁹ See International Monetary Fund (2006), *World Economic Outlook*.
- ²⁰ See IMF (2004), *World Economic Outlook*, Chapter 5: ‘The boom in non fuel commodity prices: can it last?’
- ²¹ The consequences of the dependence on natural resources (the “resource curse”) are at the origin of CEPAL’s advocacy of industrialization. As early as the end of the 1950s, Furtado produced a pessimistic and premonitory report about the Venezuelan case. For many years, mainstream economics tried to deny the specific difficulties that an emerging economy centered in natural resources tend to face. See, for instance, World Bank (2001), *From Natural Resources to the Knowledge Economy*. However, for an assessment of the negative consequences (including at the political level) of the “resource curse,” see Stiglitz (2006).
- ²² *The Newly Industrialized Countries. Challenges and Opportunity for OECD Industries*. OECD, 1998
- ²³ See Batista and Dos Santos (2007).
- ²⁴ For a characterization of the Chinese industrialization trajectory – and some striking differences to the Korean one – see Liu (2005). See also Kroeber (2007).
- ²⁵ See Cui and Hussain (2005).
- ²⁶ See Arbix, et al. (2005).
- ²⁷ See Penrose (2002).
- ²⁸ Primeiro Balanço do PAC, janeiro a abril de 2007. [PAC - First Evaluation, January to April 2007]

Bibliography

- Arbix G., M. Salerno, and J. De Negri (2005), 'A Nova Competitividade da Industria e o novo Empresariado' in J. Velloso (ed.) *O Desafio da China e da Índia: A resposta do Brasil*. José Olympio.
- Barros J., J. Rizzieri, and P. Pichetti (2002), 'Effects of Agricultural Research' in M. Barbosa (ed.) *Impacts of the Agricultural Sector Technological Change on the Brazilian economy*. Empresa Brasileira de Pesquisa Agropecuaria (EMBRAPA).
- Batista J. and W. dos Santos (2007), 'A industrialização da pauta de exportação brasileira entre 1964 e 1974: novos dados e índices para o comércio exterior brasileiro do período,' *Revista de Economia Política*, 27(2).
- Castro A. (2001), 'A reestruturação industrial do Brasil nos anos 90: Uma Interpretação,' *Revista de Economia Política*, 21(3).
- _____ (2005), 'A Hipótese do Crescimento Rápido e Sustentável' in J. Velloso and R. Cavalcanti (eds.). *Cinco décadas de questão social e os grandes desafios do crescimento sustentado*. José Olympio, Rio de Janeiro.
- _____ and F. Pires de Souza (eds.) (2006), 'Especialização e Diversidade na Indústria: O Desafio Contido nos Mais Recentes Dados,' *BNDES: Sinopse do Investimento no. 4*.
- Coriat B. and G. Dosi (2002), 'The Nature and Accumulation of Organizational Competences and Capabilities,' *Revista Brasileira de Inovação*, 1(2).
- Cui L. and M. Syed (2007), *Is China Changing its Stripes? The Shifting Structure of China's External Trade and its Implications*. International Monetary Fund.
- De Negri J. and M. Salerno (eds.) (2005), *Inovações, Padrões Tecnológicos e Desempenhos das Firms Industriais Brasileiras*, IPEA.
- Fraga A. (2004), 'Latin America since the 90s: Raising from the sickbed?' *Journal of Economic Perspective*, 18(2).
- Gonzaga Mibielli P. (2000), 'As Causas do Aumento da Produtividade na Indústria Brasileira nos Anos 90,' PhD Dissertation, Instituto de Economia, UFRJ.
- Khair A., J. Afonso, and W. Oliveira (2006), 'Lei de Responsabilidade Fiscal: Os Avanços e Aperfeiçoamentos Necessários' in M. Mendes (ed.) *Gasto Público Eficiente*. Topbooks.
- Kroeber A. (2007), 'Inovação: Todo o Errado,' *Carta da China*, Edição Especial. Conselho Empresarial Brasil-China.
- Kupfer D., J. Ferraz, and M. Iooty (2004), 'Made in Brazil: Industrial Competitiveness 10 years after Economic Liberalization,' *Cepal Review*, 82.
- Lora E. (2001), *Structural Reforms in Latin America: What has been reformed and how to measure it*, Inter-American Development Bank, Washington DC.
- Liu X. (2005), *China's Development Model: An Alternative for technological Catch-up*. Institute of Innovation Research Working Paper, Hiotsubashi University.
- Maddison A. (1992), *La Economia Mundial en el Siglo XX*, Fondo de Cultura Económica, Mexico.
- Penrose E. (1995), *The Theory of the Growth of the Firm*, Oxford University Press.

Stiglitz J. (2006), *Making Globalization Work*, Norton, New York.

Velloso J. and R. Cavalcanti (eds.) (2004), *Cinco décadas de questão social e os grandes desafios do crescimento sustentável*, José Olympio.

World Bank (2006), *Global Economic Prospects: Managing the Next Wave of Globalization*.

Zettelmeyer J. (2006), *Growth and reforms in Latin America: a survey of facts and arguments*, International Monetary Fund.