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Perverse Macroeconomics

S tagnation and high rates of inflation were the main characteristics of the Brazilian economy in the 1980s. Growth in a country that had expanded rapidly during the last century stopped suddenly in 1981. In 1990 income per capita was below what it had been in 1980. In that first moment—between 1981 and 1983—the slowdown was correctly attributed to the adjustment effort imposed by the debt crisis; in a second moment—1984 to 1986—the crisis seemed to have been overcome and the adjustment process to have been successful. In 1987, however, the crisis returned. In 1988 and 1990 GDP growth was negative; in the years since, it has been very small (see Table 5.1).

This crisis can be explained in several ways. Its connection with the external debt is clear. The fiscal crisis that developed from the debt is obviously at the core of this economic stagnation. The acceleration of the inflationary process that occurred during the 1980s can be partially

Table 5.1   Internal Macroeconomic Variables (percentages)

	GDP	Investment/ GDP (current prices)	Investment/ GDP (constant prices)	Gross Savings/ GDP (current prices)
1979	7.2	22.0	22.9	18.9
1980	9.1	22.3	22.9	17.8
1981	(3.1)	23.1	21.0	18.6
1982	1.1	21.1	19.5	15.3
1983	(2.8)	16.7	16.9	13.3
1984	5.7	15.7	16.2	15.8
1985	8.4	19.2	16.7	19.1
1986	8.0	19.1	19.0	17.1
1987	2.9	22.3	18.3	21.8
1988	(1.0)	22.8	17.0	24.1
1989	3.3	24.9	16.7	25.1
1990	(4.0)	21.7	16.0	21.2

Source: Instituto Brasileiro de Geografia e Estatística, *Anuário Estatístico,* several years.

explained by the fiscal crisis, but it can definitely be explained by distributive conflict, which characterizes an economy in which income is as unevenly distributed as is the case in Brazil and which is the fundamental cause of inflation and its acceleration. The foreign debt, so far as it either directly or indirectly caused the distributive conflict to worsen, played an important role in the acceleration of inflation. Inflation, in turn, fed the real sector crisis because it increased the public deficit, hindered investments, and lowered the productivity of capital.

All of these factors are interrelated. There is a dictum that nothing succeeds like success; the reverse is also true—the vicious circle of a crisis is or seems to be endless. There is a perverse logic in the stagnation of the Brazilian economy. In this chapter I will try to describe and formalize this logic and to define the perverse macroeconomics of Brazilian stagnation. To begin, I discuss the external debt, which is the origin of the crisis—a crisis defined by the fiscal crisis of the state, the fall in the rate of investment, and the loss in efficiency of the stock of capital. I then define this crisis as both a stock and a flow crisis, and I analyze the perverse character of adjustment in these circumstances. I next discuss the fiscal crisis in terms of the public deficit and the reduction in public savings; the relation between the two phenomena is presented. I then examine how a debt crisis turns into a fiscal crisis. An analysis of the high rates of inflation that prevail in these circumstances follows; inflation becomes inertial or autonomous, tending to accelerate slowly but firmly. In this process money plays a passive role, which I describe. The paralysis of the state as a result of the fiscal crisis is discussed, followed by a description of the overall logic of stagnation in a country plagued by debt, deficit, and inflation. But we do not expect stagnation to be a permanent situation; thus I conclude with a discussion of the pattern for financing investments that will be consistent with growth in Brazil. The requirements for overcoming the crisis and resuming growth are briefly presented.

The fundamental cause of the Brazilian economic crisis is the country's fiscal crisis—a structural, financial imbalance of the public sector—which, in turn, has as one of its fundamental causes the excessive size of the external public debt. I stated above that the fiscal crisis is one of the assumptions of this analysis; the topic has been widely discussed.[1] However, it is mistaken to suppose that this crisis is limited to a large public deficit, as if it were possible to separate it from the current discussion of the Brazilian economy. In point of fact, the fiscal crisis has three dimensions: (1) a flow dimension (the public deficit and reduced public savings); (2) a stock dimension (the internal and foreign public debts); and (3) a psychosocial dimension—the lack of confidence in the state, defined in objective terms by its inability to finance its deficit except on the overnight market.

The flow dimension of the fiscal crisis is the most commonly analyzed.

It can be measured in two ways, as shown in Table 5.2: by the operational public deficit and by the ability of the public sector to save. The first includes the state corporations and corresponds to an increase in borrowing or an increase in the public sector's need for financing. In addition to measuring the financial imbalance of the state, it could also be an indication of excess demand. Because the public deficit has a substantial financial component and often occurs at the same time the private sector is reducing investments and financing the public sector at high interest rates, the result is insufficient aggregate demand (see Dall'Acqua and Bresser Pereira 1987). The Brazilian public deficit was very high in the early 1980s. Beginning in 1983, it was reduced by severe cuts in public investment and social spending. Yet with the adoption of populist economic policies in the Sarney administration (1985–1989), it increased once again.

Table 5.2   Public-Sector Accounts (percentage of GDP)

	Tax Revenue	Personnel Expenditures	Interest on Internal Debt	Interest on External Debt	Public Savings	Public Deficit
1979	24.3	6.9	0.55	0.29	3.8	8.3
1980	24.2	6.2	0.74	0.36	2.2	6.7
1981	24.6	6.5	1.08	0.29	2.3	6.0
1982	26.2	7.3	1.21	1.18	1.8	7.3
1983	24.7	6.5	1.65	1.57	0.6	4.4
1984	21.6	5.6	2.05	1.83	0.8	2.7
1985	22.0	6.8	2.24	1.51	0.3	4.3
1986	24.3	7.0	1.14	1.35	1.9	3.6
1987	22.6	7.7	1.15	1.44	(1.2)	5.5
1988	21.9	7.9	1.58	1.72	(2.4)	4.8
1989	21.9	9.7	1.44	2.03	(5.3)	6.5
1990	27.4	10.5	1.09	2.12	0.8	(1.2)

Sources: First four columns, Instituto de Pesquisas Econômicas Aplicadas; last two columns, Central Bank.
Note: The first five columns refer to the public sector in the strict sense; the last includes state corporations.

A second flow imbalance is also related to the state's financial incapacity to save. Public savings cannot be directly compared with the public-sector deficit because Brazil's national accounts do not include state corporations in the public sector. However, these two measurements are related. Public savings, which were around 5 percent of GDP in the mid-1970s, dropped to 3.8 percent in 1979 and then to −1.2 percent in 1987. This means that in the 1970s the public sector was able to collect forced savings and

invest them; that is, to carry out the role of the state par excellence in the development process. In the 1980s, however, although the state was forced to invest because it was still responsible for a good part of the country's productive infrastructure, it did not save. The only form of financing public investment was to borrow from the private sector, increasing the public deficit.

These two flow imbalances result in a growing stock imbalance, that is, public debt. In the 1970s public debt was mainly foreign. Since 1979, however, when international banks began to reduce the rollover of the foreign debt, and particularly since 1982, when they definitively stopped the rollover, internal debt began to grow explosively. The foreign public debt continued to grow because the private sector paid or prepaid its foreign commitments to the Central Bank in cruzados, changing those commitments into foreign public debt. In 1988, with a GDP of nearly $320 billion, Brazil had a foreign public debt of approximately $100 billion (almost 85 percent of the total foreign debt), which, added to the Treasury's short-term internal debt of $41 billion and to approximately $30 billion in other internal debts, totaled about $170 billion in public debt—corresponding to more than half of GDP.

Both the flow imbalance and the stock imbalance are very high in relation to GDP. However, this does not necessarily imply a fiscal crisis. To take an extreme case, Italy has a public deficit of almost 10 percent of its GDP and a public debt almost equal to its GDP, but one cannot say the Italian state is bankrupt. The most we could say is that it is undergoing a potentially serious fiscal crisis. In Japan, where in the late 1970s the public deficit was around 6 percent of GDP and has recently fallen to 2 percent of GDP, fiscal crisis is out of the question. Why is it, then, that in the case of Brazil but not in other countries, the public sector is insolvent, even though in Italy the quantitative indices of fiscal imbalance are higher than those in Brazil? The reason is that in these other countries the state still has credit. It is able to obtain financing from the private sector—for one or two years in the case of Italy and for at least ten years in the case of Japan—whereas the Brazilian state has almost no credit. Almost all of its internal financing takes place on the overnight market. In such a situation there is almost no difference between financing through the emission of money and through the sale of Central Bank bonds on the overnight market.

The financial imbalance of the public sector originated in the 1970s through a policy of promoting growth through foreign borrowing. This strategy was justified until 1978, when the debt:export ratio for Brazil was near the limit of 2. It became totally unjustifiable in 1979 and 1980, not only because the debt was already very high but also because four external shocks had forced Brazil to adjust its economy immediately: (1) the second oil shock, which increased import costs; (2) the recession in the United States,

which reduced exports; (3) the increase in the nominal interest rate because of inflation in the United States; and (4) the increase in the real interest rate as a result of the U.S. monetarist adjustment policy. The last two shocks raised the amount of interest Brazil had to pay to its creditors.

The crisis of the Brazilian economy started in 1979, when Brazil—as with all of the highly indebted countries—should have engaged in a strong adjustment process. The second oil shock, the rate of interest shock, and the U.S. recession were clear indications that this was the line to follow. Korea was one of the few highly indebted countries that decided to adjust at that time. Brazil and all of the other Latin American countries did not. When Brazil began to adjust in 1981, following two years of accelerated growth, it was too late. The debt had become too high to be paid.[2]

The perverse logic of the external debt appears when it becomes too high. But when does a debt become too high, and what is too high a debt?

A debt becomes too high from the standpoint of the creditors when they decide to suspend its rollover—to finance the interest to be paid. When the process of indebtedness begins, the country receives loans to finance real expenditures (consumption or, it is hoped, investment). After some time, however, the interest due becomes so high that the financing of interest is halted. In fact, the process of indebtedness undergoes consecutive phases: (1) loans finance additional expenditures; (2) they finance additional expenditures and interest; (3) they finance only interest; (4) they finance only part of the interest to be paid on the old loans; and (5) new loans are suspended.

The suspension of new loans to Brazil in 1982 was part of a more general decision by bankers following the Mexican default in August of that year. But it is also based on some objective considerations that caused bankers to consider the Brazilian debt to be too high. There are basically two parameters. First, there is a stock rule of thumb, which says that the relation between the external debt, DX, and exports, X, of a country should never exceed 2 (in Brazil the debt:export ratio achieved this limit in 1979). Second, there is a flow reasoning, which says that when this ratio is achieved, the rate of interest, j, should not exceed the rate of growth of exports, x'.

$$DX{:}X < 2$$

and
if
$$DX{:}X > 2$$
then
$$j < x'$$

Following the suspension of the market—that is, of voluntary loans to a debtor country—from the debtor country's point of view there are three situations in which a debt would be considered to be too high. Basically it is too high if, after a reasonable internal adjustment process, it remains impossible to serve the debt fully. In this case the external interests, J_x, to be fully

paid, (1) have to be financed with additional loans, which in turn leads to an increase in total debt, dDX; and/or (2) can be paid only if too large a trade surplus, R, has to be produced. "Too large a trade surplus" means a trade surplus that implies a transfer of real resources to the creditor countries, which, to be achieved, depends on a reduction in imports, M, rather than an increase in exports, X. The reduction in imports is basically achieved by reducing investments, I, rather than consumption, C. In this case the actual trade surplus, R, is larger than the potential surplus, R^*, since we define potential surplus as the trade surplus that can be achieved while maintaining the "necessary" level of investments, I^*.

A third situation in which the debt would be seen as being too high is the one in which the debt is almost entirely a state responsibility, DXG_t, and the revenues from exports are private, X_{Pr}. In this case, the external debt becomes a basic reason for the crisis even if the country is producing a trade surplus. The interest paid on the external public debt becomes a root cause of the public deficit. When the public deficit can no longer be financed by an increase in the external debt, it is financed by increasing the internal debt or by printing money. Fiscal crisis and inflation are the obvious outcomes.

Thus an external debt is too high when, to pay fully the respective interests, we have:

$$DX_{t+1} > DX_t \tag{1}$$

and/or

$$R > R^* - I < I^* \tag{2}$$

and/or when

$$DXG_t \text{ versus } X_{Pr} \tag{3}$$

In Brazil during the 1980s these three conditions were present. Let us take 1980 as a starting point because it was at the end of that year that the adjustment process began in Brazil as a result of the debt crisis. Since that time, (1) total foreign debt has practically doubled; (2) the rate of investments has fallen by 5 percentage points below the previous level; and (3) the external public debt, which accounted for 68 percent of the nation's total foreign debt in 1979, currently makes up 87 percent, whereas exports and the trade surplus continue to be almost entirely private.

I begin the exploration of stock disequilibrium leading to flow disequilibrium using conventional or textbook models of stabilization. Suppose that in the first half of the 1970s the Brazilian macroeconomic variables were basically balanced—that is, aggregate demand was equal to aggregate supply—so that

$$I + G + X = S + T + M$$

where G is state expenditures, including expenditures of publicly owned enterprises, S is private savings, and T is state revenues (taxes and sales of publicly owned enterprises). This nice equilibrium, in which interests are disregarded, was completed by an equilibrium in each sector:

in the private sector
$$I = S$$
in the public sector
$$G = T$$
and in the foreign
trade sector $\qquad X = M$

External indebtedness during the 1970s disrupted these three equilibria. The external indebtedness of the public sector was synonymous with the public deficit ($G > T$), which had as its counterpart a trade deficit ($X < M$) financed by external savings, S_x. Following textbook or conventional economics of adjustment—so much used and misused by policymakers everywhere—the private sector remained in equilibrium. Finally, when the time of stabilization arrived (1981–1983), public-sector adjustment was given priority.

The basic objectives of the adjustment were, externally, to produce an equilibrium in the current account and, internally, to eliminate the public deficit, E. Both objectives were to be achieved simultaneously. By reducing and eventually eliminating the public deficit, the country would reach a current account balance.

$$E = G + J_x - T = 0$$

and so

$$M + J_x = X$$

where M now explicitly excludes interest and J_x represents net interest paid on the external debt.

We have seen that the reduction in the public deficit was achieved, although perversely, through the reduction of public-sector investments, given that reducing current public expenditures is always very difficult, even for an authoritarian government. Some results were achieved in this area by reducing salaries of public officials and employees of state-owned enterprises. After the end of the authoritarian regime, the new democratic government that took office in 1985 was unable to maintain this reduction of salaries, and the public deficit increased once again.[3] However, the creditors' basic objective—to attain equilibrium in the current account—was achieved or nearly achieved starting in 1984.

It is interesting to observe, contrary to conventional adjustment models,

that achieving current account equilibrium did not imply achieving budget equilibrium; in other words, the permanence of a large public deficit was consistent with a large trade surplus and an equilibrium in the current account. The explanation for this fact is simple. Conventional macroeconomic adjustment models are merely flow models. They take into account only the basic flows of an economy. This is a reasonable approach when the stock of debt (particularly the public debt and the external debt, which can largely intersect, as is the case in Brazil) is modest. When it is too high the conventional models simply do not apply. In addition to a flow model, one needs a stock model, or a flow model that takes into account the stock of debt. The imbalances in the economy are not just flow imbalances but are also stock imbalances. The economy may achieve a current account equilibrium, but because of the volume of interest paid by the state, the public deficit may remain high.

In these circumstances the basic macroeconomic equation must be rewritten by making explicit on the left side the interest paid by the state on its external debt, J_{gx} (assuming that the debt is fully nationalized and there is not yet any internal debt), and on the right side the interest paid on the foreign debt.

$$I + G + J_{gx} + X = S + T + M + J_x$$

Now we can no longer say that it is the nonfinancial public deficit $(G > T)$ that leads to excess demand and causes a trade deficit $(X < M)$. The trade balance, as well as the nonfinancial public accounts, may be balanced, but the country can still have a current account deficit $(X < M + J_x)$. And the more likely causal relation is just the opposite of conventional models. It is the current account deficit caused by the payment of interest, including interest paid by the state, that creates the total public deficit. The public deficit thus does not lead to excess demand but is a consequence of the external (and, as we see below, also of the internal) indebtedness of the state.

The adjustment process so described was perverse—self-defeating—in several ways. First, it was achieved by a reduction of imports, an increase in transfer of real resources, and a reduction of investments. Second, it was accompanied by the nationalization of the external debt, which aggravated the imbalance of public accounts. Third, the increase in the interest bill to be paid by the state implies the reduction of public savings and thus—because current expenditures and public investments have to be minimally maintained—an increase in the public deficit. Fourth, real devaluations of the exchange rate, in addition to accelerating inflation, increased the public deficit even more. Fifth, as foreign banks decided not to increase their exposure in highly indebted countries, the financing of the

public deficit caused by interest to be paid on a large external debt had to be done by increasing internal indebtedness or printing money.

In theory, the public deficit, E, can be financed by increasing public external indebtedness, $dDXG$; increasing public internal indebtedness, $dDIG$; and printing money, dB—that is, by increasing the monetary base (high-powered money):

$$E = dDXG + dDIG + dB$$

During the 1970s and early 1980s the public deficit in Brazil was financed more or less evenly by these three sources. But when the debt crisis appeared, the source of external finance for the state was reduced and ultimately closed. The state had to pay the interest on the external public debt but could no longer finance it externally. Thus, the only answer was to increase internal debt, print money, or both.[4] The increase in internal debt could be achieved only by increasing the interest rate and reducing maturities; the increase in the interest rate aggravated the public deficit. The alternative of printing money validated the going rate of inflation.[5] The perverse character of the suppression of external indebtedness as a source for financing the public deficit is fairly obvious. Whereas a great effort was being made to reduce the public deficit, the suspension of external finance for that deficit, which was not eliminated by the 1981–1983 adjustment, led to an increase in internal indebtedness, an increase in the internal interest rates—which aggravated the public deficit because interests were paid mostly by the state—and a reduction in the maturities of the public debt.[6]

Another effect of the increasingly high interest burden, in addition to increasing the public deficit, is reducing public-sector savings. Public savings, SG, are equal to state revenues, T, minus current public expenditures (total public expenditures), G (here already including interest in order to simplify), minus public investment, IG.

$$SG = T - (G - IG)$$

Thus, the public deficit, E, is equal to public savings minus public investments.

$$E = G - T = IG - SG$$

During the 1970s public savings in Brazil were strongly positive. In 1987, given the level of interest paid by the state (see Table 5.3) and the reduction of the gross tax burden and the increase in personnel expenditures (see Table 5.2), they became negative for the first time.[7]

Table 5.3   Public Sector's Interest Payments (percentage of GDP)

	External Debt	Domestic Debt	Total
1983	3.70	3.01	6.71
1984	3.89	3.30	7.19
1985	4.47	3.44	7.91
1986	2.89	2.23	5.12
1987	2.62	2.17	4.79
1988	2.85	2.88	5.73
1989	3.20	2.72	5.92
1990	3.28	0.02	3.30

Source: Central Bank, Brazil Economic Program, several issues.

Public savings are supposed to finance public investments. When public savings are around zero—as is usually the case in a highly indebted country where a fiscal crisis has developed—the public deficit is equal to the public investment that has to be made and that cannot be reduced. In this case one can speak of a structural public deficit. The real cause of the deficit is the interest burden originating in the external and internal debt, but as long as public savings are around zero, the unpleasant relationship between public deficit and public investment becomes evident.

Minimum public investments in Brazil are relatively high (around 5 percent of GDP) given the fact that the state—directly or through state-owned enterprises—is responsible for most of the investments in electricity, oil, communications, transportation, and steel production. Given that the state was reduced to zero savings mostly (not exclusively) as a result of the interest payments it has to make (around 6 percent of GDP) and that it must invest at least 5 percent of GDP, the public deficit at that level becomes structural; that is, very rigid downward.

This does not mean it is impossible to reduce and eventually eliminate the public deficit. But first, this fact emphasizes that a reduction in the public deficit without an increase in public savings makes no sense; this reduction without the recovery of public savings is possible, as the experience of the highly indebted countries in the 1980s demonstrates, but extraordinarily damaging for the country's growth prospects—it is enough to reduce public investments. In fact, the reduction of public investment is only feasible, in the long run, after a successful program of privatizations has been undertaken; in the short run, if the state is responsible for investing in crucial sectors of the economy, this strategy is self-defeating. Second, the situation described here says that the elimination of the public deficit is very difficult when the public sector is highly indebted as long as it accounts for an important share of investments in the economy.

The previous discussion demonstrates in several ways how the debt crisis developed into a fiscal crisis. The increase in the external public debt in the 1970s was a consequence of a growth strategy (PND II) based on the public deficit. The internal adjustment, which occurred between 1981 and 1983, was accompanied by the nationalization of the external private debt. In Brazil, as in practically all highly indebted countries, the adjustment was also an opportunity for private businesses to pay their debts in local currency and pass on the responsibility for the external debt to the public sector.

The 1981–1983 adjustment process reduced (in an unsound manner) but did not eliminate the public deficit. Internally, its major consequence was to accelerate the reduction of public savings as it stimulated the nationalization of the external debt. The reduction of the public deficit was achieved by reducing investment rather than current expenditures (thereby increasing public savings). The limited reduction in current expenditures between 1981 and 1983—achieved by reducing wages and salaries rather than deregulating the economy and reducing the labor force in the public sector—was compensated by the increase in the interest bill that occurred, first, because of the increase of the external public debt and, second, as a result of the internal public debt.

Whereas the internal public debt increased as a result of the impossibility of obtaining additional external funds, the rate of interest on the internal debt—and the public deficit—increased or tended to increase.[8] The public deficit, which was reduced in an unhealthy way (through the curtailment of public investment and wage and salary reductions rather than personnel layoffs, deregulation, and privatization) during the adjustment process, started to increase again in 1985 as real wages and salaries in the public sector recovered their previous level.

I am not discussing solutions for the external debt crisis and the fiscal crisis that are being described. The fiscal crisis is clearly an outcome of the debt crisis. As the fiscal crisis is aggravated, the debt crisis remains the same, given the practical absence of new external loans.

Servicing an excessively large debt—especially interest payments—leads to a reduction in a country's ability to save and invest, an increase in its public deficit, and inflation. In fact, the adjustment process imposed by creditors to make interest payments more feasible becomes self-defeating. The more a country tries to adjust when it has an excessively large debt, the greater the distortions the economy faces.

The fall in investments is directly related to the foreign debt or, more precisely, to the increase in the real transfer of resources (see Bacha 1988; Batista, Jr. 1987; Dornbusch 1989).[9] Not only in Brazil but in all highly indebted countries, as the real transfer of resources has increased the investment rate has decreased. Rather than investing (or consuming internally),

Brazil began to achieve high real transactions surpluses.[10] This phenomenon can be seen clearly in Table 5.4. The fifteen most heavily indebted countries, as identified in the October 1985 Baker Plan, also saw a real transfer of resources, whereas investment and the GDP growth rate fell, demonstrating a clear relationship between excessive debt and economic stagnation. This can be seen in Table 5.5, which shows the same tendency for these fifteen

Table 5.4   Brazilian External Accounts (US$ million)

	Real Transfers	Current Account	Debt	External Debt/ Exports
1979	(5,199.4)	(10,741.6)	49,904	327.4
1980	(5,774.9)	(12,807.0)	53,848	267.5
1981	(2,863.2)	(11,734.3)	61,411	263.6
1982	(2,816.1)	(16,310.5)	69,655	374.6
1983	4,170.6	(6,837.4)	81,319	371.3
1984	11,515.7	44.8	91,091	337.3
1985	11,017.2	(241.5)	95,857	373.9
1986	6,302.4	(4,476.9)	101,759	454.4
1987	8,889.0	(812.0)	107,514	409.9
1988	17,020.0	4,175.0	102,555	303.5
1989	14,426.0	1,564.0	99,285	288.8
1990	8,820.0	(2,347.0)	96,546	307.3

Source: Central Bank, *Brazil Economic Program*, several issues.

Table 5.5   Macro Variables of the Fifteen Primary Debtors

	GDP Growth (%)	Investment (GDP)	Inflation (%)	Public Deficit (% GDP)	Current Account/ Exports
1970–1979	5.9	24.0	31.7	(2.6)	(17.0)
1980	5.4	24.6	47.2	(0.8)	(18.0)
1981	10.1	24.0	53.7	(4.3)	(30.7)
1982	(0.5)	21.5	55.9	(5.9)	(35.8)
1983	(2.7)	17.4	91.6	(5.0)	(11.2)
1984	2.3	16.6	118.4	(3.6)	(1.0)
1985	3.8	17.1	121.8	(3.4)	(0.2)
1986	3.8	17.8	77.2	(4.8)	(11.9)
1987	2.5	17.1	116.2	(6.5)	(6.1)
1988	1.5	18.1	222.9	(5.1)	(6.4)
1989	(1.8)	–	485.9	(4.7)	(3.3)
1990	(0.8)	–	628.8	(0.7)	(2.5)

Source: IMF, *World Economic Outlook*, several issues.

countries that I showed for Brazil earlier: the fiscal crisis, represented by the public deficit, is not solved through adjustment efforts. As debt ratios continue to grow, the public deficit does not decrease, even though—as the IMF recognized—this group of countries registered an important external adjustment between 1981 and 1982 and between 1984 and 1985 as their accounts went from a deficit of 33 percent of their exports to almost an equilibrium (Cline 1988:40).

Less directly but not less importantly, the foreign debt is related to the fall in the investment rate as a result of the financial imbalance of the public sector. This imbalance can be measured by either the reduction in public savings or the operational public deficit (see Table 5.2). The lower investment rate is related to the fall in public savings because increased public investment raises the public deficit but does not diminish public savings. When public savings become negative the government has two alternatives in relation to investments: it either reduces its investments, or it borrows, thus increasing the public deficit. This happened in 1983 and 1984, when the deficit was reduced mainly by cutting public investment.

The drop in public savings and the increased public deficit on the one hand and the inverse movement of a reduced public deficit resulting from investment cuts on the other are directly related to the foreign debt. The second case is more evident. If a country has a balance-of-payments problem, it is forced to make adjustments that are invariably at the expense not only of consumption but also of investment. In Brazil's case, this has been very clear.

As long as an external debt that is far too high precludes additional external finance, the only form of financing a deficit is through perversely increasing internal indebtedness, printing money, or both. The perverse macroeconomics of adjustment when the public sector is highly indebted both externally and internally in turn leads the economy to inflation. The external debt acquired in Brazil in the 1970s was a basic cause of the fiscal crisis in the 1980s; in turn, both the external debt and the fiscal crisis were at the root of the acceleration of inflation rates during the 1980s.

As inflation accelerates, it tends to become more and more rigid downward because economic agents become increasingly inflation-conscious. The maintaining factor of inflation—the formal and informal indexation of the economy—assumes growing importance and gives rise to an autonomous or inertial type of inflation. In turn, high and accelerating levels of inflation lead to a larger public deficit, reduction of the investment rate, and reduction of the efficiency of accumulated capital. I will briefly examine these three aspects—the acceleration of inflation, its growing autonomy or inertialization, and its perverse consequences—after I describe the theory of inertial or autonomous inflation.[11]

According to the theory of autonomous or inertial inflation, we can

define the rate of inflation, p', as a result of past inflation, $p'I_{t-1}$ (where I stands for the different indices economic agents use for past inflation), plus the action of exogenous supply shocks, G^z (where the superscript z stands for the several possibilities of supply shocks), and/or the action of exogenous demand shocks, u, where u stands for the unemployment rate in the Phillips curve,

$$p' = ap'I_{t-1} + b_u + cG^z$$

where a, b, and c are coefficients adding to one; in most cases b and c may be equal to zero.

In this model the maintenance of the level of inflation is defined by the indexation of prices according to past inflation, whereas its acceleration can be explained by: (1) an endogenous change of indices used by economic agents as they perceive that the going rate of inflation is too high, so that the index they are using to correct their prices is no longer a safe protection in the distributive conflict; (2) an exogenous (to the model) pressure of demand manifested by the reduction of the unemployment rate; and (3) an exogenous (to this specific model) supply shock caused by the exertion of some kind of power over prices (state, labor, or monopoly power of business firms).

This endogenous acceleration of autonomous or inertial inflation is important because it shows clearly that it is impossible to expect high and, simultaneously, stable rates of inflation, as we believed when we were formulating the theory of inertial inflation. High rates of inflation are always accelerating rates. In spite of its name, inertial inflation is permanently in a slow process of acceleration.[12] The endogenous mechanism of acceleration of autonomous inflation is based on the tendency of economic agents to change their indices as they perceive inflation to be higher and more threatening to their income share. I call this mechanism endogenous because it is based on the definition of inertial or autonomous inflation: present inflation determined by past inflation. In fact, however, it works only in combination with the exogenous (thus called because these factors are not based on past inflation) accelerating factors of inflation. At first, while autonomous inflation is perceived as relatively low, economic agents define past inflation as their cost increases; second, as the rate of inflation is perceived to be higher—and indeed is higher as a result of some exogenous shock—past inflation, defined as the index to be adopted by the economic agents, becomes the rate of inflation proper; third, when the rate of inflation is too high, economic agents tend to define as their index the price increases above the rate of inflation of some relevant sector. Each change of index represents an endogenous acceleration of autonomous inflation. In addition to this strictly endogenous mechanism of acceleration of inflation, all of the factors analyzed here that relate the acceleration of inflation to external and internal

public debt and the public deficit are also endogenous factors of acceleration of inflation.[13]

During the 1970s the annual rate of inflation in Brazil averaged 40 percent. The acceleration of inflation to 100 percent, which occurred in 1979 and persisted until the end of 1982, coincided with the onset of the debt crisis (see Table 5.6). This crisis actually began in 1979 with the second oil shock, the increase in nominal and real interest rates, and the recession in the United States. The major supply shocks in this period were a maxi-devaluation of the cruzeiro in 1979, the increase in internal interest rates, a new wage policy, and the increase in some public prices to correct relative prices ("corrective inflation").

Table 5.6   Money and Inflation (percentages)

| | Inflation | | Monetary | | | Internal |
	(INPC)	(IGP-DI)	Base	M1	M4	Debt[a]
1979	70.7	77.2	84.4	73.6	65.1	26.4
1980	99.7	110.2	56.9	70.2	69.1	55.2
1981	93.5	95.2	67.2	87.6	140.5	137.8
1982	100.3	99.7	100.4	66.6	110.7	126.7
1983	178.0	211.0	79.8	97.4	150.5	95.7
1984	209.1	223.8	264.1	201.8	292.7	457.3
1985	239.0	235.1	257.3	304.3	303.9	387.0
1986	58.6	65.0	293.5	306.8	94.8	39.0
1987	396.0	415.8	181.5	127.4	352.6	531.2
1988	994.3	1,037.6	622.3	570.3	928.1	1,118.9
1989	1,863.6	1,782.9	1,754.1	1,384.2	1,743.1	2,068.6
1990	1,585.2	1,476.6	2,304.2	2,335.7	683.2	934.6
Accumulation[b]	10.963	14.089	8.087	4.986	7.355	13.477

Sources: Bank Central's Bulletin, vol. 20, April 1984; Central Bank, *Brazil Economic Program*, vol. 20, March 1989, and vol. 31, December 1991.
Notes: a. Internal debt includes federal bonds and bills outside the Central Bank.
b. Times rather than percent (in millions).

In 1983 inflation accelerated again to 200 percent and stayed at that level until the end of 1985. The major accelerating factor was again a maxi-devaluation of the cruzeiro, directly related to the debt crisis. Agricultural prices also contributed to the general price increase.

The deep recessions of 1981 and 1983 were unable to control inflation. In 1981 inflation maintained its previous level of around 100 percent; in 1983, this rate doubled to about 200 percent (see Table 5.6). The first recession led a group of economists in São Paulo (at the Getúlio Vargas

Foundation) and Rio de Janeiro (at Catholic University) to formulate the
theory of inertial inflation; the second recession led them to propose a gen-
eral price freeze, which they called the "heroic solution to control inflation"
(Bresser Pereira and Nakano 1984), later called the "heterodox shock"
(Lopes 1984). The Cruzado Plan of February 1986 sprang from this theoret-
ical proposal. Its subsequent failure stemmed from its populist administra-
tion rather than its original conception.

This plan, along with the Bresser Plan (June 1987) and the Summer Plan
(January 1989), was unable to eliminate inflation. As an emergency plan,
adopted to cope with the acute crises of the Cruzado Plan, the Bresser Plan
did not have eliminating inflation as its objective, but the other two plans
were clearly aimed at reducing inflation to a rate similar to the one prevail-
ing in the OECD countries. The literature on the causes of the Cruzado
Plan's failure is growing continually. At one point it became popular to say
that the Cruzado Plan had failed because it was unable to combine hetero-
dox with orthodox measures.[14] Starting from this assumption, the Summer
Plan tried to adopt an orthodox monetary policy by setting the real rate of
interest at a very high level, but it failed as well. The Cruzado and Summer
plans ended with an acute economic and financial crisis, which can be
explained, first, by their populist implementation and, second, by their
orthodox conception.

If we are to look for the basic reasons that a price freeze combined with
monetary policy is unable to control the autonomous inflation prevailing in
Brazil, the answer is fairly simple: until a definitive solution is found for the
debt crisis and the related fiscal crisis, inflation will not be controlled. A
solution to the debt crisis means reducing the debt to around 50 percent of
its present level; a solution to the fiscal crisis means—in addition to reduc-
ing the public debt—eliminating the budget deficit. However, as long as
inflation is not controlled, it remains a cause as well as a consequence of the
fiscal crisis and, more broadly, of the economic crisis.

The Olivera-Tanzi effect, by which state revenues are reduced as infla-
tion accelerates, is a basic cause of the public deficit. High rates of inflation,
together with the public deficit and the dimension of the internal public debt,
make economic agents distrustful of the indexation of the internal debt. As
compensation for continuing to finance the state, they tend to demand high-
er interest rates, which implies a higher public deficit. Under the Summer
Plan—when the loss of confidence among economic agents, leading to a
loss of credit for the state, became evident—this vicious circle was aggra-
vated by the government decision to promote the elimination of the indexa-
tion mechanism of the internal debt while at the same time setting the inter-
est rate at an artificially high level.

In this type of economy, where high rates of inflation prevail and the
source of external finance has dried up, financing the nominal public

deficit (nominal public-sector borrowing requirements), Ep, where p is the price index, plus the increase in external reserves, dV, is achieved by increasing the size of the monetary base, dB, and the internal debt, $dDIG$:

$$Ep + dV = dB + dDIG$$

The question now is how this financing process will be shared between increasing the monetary base and increasing internal indebtedness. According to the monetarist view, the increase of internal indebtedness would be the independent variable. The limit to internal indebtedness would be the crowding-out process manifested by the increase of the interest on Treasury bills. The residue would be financed by seigniorage—the increase of the monetary base. Since this residue tends to be high, given the intrinsically populist character of governments in Latin American countries, inflation will be high and accelerating.

The neostructuralist theory of inertial inflation takes the inverse position. There is not necessarily a limit to internal indebtedness if the economy—as is normally the case in Brazil, except during the Cruzado Plan—is working in conditions of unemployment and idle capacity, and private business enterprises are liquid and unwilling to invest more than is strictly necessary to maintain their market shares. In fact, internal indebtedness is the residual variable, whereas the nominal growth of the monetary base is endogenously determined by the demand for money.

In this model the real demand for money, Bd/p, is a decreasing function of the rate of inflation: the higher the rate of inflation, the smaller the real demand for money (and the higher the income velocity of money). In consequence, as nominal GDP, Yp, increases, the nominal demand for money increases less than proportionately. The real demand for money is a decreasing function of the rate of inflation, and the nominal demand for money is a decreasing function of nominal income because, as inflation accelerates, economic agents reduce their liquidity preference, and demonitization takes place. These relations can be expressed by Cagan's money demand equations (1956):

$$Bd/p = aYp/p\ e - bp'$$
$$Bd/Yp = a\ e - bp'$$

where a is a coefficient that corresponds to the share of money in GDP when the rate of inflation is zero, b is the coefficient that expresses the negative elasticity of money demand to the rate of inflation, and e is the base of the Neperian logarithm (2.7182).[15]

The increase in the nominal demand for money defines the required increase in the monetary base. Given the rate of autonomous inflation, the nominal monetary base necessarily increases as the real monetary base

decreases (see Table 5.7). If the nominal money supply does not increase as required by the increase in inflation, which is reflected in the increase in nominal GDP, a liquidity crisis will develop. Thus, given the required increase in the monetary base, the difference between it and the nominal public deficit plus the change in external reserves will determine the residual increase of internal indebtedness.

Table 5.7   Money and the Domestic Debt (Cr$ million)

	Monetary Base		Internal Debt[a]	
	Balance[b]	% GDP	Balance[b]	% GDP
1979	0.3	4.7	0.4	6.4
1980	0.5	4.1	0.5	3.9
1981	0.8	3.2	1.3	7.3
1982	1.9	3.1	3.4	7.8
1983	3.5	1.9	6.6	5.2
1984	12.7	2.0	19.1	8.4
1985	45.5	2.0	128.9	11.3
1986	179.0	4.4	354.9	8.9
1987	504.0	2.3	2,293.0	10.6
1988	3,637.0	1.5	25,575.0	10.4
1989	67,436.0	1.4	615,004.0	12.9
1990	1,621,271.0	2.2	1,886,793.0	2.6

Sources: Central Bank, *Annual Report,* several years; Central Bank, *Brazil Economic Program,* vol. 20, March 1989, and vol. 31, December 1991.
Notes: a. Internal debt includes federal bonds and bills outside the Central Bank.
b. Balance on June 30 of the respective years.

According to this point of view, the attempt to control inertial inflation with monetary policy is self-defeating, not only because the money supply is endogenous and is already decreasing in real terms as inflation accelerates (see Table 5.7) but also because an active monetary policy would have the perverse effect of aggravating the fiscal imbalance. We know that an active monetary policy means, basically, an increase in the interest rate. In Brazil, as in all countries that have autonomous inflation, it is the state, not the private sector, that is highly indebted. It is the state that pays interests. When interests increase, both the public deficit and the internal debt increase.

If the real interest rate is higher than the GDP growth rate (which is very likely because the economy is stagnant) and if interests have to be financed by increasing the internal debt, that debt will increase in such a way that economic agents will be pessimistic about its future payment. In the first two months of the Summer Plan, when the Brazilian government decided to raise

the real interest rate to extremely high levels, the consequent loss of confidence in the government and the state's loss of credit reached an all-time high, capital flight and the public deficit increased, and the possibility of hyperinflation became evident.

Seigniorage, the issuing of money, is the independent variable for financing the public deficit, but it is a decreasing source of revenue for the state as long as the real monetary base and the inflationary tax (the devaluation of cash balances) decrease as inflation accelerates. The real resources the public sector obtains by issuing money (inflationary tax, $p'\,M/p$) correspond to the difference between real seigniorage (the increase of the monetary base in real terms, dM/p) and the reduction of the outstanding monetary base, $d(M/p)$.[16]

$$p'\,M/p = dM/p - d(M/p)$$

The monetary base, which was around 5 percent of GDP at the end of the 1970s, was little more than 1 percent of GDP in 1988 (see Table 5.7). Thus, the reduction of the monetary base ($d(M/p)$) becomes increasingly larger. Inversely, the internal debt tends to increase in relation to GDP (see Table 5.7). The reduction of the real monetary base is certainly a source of the ineffectiveness of the monetary policy, but it is also a possible source of hyperinflation. As inflation accelerates, the issuing of money—the seigniorage process—must continually increase in relation to the prevailing monetary base to finance the same public deficit; that is, to collect the same inflationary tax. And the share of the deficit financed by internal indebtedness must become larger and larger. If, at a given moment, economic agents lose confidence and stop financing the state, hyperinflation will be the necessary outcome.

I nflation plays a decisive role in the overall economic crisis I am examining—a crisis marked by economic stagnation. But before I examine the perverse logic of stagnation, I need to explain the paralysis of the state with respect to structural reforms. The fiscal crisis and its more terrible outcome—the acceleration of inflation—have as a consequence the paralysis of the state with respect to long-term economic policy. And nothing is more important for the less developed countries than an overall strategy of economic development.

A deep economic crisis, such as the crisis in Brazil in the 1980s, is a clear signal that the old strategy of economic development was exhausted. The fiscal crisis is an indication that the model of the state in Brazil no longer functioned.

This crisis is also a sign that, in addition to the model of the state, the model of society in Brazil had also lost its power. Brazilian society is characterized by a very high degree of income concentration. When the country

was growing rapidly, income concentration was not a major problem. But as soon as this development stopped, income concentration became a major source of continual and aggravating social conflict—a conflict that lies at the root of the public deficit and the acceleration of the inflationary process.

The three basic strategies the Brazilian state adopted to promote industrialization were: (1) trade protection; (2) subsidies for private enterprises; and (3) direct investments in public services and basic input industries (electricity, oil, steel, communications, railroads). The change today is necessarily toward: (1) eliminating subsidies to fight the public deficit; (2) trade liberalization to stimulate international competitiveness; and (3) privatization, which will help to solve the financial crisis of the state.[17] Given the fact that Brazil is a large country, trade liberalization will necessarily be limited in comparison with smaller countries, but it will be an essential feature of any future industrial policy. State-owned enterprises played a decisive role in the first phase of industrialization, but currently, when efficiency has become crucial and the state urgently needs financial resources to balance its accounts, privatization is a natural solution.

An increasing consensus is developing regarding these reforms, but they have only started and are far from being completed, mainly because of the paralysis of the state in moments of crisis such as this. A fiscal crisis means the state has no funds to finance new economic policies; the policymakers have neither the time nor the tranquillity to formulate and implement new strategies. If to a fiscal crisis is added a social crisis stemming from excessive income concentration, the consequence is a legitimacy crisis that permanently threatens the political system and aggravates the paralysis of the state.

We now have all elements necessary to define the perverse macroeconomic logic of stagnation in a highly indebted country, where a fiscal crisis has developed and inflation has reached unthinkable levels and is nearing hyperinflation. An external debt too high to be paid— and inconsistent with growth and price stability—leads to a transfer of real resources (a surplus in the trade balance, including services) and the elimination of external savings (a deficit in the current account), which has a direct effect on reducing the global (private and public) rate of investment. This same debt leads, as we have seen, to a reduction of public savings and, consequently, to a fall in public investment.

The increase in the public external debt, which occurs as the private external debt is transferred to the state, and the increase in the payment of interest by the state cause a fiscal crisis. This crisis is aggravated the moment the public deficit can no longer be financed by external loans and must be financed by increasing the internal debt and printing money. The increase in the internal debt leads to an increase in the internal interest rate

and thus to a further increase in the public debt. Printing money validates the going rate of inflation.

Prevailing high rates of inflation tend to become inertialized or autonomous. This means they are rigid downward, have an endogenous accelerating mechanism, and are subject to exogenous supply and demand shocks. As a consequence, inflation tends to become higher and higher.

High rates of inflation plus an increasing internal debt and a decreasing maturity for this debt lead economic agents to fear the financial breakdown of the state and cause an increase in capital flight, which used to be minimal in Brazil but has become substantial in recent years.[18] All of these factors obviously have a depressing effect on the rate of investment (which is already depressed by the transfer of real resources, the disappearance of external savings, and the reduction of public savings).

Finally, new investments and the existing stock of capital lose efficiency, as can be seen by an increase in the capital-output ratio. This increase is very large if we calculate the investment ratio at current prices; it is smaller if we measure investment at constant prices.[19] In current prices the rise in the capital-output ratio is greater because prices of capital goods—both imported and internally produced—increase in relative terms. In constant prices, where the variation of relative prices is neutralized, however, the capital-output ratio also rises. This should not be the case because investments in the 1980s tended to be less capital-intensive than those in the 1970s, when the PND II was launched. The best explanation for this decline in the efficiency of capital in the 1980s is probably the rate of inflation. It is usually believed that the Brazilian economy is used to inflation, that indexation neutralizes most of its evils. This was not true when inflation was 40 to 50 percent a year; it makes even less sense when inflation is no longer calculated on a yearly but on a monthly basis—that is, when inflation is 10, 20, or 30 percent a month rather than 10, 20, or 30 percent a year. This type of inflation disorganizes the economy, makes economic calculations increasingly more difficult, stimulates speculation, and leads economic agents to spend most of their time trying to gain, or at least not to lose, from the inflationary process. New investments are not necessarily less efficient, but the measurement of the marginal capital-output ratio shows an increase because part of the existing stock of capital becomes idle and loses efficiency as the economy is disorganized by inflation and an increasing number of people in business enterprises worry much more about inflation than about production. In fact, what is increasing is the total capital-output ratio, but this ratio cannot be measured.

I t is fairly clear that to overcome this economic crisis, in addition to severely cutting the burden of the external debt and controlling the fiscal crisis, it is necessary to find a new pattern of capital accumulation or, in

other words, a new scheme for financing investments in Brazil. I discussed this matter in Chapter 4, so a summing up is adequate here.

We can define the pattern of financing investments in terms of the sources of savings as:

$$I = SP + SG + SX$$

where I is total investment and $SP, SG,$ and SX are, respectively, private, public, and external savings. The pattern of financing investments has undergone deep transformations in Brazil. Prior to the 1970s external savings were negligible, and savings were roughly divided between the private and public sectors:

$$I-1950s \text{ and } 1960s = 0.5SP + 0.4SG + 0.1SX$$

During the 1970s, with the increase in private savings and the huge current account deficits being financed by external indebtedness, a tripod model emerged. The state remained an important actor in the process of accumulation, but public savings began to decrease. Again, in very rough terms we have:

$$I-1970s = 0.5SP + 0.3SG + 0.2SX$$

In the 1980s public and external savings practically disappeared or became residual. Public savings were still positive because the savings of publicly owned enterprises were still positive. The source of savings for financing investments, however, became almost exclusively private:

$$I-1980s = 0.8SP + 0.1SG + 0.1SX$$

This pattern for financing investments today is clearly unsound. The external and the public sectors may not have such a small role in the process. And in relation to the public sector, as we have seen, in normal circumstances the public sector would still be responsible for around one-third of total investments (5 to 6 percent of GDP).

The required reduction of the external debt, the internal fiscal adjustment, and the structural reforms must have as one of their objectives to change this pattern of financing investments. This is the challenge of the 1990s. The 1980s was a lost decade for Brazil. But given that we now much better understand the logic of the debt, the deficit, inflation, and stagnation in Brazil and that we have been able to identify the ill effects produced by populism and the neoliberal orthodoxy, it is reasonable to hope that this vicious circle will be broken.