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## Introduction: Inertial Inflation and the Heterodox Shock in Brazil

The heterodox shocks that were applied in Argentina in June 1985 and Brazil in February 1986 constitute a theoretical and practical alternative to the successive failures of the orthodox policies to control inflation in these countries. On 28 February 1986, Brazilian inflation, which was already at an annual level of approximately 360 percent, was halted by a heterodox shock. This shock consisted of a freeze in prices, wages, and the exchange rate, as well as a monetary reform that substituted the cruzado, which is intended to be strong and stable, for the devalued cruzeiro. This same phenomenon took place in Argentina nine months earlier, on 14 June 1985. In both cases, the economic policy adopted was derived directly from a new development in the Latin American structuralist theory of inflation: the theory of inertial inflation.

The object of this chapter is to make a general analysis of the shock itself, of the theory on which it was based and the way in which it was developed, and of prospects for success of both the Brazilian and Argentine shocks.

When this chapter was written, four months after the Brazilian heterodox shock, everything seemed to indicate that inflation was under control. If these early results are confirmed, and the 360 percent inflation is lowered to a reasonable level with almost no difficulties, economic theory and policy—via the theory of inertial inflation—will have taken a great step forward. Even if inflation resurges, as is happening in Argentina, these experiences in controlling high rates of inflation will have a major influence on future debates on the subject.

The neostructuralist theory of inertial inflation, which served as a foundation for the heterodox shocks both in Argentina and in Brazil, conflicts directly with the monetarist theory of inflation based on changes

in the money supply and expectations. This theory, contrary to the theory of rational expectations, asserts that expectations cannot be easily modified by changes in the economic policy. Regime expectations about inflation work through the power of each economic group to protect its real income; they are based on past inflation and on the imperative of each economic agent to maintain its income share.

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In the second semester of 1985, after four months of a partial price freeze from April to July, in which Brazilian inflation was artificially maintained at an annual level of 150 percent, it underwent a new acceleration. From a previous level of 200-230 percent a year in 1983-1984, the Figueiredo government left office with inflation at a level of 270 percent a year. At the end of 1985 and the beginning of 1986, inflation jumped from a level of 270 percent a year (almost 12 percent a month) to a new level of about 360 percent a year (about 13.5 percent a month).

When inflation (consumer price index or IPC) reached 16.2 percent in January 1985, and then 14.3 percent in February, the situation had become unbearable. The economic authorities and the president of the republic were learning all they could about the theory of inertial inflation and its implications for policy, which some Brazilian economists had developed at the beginning of the 1980s. The economists had confirmed the success of the monetary reforms and a general price, wage, and exchange rate freeze in Argentina and in Israel. It was becoming more and more clear for everyone that the only way to eliminate Brazilian inertial inflation would be by a general price freeze and a monetary reform, or, in other words, by a so-called heterodox shock. The decision to apply it on 28 February was hastened by the high inflation rate in January, which was reinforced in February.

The decision to apply a heterodox shock was also because of the failure of the recessive orthodox policies for controlling inflation that had been implemented in Brazil, beginning in the second semester of 1980. In spite of a violent contraction in demand, either due to monetary restriction or to fiscal pressure, the inflation rate, after oscillating around a level of 100 percent in the period from 1980-1982, rose to a level of 200 percent a year in 1983 and to 360 percent at the end of 1985.

The basic measures of the Stabilization Plan adopted by the government in February 1986 consisted of: (1) a price, wage, and exchange rate freeze for an undetermined length of time starting on D Day; (2) deindexation of the economy; (3) a monetary reform that introduced a new

currency, the cruzado, to take the place of the cruzeiro at a parity of one thousand cruzeiros to each cruzado on D Day, and the establishment of a subsequent conversion scale based on a daily devaluation of the cruzeiro in relation to the cruzado fixed at 0.45 percent; (4) the conversion of contracts made in cruzeiros (wages, rents, school tuitions, mortgage payments, and other obligations) to cruzados via a formula that guaranteed the recomposition of their real average value. All of the other stipulations of the plan were complementary or established exceptions to these four basic guidelines.

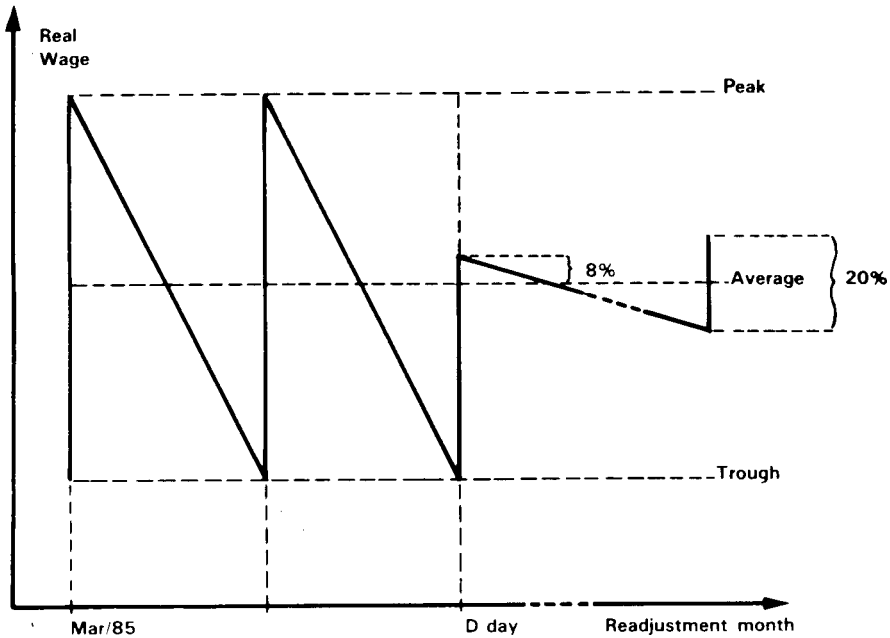
The Cruzado Plan fits into a new economic policy that was inaugurated in August 1985, and which is based on the following directives: (1) priority for economic growth near the historic annual rates of 7 percent; (2) renegotiation of the external debt without sacrificing economic growth and without accepting the conditions of the IMF; (3) redirection of public expenditures towards social programs aimed at improving income distribution; (4) solution of the unbalanced finances of the public sector, giving priority to increasing receipts rather than cutting public expenditures.

The general freeze was accompanied by the fixing of prices for the most important consumer goods (almost 500 articles, with prices differentiated according to geographic regions). The prices were formally controlled by government enforcers, but informally by the whole population.

Wages could not be directly converted from cruzeiros to cruzados because of the different months in which wage adjustments were legally due. They also could not be readjusted by taking their peak value (100 percent of past inflation up to that date) on D Day and converting it into cruzados because, in dealing with term contracts, this would imply an increase in real wages. This, in turn, would have made the freeze unviable for businesses because it would strangle their profits. The solution that was found for this problem was a simple conversion table for the wages and benefits received in the six months before the shock that guaranteed the reconstitution of average real wages and, therefore, of the workers' buying power. The nominal wages and other remunerations effectively received between September 1985 and February 1986 were multiplied by a factor that transformed them into the real wages at the prices of February. Their total was then divided by six to obtain the average real wage. An 8 percent bonus was added to this figure to protect wages against future inflation, according to Figure 1.1.

Similar to what happened in Argentina, another conversion table was established to reduce the value of term contracts in general. Corporations

Figure 1.1 Conversion of Wages to Cruzados



had included their expectations for future inflation in their prices for all term sales. Once prices stabilized, it became necessary to guarantee a discount for debtors that corresponded to these expectations for inflation. A daily table for converting cruzeiros to cruzados established this discount, corresponding to the geometric average of inflation in the last three months before the shock (14.65 percent). For rents, mortgage payments, and school tuitions, special formulas for conversion were established, all of which attempted to reestablish the average real value of the contracts.

The deindexation was not total, thus establishing certain guarantees for the economic agents. Monetary correction was maintained for deposits in savings accounts. The ORTNs (readjustable national treasury bonds), which served as a base for the whole indexation process, were transformed into OTNs (national treasury bonds), but they kept the guarantee of an annual correction. A "movable scale" was established for wages, guaranteeing that they would be readjusted whenever inflation reached 20 percent. When each category of workers has its annual wage negotiations, it will receive a correction equal to 60 percent of the IPC (consumer price index). This readjustment will be considered as an advance in their wages,

which will be automatically corrected according to 100 percent of IPC whenever this index reaches the 20 percent trigger point.

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The abandonment of the use of gradualism in combatting inflation and the adoption of shock measures are based on an analysis of Brazilian inflation that indicates the presence of some essential conditions that would allow for an abrupt interruption of the inflationary process. First, Brazilian inflation was predominantly inertial; that is, prices increased according to past inflation autonomously of pressures from demand or of shocks in supply. Second, given the chronic and inertial nature of inflation, the economic agents developed defense mechanisms with the goal of reaching: (1) synchronization of the readjustments of prices, wages, and the exchange rate; (2) reduction of the lags between readjustments; and (3) equilibrium in relative prices. Third, the public deficit had been significantly lowered in recent years while inflation accelerated. Fourth and last, huge superavits in the international trade balance and increasing international reserves represented a guarantee that the exchange rate freeze would be maintained.

It is not difficult to understand that, if the conditions above are fulfilled, the inflationary process could be abruptly interrupted. The deindexation, the freeze, and the monetary reform act as a synchronization mechanism that imposes a collective, coordinated decision to simultaneously interrupt the elevation of all prices and wages. If there is a perfect synchronization in the readjustments of wages and prices, if the lag between the readjustments is small, and if relative prices are balanced, the freeze would not have redistributive impacts, nor would it violate the laws of the market or, in other words, the law of value. The only function of the freeze would be to eradicate the habit of periodically readjusting prices by erasing the inflationary memory once and for all.

In the absence of the ideal conditions for a perfect synchronization of the readjustment of prices and wages, and the existence of relatively large lags in the adjustments of wages in some sectors, the heterodox shock itself tries to create these ideal conditions through administrative measures. With this in mind, wages and other incomes were converted to their real average value and the expectations for inflation that were built into contracts were neutralized by the monetary reform and the decimal table for converting cruzeiros to cruzados.

The success of the program depended mainly on one condition: that on D Day, 28 February, the freeze did not create any big winners or big losers. Relative prices had to be reasonably adjusted, without distortions

caused by the previous sectorial price setting by the government. Aside from this, the lags in the price increases just before D Day had to be small enough so that, on D Day, relative prices were not unbalanced because the last adjustment was closer to or further from D Day.

If there were big winners and big losers, there would have been several correlative implications: the reform would not have respected the law of value; market prices would have deviated too much from production prices; relative prices would have been distorted, benefitting those who had increased their prices recently and penalizing those who had planned to raise their prices soon after D Day; the differences between sectorial profit rates would have increased rather than decreased; and last, wages and other term contracts would not have been converted according to their average real value. If this had happened, the pressure from the losers would have been unbearable, their prices would have to have been readjusted sooner or later, and the stabilization program would fail.

Contrary to what happened in Hungary in 1946 and in Argentina and Israel in 1985, there were no adjustments made in relative prices on the eve of D Day. The prices for the state corporations were not increased because it was thought, perhaps a bit hastily, that most of them had already been adjusted, and because it was wrongly predicted that there would be no operational public deficit in 1986. The cruzeiro, on the other hand, was not devalued before being converted into cruzados, thus not establishing a security margin in relation to the exchange rate in order to withstand a small amount of inflation in the following months.

This predicted fiscal balance came, in part, from a fiscal reform approved at the end of 1985, which increased the tax base progressively. It also came from the Stabilization Plan, which eliminated the real loss of taxes that had been caused by the difference between the moment in which taxes are computed and the moment in which they are paid. For example, in the case of the tax on industrialized products (placed on the consumer), with inflation the government was losing receipts relative to the devaluation of the cruzeiro in a three- to four-month period; with the stabilization this loss disappeared. In 1985, the operational public deficit (public sector borrowing requirements in real terms) was 3.4 percent of the GNP. After the Stabilization Plan, everything pointed in the direction of a deficit in 1986 similar to that of 1985. This kind of deficit, or one even slightly higher, was perfectly consistent with price stability; in 1986, there would be an increase in the real demand for money, which would permit the monetary authorities to issue cruzados without any pressure on aggregate demand. It was estimated that this remonetization would triple the money supply.

Two months later, however, this idea was dismissed, given new projections of a public deficit of around 5 percent of the GDP. The effects of the fiscal reform were not as positive as was previously thought: the decision to not raise the prices in the public sector immediately before the shock was a mistake, and control of public expenditures was somewhat loose.

Given the predominantly inertial nature of Brazilian inflation, the only alternative for controlling inflation was a heterodox shock. An orthodox shock, inspired by monetarist or Keynesian economics, is based on a cut in state spending and an increase in taxes, a drastic reduction of the money supply, an increase in the interest rate, and on a recession, which would have indirectly led to a reduction in wages and in profit margins. This kind of shock would not have been viable for the simple fact that inflation was inertial rather than demand push. It was necessary to break the inflationary inertia, that is, the ability of the economic agents to formally or informally index their prices, thus automatically passing their increases in costs on to prices. Indirect measures that aim to reduce this inertial increase of prices via the market are inefficient, as they present an extremely high cost-benefit relation. Actually, there are only two correct forms for controlling inertial inflation, both of which are of an administrative nature and try to directly control prices. Either a policy of gradually controlling prices, wages, and the exchange rate—in accordance with a declining future rate of inflation—is adopted, or, if the level of inflation is already very high, there is no other alternative to that of a heterodox shock.

The shock is heterodox because it is based on a price freeze and administrative measures instead of market forces to combat inflation. The former do not aim to stabilize prices by correcting, through fiscal or monetary measures, the way in which the market functions, but use direct coordination of economic relations and the imposition of decisions and actions through administrative measures dictated by a central authority. It is also heterodox because it does not provoke a recession. An orthodox shock begins with the assumption that inflation is caused by an excess of demand; for this reason, it is seen as necessary to provoke a recession that reduces demand. The heterodox shock recognizes that the market no longer functions—it no longer maintains stable prices, even though there is no excess demand—and that it is necessary to administer it. In these terms, a recession is unnecessary or even counterproductive. An expansion of the economy makes it easier to stabilize prices; the increase of income and the reduction of total fixed unit costs and the reduction of average variable costs caused by the increase in productivity make it possible to reduce average total costs, and thus neutralize the distributive conflicts.

In Argentina, the economy was already in the middle of a recession when the Austral Plan was implemented. The institution of a very high interest rate to avoid capital flight and hoarding of stocks and a very large, abrupt cut in the public deficit deepened the recession. The Stabilization Plan in Brazil was introduced in a completely different situation—when the economy was in full expansion, the external sector balanced, international reserves high, and public finances relatively under control. Aside from this, Brazil can count on a powerful industrial economy that is internationally competitive and where the opportunities for investment are enormous. For this reason, the flight of capital is a much less serious problem and, thus, does not demand the establishment of a high interest rate. Also, the risk of speculative hoarding of stocks is less in Brazil; this is another factor that helps to avoid high interest rates, because, as there were no drastic adjustments made in public prices on the eve of D Day, the economic agents did not have a special reason to expect a future increase in their prices.

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The theory of autonomous or inertial inflation, which served as the base for the heterodox shock of 28 February 1986 in Brazil, and previously for the Argentine shock of 15 June 1985, is part of the wider structuralist theory of inflation. Actually, it could be considered as the third paradigmatic moment in the development of this theory. The first moment, which was marked by the works of the economists of CEPAL (the United Nations Economic Commission for Latin America), especially those of Juan Noyola (1956), Oswaldo Sunkel (1958), Celso Furtado (1959), Julio G. Oliveira (1964), and Aníbal Pinto (1973), introduced two basic concepts: (1) bottlenecks in supply that provoke sectorial elevations of prices, and (2) propagating effects of inflation, which spread initial price hikes to the rest of the economy. Mário Henrique Simonsen, who always uses an eclectic approach—both monetarist and structuralist—to analyze inflation, contributed to the theory of propagating effects with his concept of inflationary feedback (1970).

The second paradigmatic moment for the theory of inertial inflation was the publication of Ignácio Rangel's book, *A Inflação Brasileira* (1963). The endogenous nature of the money supply, inflation as a defense mechanism of the economy itself when faced with a chronic insufficiency of demand, and the concept of administered or oligopolistic inflation were the main ideas developed by Rangel.



The third paradigmatic moment for the theory of structural inflation took place at the beginning of the 1980s in Brazil. There are some works dealing specifically with the formulas for indexing wages, which contain some elements of the future theory of inertial inflation: André Lara Rezende (1979), André Lara Rezende and Francisco Lopes (1980), Francisco Lopes and Edmar Bacha (1981), Pêrsio Arida (1982). The idea of autonomous or inertial inflation becomes more consistent with the works of Luiz Bresser Pereira (July 1981, 15-20), Adroaldo Moura da Silva (September 1981, 67-75), and Edmar Bacha (1982, ch. 7). In these, the ideas that present inflation as a mere reproduction of past inflation—that it is the result of the formal and informal indexation of the economy and, on a wider level, of the distributive conflict—begin to be defined. In Chile, Joseph R. Ramos (1977) made a pioneer contribution to the theory of inertial inflation, even though he adheres excessively to the problem of inflationary expectations. In the United States, Otto Eckstein made an important contribution to the theory of inertial inflation with his concept of "core inflation" (1981), breaking the inflation rate into three parts: core inflation, demand, and stocks in supply, making an empirical estimate with an econometric model.

The theory of inertial inflation, meanwhile, only became fully developed with the works of Bresser Pereira and Nakano (December 1983 and July 1984a), Francisco Lopes (December 1984b), Pêrsio Arida (December 1984), and Lara Rezende and Pêrsio Arida (December 1984). Their starting point was the concept of stagflation, that is, of the coexistence of inflation with recession, idle capacity, and unemployment. In order to explain this fact, it was necessary to construct a model of inflation that, contrary to what takes place in the Keynesian models of inflation, (1) assumes, or is compatible with, unemployment and idle capacity, and (2) does not begin from a situation of stability (zero inflation) to explain inflation, but admits that a given or going inflation rate or inflationary tendency exists.

In order to construct a model of inertial inflation, a clear distinction—which the conventional literature on inflation does not make, or to which it does not give enough importance—between the factors that accelerate inflation (demand or supply shocks) and those that maintain it (the "trend" or "momentum," or inertial component of inflation) was necessary. By starting with zero inflation, the theories of inflation were always oriented toward explaining the causes of inflation in terms of the

causes of inflationary acceleration. This resulted in a debate to determine if, in each concrete case, we were dealing with demand inflation (Keynesian, if the excess demand has a fiscal origin; monetarist, if it has a monetary origin; structuralist if the origin is sectorial), or with administered or cost inflation, provoked by the monopoly power of corporations, trade unions, or the government.

After making the distinction between the accelerating and the maintaining factors of inflation, it became necessary to clarify—when asking about the causes of inflation—if the question referred to the causes of the acceleration of inflation, or to the maintenance of the level of inflation. If one was dealing with the first question, the old debate between demand inflation and cost inflation continued to be valid. However, if one was dealing with the second question, it then became necessary to search for the causes of the autonomous or inertial nature of inflation—to know why past inflation tended to automatically reproduce itself in the present.

As the theory of inertial inflation is an advance or a new conceptual stage of the structuralist theory, it seeks its most profound cause in the distributive conflict. For the structuralists, inflation is a real phenomenon that reflects the economic structure and the power relationship in society; It is a real phenomenon that always has monetary consequences (and eventually causes). The economic agents always try, either individually or in groups, to maintain their share in the income, and, if possible, to even increase it. Also, all try to maintain a positive growth of the GDP. In the process of defending their share of the income, given the current inflation rate, economic agents increase their prices alternately and systematically. If the economy consisted of only three economic agents (A, B, and C), and if the current inflation rate were  $x$  percent, then agent A would increase its prices inertially by  $x$  percent on the first day of the month, B on the tenth, and C on the twentieth, thus causing A to increase its prices by  $x$  percent (as long as there is no new accelerating factor) on the first day of the following month, and so on. If any one of the economic agents were to stop increasing its prices, its share in the income would be reduced. All of them would be facing the prisoners' dilemma.

In his detailed model of inflation, using a Phillips curve augmented by expectations, Milton Friedman made a distinction between accelerating factors and inflationary tendency. However, as he understands inflation to be an essentially monetary phenomenon, he attributed inflation, its acceleration, and its "trend" (inertia) directly to the behavior of the money supply and indirectly to the expectations related to this money supply. As a result, the distinction between accelerating factors and maintaining factors loses its clarity, as they are all explained by the same cause: the money supply. On the other hand, by reducing the whole problem of

inflation to the money supply, the monetarists, and especially the followers of the theory of rational expectations, turned inflation into a problem of expectations, and thus into a psychological problem. The determining factor for inflation became the expectations of the economic agents in relation to the money supply.

Because inflation is an economic problem, and because economics is a social science, it is a tautology that inflation is based on the behavior of individuals, their expectations for the future, their attempts to face uncertainty, and on making the most of the profits or wages they receive. Meanwhile, it is far from clear that these expectations can be easily changed by means of economic policy. Also, it is not certain that the expectations of the economic agents influence their behavior to the extent that these expectations are confirmed in practice. There are many expectations that never materialize. Albert Hirschman once defined disappointment, so common among people, as a kind of mistaken expectation. He added that "it is much more common for expectations to exceed reality than for reality to exceed expectations" (1982, 13). Because of this, the economic agents know that they cannot take their expectations too seriously.

As opposed to what the monetarist economists assert, inflation is not essentially a monetary or a psychological phenomenon, but rather a real phenomenon with monetary consequences (and, eventually, causes). Inflation is a real phenomenon directly related to the distribution of income and to class conflict. Actually, monetarists underestimate the tendency of the economic agents to defend their share of the income, because the latter base their expectations principally on past inflation, which is concrete. Instead, the monetarists believe that these expectations can be changed as a result of economic policy decisions.

According to the theory of inertial inflation, expectations are relevant, but they are based on past inflation and are a consequence of the distributive conflict. Living with chronic inflation, the economic agents try to replace their peak real income, because inflation continually corrodes the buying power of their nominal income. But it is impossible to guarantee everyone's peak real income; it is inconsistent from a distributive viewpoint, since income would then have to be greater than the product. Inflation is a mechanism that makes the distribution of income consistent via a real average income that is less than the real peak value.

In this sense, there is a radical divergence between the neostructuralist theory of inflation, based on the real distributive conflict, and the theory of rational expectations, or the Phillips curve augmented with expectations, which uses the idea that inflation is a psychological phenomenon that

depends on the way the economic agents change their expectations in response to changes in the regime of economic policy.

The higher inflation is, the clearer the income effects of price increases become for all of the economic agents: the monetary illusion disappears. As a result, the distributive conflict becomes sharper and inflation more and more inertial. In the cases of hyperinflation—the study of which was very important for the formulation of the theory of inertial inflation—the inertial component of inflation becomes absolutely dominant (L. Yeager 1981). On the other hand, the dissynchronization of price increases becomes minimal and relative prices reach a reasonable balance in which no one gains or loses with inflation. Price increases become almost simultaneous. The differences between peak prices and real average prices almost disappear. For this reason, any significant exogenous factor—such as a monetary reform accompanied by the obtaining of foreign loans that guarantee the fixing of the exchange rate, as happened in the Central European countries after World War I—allows for the immediate elimination of inflation without the need for a price freeze. Taking the viewpoint of the theory of rational expectations, Sargent (1982) mistakenly attributed the end of hyperinflation to the change in the economic policy regime. Actually, inertial inflation reached such dimensions, and the time lag between price increases became so small, that inflation lost any redistributive effect and, therefore, its reason for existing. The exogenous change in economic policy was just a signal for the economic system that was ready and anxious to stop hyperinflation as long as the exchange rate was kept stable.

In the theory of inertial inflation, the money supply is considered to be a factor that sanctions inflation. The endogenous nature of the money supply was advanced by Wicksell, Bortkiewicz, Schumpeter, Keynes, and Joan Robinson in the 1930s (see Gerald Merkin, 1982), but in a very imprecise form. This idea was finally fully developed by the structuralist economists, particularly by Ignácio Rangel (1963). More recently it became popular among the post-Keynesian economists, mainly because of the contributions of Nicholas Kaldor (1970). In a capitalist economy, the need for money comes from the very process of production and capital accumulation. Basic contractual relations, such as those of wages, are fixed monetarily, and business firms and consumers need to have monetary resources and access to credit in order to make their transactions. As the value of production expands, whether because of an increase in quantity or

because of an increase in prices, the demand for money increases. When business firms decide to invest, the expansion of credit is also unavoidable. In both cases, the result is an expansion of the money supply, either through the utilization of the monetary reserves of the banks and the creation of cash deposits, or by the simple issuing of money by a central bank as a form of financing an eventual budget deficit. Given the exchange equation and assuming a relative stability for the income velocity of money and the accommodative economic policy of the authorities, an inertial increase of prices necessarily leads to an increase in the money supply. It is undeniable that a central bank has or may have some role in the control of the money supply, especially through control over banking credit. But a reduction in the real money supply, that is, a nonaccommodative economic policy, leads to a crisis in liquidity, an increase in the interest rate, and to recession. This situation never lasts for long. In order to avoid a crisis and a financial collapse, the economic system tries to defend itself by increasing the nominal money supply, either directly through pressure on the monetary authorities, or indirectly through the endogenous mechanisms of the banking system, or even by creating substitutes for money in intercorporate transactions. Faced with the need to create a nominal money supply in order to prevent a reduction in the real money supply, and thus to make the volume of current production viable (macroeconomic reason), and given the liquid assets that the financially healthy corporations have at their disposal (microeconomic reason), the banking system automatically expands the nominal credit supply either by taking recourse to its idle monetary resources or by pressuring the central bank.

Naturally, there are special cases in which an increase in the money supply can transform itself into an accelerating factor for inflation. If the government decides to act in a populist way and finance its public deficit by issuing money or, more precisely, by making a real increase in the money supply, the resulting acceleration of public and private investment (given the reduction in the interest rate), would lead the economy to full employment and to a classic demand push inflation. It must be made clear, however, that the simple existence of a nominal public deficit financed by an increase in the nominal money supply does not transform this increase into an accelerating factor for inflation. Even though the money supply increases in nominal terms in order to maintain the real money supply, it will be a factor that merely sanctions inertial inflation.

Naturally, there are numerous points in common between the neostructuralist theory of inertial inflation and the post-Keynesian theory. Their basic agreement is on the endogenous nature of money. The Kaleckian theory of oligopolistic pricing based on direct costs plus a profit margin, the latter being determined by the degree of monopoly, is another point in common between the post-Keynesian and structuralist schools. Actually, the markup theory of prices that implies that prices are indexed to past prices, especially the wage rate and the exchange rate, composes the nucleus of the inertial theory of inflation. In the post-Keynesian model, however, there is no distinction between accelerating factors and maintaining factors, there is no adequate explanation for stagflation, and the distributive conflict does not receive the same emphasis. Shocks in supply are almost exclusively related to real increases in wages above productivity, thus ignoring or underestimating the oligopolistic increases in profit margins, the measures of "corrective inflation," and the differentiated behavior of the prices of the agricultural goods and mineral raw materials.

The distinction is also clear on the level of economic policy. While the monetarists are fundamentally oriented toward controlling the money supply, and the Keynesians to managing fiscal policy and income policy (thus admitting the importance of the distributive conflict), the neostructuralists emphasize administrative controls of prices, wages, and long-term policies.

If inflation is inertial, if it is not the result of an excess of demand but rather of the ability of the economic agents to automatically pass on increases in their costs to their prices, the natural way to break this cycle is administrative price controls. This solution becomes even more natural when we learn that this ability to automatically reproduce past inflation in the present would become greater, not only as inflation is higher, but also as the market for goods and services and the labor market are oligopolized and the degree of intervention of the state is increased.

Administrative wage-price controls can be carried out either gradually, in keeping with a partial deindexation through a forecast declining inflation, or abruptly, via a general freeze of prices, wages, the exchange rate, and a monetary reform. As long as inflation is at relatively low levels, it is still possible to think in terms of gradual administrative controls. However, when inflation reaches high levels (more than 300 percent in Brazil, and more than 1,000 percent in Argentina and in Israel), the only choice for abruptly cutting inflation is a freeze.

The first economist who perceived the need for an administrative type of shock treatment in order to eliminate inflation was Octávio Gouveia de Bulhões, when, at the beginning of 1983, he proposed a total deindexation of the economy. Deindexation is an administrative measure. However, as he is a monetarist and does not make use of the theory of inertial inflation, he opposed a freeze, preferring to support deindexation along with a radical reduction of the money supply.

The proposals for a freeze and deindexation are natural results of the theory of inertial inflation. Because of this, as soon as, or immediately after, the theory was formulated, proposals formulated by these previously mentioned economists appeared. Bresser Pereira and Nakano (July 1984, 123-124) proposed a "heroic solution for controlling inflation," with the choosing of a D Day for a general price freeze. Francisco Lopes (August 1984a, December 1984b) introduced the expression "heterodox shock" and made a more complete proposal along these lines, which would later serve as the main theoretical source for the Argentine and Brazilian shocks. André Lara Rezende (September 1984, 1985) and Pêrsio Arida (December 1984, 5-18), both separately and together (December 1984), proposed a "monetary reform" and an "indexed currency." Mário Henrique Simonsen (November 1984) supported and further developed the original proposal of Lara Rezende. Antonio Dias Leite (January 1985) presented a proposal for "overcoming inflation in 100 days." Eduardo Modiano (1985) made a formal proposal for converting wages to an average real wage. Last, Rudiger Dornbusch (1986) proposed a freeze maintaining deindexation.

There is not enough room here to describe each one of these proposals. Taken together, they served as the base for the Austral Plan and the Cruzado Plan. In the Argentine case, there was more preoccupation with correcting relative prices and with the public deficit at the time of the shock, as had been the case in Hungary in 1946 (see Bomberger and Makin, 1983, and Hegedus, 1986). In Brazil, the major preoccupation was with guaranteeing distributive neutrality via several formulas for conversion. In Argentina, the economy was in a recession; in Brazil, it was expanding. In both cases, however, the heterodox shock was based on the choosing of a D Day to end inertial inflation through a general price freeze. In this way, Brazil avoided the deep recession that an orthodox policy (either gradualist or by shock) for eliminating such high inflation would have provoked. Argentina was not as successful because its economy was already in recession when the shock was applied.

Now, the important question is if both of the stabilization plans will be successful or not. The orthodox economists are generally skeptical or else they pretend that there was not a heterodox shock in both countries, but rather an orthodox one. The structuralist economists are confident, because in both stabilizations, as well as in Israel, they see a confirmation of their theory of inertial inflation.

In Brazil, after four months of the Cruzado Plan, inflation was under control and prices had stabilized. In Argentina, after fourteen months of Austral Plan, inflation was 70 percent a year. The recession in Argentina was already underway before the shock; recent information indicates the beginning of a recuperation. In Brazil, there have not yet been any signs of a recession, although the interindustry conflicts over the discounts in credit sales could create obstacles to production. In both countries, meanwhile, the freeze has not yet been suspended—in Brazil, because it is still very early; in Argentina, because the government does not feel secure enough. Of course, the important question is to know what will happen after the end of the price freeze.

In terms of the inertial inflation theory, the first big risk for the plan is that the shock was not neutral enough from the distributive point of view on D Day. The second big risk is that the distortions of relative prices, which express the lack of distributive neutrality, would increase instead of decrease during the period of the freeze. In the event that these two problems converge, inflation would start to accelerate again at the moment the freeze was suspended because it had become insupportable. In Argentina, between March and June 1986, monthly inflation averaged 4.5 percent (70 percent a year). The first devaluation of the austral, of 3.75 percent, was announced at the beginning of April, anticipating monthly devaluations for the next two months of 2 percent. This relative failure is mostly a consequence of the Argentine government's delay in correcting relative prices. Certainly the public deficit and excess demand cannot be blamed for the resurgence of inflation.

No matter how inertial inflation is, on D Day there will always be some imbalance in relative prices because of controlled prices or exceptional behavior in the supply or demand of certain goods in the period immediately before the freeze. These imbalances will be frozen along with prices and, moreover, will become more visible. On the other hand, all of the formulas and tables for converting long-term contracts into australs or into cruzados will not prevent, at the start, those imbalances from increasing rather than decreasing, because of lags in the price increases and



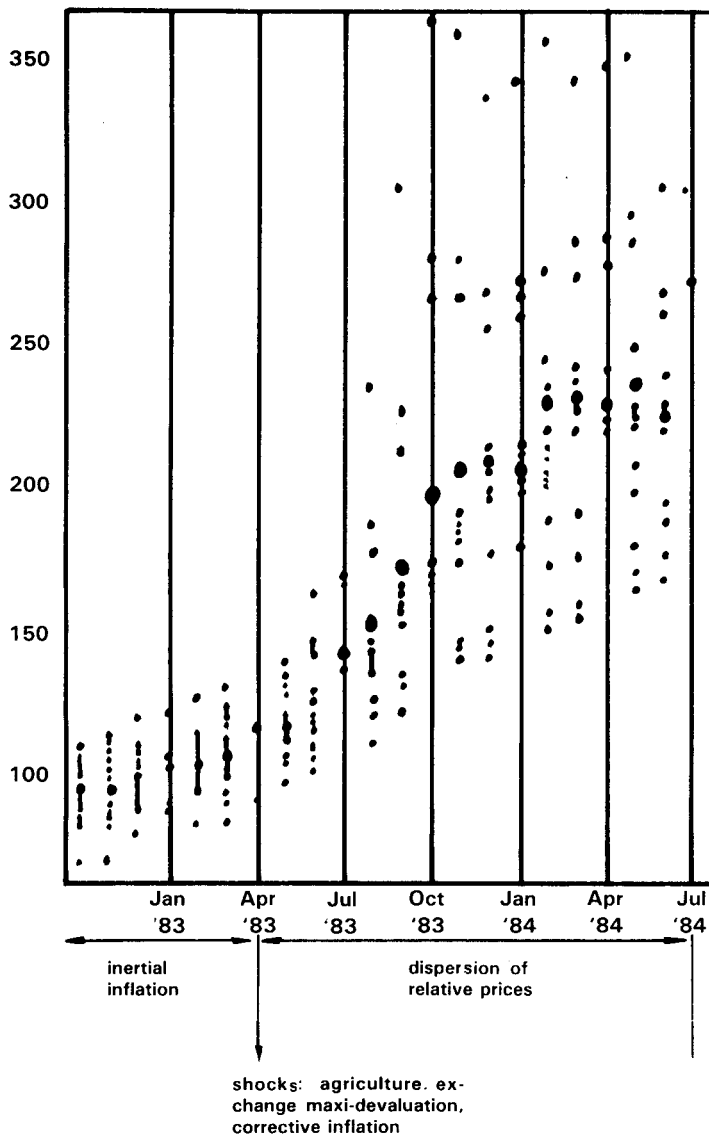
the fact that D Day is an arbitrary day among the differently timed price increases. Even though there is an attempt to convert prices to their average value and not to their peak value, there are always some prices that cannot be converted in this way or that were imperfectly converted.

In order to have an idea of behavior of relative prices in Brazil, Figure 1.2 (Fernando Maida Dall'Acqua, 1986) shows the dispersion of the annual growth rates of the main price indices collected by the Getúlio Vargas Foundation for the period from October 1982 to February 1986. It can be clearly observed that the periods with small differences in the growth rates of the relative prices, when there is a predominance of the inertial component, are followed by periods with temporarily distorted relative prices, during which the effects of shocks in supply, maxidevaluations, and corrective inflation spread through the price system. Certainly, as can be observed in Figure 1.2, between the third and fourth trimesters of 1984, there was a period of purely inertial inflation. The fluctuations in the inflation rates from one month to another in this period can be explained by seasonal effects. It can also be noted that, in February 1986, there was a large dispersion in the inflation rates. At this point, inflation was clearly passing through a phase of acceleration.

Table 1.1 only takes industrial prices into consideration, because the prices for agricultural goods and raw materials fluctuate intensely. Using the standard deviation for the analyzed inflation rates as an approximate measure of the dispersion of relative prices, it can be confirmed that the third and fourth trimesters present the smallest standard deviations, and that February 1986 showed an enormous dispersion in relative prices because of the shock of agricultural prices. This information suggests that the structure of the postfreeze relative prices should generate a dispersion in the sectorial profit rates that is inconsistent with a satisfactory long-term performance for some sectors. This means that the freeze should not last long, and that a zero inflation rate is an unattainable goal. Before the end of the freeze, however, prices should be administered, using the real prices of the second semester of 1984 as parameters.

In Brazil, in the days following the shock, there were two themes that dominated discussions. One was the maintenance of the average buying power of the last six months in the conversion of wages from cruzeiros to cruzados; the other was interindustrial relations, because there was a need for the corporations selling on credit to offer a discount relative to the inflation that was built into their selling prices. As for wages, although it was naturally difficult for the workers to accept the conversion of wages based on the average real wage rather than on the peak real wage, it seemed to be sufficiently clear that there had not been any loss for wage earners.

Figure 1.2 Dispersion of Relative Prices (%)



Annual growth rates of the main price indicators of the economy (Consumer goods, durable and non-durable; Capital goods, machines, vehicles and equipment, non-edible raw materials, construction material, agricultural products, industrial products, Cost of living index-Rio de Janeiro, National Index of Civil Construction, General Price Index (IGP))

Source: Fernando Maida Dall'Acqua, 1986

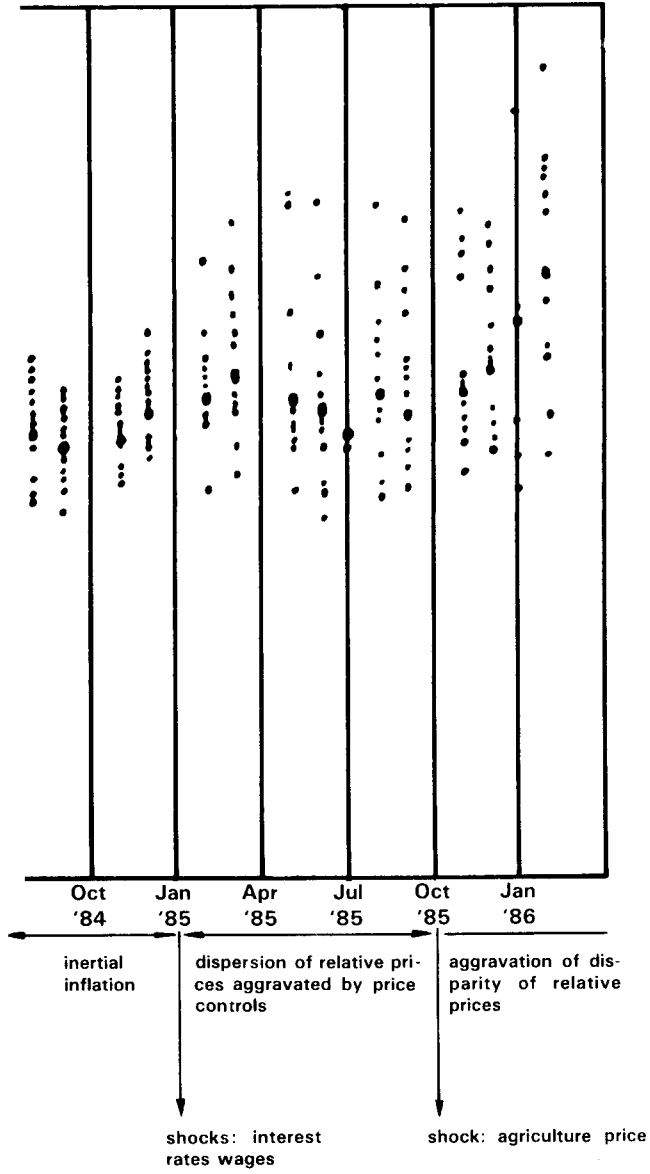


Table 1.1 Annual Growth Rates for Industrial Prices (%)

	1984			1985			1985/86	
	Jan/Apr	May/Aug.	Sept/Dec	Jan/Apr	May/Aug	Sept/Nov	Dec/Jan	
	Extractive Minerals	242	213	225	252	202	170	171
Transformation								
Metallurgy	206	210	201	210	199	216	228	
Mechanical	171	211	222	260	248	244	247	
Electrical Material	166	191	205	244	220	234	249	
Transport Material	143	166	194	220	179	185	188	
Furniture	167	190	237	297	335	327	307	
Paper & cardboard	197	221	267	289	241	187	184	
Rubber	173	186	219	228	214	185	168	
Chemical	240	231	230	258	205	175	171	
Fuel	260	221	204	244	185	156	157	
Textile/clothes shoes	193	236	240	255	255	264	282	
Drinks	169	195	230	257	241	257	259	
Food products	232	235	223	253	228	219	303	
Average	197	208	222	251	227	216	224	
Standard deviation	35.1	20.0	18.7	23.2	38.7	45.0	52.0	

Source: Fernando Maida Dall'Acqua, 1986

The shock maintained the relation between wages and profits more or less unaltered.

The problem of interindustrial relations is more complicated, since the government decided neither to distinguish the imbalances in the relative prices on D Day from the supervenient imbalances resulting from the inflation built into the term contracts, nor to establish a clear rule for the discounts for new supplies of merchandise sold on a credit basis. Instead, it intended to let the market resolve these two problems together through discounts freely set between the corporations. The result of this policy could be favorable, finally reducing the imbalances in relative prices, but it is more likely that it will be negative, increasing these imbalances. In the same way in which a conversion formula was set for the long term contracts in force on D Day, a formula for calculating a minimal discount for new supplies should have been adopted. In the first month after the Cruzado Plan was implemented, interindustrial relations continued to be tense: wholesalers and retailers were not accepting the discounts offered by industry; there was a shortage of merchandise in stores at the same time in which stocks were accumulating in factories. The difficulties, however, seemed to be resolved more easily than expected. As opposed to what happened in the Argentine economy, the Brazilian economy was in full expansion at the time of the shock. In spite of the interindustrial difficulties, this expansion continued after the shock, stimulated by the higher wages (since many corporations went against the conversion formula and did not reduce nominal wages when the formula called for this), by the transference of income from banks (which lost their income from cash deposits) to firms and consumers, and by the monetary illusions of the consumers. Actually this strong expansion is helping to solve the interindustrial distributive conflict, while creating demand push inflationary effects. In July 1986, the Brazilian authorities implemented a package of policies to try to control the excess consumption.

Strictly speaking, a general freeze of three to six months should be enough to break inertial inflation. A freeze for a longer period could only be justified if, during this period, the government succeeds in diminishing the imbalances in relative prices through a judicious administration of prices, and thus prevents the shock from representing large losses for some and large gains for others. It is important to note that this administration of prices is inconsistent with the goal of zero inflation for which the Brazilian government aimed just after the shock. A small amount of inflation resulting from the increase of the outdated prices is necessary. Zero inflation would only be feasible if the increases in these outdated prices were compensated for by a decrease in the prices that were changed more recently, or else if there was a large deflation in the first month.

Obviously, neither of these two alternatives is realistic. In Brazil, deflation in the first month was only 0.11 percent. In April, the second month, there was a positive inflation of 0.78 percent. The average monthly inflation up to July was around 1 percent.

In any case, the freeze cannot last long. In the first months after the shock, it would be theoretically possible to decrease the imbalances in relative prices by administrative means. In the long run, however, the risks are very great that administering prices, instead of letting them be controlled by the market, would increase rather than decrease those imbalances. For this reason, it will be necessary to suspend the freeze in time, preferably gradually, and definitely before this suspension can no longer be decided by the government but instead becomes an inevitability, imposed by the market itself, which was violated during the freeze.

As was expected, the stabilization of prices provoked a greater demand for money. The economic agents no longer needed to recycle their money quickly, preferring instead to increase their cash deposits. As a result, in the period of February-June 1986, demand deposits in the banks (commercial private banks and commercial public banks) increased 216.5 percent, the monetary base increased 134.0 percent, and the money supply (M1) 185.1 percent. For a while, until the remonetization of the economy is completed, the issuing of currency could help to finance the public deficit in a noninflationary way. It is difficult to determine the new ideal level of money with which the economy can operate. If the growth of the money supply provokes an excessive lowering of the interest rate and pressure on demand, these would be signs that it is necessary to interrupt the remonetization process. For the moment, even though there may be some excess demand, the real interest rate for depositors is being maintained at approximately the same level as before the shock: 15 percent per annum.

One month after the shock, concerns about the public deficit returned. The projections for the operational public deficit (public sector borrowing requirements in real terms) fluctuated between 3.5 percent and 5.4 percent for 1986, showing that the fiscal reform of December 1986 was not enough to balance the public budget. This deficit could be financed with the internal savings of the private sector, but it is a cause for concern in the sense that the private sector is also showing signs of wanting to recover investments. In this case, there would be fewer resources available for the public sector, thus allowing for a substantial increase in the interest rate. The compulsory loans on gasoline consumption, sales of cars, and international travel imposed in July were aimed at solving this problem.

In any case, the conditions necessary for the success of the Cruzado Plan are clear. Actually, the plan is already an extraordinary success, a

great conquest by theory and economic policy. The predominantly inertial nature of Brazilian inflation before the shock is indisputable. Although the plan deserves some criticisms, especially for not having regulated interindustrial relations, it was definitely carried out with technical competence. However, there are still many decisions to be made until the moment arrives in which the market can go back to regulating the economy.

*July 1986*