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1

Brazil in the 1990s: An Economy in Transition

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I. Introduction

Social sciences are not pure sciences. The analysis of social movements requires one to identify the period of time in which the movements to be considered have taken place, to ensure control of the influence of other, related phenomena. This identification is often associated with calendar periods for several reasons, among others the very availability of most data.

Analysing the Brazilian economy in the 1990s is, however, far more than a calendar coincidence. This has been an extremely rich period to study, and a number of aspects will continue to be the object of analysis for a long time yet.

To start with, the international scenario at the beginning of the decade was one of increasing movement of capital flows and technological transformation. The difficulties associated with an unstable domestic macroeconomic environment, though, did not allow the Brazilian economy to participate fully in either of these new movements. Also, policy makers were constantly reminded of the success of emerging economies elsewhere, and the road to achieve such a bonanza appeared well paved from the viewpoint of several influential agents abroad.

On the domestic front, mounting inflation after a number of failed stabilization plans made fertile ground for varied attempts at fighting inflation. Furthermore, a new Constitution brought new fiscal and social features into an already complicated economic environment.

The second half of the decade, however, was characterized by a distinctly different context. The achievement of price stabilization combined with relative openness to foreign trade has no precedent in the country's economic history. At the microeconomic level, a number of impressive changes have also taken place, all of which have facilitated access to international capital markets and led to a new pattern of growth.

This chapter aims to discuss these features in the light of the adjustment process that took place during the present decade. A number of aspects

correspond to what the literature of reforms in developing countries would have indicated. But not everything actually turned out as one would have predicted or preferred. It is argued that this might have been due to various factors, ranging from the design of the policies to economic agents' actual perception of the market signals.

This chapter is divided into five sections. The next section presents a brief survey of the literature on reforms, in particular suggestions regarding their timing and sequencing. This is followed by a rather lengthy account of the key features of the Brazilian reforms in the 1990s. In the fourth section I discuss some of the outcomes which did not exactly correspond to expectations and attempt to identify their causes. The fifth section lists some lessons derived from the recent Brazilian experience.

II. The need to reform and the basic recipes

Latin American policy makers in general were exposed to a multiple set of pressures during the Seventies and Eighties. Economic and social distortions and inefficiencies, combined with external constraints aggravated by intense movements in the international commodities market and by financial difficulties consolidated the need to promote substantial reforms in these economies.

Individual countries in the region have experienced different approaches over time¹ but on the whole the design of such reforms was strongly influenced by an orthodox reading of the outcomes of the successful experiences of the emerging economies in Southeast Asia.

According to this view, reforming was to be an immediate task, because the sooner the adjustment process was undertaken the lower the costs involved. In the words of a World Bank authority, 'adjustment postponed [is] pain compounded'.²

Market-oriented policy reforms were recommended on the basis of four basic arguments:³ (a) economic liberalization reduces static inefficiencies arising from resource misallocation and waste; (b) economic liberalization enhances learning; (c) outward-oriented economies are better able to cope with adverse external shocks; (d) market-based economic systems are less prone to wasteful rent-seeking activities.

Reforming should thus comprise fiscal rectitude, ensure sustained free trade conditions and reduce to a minimum existing market price distortions. Restructuring economies should be afforded financial assistance during the transition period, so as to reduce the adjustment costs associated with micro reforms: adjustment includes reforms of policies and institutions, in the belief that 'these changes can improve resource allocation, increase economic efficiency, expand growth potential and increase resilience in response to future shocks'.⁴

Financing agencies and the academic mainstream were in apparent agreement that the measures typically called for at the beginning of the process comprised⁵ what came to be known as the Washington Consensus: fiscal discipline, redirection of public expenditure priorities towards health, education and infrastructure, tax reform (broadening the tax base and cutting marginal tax rates), providing competitive exchange rates, securing property rights, deregulation, trade liberalization, privatization, elimination of barriers to foreign investment and financial liberalization.

Such mapping of the ideal path to an undistorted system gives little guidance, however, on how to deal with crucial aspects such as⁶ minimizing the adjustment costs, coping with the implications of differential rates of adjustment between sectors, the appropriate macro-policy during the reforms (and, more specifically, management of the exchange rate), and how to minimise the welfare consequences of leaving one sector controlled while freeing another from state intervention.

In an ideal world a reformer, say, of trade policies would not have to be concerned with these intermediate steps since an optimal policy would consist of an immediate switch to free trade, unless specific market distortions exist.⁷

In practice, however, a correct designing of the reform process is essential not only for the sake of academic evaluations or even to secure the political support for the reforms. Credibility is an essential aspect to be considered.⁸ Lack of confidence that a reform will last introduces distortions which may be self-fulfilling: the reversal of a reform may come about simply by the belief that it will have a short life.

A simple way to illustrate this is with a trade reform expected to be temporary. This might lead economic agents to perceive imported goods to be cheaper only temporarily, and hence incur debt above the level they would otherwise contract, merely for reasons of intertemporal substitution in consumption. If economic agents have little past experience upon which to draw with regard to a more open environment, they have to infer from the experiences of other countries. If they are able to borrow against their perceived higher permanent income through an open capital account, present consumption will increase.⁹ Current account imbalance stemming from such a procedure may lead to renewed trade barriers, thus reversing the initial movement.

The need for a recommended path has given birth to a literature on policy reforms dealing with the timing and sequencing of reforms, as well as the importance of eliminating uncertainty about government intentions.

Most of the debate has concentrated on the question of whether trade liberalization should precede or follow capital-account liberalization.¹⁰ Experience has shown, however, that sharp macroeconomic imbalance at the beginning of the reform period might affect the outcome. An additional, more specific discussion therefore relates such sequencing to an

initial economic environment of high inflation, and deals with the synchronization between the process of price stabilization and the reforms.¹¹

Another, related aspect of the discussion about reforms¹² is the relation between reforming the domestic financial sector and liberalizing the Capital Account of the Balance of Payments. In countries where inflation is high, fiscal deficit and intervention in the domestic financial market often lead to artificially low domestic interest rates. Controls imposed on international capital should therefore only be relaxed after the domestic financial market has been reformed, the fiscal deficit is under tight control and real interest rates have been raised, so as to avoid large, destabilizing capital flows.

If the opening of the capital account takes place when domestic interest rates are maintained below their equilibrium level, there will be a massive outflow of resources. Alternatively, with fiscal deficit under control a reformed domestic financial market will operate at equilibrium interest rates. Reducing constraints on capital movements will stimulate arbitrage movements, leading to an inflow of foreign capital.

There hence seems to be little dispute as to the sequencing between the reform of the domestic financial market and the liberalization of capital movements: impediments to capital movements should not be relaxed before the domestic financial sector is liberalized.¹³

Several authors have also advocated that the Capital Account liberalization should take place only after trade and other sector distortions have been dismantled.¹⁴ The relaxation of capital controls bringing about substantial inflows of capital will induce an increase in the level of aggregate expenditure on both tradable and non-tradable goods, generating real exchange rate appreciation (so less protection for the producers of tradable goods), hence precluding or even frustrating the liberalization of the external trade sector.¹⁵

While the opening of the Capital Account often generates a real appreciation of the exchange rate, it follows both from theory as well as from experience¹⁶ in various trade policy reform episodes that successful trade liberalization generally requires real devaluation of the domestic currency.

In principle therefore, trade reform should come before the dismantling of controls on foreign capital flows. But this conclusion still leaves room for two other questions.

First, it is not quite clear from this debate whether a gradual reform is more desirable than an abrupt one. What is at stake is the outcome itself and the sustainability of the process. As Edwards (1990) puts it, it is possible that gradualism has characteristics that may either enhance or compromise the credibility of the reforms, depending on the actual conditions in each country: by reducing unemployment and allowing for a fiscal equilibrium, a gradual reform will tend to be more credible; but at the same time a slow reform might allow the groups negatively affected by the new policies to organize and lobby against those policies.

A second aspect is the relation between reforms and disinflation. Economic theory provides little guidance in this regard. But experience would suggest¹⁷ that in economies with glaring macroeconomic problems reforms should be initiated only when sufficient progress has been made to reduce such imbalances: instability reduces the benefits of reforms aimed at improving the allocation of resources via changes in relative prices.

Where trade liberalization – the first step in the proposed reform scheme – is concerned, there are three arguments to postponing it until inflation has been controlled.¹⁸ First, the above mentioned relative-price variability affecting the transmission of efficiency benefits. Second, trade liberalization might negatively affect fiscal revenues should the reduction or elimination of taxes on trade surpass tax revenue accruing from the improved trade activity. Third, liberalization requires a compensatory exchange-rate devaluation to protect the Current Account, just as domestic price stabilization would benefit from cheaper imports favoured by an appreciated exchange rate.

It is the exchange-rate argument that warrants detailed consideration here. From the theoretical viewpoint, this is the one that might impose the most serious constraint on trade liberalization.¹⁹ Furthermore, for the present purposes it is directly related to understanding the Brazilian experience since 1994.

The debate about reforming in a context of stabilization policies has focused on whether reforms can assist the disinflation process: trade liberalization may help disinflation by forcing convergence between domestic and external price variation in tradable goods; however, whereas trade liberalization calls for a compensatory exchange-rate depreciation (in view of the downward rigidity of wages) domestic price stabilization, on the contrary, requires that devaluation of the exchange rate be avoided. The exchange rate can thus be used either as an instrument to achieve a real target (in which case it follows the price and wage-setting process) or as a nominal anchor for the domestic price level (in which case it commands that process).

Furthermore, if coupled to financial liberalization²⁰ the real appreciation of the exchange rate will: (a) tend to compromise the credibility of the liberalization episode and (b) after an initial overshooting of capital inflow, expectations of a real depreciation will lead to higher real interest rates, at a time when the real side is going through the costly adjustment that follows the liberalization of trade restrictions.²¹

This exchange-rate dilemma may be illusory, however, if exchange rate overvaluation is considered as a price to be paid to secure the credibility of the process.²² If the inflationary process has strong inertia linked to the indexation or accommodation of key nominal variables²³ to the lagged variations in the price level, a credible commitment should not only take care of inflation, but also remove the nominal rigidities that require the use of devaluation for purposes of competitiveness.

From this perspective an overvaluation of the exchange rate may be viewed as not being an independent source of risk. To a public which has seen many disinflation plans fail for the lack of political will, an ambitious package that attacks all inflationary sources may signal the presence of a government with clear decisions and well-defined policies. This also makes a reversal less likely in the event of temporary setbacks. Hence²⁴ the use of the exchange rate as a nominal anchor may not necessarily conflict with trade liberalization, because if the anchor works, nominal wage rigidity will eventually disappear, improving the likelihood of sustained competitiveness.

Two final observations regarding reforms have to do with the facts that (a) open policies generate their own constituencies²⁵ – as new profit opportunities appear, the entrepreneurs that benefit from the post-reform scenario will fight against any attempted reversal; (b) a reformed system does not necessarily mean the elimination of rent-seeking activities – as long as governments implement policies, individuals will try to obtain benefits for themselves.²⁶

III. The Brazilian economy in the 1990s: an overview

The 1990s are considered 'the decade of reforms' in Brazil. Although some tentative action took place in the late Eighties – as is the case, for instance, with foreign trade liberalization and early privatization – clearly the most significant steps were taken after 1990.

This decade has been a turning point in the economic history of the country. Having been a closed economy in the previous four decades with major presence of the State as producer of goods and services and after a long record of indexed high inflation, by the end of the Nineties Brazil has become an economy open to trade in goods and capital, with the simultaneous reduction of the role of the State as a direct producer.

Furthermore, the economy has also achieved unprecedented price stabilization that has lasted for five years now: the consumer price index increased a record 2,489% in 1993, but has gradually been reduced to single digit figures since 1996, having varied only 2.6% in 1998.

The reforms and their effects cannot be understood without taking into consideration the massive impact of such price stabilization: (a) it provided a 'wealth effect' that affected both consumers and producers, (b) the stable macroeconomic scenario created a political environment favourable to reforms and (c) induced confidence among domestic and foreign investors, at the same time that (d) it eliminated the impressive inflationary gains accruing to the government and the banking sector, with important consequences for monetary and fiscal policies, as well as for the design of stringent new regulations for the financial sector as a whole.

The literature on policy reforms often adopts a taxonomic approach, identifying several levels of reforms. According to this view, Brazil is about to complete its first-generation reforms, starting with trade policy reform and the privatization of State firms in the late 1980s, but intensifying the whole process since the early 1990s. It has also taken several steps towards second-generation reforms, such as social security reform, administrative reform of the public sector, and tax policy reform.

Other policy changes have taken place in the same period with important consequences for the economy. Social programmes have been significantly redesigned to cope with new universal rights assured by the 1988 Constitution, to circumvent fiscal difficulties and to redistribute the burden of service provision between the federal government, local states and municipalities.

In the social sphere, as in other areas (for instance science and technology) there has been an increasing (though insufficient) involvement of the private sector in the financing of several activities. Recent fiscal results and the forecasts for the coming years would suggest that this is a feature that may become more salient in the future.

This is not to say that reforms necessarily went in the right direction, that they were well implemented and even less that they are now complete. But there is no denying how substantially the whole productive environment has changed in recent years as a result of these reforms.

One might ask why there was such concentration of reforms in this particular period. The answer has to do with the increasing perception by domestic economic agents – government officials, the business community and academic analysts – of the need to change. The international economic environment is certainly also part of the answer. The conjunction of the final stages of multilateral negotiations, renewed access to financing by other Latin American countries and fiscal policies elsewhere²⁷ have acted as additional stimuli to reformers.

Reforming (privatization and social security reforms in particular) required major changes to be made to the Constitution. It thus demanded political will and power that could only be achieved on the basis of the consensus among economic agents mentioned above.

Table 1.1 shows the sequencing of the major reforms. The process started with trade policy reform and in the early 1990s some sporadic, tentative movement to privatize public assets, followed by the opening of the capital account of the Balance of Payments. Second-generation reforms began only in the second half of the decade with social security and administrative reforms, as well as the regulation of the financial sector and a series of changes in a number of social programmes, comprising education, health and poverty alleviation.

Table 1.1 Brazil: A Decade of Reforms

| | 1988 and before | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|---------------------------------------|--------------------|------|------|------|------|------|------|------|------|------|------|
| Trade Reform | * | * | * | * | * | * | * | * | | | |
| Opening to external financial capital | | | | * | | | * | * | | | |
| Privatization | * | | * | | | | * | * | | * | |
| Regulation of the financial sector | | | | | | | | * | * | * | * |
| Social Security Reform | | | | | | | | | * | * | * |
| Administrative Reform | | | | | | | | | | | * |
| Reform of Social Programmes: | | | | | | | | | | | |
| • Education | | | | | | | | * | * | * | * |
| • Health | | | | | | | | * | * | * | * |

Note: Asterisks indicate the approximate date of the main measures regulating each reform, not the moment of highest intensity of changes. This is important to bear in mind, for instance, in the case of privatization, far more intense in 1998 in terms of the value actually transacted than at any time before.

Trade liberalization started in 1987, with the first change in 30 years of the nominal tariff structure, and a phasing-down of tariff rates which had been accelerating since 1990.²⁸ The average simple (non-weighted) nominal tariff rate was as follows:

| | |
|-----------|-------|
| 1988–1990 | 33.4% |
| 1991–1993 | 17.8% |
| 1994–1996 | 12.9% |
| 1997–1998 | 13.9% |

There were two moments when the process of tariff reduction was accelerated – in 1990 and again in late 1994. In both cases one of the major arguments for doing so was to provoke a shock of competitiveness on domestic producers, breaking down monopolistic positions and using trade policy as a supplementary tool for the price-stabilization process.²⁹ Trade reform in 1990 was broadened so as to comprise also the elimination of non-tariff barriers and a number of incentives to export, as well as a significant reform of the institutional framework dealing with foreign trade policy. The 1994 reform led to a partial anticipation³⁰ of Mercosur's Common External Tariff, which would otherwise enter operation in January 1995.

Analysis of the impact of trade reform on the trade balance is therefore not straightforward because (a) given the peculiarities of the large domestic market that had been closed for so many years, it took some time for imports to attain a significant value; (b) export growth was the outcome of

two simultaneous processes: multilateral tariff reduction and regional preferences within Mercosur; (c) price stabilization after 1994 provoked a 'wealth effect', which affected domestic demand for imported goods; (d) the exchange-rate policy maintained a good deal of overvaluation throughout the period, affecting foreign trade.

Having made these preliminary remarks, suffice it to note that trade surpluses which averaged US\$ 13 billions in 1992–94 turned into trade deficits averaging US\$ 6 billions in 1995–98.³¹ The imports coefficient³² went up from 5.5% in 1990–93 to 7.2% in 1995–97 (Figure 1.1). The most intensely demanded imported items were raw materials and intermediate products, capital goods and automobiles. The importance of this import structure for the domestic investment cycle and for some productive sectors will be discussed later on.

Trade reform was significant and did help to (i) increase the import component of domestic production,³³ which (ii) fostered labour productivity – Bonelli (1998) estimates that labour productivity in the manufacturing sector has increased at an annual rate of 8.7% in 1991–97, as compared to 0.3% on average in 1981–89 and to 5.6% in the early Seventies – and (iii) increased consumer surplus (total imports of consumer goods increased from US\$ 2.6 billions in 1990 to US\$ 11 billions in 1998), but its impact on exports was surpassed by the overvaluation of the exchange rate³⁴ and the increase in (mostly manufacturing) wages.³⁵

The early 1990s also witnessed a major concern of policy makers to create the conditions for the Brazilian economy to take advantage of the then increasing facilities in the access to international capital markets.

Brazil had since the 1950s been among the developing countries with the highest participation of foreign capital in its productive structure.³⁶ Until the end of the 1970s it was one of the greatest absorbers of foreign investment. That changed during the crisis of the Eighties, and there was a widespread perception that the economy missed the opportunities created by financial globalization, more intense during that decade than in any other period.³⁷

This led to a number of specific policy measures creating favourable conditions to attract portfolio investment, starting in 1991. As a result,

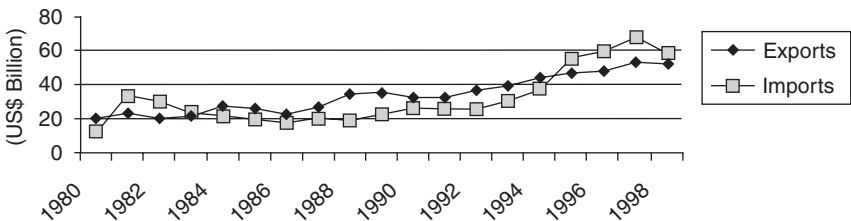


Figure 1.1 Brazil: Trade Balance 1980–98

portfolio investment flows – less than US\$ 800 millions until 1992 – already in 1993 came close to US\$ 7 billions. The capital account of the Balance of Payments changed the systematic deficits experienced in 1985–91³⁸ into a surplus of US\$ 25 billions in 1992.

It is worth noting that this was a period of rather limited economic activity: GDP growth rates in 1991 and 1992 were respectively 1% and –0.3%, reaching 4.5% in 1993. The inflow of resources was thus largely the outcome of changes in domestic legislation,³⁹ and of the relatively low prices of stocks of Brazilian companies, after several years of inflation and low growth.

Recovery of domestic economic activity,⁴⁰ combined with the opportunities created by privatization soon led foreign direct investment to surpass portfolio capital inflows. Yearly flows of about US\$ 900 millions in 1990–93 went up to US\$ 2.2 billions in 1994, US\$ 3.3 billions in 1995, and then boomed to an unprecedented US\$ 9.6 billions in 1996, US\$ 17 billions in 1997 and US\$ 26 billions in 1998.

This massive inflow of foreign capital helped finance most of the recurrent and increasing Current Account deficit: from less than 1% of GDP in 1993 and 1994 it rose steadily, reaching close to 4.5% of GDP in 1997.

The favourable new conditions granted to foreign investors combined with the favourable international environment led to early expectations of massive participation of foreigners in the process of privatization of state-owned enterprises. As a matter of fact, this was one of the major political obstacles to the programme at the outset, but actual results proved those fears to be excessive, since until as late as 1995 the participation of foreign investors in the National Privatization Programme amounted to less than 1% of total revenues.⁴¹

Privatization efforts started in the early 1980s,⁴² but it was only in the mid-1990s that the process became truly significant. In 1991–98 total revenue accruing from the privatization programme totalled US\$ 58 billions (for federal government companies), plus US\$ 29 billions in revenue from local state firms. This involved a total of US\$ 70 billions-worth of assets sold plus US\$ 17 billions of transferred debt (see Table 1.2).

In 1991–94, a relatively small number of firms (32) were privatized, providing a total revenue of US\$ 8.6 billions. But this was the phase when privatization in the manufacturing sector was completed, with the selling of all relevant state-owned enterprises: firms in the steel, petrochemical and fertilizer sectors corresponded to over 90% of the State's entrepreneurial activities. One peculiar aspect in this phase was that one-third of the revenue corresponded to federal bonds.⁴³

The total volume of resources – over US\$ 87 billions, in seven years⁴⁴ – makes this one of the biggest privatization processes in the world, and it will certainly have significant impact on the productive sector. The whole process had a double-sided logic: firms were sold to improve overall efficiency, but in several cases there were strong fiscal reasons.⁴⁵

Table 1.2 Brazil: Privatization Programme 1991–98

(US\$ millions)

| Sector | Number of Firms | Assets Sold | Transferred Debt | Total |
|---------------------|-----------------|-------------|------------------|--------|
| Steel | 8 | 5562 | 2625 | 8187 |
| Petrochemicals | 27 | 2698 | 1003 | 3701 |
| Electric Power | 3 | 3907 | 1670 | 5577 |
| Railways | 6 | 1697 | — | 1697 |
| Mining | 2 | 3305 | 3559 | 6864 |
| Telecommunications | 21 | 26970 | 2125 | 29095 |
| Other | 14 | 2442 | 344 | 2786 |
| Federal Firms | 81 | 46581 | 11326 | 57907 |
| • Local State Firms | 26 | 23724 | 5311 | 29035 |
| • Total | 107 | 70305* | 16637 | 86942* |

Source: A. Pinheiro and F. Giambiagi (1998), and www.bndes.gov.br

* Includes sales of minority shareholdings

The successful anti-inflationary plan and the privatization of state-owned companies have, however, failed to produce the positive effects on fiscal accounts that other countries have experienced. On the one hand, fiscal revenues were indexed before stabilization.⁴⁶ On the other, some expenditures have increased after stabilization, such as wages in the public sector⁴⁷ and expenditure on social security, reform of the health sector and the adjustment of the financial sector.

As a consequence, fiscal balance deteriorated from a surplus of 1.4% of GDP in 1994 to a deficit of about 8% of GDP in 1998. Nominal interest rates needed to finance this deficit⁴⁸ have as a result remained at very high levels,⁴⁹ often in excess of 3% per month, with monthly inflation rates around 0.3% (and even negative in several months in 1997 and 1998).

The end of inflationary transfers to the banking sector⁵⁰ that followed price stabilization led monetary authorities to create new mechanisms to avoid a systemic crisis in the financial sector. The rapid fall in inflation provoked immediate demand for money: the broadest monetary concept (M4) was by 1998 twice as high (in real terms) as in 1994. Also, credit to the private sector had increased fourfold in those four years.

This increase in credit comprises both normal financing and a substantial sum used for adjusting the banking sector. The elimination of inflationary gains coupled with the sharp increase in interest rates (Figure 1.2) since March, 1995⁵¹ has brought enormous difficulties to several private and public banks, making the restructuring of the banking sector a must.⁵²

Monetary authorities have had to intervene in several institutions, and a number of instruments have been devised. The most important policy tools have been credit programmes to finance troubled institutions, both at

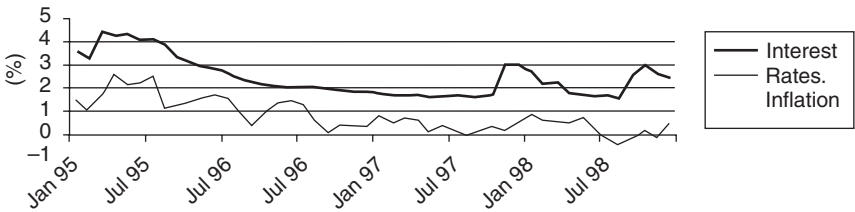


Figure 1.2 Brazil: Monthly Nominal Interest Rates and Inflation (%) 1995–98

federal and local state levels, alongside an induced redesigning of the sector as a whole, through the merging and sale of private and public banks with liquidity problems.⁵³ This led to the elimination of most of the financial institutions belonging to local state governments. As a result, the banking system was able to face the 1997–98 external shocks with a 35% credits/total assets coefficient and a 13% capital/reserves ratio.⁵⁴

Macroeconomic adjustment also had spill-over effects on social expenditure. At the beginning of the decade social policies were characteristically financed via monetary transfers. The huge numbers of potential clients faced a system strongly dependent on contributions,⁵⁵ with multiple organisms and service networks and a strong concentration (two-thirds) of resources in the federal government, all of which led to mistargeting social programmes. Furthermore, the multiplicity of social funds and their link with specific items of expenditure made resources for social expenditure highly sensitive to the business cycle.⁵⁶

The 1988 Constitution weakened the links between contributions and the financing of the system,⁵⁷ made access to social services a universal right and established minimum levels for social benefits. The most radical change has taken place in the health area, with the creation of the Unified Health System, comprising both health services and social security.

In the early 1990s there was ironically intense legislative activity to regulate the new Constitutional determinations, in parallel with sharp reduction in social expenditure⁵⁸ as well as of the institutional apparatus for the provision of social services. By the mid-1990s, a new strategy for social development had been adopted, taking into account the right to universal access for basic social services, and comprising employment and income programmes for generating new opportunities, priority being ascribed to universal programmes.⁵⁹

Since 1994, and despite the fiscal difficulties faced by local States and municipalities, they have been increasingly absorbing responsibilities in the financing of social programmes, thus reducing the amount of resources contributed by the central government.⁶⁰ Table 1.3 displays the distribution of social expenditure by administrative levels and percentage of GDP.

According to figures in Table 1.3, in 1995 the federal government was still responsible for most of the expenditure in 8 out of 14 social programmes. In 1995 social expenditure by federal, state and municipal governments together corresponded to 21% of GDP, 85% of which went on education, health, social security and benefits to public servants.

Price stabilization and political will have allowed for better focusing and higher selectivity of programmes, new expenditure procedures, and clearer technical criteria for the allocation of funds. Social programmes concentrate on two lines of action – investment in human resources and social assistance and programmes to fight poverty.

Education has always been a bottleneck in Brazil's development process. The very dimensions of the country, the poor quality of educational services, syllabuses unsuited to market demands and strong distortions in financing and expenditures⁶¹ are all long-standing characteristics of the education system. A major goal for reform in education is the decentralization of expenditures, unevenly distributed among the three administrative tiers of government.

Health is one of the sectors most affected by the 1988 Constitution. The right to health having become a universal feature imposed new challenges on an already troubled area. Financing sources are varied, comprising contribution out of wages and profits, specific taxes and a variety of other sources. Reform in the health sector concentrates on the redesigning of

Table 1.3 Brazil: Composition (%) of Social Public Expenditure, By Administrative Tier 1995

| Programmes | Federal | States | Municipalities | Total Social Expenditure/GDP (%) |
|-------------------------------|---------|--------|----------------|----------------------------------|
| Social Security | 99 | 1 | 0 | 5.4 |
| Benefits to Public Servants | 57 | 37 | 6 | 4.7 |
| Education | 25 | 47 | 28 | 4.3 |
| Health | 63 | 21 | 16 | 3.4 |
| Housing | 4 | 14 | 82 | 1.1 |
| Employment | 98 | 2 | 0 | 0.5 |
| Social Assistance | 34 | 40 | 26 | 0.4 |
| Urban Transportation | 18 | 15 | 67 | 0.4 |
| Sewage & Water Supply | 24 | 21 | 56 | 0.2 |
| Agrarian Organization | 95 | 5 | 0 | 0.2 |
| Nutrition | 96 | 1 | 3 | 0.1 |
| Science & Technology | 100 | 0 | 0 | 0.1 |
| Environment | 16 | 52 | 32 | 0.1 |
| Human Resources Qualification | 100 | 0 | 0 | .. |

Source: Draibe (1999); rows might not equal 100 due to rounding

sources of financing⁶² and on increasingly focusing services on preventive health actions. The share of municipalities in total expenditure in the health sector increased by more than 50% between 1990 and 1995 (although in 1995 some 60% still corresponded to the federal government).⁶³

The need for reforming the social security system became clear in the late 1980s, provoked by a number of determining factors: until then the system incorporated contributors faster than the growth of beneficiaries and even the growth of the labour force; there has been significant demographic change in the population, and the 1988 Constitution incorporated rural workers into the system.⁶⁴ The number of new rural retirees was close to 2 million between 1991 and 1995, the value of the average pension doubled during that period and it comprised one-third of the rural population of retiring age (Dias and Amaral (1999)).

Furthermore, life expectancy of the population has increased in recent decades. Since the system allows for retirement on the basis of years of service, it turns out that two-thirds of retirees were 54 years old in 1995, with a life expectancy of another 22 years. Expenditure on social security absorbed some 10% of GDP in 1998,⁶⁵ with the number of actual beneficiaries reaching 19 million people. Social security deficit corresponded to approximately 3% of GDP in 1998, most of it (75%) due to benefits paid to public servants.

Reform of the social security system thus comprised the setting of a ceiling for pensions and minimum ages for retirement.

Price stabilization and trade opening have (predictably) fostered economic activity and investment, both via the increase in domestic demand for consumer goods, and by easing the access to cheaper imported capital goods.⁶⁶

Most firms in the manufacturing sector underwent a process of rationalization of production in the early 1990s (1990–92, mostly), as one of the tools to face competitive imports. When inflation disappeared, returns on investment were relatively high, due to the lower cost of equipment and parts, to the fact that most firms had already undergone a rationalization process and that the new equipment helped to close the technological gap of the productive sector. This helped foster factor productivity in manufacturing, even at the cost of making the sector more capital-intensive.⁶⁷

Industrial investment concentrated essentially on modernization, with only limited productive capacity expansion in some specific sectors.⁶⁸ The ranking of sectors by capital formation shows a different picture from that observed in previous investment cycles, such as in the 1970s. Table 1.4 displays the basic information.

Sectors which led investment in the 1970s – manufacturing, mining and petroleum – actually reduced their share in gross capital formation in the

Table 1.4 Brazil: Gross Fixed Capital Formation 1970–97

(percentage of GDP; from constant 1980 prices)

| | 1970/80 | 1981/89 | 1990/94 | 1995/97 |
|--------------------------|---------|---------|---------|---------|
| Manufacturing | 4.5 | 3.2 | 2.0 | 3.3 |
| Mining | 0.2 | 0.2 | 0.1 | 0.1 |
| Petroleum | 0.9 | 1.0 | 0.4 | 0.4 |
| Infrastructure of which: | 5.4 | 3.7 | 2.3 | 2.2 |
| Electric Power | 2.1 | 1.6 | 0.9 | 0.6 |
| Telecommunications | 0.8 | 0.4 | 0.5 | 0.7 |
| Transportation | 2.1 | 1.5 | 0.8 | 0.8 |
| Sewage & Water Supply | 0.5 | 0.2 | 0.2 | 0.1 |

Source: Bielschowsky (1998)

1990s. Investment in infrastructure (electric power, telecommunications, transportation, and sewage and water supply) was reduced in 1990–94 to between half and one-third of the amounts observed in the 1970s. Comparing the first and second half of the 1990s, one finds a sharp absolute fall in investment in electric power, a rather stable pattern in transportation and sewage and water supply and a sharp increase in telecommunications.

Within manufacturing, consumer goods led the pace (the most dynamic segments being durable goods, led by transnational companies), stimulated by the impressive ‘wealth effect’ stemming from price stabilization.⁶⁹ Unfavourable results were recorded for intermediate goods and capital goods.

The three new elements affecting investment in the second half of the Nineties are the new role played by incentives granted by local states⁷⁰ and municipalities, the post-privatization environment, and the import component of investment and production processes. Another important feature of industrial investment since the mid-1990s is that a good deal of it is associated to further exploitation of the country’s (static) comparative advantages in natural resources.⁷¹

This raises the question of the extent to which the model of industrial growth in recent years has become based on the endowment of natural resources and thus dependent on the international commodity market.⁷² A less dynamic pattern raises doubts as to the sustainability of such a model, as well as to its vulnerability to external market fluctuations. A relevant point is therefore the actual conditions of the economy to support an alternative model that favours more technology-intensive products.

Until the late 1980s scientific and technological policy in Brazil was concentrated in building up the infrastructure for R&D. Two lines of action were undertaken: (a) resources for the financing of R&D projects by firms (largely affected by the 1980s crises) and (b) tax incentives.

During the 1990s the institutional structure related to innovation and research has undergone several changes, mainly due to the reduction of the role of federal government: in 1990 it was responsible for 73% of the investments in research and development of new products (R&D); in 1997 that share had been reduced to 64%.

Part of this reduction has been compensated by a more active role played by the private sector. The corporate share of R&D expenditure increased from 15% to 20% in 1990–97, corresponding to an average 0.7% of total sales. Furthermore, the impressive number of ISO 9000 Certificates held by Brazilian firms⁷³ and the increase in private expenditure on technology and capital goods reflect a concern for modernization of productive plant.⁷⁴ But local firms as a whole did not develop their own innovative capacity to enter new markets.

The discussion about potential R&D supply is fundamental for any developing country, and even more so for an economy with two-thirds of its exports consisting of industrial goods. But in the recent Brazilian experience three effects seem to have contributed to such an unfavourable outcome: the negative impact of fiscal adjustment (which meant less public money to finance R&D activities), reforms in legislation facilitating imports of technology⁷⁵ (as part of the process of opening up the economy) and the composition of exports,⁷⁶ an increasing share of which are natural resource-intensive products.

The argument may be illustrated as follows.⁷⁷ Firstly, comparing the productive structure of the manufacturing sector in 1980 and in 1994, it turns out that there was a reduction in the share of traditional industries (from 35% to 31%), but the relative weight of electronic industries⁷⁸ is still somewhat limited (8% in 1994), greatly surpassed by chemicals (20%) and automobiles (10%).

Secondly, comparing the rates of growth in output between 1990 and 1996, the best performance is to be found in the producers of consumer durables (9%), whereas for the producers of capital goods growth was virtually nil. Indeed, for the manufacturing sector as a whole it was less than 2%. As a consequence, the relative importance of industrial sectors when classified by end-use of their production varied as indicated in Table 1.5.

Table 1.5 Value of Production by Types of Industries

| | 1989 | 1994 |
|------------------------|------|------|
| Commodities | 32.5 | 34.4 |
| Durable Consumer Goods | 13.0 | 14.9 |
| Capital Goods | 11.5 | 6.7 |
| Traditional Goods | 42.9 | 44.0 |
| Total | 100 | 100 |

Source: Tigre *et al.* (1999)

According to Table 1.5, manufacturing sectors linked to final consumption have increased their share of output – largely a result of the wealth effect that followed price stabilization – whereas the relative weight of the producers of capital goods fell to almost half in the same period.

Thirdly, and as far as foreign trade is concerned, the share of Brazilian products in total world exports remained close to 1% throughout the 1990s, less than the 1.5% attained in the mid-1980s. The highest rates of growth of exports between 1990 and 1996 were achieved by sugar and wood (19%), meat (14%), chemical products (14%), vegetable oils, vehicles and autoparts (about 9% each). Table 1.6 illustrates the argument, for groups of products.

According to Table 1.6, the share of agricultural products remained constant throughout the decade,⁷⁹ whereas mining products corresponded in 1995–97 to an even smaller share than in 1990. The more important and more dynamic export items are in traditional industrialized products, followed by rather small gains for durable goods and products associated with the dissemination of technical progress.

The undynamic performance of Brazilian exports in the 1990s is therefore apparently associated with the pattern of specialization: notwithstanding the higher share of industrial products, the export bill is largely characterized by the exportation of natural resource-intensive commodities and energy-intensive or labour-intensive products.⁸⁰

An economic environment more open to trade had implications also for the multiplier effects of foreign trade. For instance, Tigre *et al.* (1999) have found that for sectors such as ceramics and steel – in the production of which the country has a (static) comparative advantage – trade opening did not challenge local producers,⁸¹ and was actually instrumental in developing a network of local suppliers. For other sectors – such as automobiles

Table 1.6 Brazil: Export Composition (%) According to Type of Goods 1980–97

| | 1980 | 1990 | 1995/97 |
|--------------------------------------|-------|-------|---------|
| <i>Primary Goods</i> of which: | 28.9 | 19.7 | 17.4 |
| Agricultural | 20.0 | 10.8 | 11.0 |
| Mining | 8.9 | 8.9 | 6.2 |
| Energy | 0.1 | 0.0 | 0.0 |
| <i>Industrial Products</i> of which: | 69.7 | 79.1 | 81.2 |
| Traditional Products | 36.2 | 28.7 | 31.8 |
| Durable Goods | 6.7 | 6.8 | 8.3 |
| Dissemination of Technical Progress | 10.8 | 12.8 | 13.7 |
| Other Industrial Products | 16.0 | 30.8 | 27.4 |
| <i>Other Products</i> | 1.4 | 1.2 | 1.4 |
| <i>Total</i> | 100.0 | 100.0 | 100.0 |

Source: CEPAL (1999)

and telecommunications – which depend less on such endowment of resources, the exposure to competitive imported products combined with easier access to capital goods and inputs produced elsewhere has meant a new challenge. It has actually led to a disruption of the links with local suppliers, thus affecting the possibility of inducing research in product and process development.

The consequences for the labour market of such movements – price stabilization, strong domestic demand and investment in specific sectors – have been varied. Until the beginning of 1995 total employment grew, as a net result of the increase in the number of workers in commerce and services and in the informal sector, more than compensating the reduction in employment in the industrial sector and in agriculture.

The participation of industrial employment in total employment fell from 25% to 16% between 1990 and 1997.⁸² Almost all of this change in the sector structure of employment is associated with the migration of workers from the manufacturing sector to the commerce and service sectors,⁸³ by and large connected with the new technologies and (low) labour costs.⁸⁴ Table 1.7 illustrates the urban occupational structure by sector.

It emerges from Table 1.7 that the decline of employment in manufacturing has been compensated by an increase in labour absorption in housing, commerce and services.⁸⁵

Industrial employment has been falling since 1995 (despite growing output), whereas employment in the commerce and service sectors increased up to the end of 1996, stagnating since then. In other words, at the beginning of the process of price stabilization the increase in employment in the service sector more than compensated the drop in industrial employment, but that happened only until 1997. As a result, the end of the decade has seen higher and increasing open unemployment: according to IBGE, open unemployment increased from 4.3% in 1990 to 7.6% in 1998 (Figure 1.3).

Generally speaking, there has been a clear productivity shock in both the industrial sector and the services sector of the Brazilian economy, although

Table 1.7 Brazil: Urban Occupational Structure by Sectors 1990–96 (%)

| | 1990 | 1996 |
|---------------------------------|-------|-------|
| Agriculture and Mining | 6.8 | 8.7 |
| Manufacturing | 25.2 | 16.0 |
| Housing | 1.0 | 7.5 |
| Transportation & Communications | 4.8 | 4.6 |
| Commerce and Services | 62.2 | 63.2 |
| Total | 100.0 | 100.0 |

Source: CEPAL (1999)

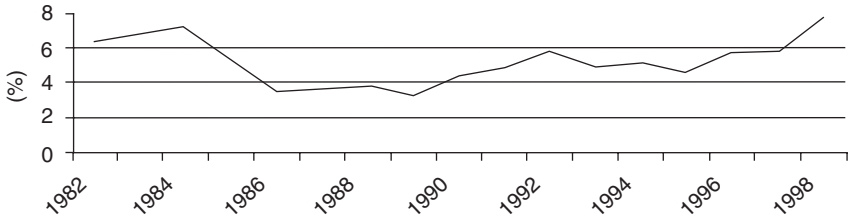


Figure 1.3 Brazil: Open Unemployment Rate (%) in Metropolitan Areas 1982–98

this has been more intense in the former.⁸⁶ Previous references to productivity gains reflected in labour/output ratios are confirmed by other indicators, such as the evolution of the initial wage of hired workers⁸⁷ as well as the number of years of formal schooling among industrial workers.⁸⁸

Real income of urban workers was not reduced throughout the period: (1) stabilization and opening relatively favoured the prices of non-tradable goods; (2) while this favouring persisted the real income of workers in services increased; (3) when (i) employment in both manufacturing and services started to lose momentum, (ii) open unemployment started to rise and (iii) relative prices stopped favouring the products of these sectors, real income of the workers in services started to fall systematically; but (4) in the industrial sector, while employment fell, the real income of workers increased until 1998, raising the real cost of labour in this sector (Figure 1.4).⁸⁹

Adjustment in the labour market to an economic environment open to trade and with stable prices thus involved the migration of workers from tradable to non-tradable sectors. This is consistent with previous considerations concerning the increasing capital-intensity of production that followed trade opening.

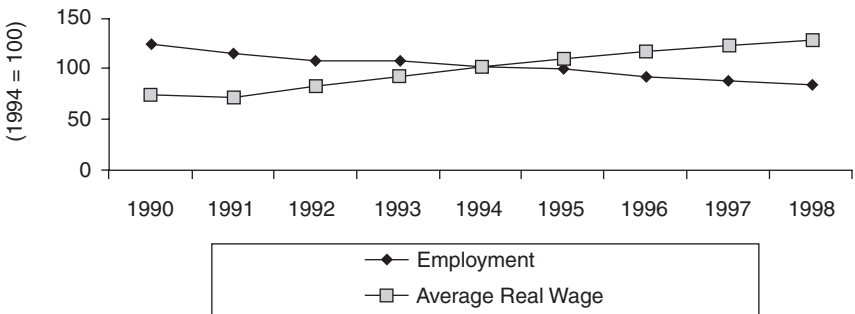


Figure 1.4 Employment and Real Wages in the Manufacturing Sector 1990–98

So much for urban sectors. Until the mid-Eighties the agricultural sector experienced a period of continued governmental intervention, and was instrumental to the growth process by providing food supply at low cost. Since the second half of that decade, however, agriculture has lost its major compensatory mechanism, the (highly subsidized) official credit programmes, as part of the fiscal adjustment process.

In the new (post-1990) environment – where the agricultural sector is exposed to international competition and starved of official credit – the major explanatory factor for output growth has been the systematic sharp increase in productivity: the loss of easy credit led producers to reduce average costs by acute productivity gains in tandem with a moderate reduction in cultivated area and a significant reduction of jobs.

For the most important goods, productivity in 1996–98 had varied quite substantially in comparison to 1990–92: cotton had an increase in productivity of 26%, soya 29%, coffee 27%, maize 30%, and beans 21%.⁹⁰ Indicators of productivity for the agricultural sector as a whole show a systematic increase from 1987 to 1998: the yearly rate of increase for this indicator is close to 1.8%.⁹¹

Such impressive productivity growth was favoured by: (a) the poor infrastructure for transportation leading to more intensive land exploitation, with areas closer to urban centres becoming more intensely used for production; (b) greater use of new domestic technologies;⁹² (c) growing professionalism of the labour force, associated, among other things, with the migratory movements from the southern states to the western and northern regions of the country; (d) trade opening having slashed input costs (Dias and Amaral (1999)).

To compensate partially the social burden of such adjustment in the agricultural sector, the government has accelerated the agrarian reform programmes and created a credit programme for small homestead agricultural production. But as far as income generation is concerned, one of the most important compensatory measures has been the reform of the social security system, allowing for retirement of rural workers.

An important element for the sustained growth of output in the agricultural sector has been the improvement of that sector's terms of trade. Between 1987 and 1994 (peak year) the terms of trade in agriculture increased 46%. Profitability in the sector increased 59% between 1987 and 1998, reflecting an increase of 22% in productivity and 31% in the index of the terms of trade for the agricultural sector.⁹³ It is this advantage – measured in terms of productivity and improved terms of trade – that has helped producers using new technologies to find substitutes for traditional rural credit.

The general picture that emerges from these figures is that the agricultural sector has adjusted through higher productivity combined with

increasing capital/output ratio and selectivity of producers, all of which imposes an additional burden on the urban labour market.

These indicators suggest that Brazil is about to complete its set of so-called first-generation reforms. These new conditions, in turn, pose new challenges, in that different conditions are required for the very sustainability of the results obtained so far, leading to what has been called a second generation of reforms.

These comprise further steps, for instance, in reforming the social security policy. Experience has shown that, as it stands, the social-security system is bound to present alarming deficits in the coming years, and even more so when domestic economic activity is low, providing reduced fiscal revenue. For the system to be in equilibrium over time a number of additional measures have yet to be adopted.

Fiscal constraints throughout most of the decade have led to adjustment of the public sector via expenditure cuts. There are clear limits to that, not least in terms of the very efficiency of the services provided by governmental agencies. Multiplicity of agencies with overlapping functions, geographical concentration of civil servants, and differences in wage levels are some of the aspects that call for sound administrative reform. Some steps have been taken in that direction with a number of measures mostly associated with the control of expenditure. But little doubt remains about the need for additional reforms.

The labour market has likewise shown to be subject to a number of constraints imposed by legislation which in several aspects dates back to the Thirties. Trade union representation, actual funding of the unions, incentives to mobility among different activities are all part of the same package of difficulties that must be tackled soon.

Other reforms which are also often demanded have to do with the functioning of the judiciary system – costly and slow-moving – as well as with the very means of political representation and decision making, by the (historically unprecedented) creation of mechanisms by which citizens feel effectively represented and afforded an active voice. This requires some deep changes in the party political structure and to electoral legislation.

These are steps that will have to be taken if the Brazilian economy and society are to become mature and open to relations with the rest of the world. But these further reforms are more complex in nature and require far more time and political consensus than those achieved so far.

IV. What did not work? Do we know why?

The Brazilian experience with reforms is rich. Reforms had (ex-post) a well-defined sequencing, were varied, and mostly concomitant with a stabilization programme.

Little doubt remains about the 1990s having been a period of remarkable changes in the Brazilian economy, with several of the so-called first-generation reforms having been virtually completed. A number of indicators show, however, that not everything went the way one would have expected.

To start with, the two spates of intense import tariff reduction that took place in 1990 and 1994 were mostly designed as part of price-stabilization programmes. As a consequence, the phasing down of tariff rates was neither instantaneous nor linear over time. Several sectors had rather to cope with a seesawing sequence of increases and reductions of tariff rates in a relatively short space of time.⁹⁴ This mixed signalling imposes a burden on investors and consumers of imported goods.

One of the most frequent criticisms in relation to the stabilization policy adopted in 1994 is that looking back five years on from its adoption it turns out that the programme has remained essentially a stabilization programme. It lacked a medium- to long-term strategy. Economic policy remained subordinated to this prime goal, and this was not without cost.

The exchange rate was kept below equilibrium levels on the grounds that: (i) economic 'fundamentals' have changed with price stabilization (hence parity criteria had to be reconsidered on a new basis), (ii) exchange-rate devaluation would have imposed cost pressures (thus impairing the stabilization process), and (iii) the sounder macroeconomic scenario would ensure the attractiveness of the economy to foreign investors. As shown in Figure 1.5 competitiveness (measured in terms of parity) deteriorated until mid-1996.

Interventions in the foreign-exchange market via adjustment of bands or intra-band intervals were defined by variations in wholesale price indexes, on the grounds that: (a) in stabilization processes the prices of services typically take longer to adapt to foreign prices than the prices of those goods exposed to foreign competition; (b) the relevant indicators are those associated with competitiveness of tradable goods; (c) given the magnitude of

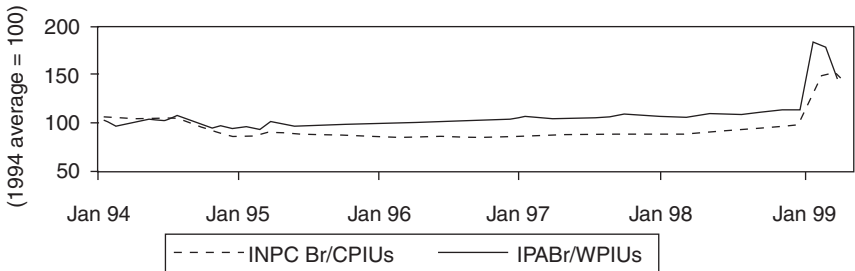


Figure 1.5 Brazil: Real Exchange Rate 1994–99

changes in the process of price formation, there would be no sense in taking as references the price levels prior to the *Real* Plan.

As Figure 1.5 shows, the overvaluation of the *real* was more pronounced when considered in terms of consumer prices. Such overvaluation has been reduced since 1997, when the government started to signal the need to change the exchange rate gradually in line with domestic inflation, but external pressure called for sharper variation of the exchange rate in 1999.

The positive effects on competitiveness stemming from trade reform were expected to generate positive export performance. It is still not quite clear the extent to which easier access to imported goods has helped export growth. In any event, high domestic interest rates affected the production of exportable goods, and wage increases coupled with an overrated currency have negatively affected traders. At the same time, demand for imports boomed. As a result, large trade deficits prevailed.

The literature surveyed in section II suggests that this procedure might have been part of the government's strategy to gain credibility for its reform programme. It is not clear, however, what timespan is required by the credibility argument: exchange-rate policy was essentially maintained with only minor changes for four-and-a-half years.

On the monetary side, in the first half of the Nineties domestic debt was financed via bonds with fixed interest rates. Since the *Real* Plan, price stabilization combined with the inflow of foreign capital has led authorities to alter the financing structure to a predominance of bonds with flexible interest rates (75%) and dollar-indexed bonds (21%). Continued use of monetary policy and a restrained exchange rate were vital for sustaining price stability. The maintenance of high interest rates this policy mix requires, however, has fuelled public debt, and the government has not been able to make the necessary changes in policy.

This is not to say that no attempt was made to increase revenue: fiscal revenue expanded from 25% of GDP in 1993 to 30% in 1998, and 'primary'⁹⁵ fiscal results were positive throughout the second half of the decade. The problem lies in the expenditure side, and especially as a consequence of the variation of domestic interest rates: in 1998 payment of interest rates on domestic public debt consumed 44% of total fiscal revenue.

An overvalued *real* fuelled importers' demand for foreign currency. Changes in legislation, price stabilization and renewed access to international capital markets produced a massive influx of foreign capital (loans and portfolio investment initially, followed by foreign direct investment).

The outcome has been a vicious circle of foreign currency inflow being monetized and having to be neutralized via higher interest rates. These, in turn, put pressure on fiscal accounts, leading to higher debt, a need for new loans and hence even higher interest rates. Table 1.8 presents the various components of fiscal deficit.

Two aspects are worth noting in Table 1.8. First, interest on domestic and external debt accounted for most of the deficit by the end of the decade. Second, the monetization that took place at the beginning of the stabilization process was replaced by domestic and external sale of bonds as a source of public financing.

Reliance on external savings has been a mixed blessing. It has helped to finance public debt, as shown in Table 1.8, but at the same time the increase in the external savings rate after 1994 (from 0.9% to 4.4% of GDP in 1998; see Figure 1.6) mostly financed consumption. The investment rate increased from 15% to 18%⁹⁶ in those four years,⁹⁷ but most of it was essentially modernization projects, not productive capacity expansion.⁹⁸ Between 1993 and 1996 private consumption accounted for 72% of the increase in aggregate demand, whereas capital formation corresponded to only 22%.⁹⁹

The privatization programme helped cope with this background of incomplete fiscal adjustment via the sale of public firms and the relief of the fiscal burden imposed by inefficient state-owned enterprises. Whatever the consequences for productive efficiency, however, two side effects are worth noting.

Some firms were sold even before the regulation of their sector was complete, and this may negatively affect competition in the domestic market. On the other hand, privatization of several important firms was initially the outcome of financial arbitrage movements, involving agents not directly involved in the productive activity, and – until recently – limited participation of foreign investors. Efficiency gains may as a consequence not be as high as planned. It may similarly take some time before changes in ownership provide the conditions for competitiveness.

Even though one of the objectives of the privatization programme was apparently to maximize revenue, and despite the impressive sums involved,

Table 1.8 Brazil: Main Components of Fiscal Deficit (% of GDP)

| | 1994 | 1998 |
|------------------------------|------|------|
| 'Operational' Fiscal Deficit | -1.4 | 7.5 |
| Uses | | |
| 'Primary' Deficit | -5.3 | -0.0 |
| Interest on Domestic Debt | 3.2 | 7.2 |
| Interest on External Debt | 0.7 | 0.3 |
| Sources | | |
| Domestic Financing | -2.6 | 4.5 |
| External Financing | -3.0 | 2.2 |
| Monetary Expansion | 4.3 | 0.8 |

Source: Central Bank Bulletin, May 1999.

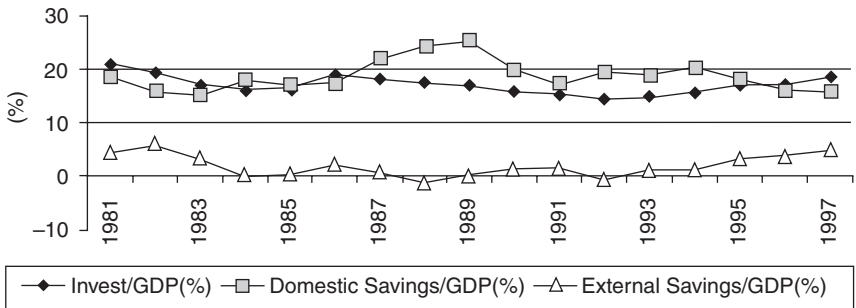


Figure 1.6 Investment and Savings (% of GDP) 1981–97

a hefty public debt remained, due mostly to the public-sector wage bill (9% of GDP in 1997), social security deficit (9.4% of GDP) and real interest rates (3.4% of GDP).¹⁰⁰

Privatization of public companies, in addition to changes in regulation and elimination of public monopoly in several sectors, have improved private capital activity. But private capital has become more active only in the productive sector. Its contribution to social expenditures has remained quite limited. Although private firms and NGOs have for quite some time participated in the provision of social services, most of it remains very much a public-sector activity.

The level of social expenditure in Brazil is comparable to most medium-income countries – about 19% of GDP, although unfairly distributed – and reforms have not so far been able to alter significantly the origin and composition of revenues: in spite of constitutional changes, social expenditure remains dependent (58% in 1996) upon funds formed by social contributions.¹⁰¹

Furthermore, aggregate social indicators suggest that there is still a long way to go in this area. Price stabilization and public transfers have provided significant, positive effects. Real income of employed workers increased 30% between 1993 and 1997, due essentially to: (a) sharp increase in transfers to households at all income levels and (b) changes in relative prices that have reduced the price of basic products. As a consequence, between 1990 and 1996 the proportion of households below the poverty line fell from 41% to 29%,¹⁰² which is an undisputed positive indicator.

Insofar as income equality is concerned, Neri and Camargo (1999) estimates – using PNAD¹⁰³ data – confirm the well-known high-income concentration in Brazil, and find relatively small variation in the indicators of inequality between 1990 and 1997 (the coefficients are almost stable, when one allows for the margin of error in this type of indicator). This result is achieved using both a Theil-T index (0.748 in 1990 and 0.715 in 1997 for

all income sources) and a Gini coefficient (0.607 in 1990 and 0.595 in 1997 for all income sources).¹⁰⁴ Moreover, most of the reduction in inequality measures obtained in Brazil in 21 years (1976–1997) took place in 1993–1997.

Neri and Camargo (1999) also show that detailed computation of primary PNAD data calls for a qualification of these results. This fall in overall inequality indicators does not reflect an improvement in income distribution: the share of the richest strata of the population in total income remains very high and the individuals in those strata have accrued most of the gains stemming from a number of effects, such as those associated with better payment for more qualified workers, better payment by type of activity, financial gains obtained from the high interest rates, and others. Several tests indicate that the improvement in those inequality indicators is an outcome of wealth effects ensuing from the lower cost of the consumption basket as well as the reduction of volatility of workers' income resulting from price stabilization. There has hardly been any significant structural change in the profile of income distribution in this period.

Be that as it may, the significant number of households that crossed the poverty line has had a major impact on domestic aggregate demand. As a consequence, imports boomed at the same time that the aggregate investment rate increased, by and large to meet domestic demand.

In most industries investment increased significantly in 1995–97 as compared to 1990–95. But except for telecommunications it remained below the levels observed in the 1970s and 1980s. In the 1990s there is clearly a new investment model, probably more efficient from the microeconomic standpoint, but not instrumental in terms of productive capacity and economic growth. Furthermore, investment has been more intense in those sectors that remained somehow protected from foreign competition (such as consumer durables), with highest productivity, and where the presence of transnational companies is more intense.

Apart from manufacturing, the record of investment is mixed. In the mining industry there has been very limited investment (due to the relatively poor knowledge of available resources, and unpromising market prospects for those minerals with known reserves), the same occurring in the petroleum industry.

Productive and distributive bottlenecks are so widespread that they have come to be known as 'Brazil Cost', meaning overall inefficiency costs imposed by specific inadequacies. Investment in infrastructure is also a mix of success and failure. Modernization of ports is under way, since privatization, but at the same time there has been relatively little investment in railways and equipment, and several constraints remain in the railway system due to the lack of integration with other transportation facilities. Private investment is also starting to improve conditions on a number of

highways, but this is still a troubled sector, since only a few motorways in the country are likely to be privatized, given the expected private profitability.

The most impressive performance has taken place in telecommunications, with an unprecedented amount of investment associated with privatization. At the same time, however, there has been a mediocre performance in electric power, leading to insufficient supply and even a risk of blackouts. In sewage and water supply there has been an important recovery of investments since 1996, but there might be some future constraints caused by financial difficulties and high indebtedness of firms in the sector.

From the viewpoint of industrial policy, therefore, reforms have allowed only partial success in the improvement of infrastructure. As shown, output growth could resume for some time, but increasing doubts persist as to the resulting productive structure and its long-term prospects, inasmuch as the economy's insertion in the international division of labour is concerned.¹⁰⁵

In general, firms have sought to adjust to import competition via defensive specialization strategies, often negatively affecting the local production of parts and products with higher technological components. The process of adjustment of the industrial sector has fostered competitiveness in those sectors that are intensive in gains from scale and are labour-intensive. Facility to import capital goods has stimulated the modernization of sectors with low technological dynamism.

Between 1991 and 1993 a number of measures facilitated the importation of technology. But the utilization of foreign technology has traditionally not been accompanied by a domestic technological effort other than the adaptation of such technologies to local conditions.¹⁰⁶ Only a limited number of firms have R&D activities, and technological links outside the firm are rather limited, not only among firms but also between them and universities and research institutions. An excessively heterogeneous industrial sector makes it harder to establish technical liaison among firms.

More capital-intensive production processes with higher import content have also added a structural component to the increase in open unemployment: even when the economy resumes an output growth trajectory, the reduction in open unemployment is slower than in previous periods. The period of time that the average worker remains unemployed increased from 3.5 months in 1991 to 6 months in 1998.¹⁰⁷

This is compounded by labour legislation.¹⁰⁸ As a consequence, 3% of the workers in the manufacturing sector change job every month, reducing the incentives for labour training, and adding to the difficulties previously mentioned with regard to local technological efforts.

The effects of adjustment were also felt in the rural area. Reduced credit, trade liberalization and an overvalued currency have provoked significant changes in the relative prices of agricultural products.

The agricultural sector adjusted by trying alternative forms of internal capitalization, mostly associated with sharp improvement in productivity, cost cutting and reduction of assets. As a consequence, there has been massive unemployment.¹⁰⁹

The impressive increase in demand for food¹¹⁰ following stabilization was met by an increase in domestic food supply fostered by the significant reduction in imported input costs. This characteristic, plus the sharp reduction of official credit, has proven to be highly discriminatory against smaller producers, users of more traditional technologies. The elimination of producers with below average productivity levels likewise aggravates open unemployment rates.

The questions that emerge from this panorama and the dissatisfaction with the results have to do with the reforms having been incomplete, incorrectly implemented or whether inappropriate signals were given to economic agents.

V. Lessons from the Brazilian experience

The reforms that have taken place in Brazil since the late 1980s are quite illustrative in several aspects. To start with, these reforms have at least two characteristics not considered by the usual models: (a) they have taken place alongside a process of regional integration (Mercosur), and the commitments associated with that process were significant, at least for foreign trade policies; (b) Brazil is a federative structure, and this has major implications for the outcomes of several reforms, such as the reforms of the social security system and the financial sector.

As suggested by Table 1.1, section III, the sequencing of reforms has apparently corresponded to the recommendations found in the literature: trade reform has preceded every other reform. But there were clearly two stages – until mid-1994 and thereafter, the turning point having been the adoption of a drastic domestic price stabilization programme.

In other words, trade reform started at a point when the economy still presented acute macroeconomic imbalances – so the benefits transmitted via relative prices could not be maximized – and was then accelerated in tandem with a stabilization programme.

This simultaneity of opening and disinflation is more familiar to the literature about reforms.

Indicators shown here suggest that opening has actually helped stabilization and fostered producer and consumer surpluses through access to imported goods. The simultaneity of exchange-rate overvaluation required for stabilization purposes affected both the trade balance and the relative price of tradable and non-tradable goods. As a result, trade deficit burgeoned and there was a stimulus to factor movement towards the production of non-tradable goods.¹¹¹

It is conceded that during stabilization programmes the maintenance of an overvalued exchange rate might be a cost to be paid, if it is part of the government strategy to show fierce commitment to reform. The alternative social cost of dwindling faith in the reforms could be much higher. The question posed by the Brazilian experience is, however, that such a policy remained for quite a long period, well beyond the period of time one would have considered necessary to induce credibility.

Consequently, this has led to increasing concern in terms of long-term growth. Signalling to economic agents has concentrated on stabilization purposes. Not much has been done in terms of the conditions for resuming growth, except for the expected efficiency effects stemming from privatization and trade opening. As a result, investment has increased as a whole, and is more efficient in microeconomic terms, but the amount actually invested is not sufficient from the viewpoint of a long-term growth strategy (increase in productive capacity has been limited) nor does it give much hope in terms of export performance.

It has also been shown that the literature on reforms indicates that reform of the domestic financial sector should come before the dismantling of controls on foreign capital. The Brazilian experience has been peculiar in this respect, too. Incentives for foreign investment were adopted in 1990–91, whereas the actual reform of the financial sector only took place in 1995, after adjustments became necessary due to the loss of inflationary gains that accrued to the banking sector. That reform has not induced a reduction in interest rates, as one might have expected. Instead, there has been a vicious circle of capital inflows combined with fiscal deficit leading to higher rates, which attract new capital, and so on.

In terms of the models reviewed in section II, when lack of faith in the permanence of reforms coincides with access to external financing, the private sector incurs debt to finance anticipated consumption. The Brazilian experience shows a different story. The same effect of increasing external debt essentially to finance domestic consumption occurred in a context of relatively low investment but intense domestic demand, even when there was little doubt regarding government intentions (as illustrated by the series of political gains the government has accumulated).

The basic recipes regarding structural adjustment would also indicate that public expenditures should concentrate on health, education and infrastructure, leaving all other activities to private enterprise.

This is perhaps the aspect where the federative structure of Brazilian society stands out more clearly as determining the outcomes. Sections III and IV have shown that a number of aspects have changed in the structure of public financing. But evidence also shows that: (a) private-sector commitment to financing in these areas is slow and limited and (b) there are structural constraints that condition the extent to which it is possible to transfer expenditures from the federal government to local states and

municipalities. Pursuing such reforms requires a redesigning of the entire fiscal structure.

This latter aspect, compounded by indications of rigidities in the labour market imposed by legislation and to the increasingly evident costs involved in the way the judiciary and legislative powers operate, lead to the conclusion that there is no partial reforming. Once initiated, if the reform process is to remain, there is need for continual deepening and spreading of the process itself.

In brief, one might identify seven lessons (at least) that can be derived from the Brazilian experience in the 1990s:

1. There are clear gains accruing from the end of inflation but the outcome depends on how stabilization is sustained. Brazil has not adopted (i) a repressive scheme, such as in Chile in the Eighties or Argentina (with Bonex and the reduction of nominal wages) nor (ii) a negotiated procedure, such as in Mexico and Israel. Instead, in the Brazilian experience since the mid-1990s, there has been (a) a nominal exchange rate *anchor*, (b) high positive real interest rates, (c) a real wage squeeze in the public sector, combined with (d) quantitative adjustment in the labour market, all of which imposes the costs of impairing competitiveness and performance in the medium-to-long run.
2. Trade opening has increased producer and consumer surpluses, as theory would have suggested. But the way opening took place seems to have imposed excessively high costs on some sectors.
3. Fiscal adjustment is a must, if one wants to avoid excessively high interest rates and resume public-sector action. But adjustment should be devised in such a way as not to impair productive efficiency nor impose excessive social costs: private financing of social expenditure is neither immediate nor should it be taken for granted.
4. Adjustment of the financial sector is crucial in a world of intense capital movement: the Brazilian process has cost less in terms of GDP than similar processes in other countries and has been apparently instrumental in avoiding the multiplier effects of recent external crises.
5. However important, price stabilization should not become the sole goal of economic policy. Experience does show that it takes some time for inflationary expectations to die out.¹¹² But a correct signalling to economic agents with regard to resuming output is as important, in order to ensure the very conditions for the reforms to be sustainable over time.
6. Once initiated, the process of reform calls for its own continuity at progressively higher stages if a reversal is to be avoided. Therefore, economic contexts with low inflation and open economic relations with the rest of the world call for fiscal fitness and for changes in labour legislation as well as modifications in administrative and institutional procedures.

7. Relying on external savings to resume an investment cycle is a risky bet, since decisions by foreign investors are taken on the grounds of what happens to domestic variables, but also include facts emerging elsewhere.

The intensity and multiplicity of the reforms undertaken in Brazil in the 1990s were such that it is perhaps still early to appraise them fully. A number of policy changes – such as the privatization of public enterprises and the reform of the social security system – are bound to be translated into dynamic gains only after some time. But it is now nine years since the first significant movements took place, and certainly some of the lessons that can already be identified contribute to our understanding of the adjustment process in a developing economy.

The Brazilian experience illustrates a case where reforms did not follow the prescribed ideal sequencing, where in some cases there was inadequate signalling to economic agents, but also where the gains that have been achieved might easily be lost in the event of a reversal of these movements.

Notes

- * UN/ECLAC and Universidade de Brasilia. Opinions here are strictly personal and do not necessarily represent the position of these institutions.
1. As witnessed, for instance, by the Chilean, Argentine and Uruguayan opening processes in the late Seventies and early Eighties, as compared to the later trade reforms in Mexico, Bolivia and Brazil.
 2. Stern (1991), p. 3.
 3. Rodrik (1993a), p. 7.
 4. Thomas *et al.* (1991), p. 12.
 5. According to Williamson (1990).
 6. Conley and Maloney (1995).
 7. Mussa (1986).
 8. Calvo (1989).
 9. Conley and Maloney (1995).
 10. At what point should reforms also include other markets, such as the labour market (an inevitable step, if trade opening is to remain), is not so clearly stated in the literature.
 11. A matter of great interest for Brazil in the early Nineties.
 12. Largely influenced by the Chilean experience in the early Eighties.
 13. Edwards and Edwards (1987) and Edwards (1990).
 14. McKinnon (1982).
 15. An alternative way of presenting this argument follows from the pace of adjustment in the goods and financial markets: since the former takes more time to clear than the latter, a homogeneous reform would call for the goods markets to be liberalized before financial markets (J. Frenkel, cited in Edwards (1990)).
 16. Chomski and Papageorgiou (1986). Real devaluation of the domestic currency is considered a necessary condition for successful trade liberalization.
 17. Corbo and Fischer (1992).
 18. Rodrik (1993b).

19. See the discussion in Rodrik (1993b).
20. The elimination of inflationary gains resulting from a successful stabilization process may lead the financial sector to look for other sources of financing.
21. Edwards and Edwards (1987).
22. Rodrik (1993b).
23. Wages, monetary aggregates, the exchange rate.
24. Rodrik (1993b).
25. Rodrik (1992).
26. Rodrik (1993a).
27. Taxes and interest rate differentials were a major stimulus to international financial arbitrage movements.
28. A full account of the changes in trade policy in the Nineties would also have to consider that for the first time in its history Brazil was committed to a regional integration process, with some important additional consequences.
29. Some criticism remains with regard to the way these changes actually took place. See Baumann *et al.* 1997 for a detailed account of tariff reforms in 1994–96.
30. To September, 1994.
31. Despite the continued export expansion – 6% yearly growth on average in 1994–98 – and the improvement of the terms of trade (almost 20% between 1991 and 1995).
32. Total imports/GDP (%).
33. Data from IBGE indicate that in 1990 only 11% of gross fixed capital formation in machinery and equipment corresponded to imported goods. In 1997 that percentage reached 41% (Sáinz and Calcagno (1999)).
34. Exchange-rate policy during the 1990s was rather varied. Starting from an initial position of letting the market determine the equilibrium rate (as an additional tool for breaking a long-standing indexation process) the government was soon led to adopt a band system that experienced some changes over time. In January 1999 external pressure based on the accumulated overvaluation led to new freely floating system.
35. A Bilateral Real-US Dollar index deflated by wholesale price indexes based in mid-1994 would show overvaluation from July 1994 to March 1996, reaching a maximum of 17 percentage points by February 1995. Bonelli and Fonseca (1998b) qualify this argument: while labour competitiveness increased 62% in 1990–96, the average wage in US dollars increased 84%, which means that productivity gains were surpassed by labour costs. In other words, the reduction in competitiveness was not due merely nor predominantly to exchange-rate overvaluation: industrial wages deflated by the wholesale price index increased 76% in that period, compared to a 5% appreciation of the Real against the Dollar.
36. It has been estimated (Chudnovsky and Lopez (1997)) that in 1995 92% of total sales in the automobile industry, 59% in the pharmaceutical industry, 56% of the sales of electrical appliances and 44% of beverages and tobacco in Brazil were associated to foreign-owned firms.
37. Brazil's share of total world foreign direct investment was as follows: 1970–75 5.1%; 1976–80 6.3%; 1981–85 4.4%; 1986–90 1.2%; 1991–95 1.3%; 1996 2.7%, according to UNCTAD, World Investment Report, several issues.
38. Thanks to the amortizations of the external debt.
39. As well as international liquidity.
40. GDP growth rates went from –0.3% in 1992 to an average 4.5% in the next four years.
41. According to Pinheiro and Giambiagi (1998).

42. In 1979 the government created the Special Secretariat for the Control of State Enterprises (SEST), with a mandate to rein-in state enterprises. It was not until 1981 that the first 'Special Privatization Commission' was created (Pinheiro and Giambiagi (1998)).
43. For a detailed account of the whole process of privatization in Brazil see Pinheiro (1996).
44. And with a number of significant firms still to be sold, in the energy and telecommunications sectors.
45. For instance, privatization at the state level was important for its more pronounced fiscal impact: while federal-owned firms showed a fiscal surplus equal to 0.1% of GDP on average in 1995–98, local state firms recorded a deficit of 0.5% of GDP in the same period. See Pinheiro and Giambiagi (1998).
46. The 'Olivera-Tanzi effect' associated with the end of inflationary processes was small: in the inflationary years this effect was actually positive, given that indexed revenues coupled to delays in payments afforded the government extra gains.
47. Wage policy in the public sector in 1995 (with wages being adjusted to compensate previous inflation) is estimated to have added some 15–20% to the wage bill. Furthermore, the sharp increase of the minimum wage in that same year also affected social security expenditures. These two items taken together are estimated to have added some 2% of GDP to total government expenditure (Baumann and Mussi (1999)).
48. As well as neutralize the monetary impact of the inflow of foreign resources.
49. And increased sharply even further in response to external shocks in 1995, 1997 and 1998.
50. Transfers accruing from the fall in the real value of deposits. It is estimated that those transfers corresponded to 4% of GDP in 1990–93, having disappeared since 1995.
51. Monthly average nominal rates for overnight operations rose from 3.2% in February to 4.4% in March 1995.
52. The proportion of nonperforming operations increased from less than 9% of total loans to almost 14% by the end of 1995 (Baumann and Mussi (1999)).
53. A total of 42 banks (out of a total of 271) were affected, from July 1994 to December 1997.
54. Higher than the Basle Committee recommended 8% ratio.
55. Fixed percentages of wages and profits, as well as other quasifiscal sources of revenue.
56. Draibe (1999).
57. Although financing remains very dependent (58% in 1996) upon such contributions.
58. Social expenditure by the federal government fell from 11.4% of GDP in 1990 to 9.7% in 1992, a recessive period. Individual areas were affected in different manners: while federal expenditures in the health sector, food and sewage and water supply were in 1993 between 50 and 60% of their corresponding value in 1989, expenditure on social security had actually doubled in the same period (Draibe (1999)).
59. The social expenditure/GDP ratio increased some 4% between 1990–91 and 1996–97 (coming close to 20%). In the same period the share of social expenditure in total public expenditure remained approximately the same (59%) (CEPAL (1999)).
60. This has been made possible by the higher transference of resources from the federal government to states and municipalities, as well as by the improvement

- of their fiscal revenue: in 1980 states absorbed 25% and municipalities 9.6% of total revenue; in 1991 those shares had become 27% and 16%, respectively (Draibe (1999)).
61. By way of illustration, public per capita educational expenditure is estimated at US\$ 223. But that reflects US\$ 870 per student at the basic level and US\$14,303 per university student (figures refer to 1995; see Draibe (1999)).
 62. The recent tax on cheques is the most well-known example.
 63. It is estimated that the number of persons covered by private health plans has increased fourfold in ten years, reaching 45 million people in 1998. This is more a reflection of discontent with the state system than actual planning (*The Economist*, 8 May 1999).
 64. The value of retirement pension is estimated on the basis of the last 36 months of contribution to the system, up to a limit of approximately US\$ 1000. Civil servants can, differently, retire and earn the equivalent of their last wage. Rural workers are afforded retirement but do not contribute. Resource transfer that followed from the inclusion of rural workers in the social security scheme are considered as having been a major contribution to reducing the percentage of households below the poverty line from 41% in 1990 to 20% in 1996 as estimated in CEPAL (1999).
 65. When both public and private regimes are taken into account.
 66. An effect amplified by the exchange-rate overvaluation throughout most of the second half of the decade.
 67. Bonelli and Fonseca (1998b) estimate that the yearly increase in total factor productivity went up from an average of 1% in the 1980s to 2.1% in 1990–97. According to Neri and Camargo (1999) industrial output grew 10% between 1991 and 1995, whereas industrial employment fell 22% in the same period, leading to a 40% increase in labour productivity.
 68. In some sectors (e.g. the automobile industry) there has actually been some 'greenfield' investment, motivated by tax incentives. But in most sectors investment projects essentially aimed at modernization.
 69. The only exception being textiles.
 70. Which have played a decisive role in the unprecedented geographical relocation of productive plants the country has been experiencing in recent years.
 71. According to Bielschowsky (1998) total fixed investment in manufacturing at constant 1980 prices averaged 3.3% of GDP in 1995–97. The group of 'dynamic' sectors formed by producers of Steel Products, Transportation Material, Processed Food, Electric and Electronic Material, Plastics, Pharmaceutical Products and Textiles invested on average some 2.1% of GDP, whereas the producers of Chemical Products, Machinery, Non-Metallic products, Pulp and Paper, and Rubber Products invested on average only 0.77% of GDP in the same period.
 72. Different, for instance, from the strategies followed in other emerging economies and in Brazil in previous decades, i.e. the provision of stimuli for (producers and) exporters to enter dynamic, new markets.
 73. About 2,500 Certificates until 1997 (Tigre *et al.* 1999).
 74. Though positive, such results compare rather poorly with other countries. The R&D/sales ratio for OECD countries comes close to 2%, and even other emerging economies present a higher commitment to technology: in South Korea the share of the private sector in R&D is as high as 80%.
 75. In 1991 and again in 1993 specific norms facilitated technology transfer contracts between foreign subsidiaries in Brazil and their parent companies (see Tigre *et al.* (1999) for a description of the major changes in legislation).

76. The elimination of a number of export incentives has led to a more 'passive' participation in the international division of labour.
77. Tigre *et al.* (1999).
78. The most dynamic segment in the present technological paradigm. For the sake of comparison, suffice it to say that in Taiwan, South Korea, Singapore and Hong Kong the share of electronic industries was on average 16%, in the same year.
79. Although much lower than in the 1980s. This point is discussed later on.
80. As illustrated, for instance, by the remarkable export performance of pulp, paper, orange juice, soya and semi-processed mineral products.
81. The ceramics sector is actually a very successful story of restructuring leading to an increase in the number of patents, greater outlay on R&D and a number of other positive effects.
82. There was also a reduction of employment in agriculture, to be discussed later on.
83. This migratory process was also facilitated by another structural characteristic of the Brazilian labour market: on average between 2.5% and 3% of industrial workers change job every month; about 40% of the workers in the industrial sector have been in the same occupation less than two years, thanks to the legislation regulating payments following dismissals (see Amadeo and Gonzaga (1997) and Amadeo and Neri (1997) for more details).
84. The increase in labour costs in the industrial sector (55%) between 1994 and 1997 outpaced the corresponding increase in the services sector (15%) (Camargo (1998)).
85. Figures relative to agriculture in Table 1.6 apparently reflect the significant increase in the number of self-employed workers: the share of rural wage-earning workers has fallen from 44% of total employment in this sector in 1990 to 34% in 1996, whereas the number of self-employed workers increased from 53% to 64% in the same period (Cepal (1999)).
86. Which might lead to an increasing disparity of wages between the two sectors in the future (Camargo, Neri and Reis (this volume)).
87. Taken as an indicator of marginal productivity of the labour force, it indicates that between 1995 and 1997 the gains in productivity were 45% in the industrial sector and 33% in the services sector (Camargo, Neri and Reis).
88. The percentage of workers with less than four years of schooling fell from 38% in 1989 to 31% in 1996, whereas the percentage of workers with more than 8 years of schooling increased from 42% to 49% of the labour force (Camargo, Neri and Reis).
89. A 30% increase between 1994 and 1997 (Camargo, Neri and Reis).
90. Data from Dias and Amaral (1999).
91. In the cattle-raising subsector a similar figure obtains, with an annual increase in productivity close to 1.9% (Dias and Amaral (1999)).
92. Mostly developed by Embrapa – Brazilian Agricultural Research Enterprise, attached to the Ministry of Agriculture.
93. Dias and Amaral (1999).
94. Baumann *et al.* (1997) have shown that for a group of products there were up to 8 changes of nominal tariff rates in a 26-month period from July 1994 to September 1996. In some cases, nominal tariff rates oscillated between 0% and 19% (between 19% and 73% for some other products) and those changes were repeatedly in both directions (i.e. a sequence of increases and reductions).
95. That is, excluding monetary correction and the payment of interest rates.
96. At constant 1980 prices.

97. Mostly by the private sector: public investment in machinery and equipment was reduced from 0.7% in 1994 to only 0.4% in 1998, whereas for investment in construction those rates were 2.9% and 1.8%, respectively, according to IBGE.
98. Reliance on external financing also raised total external debt by 47% in four years, from US\$ 151 billions in 1994 to US\$ 222 billions in 1998.
99. Sáinz and Calcagno (1999).
100. Cysne (1998).
101. Resources remain concentrated in specific areas: federal government concentrates two-third of its resources in social security and benefits to public servants; local states concentrate their resources in education, benefits to public servants and health, whereas municipalities have three-quarters of their social expenditures in education, housing, health and sewage and water supply.
102. The reduction being from 36% to 25% in urban areas and from 64% to 46% in rural areas. Data from CEPAL (1999).
103. PNAD – National Household Sampling Survey.
104. Alternative methodologies using a different unit for analysis – as in CEPAL (1999) – also indicate quite a high degree of concentration with relatively small variation during the 1990s: in 1990 the Gini coefficients were 0.528 for urban areas and 0.456 for rural areas, only slightly lower than the corresponding 1997 coefficients of 0.538 and 0.460, respectively.
105. There are concerns also with regard to the actual involvement of producers with the exporting activity: only some 14,000 firms have systematic operations with the foreign market, out of more than one million registered firms.
106. Balance of Payments data show an increase in the importation of technology in the 1990s, with a significant change in its composition: the share of imports of ‘specialized technical services’ in total imports of technology fell from 67% in 1990 to 32% in 1996, with a simultaneous sharp increase in payments for ‘use of patents’, and ‘supply of industrial technology’ (for non-patented technologies). This reflects an increase in importing and transferring foreign technology, without a corresponding increase in expenditure on R&D by local firms (Tigre *et al.* 1999).
107. Camargo, Neri and Reis (this volume).
108. When the economy is growing and unemployment is low there is an implicit incentive for workers to provoke their dismissal, as they receive a payment corresponding to one monthly wage plus 40% from a fund accumulated by the firm (FGTS – formed by one wage per year employed in the firm) (Amadeo and Gonzaga (1997)).
109. It is estimated that the number of workers in the agricultural sector was reduced by 23% between 1985 and 1996 (corresponding to 5.5 million jobs), whereas the sector’s output grew 30% in the same period.
110. The purchasing power of urban workers in relation to the cost of food and clothing increased more than 60% since 1990, with the rise in wages of less qualified urban workers outpacing the variation of food prices.
111. Very much in the way an absorption approach model with fixed exchange rate would have predicted: a displacement of the production frontier with relative prices benefiting the production of non-tradable goods.
112. See, for instance, the analyses of the stabilization experiences in Argentina, Chile, Mexico and Peru published in IPEA/Escritório da Cepal no Brasil (1997): it might take more than four years after stabilization for economic agents to lose their inflationary memories and behave accordingly. The long-standing

Brazilian experience with widespread indexation might require an even longer period of adaptation, however.

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