# THE DECLINE AND FALL OF BRAZIL'S CRUZADO*

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On 28 February 1986, the Brazilian government announced a "heterodox" inflation stabilization program that rapidly came to be called the Plano Cruzado. It was intended to halt an inflation that appeared to be escaping control and untamable through orthodox stabilization policies. Although at first the Plano Cruzado seemed to succeed dramatically in eliminating inflation without recessionary side effects, it failed by the end of 1986, as inflation revived, external accounts collapsed, and real growth sagged.

Does this failure reflect an incorrect diagnosis of the nature of Brazil's inflation that led to inappropriate policies? Or was the Plano Cruzado correct in conception but incorrectly administered? If the latter was the case, did socioeconomic forces impede correct implementation?

This essay will argue that the answers to these questions are relatively straightforward. "Inertial" forces assuredly played a fundamental role in Brazil's inflationary momentum through such processes as wage indexation, financial indexation, the crawling-peg exchange rate, expectations formation, relative price dispersion, and so on. The Plano Cruzado addressed these problems, but it was fatally flawed from the outset by having incorporated a substantial wage increase. Matters were made worse first by the persisting public-sector deficit (to which higher public-sector wages contributed) combined with the relatively low exchange value of the *cruzado* when it was launched. The situation was then exacerbated by the execution of the plan: prices were frozen in a disequilibrium array for too long, and monetary policy was far too loose.

The government was determined to maintain the price freeze and the fixed exchange rate until after the crucial November 1986 legislative and gubernatorial elections. This determination magnified the

*The views expressed are those of the writers and do not necessarily reflect the views of the Federal Reserve Bank of New York or the Federal Reserve System. The authors wish to thank Thomas Trebat and four anonymous *LARR* reviewers for many helpful suggestions. The authors alone are responsible for any errors of fact or judgment.



https://doi.org/10.1017/S0023879100022664 Published online by Cambridge University Press

consequences of the Plano Cruzado's failure, causing repressed inflation to persist and generating a sharp decline in exports.

But the essence of the failure of the Plano Cruzado lay in the wage increase. This interpretation by no means claims that Brazilian wage levels were adequate even after the adjustment. The problem was that by sharply increasing real wages and freezing real prices from one day to the next, the government decreed a massive shift in income composition. Because the immediate consequence was to shift income toward persons with lower incomes, the rate of savings diminished. Aggregate demand rose sharply and rapidly pressured aggregate supply. Capacity utilization reached record levels, and demand for labor—particularly skilled workers and executives—pushed wages and the wage bill up further.

In support of this argument, this essay is divided into four sections. The first section will present a brief background on the conception of the Plano Cruzado. The second will describe the plan and its immediate impact. The third section will analyze the distortions that developed and the authorities' attempts to counteract them. The final section will draw conclusions about the reasons for the Plano Cruzado's collapse.

## CONDITIONS PRECEDING THE DEVELOPMENT OF THE PLANO CRUZADO

The authoritarian regime that took power in April 1964 managed to reduce inflation gradually from an annual rate of 100 percent to 26 percent by 1973. The regime accomplished this reduction through a self-consciously "gradualist" approach that included standard fiscal measures; a tight, centralized wage policy and a realignment of controlled public-sector prices (a policy then described as "corrective inflation"). The introduction of index-linked government bonds helped to finance a persisting, although diminishing, public deficit with a minimum of money creation,[1] and later index-linked savings accounts helped promote private saving. After August 1968, devaluation and the introduction of a crawling-peg exchange rate stimulated exports and contributed, along with ambitious public-sector investment, to the "miracle" period between 1968 and 1973, when the Brazilian economy grew at rates exceeding 10 percent per year.

The downward inflation trend was reversed in 1973. The gross domestic product (GDP) deflator rose about 34 percent in 1974 and 1975, then 47 percent in 1976 and 1977. After dipping just below 40 percent in 1978, the inflation rate rose to 55 percent in 1979 and to 90 percent in 1980. From 100 percent in 1981 and 1982, the inflation rate climbed to 150 percent in 1983 and above 200 percent in 1983 and 1984; by February 1986, it soared to a yearly rate of almost 300 percent.

The resurgence of Brazilian inflation can be linked to a well-known series of external and internal shocks, such as the oil shocks in 1973 and 1979, the world interest-rate shock of the early 1980s, and agricultural shocks such as freezes and droughts. The Brazilian economists who designed the Plano Cruzado argued that the shocks led to inflation, rather than the one-time increases in price level that economic theory might have predicted, because of the rapid "spiral" induced by the economy's pervasive formal and informal indexation. Long experience with inflation as well as particular socioeconomic circumstances have enabled Brazilian economic actors to pass on price increases affecting them (Baer 1987). The result has been an increasingly severe inflationary process of fighting for shares "between firms, sectors, firms and unions, between classes, between the public and private sector . . . , [which became] . . . a mechanism for transferring income to the economically or politically stronger sectors" (Bresser Pereira and Nakano 1984, 30). The economists who designed the Plano Cruzado named this process "inertial inflation" to convey the notion that inflation itself engendered inflation in a self-perpetuating process. Inflation of this kind could prevail in years of both high growth and recession; in theory, it had no connection with any Phillips curve process.[2]

Many Brazilian economists have contributed to the concept of "inertial" inflation. Essential basic contributions were made by such writers as Ignacio Rangel, Mário Henrique Simonsen, Luiz Carlos Bresser Pereira, and Yoshiaki Nakano.[3] Since the late 1970s, Francisco Lopes has written extensively on the relationship between wage-setting and inflation. Drawing on an analytical framework set out by Simonsen, Lopes has shown how inflation could perpetuate itself if labor repeatedly recovered or exceeded its previous peak real income in each wage adjustment (Lopes 1984; see also Lara Resende and Lopes 1981; Lopes and Modiano 1983). According to Lopes's basic analysis, average shares of labor and capital income are taken to be relatively unchanged from one wage-contract period to the next. (For simplicity, we are assuming here that productivity growth is slow, with the result being that its favorable effect on inflation is relatively negligible.) Thus as workers recover their peak purchasing power at the start of each negotiation period, prices must rise to restore the preceding period's relative share structure, thus driving labor's purchasing power down over the course of each period. The higher the level achieved by labor's previous peak income, the higher the wage adjustment labor will seek at the start of each period, and the higher the wage pressure is likely to become (Lopes 1984, 58). Economic actors (individuals and firms) might attempt to defend themselves by securing more frequent price adjustments. The more frequent the adjustment intervals, however, the more rapidly the price level must rise in order to drive real wages down quickly.



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If economic actors generally act to restore and maintain previous peaks of real income, inflation may be regarded as simply the outcome of "desired peaks of real income of each and the structure of average relative prices. It follows that if all agents adopt stable rules of periodic adjustments to unchanging real income peaks and relative prices do not change, the rate of inflation will remain constant" (Lopes 1984, 58). Lopes accordingly concludes that all economic actors taken together must accept reductions in their real-income ambitions in order to cause a genuine and permanent decline in inflation. Lopes's policy recommendation was a "heterodox shock" consisting of a total price and wage freeze. Monetary and fiscal policies could be "passive," in terms of the frozen price and wage configuration.

Before the freeze, wages and controlled prices would be set according to a real value (when deflated by the new frozen price level) that equaled presumable "equilibrium" values—for example, their approximate averages over the preceding six to twelve months. The freeze would be temporary and would be followed by a "decompression" that involved gradually loosening price controls. During the decompression period, moderate price changes could be permitted in order to correct distortions caused by the price freeze (Lopes 1984, 64–65). Lopes argued that by means of such a freeze, the process by which inflation causes inflation would be interrupted, thus permitting the economy "to start all over again" as far as inflation is concerned.

Lopes's call for a heterodox shock was seconded in an influential paper by Pérsio Arida and André Lara Resende (in the Williamson collection (1985). They started with the premise that over the course of a severe inflation, economic actors come to think of their current and future incomes in terms of purchasing power rather than monetary units. This approach endows inflation with a powerful inertial character because the assumption becomes widely accepted throughout society that each economic actor sets prices and income claims so as to maintain purchasing power. This insight led Arida and Lara Resende to propose an ingenious stabilization scheme: temporarily freezing real prices, not nominal prices—or put differently, substituting the purchasing power of the *cruzeiro* unit with a unit having a constant purchasing power (for which they proposed the Brazilian Treasury's purchasing-power or index-linked bond unit). On concluding the freeze, the purchasing-power unit would be transformed into the new monetary unit. The so-called Lárida proposal was discussed widely, and although it was never attempted, its arguments strongly influenced the approach that yielded the Plano Cruzado.

## EVENTS LEADING TO THE CRUZADO PLAN

The recession of 1981–1984, which resulted from the adjustment policies enacted to confront the crisis in external payments, failed to reduce the inflation rate (see table 1), although it dramatically reversed the country's balance-of-payments position. This recession produced large trade surpluses, which resulted mostly from a pronounced decline in imports: from almost twenty-three billion dollars in 1980 to fifteen billion in 1983 and thirteen billion in 1985. The contributions of export growth to trade surpluses began only in 1984 (see table 2). Economic growth resumed in 1984, at first the result of the rapid expansion of exports. Beginning in 1985, however, growth was based largely on sharply rising real wages, which generated a consumption boom.

The resumption of aggregate-demand growth in an economy with widespread financial indexation, a crawling-peg exchange rate, and wage indexation reinforced by resurgent labor militancy (a brief period of "80 percent wage indexation" was ended in 1985) combined to reinforce the intractability of the inflation. In late 1985, a drought caused a sharp rise in agricultural prices. By early 1986, as the shock rippled through the indexation system, the inflation rate seemed set to soar above 20 percent a month, a rate unprecedented in Brazilian history. President José Sarney's economic advisors argued that such a level of inflation could not be managed with traditional orthodox stabilization programs, and they persuaded him to attempt a "heterodox shock" (Lopes 1986).

## THE CRUZADO PLAN

On 28 February 1986, in a television address, President Sarney announced Decree-Law 2283, which was intended to kill off Brazil's inflation with a dramatic blow (Brazilian decree-laws go into effect immediately, although in principle, they can be voided by a two-thirds vote of the legislature). This decree-law (and its slightly revised version, Decree-Law 2284) imposed six major measures: a general price freeze on final prices of goods; a wage freeze following a readjustment that set the new real wages at the average of the previous six months, plus 8 percent or plus 15 percent for the minimum wage; application of the same formula to rents and mortgage payments, without the 8 percent increase; a wage-escalation system guaranteeing an automatic wage increase each time the consumer price index accumulated 20 percent from the previous adjustment, or from each labor category's annual "base date"; prohibition of indexation clauses for contracts of less than one year; and creation of a new currency, the *cruzado*, to replace the old cruzeiro (one cruzado being equal to one thousand cruzeiros).

TABLE 1 *Measures of Growth and Inflation in Brazil between 1970 and 1987 According to Yearly Growth Rates*

| | *Output* | | | *Prices* | | |
|---|---|---|---|---|---|---|
| *Year* | *GDP (%)* | *Industry (%)* | *Agriculture (%)* | *General (%)* | *Wholesale (%)* | *Consumer (%)* |
| 1970 | 8.8 | 10.4 | 1.0 | 19.8 | 19.4 | 20.9 |
| 1971 | 11.3 | 12.0 | 11.3 | 18.7 | 20.0 | 18.1 |
| 1972 | 12.1 | 13.0 | 4.1 | 16.8 | 17.7 | 14.0 |
| 1973 | 14.0 | 16.3 | 3.6 | 16.2 | 16.2 | 13.0 |
| 1974 | 9.0 | 9.2 | 8.2 | 33.8 | 34.1 | 33.8 |
| 1975 | 3.2 | 5.9 | 4.8 | 30.1 | 30.6 | 31.2 |
| 1976 | 10.1 | 12.4 | 2.9 | 48.2 | 48.1 | 44.8 |
| 1977 | 4.5 | 3.9 | 11.8 | 38.6 | 35.3 | 43.1 |
| 1978 | 4.7 | 7.2 | −2.6 | 40.5 | 42.3 | 38.7 |
| 1979 | 7.2 | 6.4 | 5.0 | 76.8 | 79.5 | 76.0 |
| 1980 | 9.1 | 7.3 | 6.3 | 110.2 | 100.8 | 86.3 |
| 1981 | −3.4 | −5.5 | 6.4 | 95.2 | 112.8 | 100.6 |
| 1982 | 0.9 | 0.6 | −2.5 | 99.7 | 97.6 | 101.8 |
| 1983 | −2.5 | −6.8 | 2.2 | 211.0 | 234.0 | 177.9 |
| 1984 | 5.7 | 6.0 | 3.2 | 223.8 | 230.3 | 208.7 |
| 1985 | 8.4 | 9.0 | 8.8 | 235.1 | 225.7 | 248.5 |
| 1986 | 8.0 | 12.1 | −7.8 | 65.0 | 62.6 | 63.5 |
| 1987 | 2.9 | 0.2 | 14.0 | 415.8 | 407.2 | 432.3 |

Source: *Conjuntura Econômica.*

The decree-laws made no specific reference to the exchange rate, but the government clearly intended to keep it fixed indefinitely at 13.84 cruzados to the U.S. dollar.[4] For contracted future payments previously set in cruzeiros, the decree law stipulated a conversion rate to cruzados under which the cruzeiro would decline against the cruzado at a monthly rate of 14 percent, that is, at the expected monthly inflation rate presumed to be implicit in the contracts.

The success of the Plano Cruzado presumably hinged on the degree to which the Brazilian inflationary process was "inertial" in nature. To the extent that inflation resulted from an excess of aggregate demand or insufficiency of aggregate supply, the plan would not be sufficient to bring inflation under long-term control. As Gustavo Maia Gomes wrote, "Several indicators suggested, already by the last quarter of 1985, that formal and informal indexation could not fully explain Brazilian inflation. For one thing, inflation was accelerating, something that cannot be dealt with in terms of inertia. In addition . . . , the rate of capacity utilization was approaching 100 percent in some industrial sectors. . . . Evidence was also abundant that the public-sector deficit in-



https://doi.org/10.1017/S0023879100022664 Published online by Cambridge University Press

TABLE 2 *Yearly Economic Indicators in Brazil, 1977–1986, in Billions of U.S. Dollars*

| *Year* | *Exports* | *Imports* | *Trade Balance* | *Net Interest Payments* | *Current Account Balance* | *Reserves* |
|---|---|---|---|---|---|---|
| 1977 | 12.1 | −12.0 | +0.1 | −2.5 | −4.1 | 7.3 |
| 1978 | 12.7 | −13.7 | −1.0 | −3.3 | −5.9 | 11.9 |
| 1979 | 15.2 | −18.0 | −2.8 | −5.3 | −10.7 | 9.7 |
| 1980 | 20.1 | −23.0 | −2.9 | −7.5 | −12.8 | 6.9 |
| 1981 | 23.7 | −22.1 | 1.6 | −10.3 | −11.7 | 7.5 |
| 1982 | 20.2 | −19.4 | 0.8 | −12.5 | −16.3 | 4.0 |
| 1983 | 21.9 | −15.4 | 6.5 | −10.3 | −6.8 | 4.6 |
| 1984 | 27.0 | −13.9 | 13.1 | −11.4 | 0.1 | 12.0 |
| 1985 | 25.6 | −13.2 | 12.4 | −11.2 | −0.2 | 11.6 |
| 1986 | 22.4 | −14.0 | 8.4 | −10.1 | −4.5 | 6.8 |
| 1987 | 26.2 | −15.1 | 11.1 | | | |

creased from 1984 to the end of 1985" (Maia Gomes 1986a, 13–14). In fact, before 28 February 1986, the government had taken measures against fiscal and monetary imbalances. The budget of the Brazilian National Treasury and the so-called monetary budget (mainly subsidy programs operated by the monetary authorities) were partially unified in August 1985 to better control expenditures. In February 1986, the Banco do Brasil's "movement account," which enabled this official commercial bank to create base money through an open central bank "discount" facility, was frozen. In the same month, the Secretaria do Tesouro was created within the Ministério da Fazenda to centralize control over all public expenditures. In December 1985, the Brazilian Congresso approved Law 7450, which substantially increased tax rates on financial transactions, required firms to file income tax twice a year, and raised the personal income tax burden. Finally, days before the introduction of the Plano Cruzado, the Conselho Monetário Nacional reduced the maximum time for consumer credit from twelve to four months and tightened other rules relating to such credit.

The Plano Cruzado's immediate results were spectacular from both economic and political perspectives. The monthly inflation rate as measured by the general price index declined from 22 percent in February 1986 to minus 1 percent in March. It then rose 0.6 percent in April, 0.3 percent in May, and 0.5 percent in June (see table 3). Meanwhile, economic activity, which had grown 8.3 percent in 1985 and was still growing in January and February 1986, accelerated. Industrial production was 8.6 percent higher in the first quarter than in the corresponding 1985 period, and 10.6 and 11.7 percent higher in the second and

TABLE 3 *Monthly Price Changes in Brazil according to Indexes of General, Wholesale, and Consumer Prices in 1986–1987*

| | General Prices | | Wholesale Prices | Consumer Prices |
|---|---|---|---|---|
| | Monthly | Yearly | Monthly | Monthly |
| 1986 | | | | |
| January | 17.8 | 250.4 | 19.0 | 15.7 |
| February | 22.4 | 289.4 | 22.2 | 21.8 |
| March | −1.0 | 242.5 | −1.0 | −0.1 |
| April | −0.6 | 217.5 | −1.5 | 0.8 |
| May | 0.3 | 195.6 | 0.1 | 1.4 |
| June | 0.5 | 175.5 | 0.4 | 1.3 |
| July | 0.6 | 154.6 | 0.6 | 1.2 |
| August | 1.3 | 126.3 | 1.3 | 1.7 |
| September | 1.1 | 109.6 | 0.7 | 1.7 |
| October | 1.4 | 94.8 | 1.2 | 1.9 |
| November | 2.5 | 73.7 | 2.1 | 3.3 |
| December | 7.6 | 65.0 | 7.7 | 7.3 |
| 1987 | | | | |
| January | 12.0 | 57.0 | 10.5 | 16.8 |
| February | 14.1 | 55.8 | 10.4 | 13.9 |
| March | 15.0 | 69.8 | 14.1 | 14.4 |
| April | 20.1 | 105.1 | 21.0 | 21.0 |
| May | 27.7 | 160.8 | 30.7 | 23.2 |
| June | 25.9 | 226.5 | 26.3 | 26.1 |
| July | 9.3 | 254.7 | 9.9 | 3.1 |
| August | 4.5 | 265.8 | 3.7 | 6.4 |
| September | 8.0 | 290.9 | 7.6 | 5.7 |
| October | 11.2 | 328.5 | 11.7 | 9.2 |
| November | 14.5 | 378.8 | 15.0 | 12.8 |
| December | 15.9 | 415.8 | 16.1 | 14.1 |

Source: *Conjuntura Econômica.*

third quarters respectively. Table 4 shows that production of consumer durables grew at astonishing rates, with annualized growth rates surpassing 30 percent in the months of May through August. At least during the first few months following the Plano Cruzado, external accounts remained strong, with merchandise trade surpluses running at one billion dollars a month (see table 5). Superficially, it seemed that Brazil had accomplished the trick of running solid external accounts and maintaining spectacular growth with rising real wages, diminishing unemployment, and insignificant inflation.

*TABLE 4 Industrial Production in Brazil according to Yearly Growth Rates, 1986–1987*

| | Industry (%) | Manufac-turing (%) | Capital Goods (%) | Intermediate Goods (%) | Consumer Goods Durable (%) | Consumer Goods Non-durable (%) |
|---|---|---|---|---|---|---|
| 1986 | | | | | | |
| January | 8.3 | 8.1 | 11.6 | 7.1 | 14.8 | 8.1 |
| February | 9.1 | 8.9 | 13.0 | 7.6 | 17.7 | 9.1 |
| March | 8.5 | 8.3 | 11.9 | 7.0 | 18.1 | 8.6 |
| April | 9.7 | 9.6 | 15.3 | 7.9 | 24.3 | 8.8 |
| May | 10.4 | 10.4 | 17.9 | 7.9 | 31.0 | 9.1 |
| June | 11.4 | 11.4 | 20.8 | 8.4 | 33.8 | 9.9 |
| July | 11.5 | 11.6 | 21.3 | 8.5 | 30.8 | 10.2 |
| August | 11.5 | 11.6 | 21.8 | 8.4 | 30.2 | 10.1 |
| September | 11.8 | 12.0 | 22.0 | 8.8 | 28.0 | 10.4 |
| October | 11.5 | 11.8 | 22.2 | 8.8 | 24.6 | 10.0 |
| November | 11.4 | 11.7 | 22.3 | 8.8 | 21.7 | 9.7 |
| December | 11.0 | 11.3 | 21.7 | 8.5 | 20.4 | 8.9 |
| 1987 | | | | | | |
| January | 10.6 | 11.0 | 21.2 | 8.3 | 18.9 | 8.2 |
| February | 10.6 | 11.0 | 20.5 | 8.3 | 17.2 | 8.3 |
| March | 11.4 | 12.0 | 20.9 | 9.2 | 15.0 | 9.6 |
| April | 10.6 | 11.1 | 17.7 | 8.8 | 10.0 | 9.6 |
| May | 10.1 | 10.7 | 16.0 | 8.7 | 4.8 | 9.5 |
| June | 9.1 | 9.7 | 12.2 | 8.2 | 1.4 | 8.7 |
| July | 7.4 | 7.8 | 9.5 | 6.8 | −1.0 | 7.0 |
| August | 6.2 | 6.6 | 6.9 | 6.0 | −2.4 | 5.8 |
| September | 4.3 | 4.6 | 3.6 | 4.4 | −5.0 | 4.3 |
| October | 2.8 | 2.8 | 0.7 | 2.9 | −6.6 | 2.9 |

Source: *Conjuntura Econômica.*

## EMERGING DIFFICULTIES AND CONTRADICTIONS

The point of the Plano Cruzado's price and wage freeze was to halt inertial inflation. But the wage increase and price freeze together amounted to an incomes policy favoring labor (curiously, Brazilian public opinion initially failed to perceive this bias, perhaps because of the confusing multiplicity of policy actions). The Plano Cruzado's drastic nature, following an inflation that seemed to be spiraling out of control, rallied the population behind the president, with millions of citizens volunteering to serve as "Sarney's price inspectors" by reporting on



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TABLE 5 *Monthly Foreign Economic Indicators in Brazil, 1986–1987*

| | *Exchange Rate of cruzado per dollar (% of parallel rate over official rate)* | | *Exports* | *Imports in millions of dollars (spent on importing oil)* | | *Trade Balance* |
|---|---|---|---|---|---|---|
| 1986 | | | | | | |
| January | 11.31 | | 1,909.6 | 1,208.6 | (475) | 701.0 |
| February | 13.07 | (36.5) | 1,751.2 | 1,123.0 | (387) | 628.2 |
| March | 13.84 | (26.4) | 2,157.3 | 1,021.1 | (238) | 1,136.2 |
| April | 13.84 | (36.0) | 2,171.5 | 880.4 | (142) | 1,291.1 |
| May | 13.84 | (49.2) | 2,291.8 | 951.3 | (224) | 1,340.5 |
| June | 13.84 | (49.0) | 2,000.3 | 928.7 | (186) | 1,071.6 |
| July | 13.84 | (59.8) | 2,209.1 | 1,175.3 | (225) | 1,033.8 |
| August | 13.84 | (69.8) | 2,098.9 | 1,076.4 | (191) | 1,022.5 |
| September | 13.84 | (69.1) | 1,857.0 | 1,017.0 | (195) | 840.6 |
| October | 13.97 | (86.7) | 1,340.0 | 1,130.0 | (205) | 210.0 |
| November | 14.11 | (104.5) | 1,300.0 | 1,180.0 | (223) | 130.0 |
| December | 14.55 | (88.7) | 1,329.0 | 1,173.0 | (156) | 156.0 |
| 1987 | | | | | | |
| January | 15.70 | (71.8) | 1,259.0 | 1,321.0 | (334) | −62.0 |
| February | 18.32 | (64.5) | 1,530.0 | 1,142.0 | (333) | 388.0 |
| March | 20.65 | (51.0) | 1,427.0 | 1,139.0 | (456) | 288.0 |
| April | 23.80 | (30.0) | 1,660.0 | 1,145.0 | (364) | 485.0 |
| May | 30.74 | | 2,170.0 | 1,224.0 | (444) | 946.0 |
| June | 39.90 | | 2,641.0 | 1,212.0 | (302) | 1,429.0 |
| July | 44.93 | | 2,892.0 | 1,434.0 | (335) | 1,458.0 |
| August | 47.13 | | 2,759.0 | 1,325.0 | (414) | 1,434.0 |
| September | 49.86 | | 2,694.0 | 1,200.0 | (472) | 1,484.0 |
| October | 53.40 | | 2,510.0 | 1,310.0 | | 1,200.0 |
| November | 59.28 | | | | | |

Source: *Conjuntura Econômica*; Banco Central do Brasil, *Boletim*.

freeze violations. This popular enthusiasm might have made an incomes policy feasible, at least for a short period. Nevertheless, real wages rose dramatically. Many firms spontaneously provided wage increases above the Plano Cruzado formula, and wages of skilled and executive personnel were bid upward as the developing boom made workers in these categories scarce. Real average industrial wages in São Paulo were 9.1 percent higher in March 1986 than in February, and they rose another 1.5 percent before peaking in November. The corresponding real-wage bill was 9.8 percent higher in March than in February and peaked at another 8.7 percent higher in November.



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Within weeks after the Plano Cruzado was implemented, however, problems emerged and rapidly intensified.

*The Allocative Impact of the Price Freeze*

One immediate consequence of the freeze—perfectly anticipated by the Plano Cruzado's economists, who urged the temporary sacrifice of the allocative system to wring inflation from the economy—was that it eliminated the price mechanism as allocator of resources. The longer the freeze lasted, of course, the more serious the market distortions would become. Brazil's inflation had not quite become a hyperinflation at the time of the freeze, so economic actors were still adjusting prices (or having prices adjusted) at discrete, if relatively short, intervals. Thus on February 28 some sectors whose prices had risen just prior to the freeze were in a favorable position compared with their recent real averages, while others, who had planned to make adjustments a short time thereafter, lagged behind. A study of 311 products revealed that 84 items were in the former category, 35 had price adjustments which kept them at par at the time of the freeze, while 192 products lagged behind. The latter included milk, cars, meat, and various consumer durables (de Souza 1986, 29–30).

Public utility rates, notably electricity, were caught notoriously behind by the freeze. For example, in the period between February 1985 and February 1986, public utility rates in Rio de Janeiro increased by only 201 percent, while general prices rose by nearly 270 percent. This lag increased the deficit of the state public utility companies, placing pressure on the government to subsidize both their current and their capital expenditures. Moreover, capital expenditures could not be postponed if bottlenecks were to be avoided as rapid economic growth continued.

While the Plano Cruzado economists agreed that the price freeze would have to be temporary, they reached no consensus about how long it should last because they did not know how long it would take to reverse inflationary expectations. They appear to have been thinking in terms of two or three months. These economists did fear, however, that premature unfreezing could reintroduce inflationary expectations and renew inertial conditions. As time passed, political criteria came to dominate economic considerations: the price-freeze component of the Plano Cruzado had become the basis of the government's popularity. "Zero inflation" was increasingly perceived by President Sarney and his political advisors as the essence of the government's economic success, and adherence to it was therefore important as crucial November 1986 congressional and gubernatorial elections approached. Because the Congress would also function as a constitutional assembly (with the



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power to determine the length of the president's term of office), the president was anxious to preserve zero inflation through mid-November. Government economists argued for price realignments as early as May 1986, and they were joined by the finance minister in June 1986. All were overruled on political grounds, however.

Attempts to circumvent the freeze abounded. Brazil provided case studies for all the folklore of price-control evasion, including raising prices by offering "new products," cheating on the content of packages, and requiring "side-payments" or "premia" (the Brazilian term is *agios*), particularly for automobiles and other consumer durables. Waiting lists for new automobiles swelled to six months and longer, although the wait could often be shortened appreciably through appropriate agio payments. Products of all kinds went into short supply, and shoppers' queues became increasingly common. Foodstuffs—notably milk and meat—became scarce as lower-income groups increased demand while producers reduced supply. In response to complaints about shortages, the government pointed out that meat had become a regular part of the diet of poorer individuals for the first time, even if they had to wait in line for it. Later in the year, the government reached the point of confiscating some cattle in a well-publicized struggle with meat producers. More effectively, it authorized increased imports of foodstuffs, which contributed to balance-of-payments pressures. By cutting certain taxes and increasing subsidies, the government sometimes managed to increase supply without literally raising prices, but not without adding to pressure on public-sector finances. As the year went on, the inevitable problems caused by frozen prices deepened, and the governmental and popular efforts to enforce the freeze became more half-hearted and enfeebled.

### *Excessive Growth*

The Plano Cruzado not only avoided recession, it stimulated an already hot economy. But the plan stimulated consumption spending more than capital formation due to several factors: substantial real-wage increases; elimination of indexation from savings deposits, which encouraged withdrawals from savings accounts (into consumer goods); the price attractiveness of many goods whose relative prices were lagging at the time of the freeze; and a "wealth effect" resulting from the sudden drop of inflationary expectations, which seemed to create more spending power for consumption (Dias Carneiro 1987, 15).

As the boom continued in the months following the introduction of the Plano Cruzado, many sectors approached their productive capacity, with limited short-run hopes of increasing it. In any case, entrepreneurs were hesitant to undertake capital investment in view of the

*TABLE 6 Percentage of Industrial Capacity Used in Brazil, 1984–1987*

| | *1984 (%)* | *1985 (%)* | *1986 (%)* | *1987 (%)* |
|---|---|---|---|---|
| January | 72 | 77 | 81 | 84 |
| February | 74 | 77 | 81 | 83 |
| April | 74 | 77 | 82 | 76 |
| October | 76 | 80 | 86 | 80 |

Source: *Conjuntura Econômica.*

deepening economic difficulties. The estimates reproduced in table 6 show that utilization of industrial capacity stood at a low of 71 percent at the beginning of 1984, rose to about 78 percent at the time of the introduction of the plan, and reached 82 percent in the second half of 1986 (one source even placing it at 86 percent). By January 1987, almost 60 percent of companies in the manufacturing sector were said to be operating at over 90 percent of capacity.[5]

It is difficult to establish how large an increase in productive capacity occurred during the time of the Plano Cruzado. The overall low investment of the Brazilian economy in the mid-1980s was associated with low saving rates. Whereas in the mid-1970s, the ratio of investment to GDP had reached 25 percent, it declined to 16 percent in the mid-1980s. The macro explanations for this trend point to the severe recession of 1981–1983, which was followed by the high rates of growth in the mid-1980s, based on consumer spending. The low investment level was also related to the fact that Brazil became a net exporter of finance while servicing its enormous foreign debt. Given the diminishing influx of foreign finance in the mid-1980s, the debt service implied net external dissaving of 4 to 5 percent of GDP. Public investment had been cut in the stabilization efforts of the 1980s, and the price freeze only made it difficult for many public utility firms to generate internal resources to finance investment. Large private-investment plans were discouraged by lingering skepticism about the ultimate success of the Plano Cruzado and by the uncertain position of firms caught behind by the price freeze. Indeed, the frequent dramatic policy shifts per se—the frequent changes in "the rules of the game"—seriously discouraged private capital formation.

Indications suggest, however, that the sales and production boom that took place during the Plano Cruzado induced a substantial amount of what may be described as "short-term" capital formation. The real output of capital goods was 21.6 percent higher than in 1985. Preliminary figures indicate that Brazil's gross domestic capital formation in 1986 rose to 19.6 percent of GDP (Maia Gomes 1986b, 41–48).

The high rates of growth in consumption appear to have forced many firms to invest in added production capacity. But this trend appears to have occurred mainly in the form of added machinery rather than in construction of new plants. For instance, in the year between October 1985 and October 1986, the output of machinery increased by 14.4 percent; but within the machinery sector, the biggest subsector growth occurred in textile machinery (30.1 percent), while production of heavy equipment increased less than 10 percent over the year before. Waiting lists for textile and shoe machinery are reported to have exceeded twelve months during 1985.

*The Public-Sector Deficit*

The role of the public-sector deficit in the disintegration of the Plano Cruzado is a controversial matter. According to one widespread view, the Plano Cruzado's fundamental flaw was its lack of a fiscal control program. This view is held particularly by analysts who never sympathized with the inertial inflation diagnosis, some of whom believe that inflationary pressure can only be caused by fiscal imbalances. In reality, the role of the public-sector deficit was complicated. True, the Plano Cruzado per se incorporated neither specific tax increases nor budget appropriation cuts. As noted above, however, the government had instituted a significant tax reform in December 1985, which was expected to increase real revenues significantly over the course of 1986. In addition, the government had taken steps to unify the budget and to improve its monitoring. Moreover, the Plano Cruzado itself had powerful favorable fiscal consequences. The price freeze countered the well-known "collection lag" problem: when prices accelerate, tax receipts based on prices and income flows from weeks or months earlier lose their real value against current expenditures. The reduction of nominal interest rates and the fixed exchange rate sharply reduced the public sector's massive "nonoperating" borrowing requirement, resulting from the effective inflation adjustment of the public sector's voluminous internal and external debt. Certain state enterprises—notably the electrical power sector—were caught by the price freeze with lagging output prices because their previous rate adjustments happened to have occurred too long before. Two key exceptions to this general point were the fact that unadjusted frozen public-sector prices—particularly electricity rates—contributed to the deficit, and that increased wages pressured up public-sector wage bills.

It is evident that more could have been done to improve the public-sector accounts. More should have been done because public opinion, particularly business opinion, believed that the deficit mattered, and public credibility was essential to maintaining expectations of low inflation and thus was fundamental to the Plano Cruzado's chances of success. The central government continued to maintain large subsidy programs, which were not significantly cut until June 1987. All organs of Brazil's government—federal, state, municipal, public enterprise, the social security system, and decentralized agencies—were (and are) widely believed to be badly overstaffed, but political exigencies (and in a few cases, the real needs of government activity) made cuts impossible.

Given the conditions of excess demand, the persisting public-sector deficit was inappropriate; considerations of cyclical management called for a surplus. Nevertheless, this deficit cannot reasonably be blamed for the Plano Cruzado's disintegration. The available evidence indicates that the overall deficit cannot have been very large in the months just following the Plano Cruzado. Because inflation was in fact much reduced, the nonoperating part of the deficit (inflation adjustment of public-sector debt, largely indexation) must have been virtually zero in these months. For the year 1986 as a whole, the operating deficit—the public-sector borrowing requirements (PSBR) purged of the inflation component—was 3.7 percent of GDP (0.9 percent belonged to the central government, 0.5 to the states and municipalities, and 2.3 percent to the state enterprises). Most of the operating deficit must have been incurred at the beginning and end of 1986 because these were the months when prices were accelerating. Moreover, seasonal pressures become strongest at the end of the year. Even if the operating deficit had been running at 3.7 percent of GDP in the months following the Plano Cruzado, that factor alone was hardly likely to have caused triple-digit inflation by itself. Real economic activity grew in real terms at more than 8 percent per year. If the operating deficit had been fully monetized, if no other cause of growth in the money supply had existed, if the demand for money had possessed a real income elasticity of perhaps one-half, and if all other things had been equal, the result should have been slightly deflationary because the public ought to have absorbed a 4 percent increase in the money supply with no change in the price level (Maia Gomes 1986a).

Inevitably, one's judgment about whether a public-sector deficit is inflationary is a function of one's judgment as to what it ought to be. If an economist believes that the deficit ought instead to have been a 10 percent surplus, then the deficit was very inflationary. A budget deficit can always be improved, but this deficit was not the essential cause of the 1986 inflation.

A government budget can always be tightened further. Moreover, Brazil's public sector is riddled with serious inefficiencies and waste. Yet it is doubtful that the deficit, which could not have exceeded 3 or 4 percent of GDP in March, could have caused the Plano Cruzado to break down so completely. The wage increase, in contrast, was far more serious. Assuming that labor's share of GDP at the end of February 1986 was 55 percent, the 8 percent wage increase and price freeze transferred about 4.4 percent of income to labor from one day to the next. Moreover, the Plano Cruzado brought all workers' purchasing power to a high "peak": before the Plano Cruzado, different categories of workers received their wage adjustments at different times every half-year, thus at any given moment, the purchasing power of workers ranged between "peaks" and "valleys." The boom resulting from the sudden transfer of income to segments of society with higher propensities to consume was in some measure self-feeding. As previously noted, some firms granted spontaneous wage increases above the Plano Cruzado formula, partly in the euphoria of the moment, but also because skilled workers and executive personnel were suddenly in excess demand.

### *On the Money Supply*

One of the lessons the architects of Brazil's Plano Cruzado apparently drew from Argentina's experience with its Plan Austral was that the public's willingness to hold money would rise sharply as a consequence of declining inflation expectations, and that policymakers would therefore be well advised to allow growth in the money supply in order to forestall undue upward pressure on domestic interest rates. Brazil's monetary authority perceived an additional opportunity here. By retiring outstanding index-linked government obligations, it could reduce the future debt-service burden of the public sector. The monetary authority created a new "central bank bill" to replace the index-linked obligations that were not being effectively monetized. The new obligation could be sold at a discount in the country's well-developed short-term open-market system, further reducing the cost of servicing the public sector's accumulated debt.

In introducing central bank bills, the government was able to take advantage of some of the basic practices of Brazil's open-market system. Brazilian public-sector obligations are sold mainly to financial institutions that, in turn, finance their positions by accepting "overnight" funds from the public. These overnight operations are collateralized by the obligations. In general, the Brazilian public prefers to maintain its funds in short holdings because of the uncertainty of inflation and interest rates. Indeed, sixty-day bank certificates of deposit are regarded as virtually long-term by the average Brazilian portfolio manager. Central bank bills yield the financial institutions the going overnight rate plus a narrow spread, which is determined at the moment the bills are auctioned. Thus the government secured financing at the lower overnight rates, rather than the high indexed rates.

The central bank makes it a standard practice to intervene directly in the overnight market, "placing" and "accepting" funds in order to manipulate the overnight rate. Since the inception of the Plano Cruzado, this practice has become the central bank's basic monetary policy tool, used not only to influence liquidity conditions throughout the system (including what is now described as "indexation") but also to manipulate the government's domestic borrowing charges. In 1987 indexation was restored by linking longer-term securities to overnight financing rates of Letras do Banco Central; the central bank has manipulated the rate with a view to making it equal the average inflation rate.

Under the bank's approach of increasing the money supply to meet presumably higher money demand, the money supply increased vertiginously in the months following the Plano Cruzado. The narrow money supply increased 80 percent in March 1986 alone. The monetary accounts are hard to interpret for this period because the imposition of reserve requirements on the Banco do Brasil in February effectively reduced the monetary base by the amount of the Banco do Brasil demand deposits. Nevertheless, there appears to have been a significant rise in the rate of the narrow money stock to the monetary base, the "money multiplier"—from 2.2 to nearly 3 on the new definition—between February and March, and demand deposits nearly doubled. The monetary base rose by about one-third in March and by another third in April, partly through continuing international reserve inflows and partly through other purposely expansionary means.

The public clearly shifted its assets into money, as the theory had predicted; the ratio of the narrow money supply $M_1$ to the broad liquidity aggregate $M_4$ rose from 8 percent to 20 percent over the course of 1986 before it plunged back again in the price-level explosion that ended the Plano Cruzado in early 1987. Nevertheless, precisely because inflation was repressed by the price freeze, it was difficult to gauge at the time whether the increase in the money supply was excessive. There is no reliable estimate of the elasticity of money demand with respect to expected inflation; nor is there any reliable estimate of just how far expected inflation had fallen. Even if there were, it would undoubtedly have been rendered unreliable by the "regime change" represented by the Plano Cruzado. By June, however, the central bank apparently concluded that the low open-market yields were indicating excessive liquidity, and beginning in July, the bank tightened liquidity and credit significantly.

The expansionary policy maintained downward pressure on interest rates, not only in the "open market" for government obligations,



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but in the commercial market for bank certificates of deposit. Relatively low interest rates provided additional fuel for aggregate demand, encouraging Brazilians to buy consumer goods rather than to save. These rates also contributed to a stock market boom and undoubtedly encouraged capital flight. Rates of return on savings accounts in the housing finance system fell far lower because they now offered a very diluted form of indexation, and savings and loan institutions suffered leakages of funds. Some of the funds withdrawn actually went into checking accounts because the demand for money (narrowly defined) was now higher. But on the whole, the relatively low interest rates contributed in various ways to the overheating of the economy. The authorities were aware of this and made several attempts to raise interest rates. They were hamstrung, however, by their determination to keep commercial and working-capital credit rates as low as possible. In June and July, the Conselho Monetário Nacional added further restrictions on consumer credit operations, intending vaguely—but never successfully—to create a segmented credit structure in which consumer credit was expensive and production credit was cheap.

Brazil's monetary authorities faced (and continued to face) troubling dilemmas in targeting interest rates. The advice they receive, and usually claim to follow, is that interest rates ought to be "positive in real terms," especially when aggregate demand is hot. Some of their difficulty may arise from the Brazilian public's forming expectations of inflation partly on the basis of observed interest rates. Thus when the monetary authority tightens policy and tries to raise nominal and real interest rates, the public may assume that only nominal rates have risen and may increase its inflationary expectations accordingly. To the extent that this sequence occurs, when the monetary authority raises real interest rates in the hope of encouraging saving and discouraging borrowing, it frequently fails to accomplish these aims, persuading citizens instead that future inflation will be higher. In order to be taken seriously, the monetary authority may have to raise interest rates so high as to cause financial turbulence. While facing this problem, the authorities continued to speak of responding to excess demand by encouraging creation of new productive capacity, and for this purpose, they believed they had to maintain low credit rates. Only in late June, when it became clear that aggregate demand had become too intense, did the monetary authority make a determined effort to tighten monetary policy. Even then, the government tried to offset the adverse consequences of this tightening by setting up a national development fund for investment.

*The External Accounts*

At the moment when the Plano Cruzado was introduced, Brazil had achieved a relatively strong external position. The exchange rate was apparently favorable to exports as a consequence of the February 1983 maxidevaluation and the general maintenance of the crawling peg. Industrial exports were particularly favored because agricultural prices had risen far more than industrial prices in the wake of the 1985 drought. Because industrial prices had lagged behind the overall price index, the price of the dollar had therefore outpaced domestic industrial prices. The dollar devaluation vis-à-vis some of Brazil's trade partners helped to strengthen its export competitiveness. A substantial surplus had arisen in the balance of trade since 1983, which enabled the country to accumulate eleven billion dollars of foreign-exchange reserves by March 1986. Debt servicing was alleviated by the falling of international interest rates, offsetting the sharp increase in commercial bank debt in 1984. The decline in the international price of petroleum and the recession of 1981–1984 helped to keep imports at a relatively low level. In the first months of the Plano Cruzado, however, the favorable situation in balance of payments was also a source of inflationary pressure.

Little doubt exists that the exchange rate was kept fixed far too long after the Plano Cruzado was introduced, that the sharp increase in domestic demand and the de facto, if not fully measured, inflation after mid-March meant that the cruzado was increasingly overvalued. According to this reasoning, once the cruzado's overvaluation became clear to everyone, one-way speculation developed against it. The spectacular rise in the parallel-market premium, from 25 percent in March 1986 to more than 100 percent in November 1986, seems to be clear evidence supporting this view. Trade accounts deteriorated after August, not only because exporters found domestic markets more attractive but because they clearly perceived that the government would soon be compelled to devalue the cruzado. Because decisions to carry out export shipments are typically made six to nine weeks before goods leave Brazilian ports, one may infer that exporters were reaching such conclusions as early as June 1986. Some observers even suggested that the larger exporters were trying to force the government's hand, purposely engaging in an "export strike" in a bid for a better price. Much the same can be said of producers throughout the economy, who found themselves stuck with low prices, such as the already-mentioned cattle growers.

The reason the government resisted devaluing so long was that it feared reviving the inflation-devaluation-inflation cycle. The external accounts were probably generating inflationary pressure at the time of the Plano Cruzado. Since early 1984, Brazil's merchandise trade surplus had been running about one billion dollars a month, and while this surplus enabled Brazil to cover its external interest bill with no "new money" requirement, it also created inflationary pressure. Several perspectives can be adopted in analyzing this situation, but the clearest is probably the consideration that the surplus of net exports of goods and final services was running just slightly below that of merchandise trade, between 3 and 5 percent of GDP. This amount contributed substantially to aggregate demand, particularly in view of the fact that in the years before 1983, it had been running at only 2 percent of GDP. Because Brazil's net unrequited-transfer accounts are insignificant, the surplus in net exports of goods and final services gives the approximate national accounts measure of Brazil's external dissaving.

The real effective exchange rate calculated by the central bank is a problematic guide to whether the new currency was undervalued at the moment of the Plano Cruzado because it was heavily influenced by movements among convertible currencies early in 1986. Nevertheless, the fact that external accounts were strong combined with the fact that industry had been heavily favored by the crawling-peg policy in the early part of the year suggest that the new currency was probably undervalued.

Brazil's external dissaving must be judged to have been itself a source of inflationary pressure. One may argue that Brazil ought to have increased its private and public saving to compensate for its need to run external dissaving in order to service its external debt—or else reduced its capital formation. In fact, Brazil did all these things, although by the time the Plano Cruzado was launched, to an insufficient degree to overcome its external dissaving from the point of view of inflationary pressure. Obviously, increasing domestic saving is all to the good, on the one hand. Reducing capital formation would have been dangerous, on the other hand, because it would have worsened future aggregate supply problems. Reducing capital formation not only would have compromised the nation's future ability to employ its growing labor force and raise productivity and living standards but would have compromised the efficiency of production for export. As the Brazilian government has been pointing out in recent months, the transfer of resources overseas through external dissaving seems irrational from the viewpoint of global allocation of financial resources, in that a developing economy ought to be the most profitable for such resources. But these issues are beyond the scope of the present discussion. The essential point is that the external accounts represented a source of inflationary pressure at the moment when the Plano Cruzado was announced.

If the cruzado was undervalued when it was launched, how then is one to explain the subsequent deterioration of the trade accounts and the rising parallel-market premium? The deterioration can be accounted for in straightforward fashion. Inflationary pressure developed after the Plano Cruzado, partly because of the pressure from the external accounts but more from internal sources, principally the wage increases.

After the inflationary pressure intensified, the fixed exchange rate became overvalued, and the external accounts came under pressure.

The parallel exchange-market premium is a more intricate matter. The premium had risen as high as 50 percent toward the end of 1985, but just after the Plano Cruzado was implemented, it came under downward pressure. For a period of six weeks after the Plano Cruzado, the parallel-market premium was maintained at 25 percent through an informal understanding between the government and the principal parallel-market dealers. Because dollar purchases from the central bank are subject to a "financial operations tax" of about 25 percent (some purchases being exempted), this premium amounted to zero from a purchaser's point of view. In April 1986, however, the dealers broke the agreement, and thereafter the premium rose sharply. The rise was not simply the consequence of anticipated devaluation, however. It was as much or more the consequence of a highly distorted foreign-exchange market subjected to the pressure of sharply increased aggregate demand. Demand for nonofficial foreign exchange resulted in large part from extensive prohibitions on purchases from the central bank and was aggravated by the narrowness of Brazil's parallel market, which was estimated at the time to conduct no more than two billion dollars a year in sales (about eight million dollars per business day). If the government had devalued the cruzado early on, all these distortions would have remained. The pressure on the parallel-market premium would have been reduced only slightly, if at all, to the extent that the premium resulted from distortions rather than from expectations of devaluation. Pressure on the parallel-market premium resulted from such consequences of higher income levels as demand for foreign microcomputers (imports of which were banned under the "market reserve" policy) and heavy overseas travel (Brazilian travelers could make only limited foreign-exchange purchases at the official exchange rate). It also resulted from the so-called "Portuguese exchange": coffee exports had to be made at the official minimum "registration price," which Brazil maintained in order to put upward pressure on world prices. Some exporters found that in order to conclude sales in a softening world market, they had to provide illicit rebates to foreign purchasers, means of paying that had to come from the parallel market. Yet another source of pressure was the drought, which reduced output of crops exported through illegal channels for cash; for example, part of the soybean crop is exported illegally, and the drought therefore implied reduced supply of foreign exchange to the parallel market. There is no doubt that one-way speculation against the cruzado and capital flight (stimulated by higher incomes and the suspension of financial indexation) took on increasing importance over time. Once the markets concluded that devaluation was inevitable, the premium soared speculatively. Nevertheless, in



https://doi.org/10.1017/S0023879100022664 Published online by Cambridge University Press

evaluating the parallel-market premium as an indicator of exchange-rate misalignment, the "real" distortions must be taken into account.[6]

THE BREAKDOWN OF THE CRUZADO PLAN

In July 1986, the government made a half-hearted attempt to cope with the intense demand pressure. Monetary policy was significantly tightened. To increase investment and decrease consumption, the government imposed a 25 percent tax on international travel and instituted a compulsory savings scheme that included a 30 percent "forced loan" on new cars and a 28 percent forced loan on gasoline. These measures were considered by the government to be loans (forced savings) because they were to be returned to the consumers of these products in the form of equity shares in a new national development fund. Despite widespread public criticism, the government excluded the forced loans from the official inflation measures. The resources of the fund were to be invested in development projects outlined in the simultaneously published *Plano de Metas* (Targets Plan). The net result was presumed to be a higher ratio of investment to GDP[7] and a higher ratio of aggregate saving to GDP. The basic objectives of the policy package, sometimes called the Cruzadinho, were to cool aggregate demand, capture savings, and promote investment.

The crisis of the Plano Cruzado emerged first in the external accounts. A particular sign was the net direct-foreign-investment account, which had totaled eight hundred million dollars in what was regarded as a disappointing performance during 1985. But it totaled only fifteen million in the first six months of 1986. Profit remittances and capital flight were increasing, one apparent sign being the rising "parallel" exchange-market premium. Although the government released its international reserve figures with a six-month lag under a policy set in 1985, private observers inferred significant reserve losses and hence an imminent maxidevaluation. But apart from a slight devaluation (1.8 percent) in mid-October, the government resisted devaluation because elections were imminent. Exports fell rapidly, however, as would-be exporters awaited devaluation and found domestic markets relatively lucrative.

The government's delay in realigning prices was probably motivated by two considerations. First, because the freeze came to symbolize the plan's political success, President Sarney was reluctant to tamper with it, at least until after the crucial November elections to the new Constituent Assembly. Second, because the Plano Cruzado's "wage trigger" allowed wages to rise automatically every time the accumulated inflation from each labor category's annual "base date" reached 20 percent, policymakers were reluctant to permit price increases that might activate the wage trigger.

Shortly after winning the 15 November elections, however, the government announced another dramatic adjustment program, which rapidly came to be called the Cruzado II. Its focus was a realignment of prices of "middle-class" consumer products and increases in taxes on them. Automobile prices were raised by 80 percent, public utility prices by 35 percent, fuels by 60 percent, cigarettes and alcoholic beverages by 100 percent, sugar by 60 percent, and milk and dairy products by 100 percent. A crawling-peg exchange-rate devaluation was reinstituted, and new tax incentives for savers were introduced. These measures were intended to cool consumption expenditures and restore the health of the external accounts. But unfortunately, as a number of economists warned at the time, the price increases tended to divert consumption expenditures away from the affected goods to other goods, rather than to stimulate savings.

Inflation revived in the wake of these measures. Wages rose as the automatic trigger mechanism began to function. In December 1986, consumer prices rose 7.7 percent, and in January 1987, they rose another 17.8 percent. The inflationary explosion continued in the following months, reaching 14 percent in March, 19 percent in April, and 26 percent in May. Thus by the middle of 1987, the yearly rate of inflation was running well over 1,000 percent. Inflationary expectations—and inflationary uncertainty—recovered with a vengeance, leading to annualized short-term interest rates of nearly 2,000 percent in early June 1987. Finally, the central bank's international reserve position had fallen so low that the government found it necessary to declare a unilateral moratorium on interest payments to commercial banks on 20 February 1987.

The Cruzado II and the revival of inflation engendered severe instability in Brazil's domestic financial markets, dramatically demonstrating their peculiar sensitivity to inflationary expectations and uncertainty. It is clear that not only inflationary expectations but also inflationary uncertainty intensified in the wake of Cruzado II. The consequences were ironically magnified by the tightened monetary policy put into effect with the new policy package. Conditions of tight credit effectively implied that lenders (that is, purchasers of bank certificates of deposit and economic actors placing funds in the overnight open market) were in a position to seek interest rates that compensated not only for expected inflation but for expected inflation plus "possible" inflation as well. For example, a lender who ordinarily sought real compensation of, say, 1 percent per month and who expected that inflation would run at 7 percent per month, but feared that inflation might turn out to reach 9 percent, might insist on being compensated on the basis of the inflation feared rather than the inflation expected, which is to say, at a rate of 10 percent rather than 8 percent. This trend contributed to the volatility of inflationary expectations to the extent that Brazilians drew their



https://doi.org/10.1017/S0023879100022664 Published online by Cambridge University Press

conclusions about expected inflation on the basis of observed interest rates. Worse, this development exacerbated the recessionary consequences of monetary tightness: because inflationary uncertainty made real interest rates higher, bankruptcies were more likely to result from monetary tightness when credit came due.

Ironically, although the Plano Cruzado had ended financial indexation on the argument that it contributed to inflation-feedback pressure and maintained high levels of real interest rates, many analysts and businessmen defended restoring financial indexation on the grounds that in circumstances of high inflationary uncertainty, it would reduce real interest rates. In the example given above, lenders could charge their real interest rate plus ex post indexation. The indexation would take the place of the provision for expected inflation and uncertainty but would probably turn out lower than they would have been if the uncertainty were excessive. In any case, the argument goes, indexation should have ended the vicious circle in which inflation uncertainty on the part of lenders continually drove up interest rates. But the problem with indexation in this context is that it would create severe risks if applied to borrowers. Because inflation is not neutral, which is to say that because particular prices rise at different rates, borrowers have no assurance that their prices and incomes will rise as much as the average price level on which the indexation is based (Baer and Beckerman 1980). The increase in any inflation index is an average of price rises: even if they were symmetrically distributed, roughly half would lag behind their average. Recent empirical work on Brazilian prices suggests that matters may be even worse. In most of the time intervals studied, the median price rise was less than the average price rise (Moura da Silva and Kadota 1982). Moreover, the dispersion of price increases undoubtedly becomes wider the higher the inflation rate climbs. Particularly in view of the high inflation rates and high dispersion characterizing Brazil's economy by early 1987, full financial indexation might have been perilous. In any event, interest rates rose high enough to cause calamitous problems for many enterprises, especially the small-scale businesses set up in the euphoria following the Plano Cruzado. Bankruptcy proceedings reached record levels throughout Brazil in the first half of 1987.

A partial kind of indexation was introduced in early 1987: the classes of government obligations and savings instruments that had been index-linked before the Plano Cruzado were now officially linked to the overnight market rate. As noted above, the central bank actively manipulates the overnight rate. Although the government has strongly indicated that it plans to ensure that the overnight rate yields a "positive real" rate of return, it is not legally bound to do so. Accordingly, the "financial indexation" now in effect is rather more "partial" in character than the financial indexation practiced before the Plano Cruzado, indexation that was itself heavily diluted by various means.

## EVALUATION

The Plano Cruzado's basic purpose was to eliminate the "inertial" part of Brazil's inflation, which government economists claimed was the essential explanation of the country's persistent inflation. No doubt Brazil's inflation had become increasingly inertial as indexing, both formal and informal, had spread, resulting in a situation in which all economic actors had the power to maintain their relative position in the economy. The situation could be characterized as a "permanent stalemated fight for shares of purchasing power." There appeared to be only two ways out. One was to formulate an orthodox stabilization policy, which could succeed permanently only if certain socioeconomic groups could be made to absorb a decline in their share of the national income. The other way was to create a social consensus that would stop the "fight for shares." The Plano Cruzado amounted to an attempt to choose the second way. The general frustration with endless triple-digit inflation and the boldness of the price freeze coupled with new currency created a temporary social consensus in which even those agents who were disadvantaged at the time of the freeze were willing to accept a sacrifice.

The plan's ultimate failure may be ascribed to several causes. The most important was the wage increase granted at the plan's inception. It swelled aggregate demand at a moment when the economy was already hot, aggravated by external and public-sector dissaving. In retrospect, this situation may have meant that the plan was fatally flawed from its inception, but subsequent errors in the plan's execution made matters worse. The money supply assuredly grew too rapidly at the outset. Once the plan failed, the government clung far too long to the price freeze and the fixed exchange rate. The freeze stopped the price mechanism from working but caught a large segment of the economy in a very disadvantageous price position, a circumstance that distorted relative prices. The attempt to adhere rigidly to "zero inflation" was assuredly an error—by insisting on the whole loaf, policymakers lost the half-loaf. One could hardly expect the disadvantaged sectors of the economy to accept their sacrifices for more than three or four months. Selective price readjustments, with an emphasis on low rather than zero inflation, might have kept the gradual spread of agios and shortages at a much lower level. Also, public enterprises would have been spared problems if their rates had been raised in advance of the freeze or, as with the private sector, their rates had been adjusted after the freeze.

In order for zero inflation or anything like it to work, some prices would have had to fall. It is a revealing characteristic of Brazil's economy that (aside from agricultural commodities) the notion that a particular price might decline seems antiquated. It appears clear in retrospect that the government's basic dilemma was that it was determined to have zero inflation but needed to realign relative prices. Such an outcome would only have been possible if the government could have reduced some prices. It belabors the obvious to say that an economy with well-developed inflation-feedback mechanisms and extremely sticky downward prices will find it hard to root out inflation permanently.

In terms of distribution, the Plano Cruzado favored the wage-earning class, the opposite of what usually occurs in classic stabilization programs. Redistribution of income from capital to labor set into motion contradictory forces. It caused a substantial increase in the demand for consumer goods. The industrial capitalist sector responded by increasing output, even though unit profits were declining for many firms due to the combination of the price freeze and increased wage costs. It is likely that some firms maintained adequate profit levels through economies of scale resulting from larger production runs, although profitability came under pressure later in 1986. The rising sales may explain the increased investment, although increased investment apparently consisted more of installing additional machinery and extending assembly lines rather than constructing many new factories. As the price "freeze" melted, however, it is likely that profit margins recovered.

## CONCLUSION

The Plano Cruzado failed definitively, and the costs of its failure were high. The economic costs were bad enough, including the international reserve loss leading to the interest moratorium, the nasty inflationary resurgence at the end of the year, and the sharp decline in labor purchasing power leading to incipient recession in the first half of 1987. Yet in many respects, the political price was even higher, not merely for the individuals in power but for the nation's "political morale." Many Brazilians feel that the whole exercise was a crude political manipulation: prices were frozen long enough to enable a weak, unpopular government to win its legislative election, then prices were turned loose in the Cruzado II program, which followed the elections by less than a week. The government itself appeared to be as vacillating, manipulative, and deceptive as the preceding military regime. For example, the government altered the fundamental structure of the consumer price index to suit its current needs five times between November 1985 and November 1986.[8]

Many observers have concluded that the Plano Cruzado's failure



https://doi.org/10.1017/S0023879100022664 Published online by Cambridge University Press

shows that "heterodox" inflation shocks cannot really work, that only an orthodox program of fiscal and monetary control can ever end Brazil's chronic inflation. According to this view, a heterodox shock can only be helpful if accompanied by appropriate fiscal, monetary, and exchange-rate measures and if the price freeze is rapidly concluded. This article has argued instead that the matter is rather more complicated than this seemingly unobjectionable argument asserts. The Plano Cruzado experience was arguably not a clean test of a heterodox stabilization program. The wage increase, given in conjunction with the Plano Cruzado was destabilizing and far too large for the price level to resist, even in an economy growing as fast as Brazil's. In retrospect, the wage increase was undoubtedly the largest mistake and doomed the Plano Cruzado from the start. No conceivable amount of fiscal tightening—or reductions in other aspects of aggregate demand, such as net exports or capital formation—could have overcome the consequences of the resulting consumption spurt. Further policy miscalculations were made: the price freeze was maintained too long from an economic, if not a short-term political, viewpoint; relative prices badly needed realignment from the outset; and monetary policy was loosened too rapidly.

This article has argued more controversially that the exchange rate may have been initially undervalued, and this undervaluation generated some inflationary pressure, although the sharp deterioration in external accounts in the second half of 1986 suggests that the exchange rate subsequently became overvalued. No less controversially, this essay has argued that the persisting public-sector deficit was a relatively less important cause of the breakdown of the Plano Cruzado, although realignment of public enterprise and tighter fiscal policy would surely have helped matters.

Because the fatal wage increase was not part of the stabilization program per se, theorists may argue that the Plano Cruzado experience is not definitive evidence against heterodox stabilization. It is just possible the Plano Cruzado would have worked, or would have worked better, if real wages had not been raised 8 percent and more. This argument is a troubling one, however. As noted, workers whose wages had just been increased would have had to accept reduced wages in order to avoid that wage increase. One must ask—as Brazil's president undoubtedly did—whether that course was feasible on political grounds. It might have been more feasible not to give a wage increase to workers who recently had received one, but such a decision might have been viewed as unfair in changing the relative wage distribution in an arbitrary way.[9]

The government might have avoided the real-wage increase if it had carried out the Plano Cruzado in a somewhat different way. If the



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problem was that wage cuts were out of the question, the government might have circumvented the difficulty by raising all prices generally by a large percentage before freezing them. This measure would have enabled the government to raise all money wages so as to set real-wage values equal to the average of their real values over the preceding six months. It might even have been possible for the government to take advantage of such a general price rise to reset the real values of the prices it meant to freeze—for example, to set them equal to their average real values over the preceding six months. This price adjustment would undoubtedly have set the price array equal to something closer to equilibrium than was accomplished by simply freezing prices. Even so, one lesson of the Plano Cruzado's price freeze is that it would probably have been sensible to keep readjusting prices after the freeze—but raising and lowering prices with each adjustment, so that the overall price level did not rise. If the government had chosen such a strategy of raising all prices before freezing them, this strategy would have immediately made money and non-index-linked financial assets scarce. On one hand, the money supply would have had to increase by even more in order to meet higher money demand; but on the other hand, the monetary authority would have had more leeway to allow a money-supply increase without reaching the threshold at which it was inflationary.

On 12 June 1987, with resurgent inflation running at an annualized rate of nearly 1,500 percent a year, Brazil attempted yet another heterodox shock. This time, the government's stated ambitions were more modest. The Plano Bresser, named for Finance Minister Luiz Bresser Pereira, made no promise of zero inflation, expressing only a more realistic hope of reduced inflationary pressure. The price freeze was clearly advertised as temporary. By this time, trade accounts had recovered dramatically. But the fiscal deficit had deteriorated sharply, mainly because prices had accelerated so rapidly in early 1987 that the public sector's collection lag had become severe, its wage bills had ballooned under the force of the wage trigger, and financial charges for public debt had become a special crisis in itself for state and municipal governments. No wage increase was given, although the inflation had driven real wages well below their levels at the end of 1985. The cruzado was devalued, however, by approximately 10 percent. Unfortunately, the Plano Bresser failed much the same way as the Plano Cruzado. The problem was the devaluation: just as the government had linked stabilization under the Plano Cruzado to an inflationary wage shock, it linked the Plano Bresser to an inflationary devaluation. With the trade surplus reaching monthly records in June and July 1987, the monetary base inevitably came under severe pressure, growing some 28 percent in July and probably at a similar rate in August. The failure of the Plano Bres-



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ser was compounded later in the year by heavy public-sector wage increases and the president's refusal to carry out the ambitious fiscal program recommended by the finance minister. Once again, the heterodox approach did not receive a fair test. When carrying out heterodox stabilization, it is essential to avoid concurrent inflationary shocks, however necessary they are deemed to be on other grounds.

## NOTES

1. For details, see Baer (1983), chap. 5.
2. The Phillips curve shows an inverse relationship between inflation and the rate of unemployment.
3. See Ignacio Rangel, *A Inflação Brasileira* (Rio de Janeiro: Tempo Brasileiro, 1963); Mário Henrique Simonsen, *Inflação: Gradualismo x Tratamento de Choque* (Rio de Janeiro: Análise e Perspectiva Econômica, 1970); and Luiz Carlos Bresser Pereira and Yoshiaki Nakano, *Inflação e Recessão* (São Paulo: Editora Brasiliense, 1984).
4. A full description of the Plano Cruzado decree-laws can be found in *Conjuntura Econômica* 4, no. 3 (Mar. 1986); the following issue (Apr. 1986) contains a lengthy discussion by many of Brazil's leading economists on various aspects of the Plano Cruzado.
5. *Conjuntura Econômica* 4, no. 2 (Feb. 1987):83.
6. Maia Gomes stated at the time that "it is important that the government avoid devaluing the cruzado vis-à-vis the dollar for as long as it can. The central idea is that monetary reform, by doing away with the cruzeiro, has given rise to a stable currency could hardly be maintained if the cruzado were to be devalued in the way the old cruzeiro so frequently was. If people do not believe that the cruzado has a stable value, they will behave accordingly: inflationary expectations will be brought back to the scene and the whole plan will break down." Moreover, because a cruzado devaluation would increase the costs of many products, "it would be impossible to avoid firms from passing along to prices the increase in costs that would follow a devaluation. . . ." He therefore concluded that "Brazil will have to follow a fixed-exchange regime for months to come." See Maia Gomes (1986a, 31–32).
7. Controversy arose over whether the compulsory loans should be incorporated into the consumer price index as if they were taxes. Arguing that the loans did not amount to a real price increase because the consumer would be repaid with participatory shares in the national development fund, the government decided to exclude them from its computation of the inflation rate.
8. See Modiano (1986) and various issues of *Conjuntura Econômica* for 1986 and 1987.
9. For an evaluation of the failure of the Plano Cruzado by various policymakers involved in its conception and administration, see Sardenberg (1987) and Solnik (1987).

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