
INFLATION AND THE COSTS OF STABILIZATION

Historical and Recent Experiences and Policy Lessons

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This article reviews various experiences with stabilization. It first examines stabilization programs in the context of hyperinflation—looking at the experiences of Austria and Germany in the early 1920s and Bolivia in 1985—and then reviews and interprets the results of orthodox stabilization plans (applied in Argentina, Chile, and Uruguay during the mid-1970s and early 1980s) and those of heterodox programs (the austral plan in Argentina and the cruzado plan in Brazil, with a glance at the Mexican and Israeli experiences). The paper concludes with a discussion of conceptual issues and implications for the design of stabilization policies.

The aim of stabilization policies is to bring inflation down on a permanent basis and, if possible, at a low economic cost. This article examines several anti-inflationary programs, both historical and recent, giving attention to the response of inflation to different stabilization measures and the real costs—in output losses and cuts in real wages—of bringing inflation down in the course of economic stabilization. The purpose is to shed light on the difficulties several economies are experiencing with stabilization and to draw lessons for policy from experience in the field.

In the three cases examined—stabilization undertaken in conditions of hyperinflation, orthodox programs, and heterodox plans (defined in the relevant sections that follow)—we examine the role played in the success or failure of each program by fiscal adjustment, incomes policies, stabilization of the exchange rate, the availability of foreign resources, and conflicts over income

distribution. In addition, the experiences discussed are put in the perspective of the literature on the causes and cures of inflation.

Hyperinflation and Stabilization

Defining hyperinflation is a matter of convention: the best-known definition is Cagan's (1956), which characterizes a hyperinflation as beginning when inflation exceeds 50 percent a month and ending when it is less than 50 percent in every month during at least one year. The twentieth century has seen hyperinflation in Austria, Germany, Hungary, and Poland in the 1920s and in China and Greece in the 1940s. More recent instances are Bolivia in 1984–85, Nicaragua in 1988–89, and Yugoslavia and Poland in 1989.

Germany, 1923

The European hyperinflations of the 1920s were, to borrow from Keynes (1919), to a great extent the "economic consequences of the peace" that followed World War I. In particular, the war reparations exacted by the Treaty of Versailles from Germany and the former Austro-Hungarian empire imposed a heavy burden on the balance of payments of these economies. Germany had to transfer nearly 6 percent of its income abroad (although this effect was somewhat ameliorated by an inflow of foreign capital). The scarcity of foreign exchange, in turn, led to devaluations followed by monetary accommodation and domestic inflation. In addition, the war reparations, together with the takeover of the Ruhr province and the passive resistance policy financed by the government, led to a strong deterioration of the fiscal budget, which was financed through loans from the central banks.

The effect of these shocks combined with domestic policies to produce extreme macroeconomic instability (see Solimano 1989, table 1). In 1922 the annual inflation rate was near 4,000 percent, and the exchange rate was devalued by more than 5,000 percent. Almost 40 percent of fiscal expenditure was financed by money creation. In 1923 the situation became even worse, especially after an unsuccessful stabilization attempt in February to April of that year: by August, inflation exceeded 7,500 percent monthly, reaching 30,000 percent in October.

All the characteristic elements of a hyperinflation were present: (1) a complete domestic demonetization and a shift of portfolios toward foreign currency; (2) an increase in the fiscal deficit (mostly because of the decreased real tax revenue arising from the fiscal lag), which in turn accelerated the expansion of domestic credit, fueling inflation and generating an unstable inflationary process; (3) the destruction of the existing structure of wage contracts (the duration of contracts was drastically curtailed as a result of de facto pegging to the exchange rate); (4) a very rapid depreciation of the exchange rate; and

(5) a decrease in the indices of physical production and in real wages, and an increase in unemployment.

The need for stabilization was clear. It was finally achieved in early November 1923 and was even followed by a price deflation at the beginning of 1924. The three basic elements of the stabilization (see Dornbusch and Fischer 1986, Sargent 1982) were (1) a fiscal reform, which included an increase in taxes and a reduction in public expenditure; (2) a monetary reform forbidding the Reichsbank to discount government bonds as an inflationary form of financing the deficit; and (3) the depreciation of the Rentenmark followed by freezing of the exchange rate.

It is interesting that the stabilization took place along with the arrangement of an external loan under the supervision of the League of Nations, finally received by Germany in 1924 and conditional on the implementation of legislative reform in the fiscal and monetary areas.

As is shown in table 1, in the worst year of the hyperinflation—1923—the index of per capita production fell substantially (from 86 to 54) but rose quickly to 77 in 1924, the first year of price stability after the program. When October 1923 is compared with December 1923 and the year 1924, it is apparent that real wages rose when the inflation rate fell and that unemployment increased at the outset of stabilization but decreased in 1924.

Table 1. Labor Market and Production Indexes During German Hyperinflation and Stabilization, 1920–27
(1913=100)

Year	Physical production per capita	Real wages			Unemployment rate	
		Period	Skilled workers	Unskilled workers	Period	Percent
1920	61.0		—	—		—
1921	77.0		—	—		—
1922	86.0	August	72.0	93.4		—
1923	54.0	October	53.0	64.6	September	9.9
		December	70.0	—	November	23.4
1924	77.0	June	89.2	98.4	January	26.5
					April	10.4
					October	8.4
1925	90.0		—	—		—
1926	86.0		—	—		—
1927	111.0		—	—		—

— = not available.

Source: Sargent 1982, Dornbusch and Fischer 1986.

The experience of Germany was paralleled in many respects by that of Austria—which was going through a hyperinflation followed by a stabilization at much the same time (1922) for much the same reasons. In Austria a loan from the League of Nations had also played an important role in the stabilization. The Austrian stabilization plan comprised real tax increases, reduction of fiscal expenditure, and restrictions on the government's power to borrow from the national bank. The loan helped to stabilize the (floating) exchange rate and contributed decisively to the checking of price increases. Another similarity with the German experience was that in Austria the cost of stabilization with respect to employment (Wicker 1986) was significant: 10,000 jobs lost in the financial sector and 85,000 in public employment (reflecting also the shrinking of the bureaucracy left over from the Austro-Hungarian empire).

Bolivia, 1984–85

Like the European experiences of the 1920s, the Bolivian hyperinflation of 1984–85 arose in the context of difficulties in the external sector, deterioration of public finances, and sociopolitical conflicts. In the early 1980s, Bolivia lost access to private and multilateral international lending sources; it responded by suspending the servicing of its foreign debt. On the fiscal side, the government replaced the foreign loans to the public sector with loans from the central bank (in other words, there was an inflation-tax replacement in public finances), a principal element in triggering the hyperinflation in Bolivia.

The ensuing process of accelerating price increases in Bolivia followed the common pattern of hyperinflation: inflation rates of more than 50 percent a month (on average) between April 1984 and September 1985, a drastic decrease in real money balances despite a rapid expansion of nominal money supply (implying an increased velocity of circulation), portfolio shifts toward the dollar, shortening of wage and other contracts, pegging them to the dollar (especially the parallel exchange rate), and increases in the fiscal deficit following erosion of the real value of tax revenue (see Solimano 1989, table 3).

Because wages, prices of domestic and imported inputs, and most contracts were de facto pegged to the exchange rate, the stabilization of the exchange rate by the government in August 1985 brought inflation to a sudden halt (see Sachs 1986, 1987). The stabilization also comprised a drastic fiscal reform (including a sharp increase in taxes on fuel and a wage freeze and job cutbacks in the public sector), an agreement with the International Monetary Fund (IMF), and a continued moratorium on the repayment of the external debt, both principal and interest. After the initial halt, there was some acceleration of inflation in December 1985 and January 1986, but by the end of 1986, the stabilization had been consolidated.

The restoration of confidence, however, was slow. Real balances remained low, real wages fell sharply (nearly 80 percent) in the second quarter of 1985, starting to recover only when inflation slowed down, and the already declining

gross domestic product (GDP) fell further in 1985 and in 1986, owing partly to the stabilization plan and partly to a deterioration of the terms of trade. Although there was considerable unemployment in Bolivia at the time—nearly 20 percent in 1986—Morales (1988) attributes only three percentage points of this 20 percent to the stabilization policy.

Orthodox Stabilization Programs: The Southern Cone in the Mid-1970s and Early 1980s

Orthodox stabilization combines the correction of fiscal deficits to reduce (or eliminate) inflation with real depreciation of the exchange rate to correct deficits in the current account of the balance of payments.

Argentina, Chile, and Uruguay suffered from severe macroeconomic imbalances in the mid-1970s. In Chile in 1973 the annual inflation rate reached 813 percent, with a fiscal deficit of almost 25 percent of GDP; Argentina in 1976 had an inflation rate of more than 400 percent; and in Uruguay in 1974 the inflation rate was lower but still a substantial 77.2 percent.

The first phase of stabilization—comprising the reduction of the fiscal deficit, devaluation, and wage controls (see table 2)—did not result initially in a significant reduction of inflation in these three economies (see Corbo and Solimano 1990 for an econometric and simulation analysis of the slow reduction in inflation in Chile in the mid-1970s). In fact, in 1976 annual inflation in Chile was still more than 200 percent, in spite of a drastic reduction of the fiscal deficit from 24.7 percent of GDP in 1973 to 2.3 percent in 1976. In 1978 Argentina's inflation continued at more than 150 percent and Uruguay's at almost 43 percent, despite significant fiscal adjustment.

The orthodox packages proved costly (table 3). Real wages fell nearly 18 percent in Chile (1973–76) and Uruguay (1974–78); nevertheless, in 1975 both countries also faced a deterioration in their terms of trade. The fall in real wages in Argentina was smaller (2.5 percent between 1976 and 1978).

Meanwhile, unemployment rose in Chile from 4.6 percent to 19.4 percent, and in Uruguay by two percentage points, although in the relevant period in Argentina, there was actually a fall in unemployment. Labor's share in national income (see Solimano 1989, table 6) fell significantly in all three countries between 1973 and 1978 during the first phase of the stabilization plan, with some recovery in the early 1980s. (See Foxley 1983 and Ramos 1986 for further examination of the distributive implications of stabilization cum structural reform packages in the Southern Cone.)

By the late 1970s and into the early 1980s governments in the Southern Cone shifted to an anti-inflationary strategy based on exchange rate management (see phase II in table 2). The exchange rate-based approach to stabilization assumed that domestic inflation would be equalized to the sum of foreign inflation and the rate of devaluation. Therefore, the exchange rate policy was

Table 2. Inflation and Orthodox Stabilization in the Southern Cone, for Selected Years, 1973–83
(percent)

Phase	Chile				Uruguay				Argentina			
	Year	Fiscal deficit as share of GDP	Inflation rate	Money growth rate ^a	Year	Fiscal deficit as share of GDP	Inflation rate	Money growth rate ^a	Year	Fiscal deficit as share of GDP	Inflation rate	Money growth rate ^a
I												
Beginning	1973	24.7	813.7	259.1	1974	3.8	77.2	80.0	1976	7.2	443.2	399.4
End	1976	2.3	232.8	216.0	1978	0.9	44.5	53.0	1978	3.2	175.5	142.8
II												
Beginning	1976	2.3	232.8	216.0	1978	0.9	44.5	53.0	1978	3.2	175.5	142.8
End	1981	-3.1	19.7	62.6	1980	0.3	63.5	34.9	1980	3.6	100.8	115.8
III												
Beginning	1981	-3.1	19.7	62.6	1980	0.3	63.5	34.9	1980	3.6	100.8	115.8
End	1983	3.8	27.3	26.6	1983	3.9	51.5	11.1	1983	11.0	343.8	361.7

GDP = gross domestic product.

Source: Ramos 1986, data base of Economic Commission for Latin America and the Caribbean, and IMF various years.

a. Refers to the growth rate of M1 (currency and demand deposits).

Table 3. Adjustment in the Labor Market and Real Exchange Rate in the Southern Cone, for Selected Years, 1973–83
(1970=100)

Phase	Chile				Uruguay				Argentina			
	Year	Real wage index	Unemployment rate (percent) ^a	Real exchange rate index ^b	Year	Real wage index	Unemployment rate (percent)	Real exchange rate index	Year	Real wage index	Unemployment rate (percent)	Real exchange rate index
I												
Beginning	1973	80.0	4.6	123.6	1974	85.0	8.1	127.8	1976	74.7	4.6	140.8
End	1976	63.0	19.4	224.8	1978	66.9	10.1	191.6	1978	72.3	2.9	136.7
II												
Beginning	1976	63.0	19.4	224.8	1978	66.9	10.1	191.6	1978	72.3	2.9	136.7
End	1981	97.5	15.6	94.5	1980	65.1	7.4	152.0	1980	92.8	2.2	60.0
III												
Beginning	1981	97.5	15.6	94.5	1980	65.1	7.4	152.0	1980	92.8	2.2	60.0
End	1983	86.8	24.5	143.6	1983	55.3	15.5	261.5	1983	90.8	4.0	131.1

a. Includes emergency employment programs.

b. Deflated by the average nominal wage index.

Source: Ramos 1986.

viewed as a key to reducing inflation. The correction of the fiscal deficit became more of a prerequisite to the guarantee of a level of international reserves consistent with the predetermined path of the exchange rate.

In Chile the exchange rate was fixed from June 1979 to June 1982; in Argentina and Uruguay a system of preannounced exchange rate devaluations at progressively decreasing rates was used until 1981 and late 1982, respectively. In these three economies inflation thereupon decreased, real wages increased (or recovered), and unemployment fell. Moreover, the rate of growth of GDP accelerated in these three countries—but at the cost of unsustainable disequilibrium in the balance of payments.

The underlying disequilibrium in the external sector may be recognized by looking at the real exchange rate. Measured in wage units, it appreciated more than 50 percent in Chile between 1976 and 1981 and by a similar percentage in Argentina between 1978 and 1980 (table 3). The drop (appreciation) in the real exchange rate in Uruguay was about 20 percent between 1976 and 1981. The increase in foreign borrowing associated with the misalignment of the real exchange rate produced an enormous increase in financial liabilities of the banking system backed by assets of dubious quality. These developments finally led to very severe financial crises (Diaz-Alejandro 1985). For example, in Chile as late as 1987 the central bank held a stock of nonperforming loans amounting to 26 percent of its total assets as a result of the government's engagement in a massive rescue operation for troubled financial institutions (Arellano 1988).

The phenomenon of exchange rate overvaluation indicated the slowness of domestic inflation in coming down to the international inflation rate (allowing for the rate of devaluation). In fact, the observed price behavior showed that the law of one price holds only weakly in the aggregate. Among the factors that conspired against meeting the targets on inflation were, in Chile, an excessive level of domestic spending on nontradable goods combined with clauses of 100 percent lagged wage indexation in a context of declining inflation. In Argentina, by contrast, a large fiscal deficit was one of the main factors behind the failure to meet the anti-inflationary targets.

In the early 1980s the conjunction of excessive foreign debt, adverse external shocks, and real overvaluation of the exchange rate led the governments of the Southern Cone to abandon their exchange rate-based stabilization plans and to resort to stepwise devaluation, followed by a crawling peg (devaluing the nominal exchange rate by the difference between domestic and foreign inflation). In addition, domestic absorption was cut, and measures to prevent a large-scale financial collapse were taken. The final outcome of the experiments with exchange rate-based stabilization in all three countries was accelerated inflation, reduced economic activity, and lower real wages (table 3).

Beyond the immediate failure of these plans, Chile made a particularly strong recovery after 1984 (without an acceleration of inflation), whereas

Argentina was trapped in a vicious circle of slow growth, high inflation, and instability that persisted until the late 1980s. Uruguay restored growth (less fast than in Chile) with an inflation rate of about 70 percent a year after 1984.

Heterodox Stabilization Programs in Latin America: Argentina, 1985–87, and Brazil, 1986–87

The central innovation of the heterodox plans was the use of generalized controls over prices, wages, and the exchange rate to reduce inflation. The use of several nominal “anchors” was intended to counteract inertial inflation (that is, the slow response of inflation to policies that reduce nominal spending) while avoiding some of the recessionary (and distributive) costs often associated with orthodox programs.

Argentina and Brazil launched heterodox stabilization programs in the mid-1980s in a context of accelerating inflation rates approaching hyperinflation. (Israel, in mid-1985, and Mexico, in December 1987, also adopted heterodox programs with satisfactory results. These programs, however, were more successful in reducing inflation than those of Argentina and Brazil.)¹

The basic elements of the Argentine stabilization plan of June 1985 featured the freezing of wages, the exchange rate, and tariffs for an unspecified length of time (see Frenkel, Fanelli, and Winograd 1986; Machinea and Fanelli 1988). The austral plan initially adjusted the exchange rate and tariffs for public sector goods and services, and some reduction of the fiscal budget was attempted. In addition, a new currency, the austral, was introduced. This program was accepted by the IMF, and Argentina received additional foreign financing, with active participation by the U.S. government.

During its first nine months, the plan was quite successful. Inflation fell from a monthly average of 26 percent between January and June of 1985 to an average of 3 percent between July 1985 and March 1986. But after a “price flexibilization” in April 1986, inflation began to rise again, reaching a monthly average between April and December 1986 of 5.8 percent. Inflation accelerated further in 1987 (to 178 percent); moreover, in 1988–89 the economy was on the way to outright hyperinflation.

As to the economic costs of the plan, between May 1985 (the month preceding the appearance of the austral) and November 1988, the purchasing power of industrial wages fell by about 12 percent—although it had increased, by 7.2 percent, until June of 1987. Essentially, it was the more rapid acceleration of inflation beginning in the second half of 1987 that depressed real wages. The plan proved moderately expansionary: on average, industrial output increased by 3.4 percent during the years 1986–87. This was consistent with the heterodox intention of avoiding severe recession following stabilization. The principal question, however, becomes whether a permanent reduction in inflation can be achieved without incurring large real costs. The Argentine experience with

heterodox stabilization suggests that the costs of stabilization were postponed over time, since the anti-inflationary gains brought by the austral were merely temporary.

The Brazilian cruzado plan (1986), like the austral plan, consisted of a general freeze of prices, wages, the exchange rate, and tariffs for public services. Wages were initially converted to their average level of the preceding semester and then increased by 8 percent across the board, plus a 15 percent increase in the minimum wage. There was, however, no preliminary adjustment of the exchange rate and public tariffs as in Argentina. In addition, the government removed indexation and instituted an automatic adjustment of wages to be triggered when accumulated inflation exceeded 20 percent.

The first months of the plan were highly successful. Monthly inflation rates were between 1 and 2 percent, industrial output increased by 40 percent between February and October of 1986, and in November 1986 real wages were 9 percent higher than the average attained in 1985. But by August 1986 the plan was becoming unsustainable. The trade surplus fell from more than \$1 billion² a month (the level at the beginning of the cruzado plan), to \$544 million in September 1986, and turned into a deficit between October and December of that year. The deterioration in the balance of payments was even more striking if we consider that Brazil lost \$3.5 billion of international reserves between the beginning of the plan (February 1986) and December of the same year.

Toward the end of 1986, then, Brazil was experiencing repressed inflation, generalized excess demand, and depleted international reserves. When the price controls were abandoned, inflation rose to monthly rates of between 10 and 15 percent (December 1986–March 1987) and accelerated still more from April 1987 to reach a monthly rate of 26 percent in May and June. The acceleration of inflation led the government to adopt a new stabilization plan, known as the Bresser plan (named after the finance minister, Luis Bresser Pereira, who replaced Dilson Funaro, initiator of the cruzado plan).

The Bresser plan tried to correct some of the errors of the cruzado plan, adjusting public tariffs and the exchange rates at the beginning of the price freeze. This time the freeze was to be temporary, and (partial) wage indexation mechanisms were restored. This program too was ultimately a failure: inflation rose rapidly in the last quarter of 1987 (more than 10 percent a month), and by 1988 the annual inflation rate was approaching hyperinflation, at about 1,000 percent. The control of inflation became, once again, the first economic priority for Brazil.

Lessons from the Stabilization Experiences

Let us turn to the lessons that can be learned from the experiences with stabilization just examined.

Hyperinflation

There are four approaches to discussing the origins and cures of hyperinflation. The first approach (Cagan 1956) lays emphasis on money creation compounded by increases in the velocity of money as the driving force behind episodes of very high inflation. In this view, a large effect of expected inflation on the demand for money can generate explosive dynamics of prices approaching a hyperinflationary situation. The second approach (Sargent 1982) focuses on the role played by the fiscal regime (as distinct from specific fiscal actions) and monetary institutions in generating and then stopping hyperinflation. Radical changes in the rules governing fiscal and monetary policy were, according to Sargent, sufficient by themselves to arrest the hyperinflation experienced in central Europe in the 1920s. Furthermore, the perception by the public of these reforms as a decisive correction of the main causes, or fundamentals, of inflation, is an important element in successful stabilization.

The third approach, the balance of payments view of inflation, emphasizes external imbalances in the balance of payments—for instance, war reparations in the early 1920s and debt servicing in the 1980s—as triggers of hyperinflation (see Bresciani-Turroni 1937 and Robinson 1938). According to this approach, the money supply reacts in a rather passive way to changes in the exchange rate and prices. In turn, the fiscal deficit is considered to be largely endogenous and adversely affected by inflation because of lags in tax collection (the Keynes-Olivera-Tanzi effect). Moreover, another ingredient of this approach is that adjustments of relative prices (for instance, a real depreciation of the exchange rate) may come along with an acceleration in inflation because of real wage resistance (see Solimano 1989 for a formal model of inflation along these lines).

This view of the European hyperinflations of the 1920s underlines the need to maintain an undervalued real exchange rate—and depressed real wages—to generate a trade surplus equivalent to the transfers abroad called for by war reparations. In the presence of distributive conflicts, expressed as a rigid desired real wage, the fall of real wages following a real devaluation would be resisted through increases in nominal wages and accommodated with price increases in the context of accommodative monetary policies. Therefore, this approach suggests that stabilization was successful when Germany and the other countries in the 1920s received their war reparations recycled through foreign loans granted by the League of Nations. Clearly, the availability of external resources—coupled with domestic adjustment—played a key role in ensuring stabilization.

A fourth approach, represented by Sachs (1986) and Dornbusch (1987), emphasizes the role of exchange rate stabilization in checking hyperinflation in economies in which the prices of goods and services were formally or informally pegged to the dollar. In the Bolivian hyperinflation of 1985, for instance, the stabilization of the exchange rate brought domestic inflation in line with international inflation much faster than if the economy had relied only on fiscal

reform (Sachs 1986). Moreover, Dornbusch (1987) describes stabilization of the exchange rate as a certificate of credibility in the stabilization plan because of its immediate effect on prices and the fiscal budget. For this exchange rate-led stabilization to be durable, however, fiscal measures beyond a cyclical improvement in the fiscal budget must also be adopted—in other words, structural fiscal deficits must be corrected.

The literature on the cost of stabilizing a hyperinflation has been greatly influenced by Sargent (1982). Looking at the hyperinflation stabilizations of central Europe in the 1920s, he makes the case of costless stabilization in economies that have drastically changed the rules that guide fiscal and monetary policies. He suggests that the decisive change in policy rules that made the stabilization effort credible and immediate at the same time forestalled a period of unemployment and output losses during stabilization such as would have been predicted by models based on the Phillips curve relationship between inflation and unemployment.

At least two remarks can be made about Sargent's approach. First, on an analytical level, the nominal rigidities imposed by the wage and price contract structure, a main source of real (for example, output and employment) fluctuations in the presence of monetary shocks, seemed to disappear during (and because of) the hyperinflation before fiscal and monetary reforms were taken up. This obviously helped reduce the cost of the stabilization plan. The situation is different in chronic and high inflations (but not hyperinflation), in which the existing wage contract structure shortens its terms but does not disappear. In these situations it would be more difficult to reduce the costs of stabilization even if the anti-inflationary plan were completely credible. This suggests that the cost of the stabilization is related to the degree of stickiness in the contract structure, a feature closely linked to the level of inflation (hyperinflation as opposed to intermediate inflation) and not only to the credibility of the stabilization plan.

Second, recent empirical evidence (Wicker 1986) for the economies analyzed by Sargent (1982) shows that the employment losses engendered by stabilization were not trivial. Wicker points to three channels of a decline in employment after the stabilization of the hyperinflation in the 1920s: (1) in the banking sector, which had overexpanded during the hyperinflation; (2) in the public sector, connected with the fiscal reform; and (3) per unit of output in private sector firms that were forced to be more efficient after the stabilization. Clearly, those mechanisms are also seen in other stabilization efforts throughout history.

Orthodox Stabilization

PERSISTENT INFLATION. A principal lesson derived from the experience with traditional orthodox programs in the Southern Cone (as well as from some other orthodox experiences; see Kiguel and Liviatan 1988) relates to the sluggishness with which inflation reacts to a reduction in the rate of growth of

nominal spending. This inflationary inertia is illustrated by the persistence of high inflation levels even in economies that adopted drastic fiscal adjustment. Chile in the mid-1970s is the standard example of an economy in which three-digit inflation continued for extended periods in spite of sharp fiscal correction. Moreover, this problem of inflationary stickiness also contributed, in the Southern Cone, to the failure of exchange rate-based stabilization programs because the associated currency overvaluation (compounded by adverse external shocks) led to a crisis in the balance of payments in these economies.

THE COSTS OF STABILIZATION. The traditional orthodox plans in the Southern Cone in the 1970s reduced real wages and increased unemployment in the short run (table 3). In general, the effects of the programs on employment and income distribution depend on the degree of slack or recession entailed by the stabilization in the short run; how much real wages or employment are cut; the redistribution of assets that may take place with the stabilization (as, for instance, privatization is implemented); those costs, in turn, will be reversed if the supply response in the medium term, when the economy is stabilized, leads to a resumption of growth and the recovery of real wages. Chile in the mid-1970s is a case in which labor market and distributive indicators deteriorated in the initial phase of stabilization (see Ramos 1986 and Foxley 1983). In the late 1980s, however, Chile exhibited high growth in the context of moderately low inflation (see Solimano 1990).

Experiences with orthodox stabilization based on the management of the exchange rate showed that the conflicts between reducing inflation and maintaining a stable and competitive real exchange rate can be decisive for the success of the program. As mentioned earlier, an overvalued exchange rate often leads to a balance of payments crisis, bringing in its wake a recession or a resumption of inflation, or both. The Southern Cone in the early 1980s provided clear examples of this conflict with far-reaching adverse macroeconomic consequences.

INTERTEMPORAL DISTRIBUTION OF THE COSTS OF ADJUSTMENT. The distribution of costs over time differs between traditional and exchange rate-based stabilization programs. The basic notion here is that the costs of the traditional program are faced at the beginning of the program, when the economy is hit by the fiscal shock, whereas in the exchange rate-based stabilization plan the costs occur at the end, when the need to correct unsustainable current account deficits generated by currency overvaluation leads to cuts in output, employment, and real wages.

The Experience with Heterodox Programs

The heterodox plans in Argentina and Brazil ultimately failed quite dramatically, although in the short run they succeeded in reducing inflation without

inducing a recession—even, in the case of Brazil (1986), with (unsustainable) high growth. In the aftermath, however, inflation in both economies accelerated sharply—to reach virtually hyperinflationary levels—and growth decelerated.

GROWTH IN SPENDING AND THE INFLATION TARGET. The cruzado plan of 1986 vividly illustrates that excessive growth in aggregate demand is incompatible with a target of low inflation for the stabilization program.³ The Brazilian attempt to sustain high growth (8 percent in 1986) simultaneously with zero (or very low) inflation during the cruzado plan was clearly overambitious. In Argentina, by the second half of 1985, after the launching of the austral, the growth in spending was certainly more moderate than in Brazil. Nevertheless, some Argentine economists, such as Canavese and di Tella (1988) and Rodriguez (1988), have questioned how far monetary and fiscal policy was consistent with the objective of reducing inflation, especially after April 1986. Moreover, the slide into hyperinflation in the late 1980s in Argentina suggests that growth in nominal spending was inconsistent with a low-inflation equilibrium.

PRICE FREEZING AND RELATIVE PRICES. Any scheme of price freezing risks distorting relative prices. In Brazil during the cruzado plan the real exchange rate fell, and relative prices became misaligned, generating an outburst of demand for basic and durable goods in anticipation of a reversal in the path of the real exchange rate and in other relative prices. This in turn put great pressure on the controlled prices and eventually led to an explosion in controlled prices. In addition, the trade surplus vanished six months after the launching of the plan, mainly as a consequence of a sharp rise in imports. Hence the combination of excess demand with misaligned relative prices led to unsustainable macroeconomic imbalances that finally undermined the stabilization effort.

CONTROLLING THE FISCAL DEFICIT. The failure of the heterodox plans in Argentina and Brazil to attain a more permanent stabilization is frequently blamed on their inability to reduce the fiscal deficit. Kiguel and Liviatan (1990) review this issue and do not find the size of the fiscal deficits and the levels of seigniorage sufficient to account for the sharp acceleration in inflation following the failures of the austral and the cruzado plans. However, the repetitive use of price controls—an indication of the failure to stabilize—clearly did lack supporting fiscal policies. In that sense, the lack of fiscal adjustment in these two economies hampered the stabilization effort.

A related issue concerning fiscal adjustment in a program involving price freezing is the potential for fiscal effort to be too lax. This could occur because the improvement in the budget generated by the price freeze (the reversal of the Keynes-Olivera-Tanzi effect) may induce policymakers to substitute a cyclical improvement in the government budget for a structural fiscal reform.

A structural adjustment of the fiscal deficit, however, entails economic and political costs that may deter governments from pursuing it more forcefully. In particular, fiscal adjustment is more difficult to undertake in the kind of economic crisis that has accompanied the implementation of the heterodox programs in Latin America during the 1980s. The natural tendency is to postpone the fiscal adjustment until the macroeconomic and political environments are more favorable. Of course, this practice simply shifts the costs of the stabilization to the future; moreover, postponing adjustment is likely to increase its associated costs.

DEINDEXATION. Indexation was viewed as the main cause of inertial inflation in Argentina and Brazil. During heterodox programs, then, the removal of indexation was thought to be a key element of the stabilization. The outcome was not encouraging for two reasons: first, deindexation is certainly not a substitute for fiscal adjustment, and second, indexation serves also as a guideline for price setting by firms and acts as an anchor that may help to prevent a price explosion in a phase of price decontrol. An additional complication for stabilization coming from the side of wage formation is the issue of hysteresis: in fact, it is a common observation in the practice of stabilization that the length of the contracts shortens during inflationary accelerations but fails to lengthen correspondingly in periods of greater price stability—an asymmetrical response of wages that undoubtedly makes stabilization more difficult.

THE FOREIGN EXCHANGE CONSTRAINT. The existence of a foreign exchange constraint during the episodes of high inflation in central Europe in the 1920s has an evident parallel in the effect of foreign debt servicing problems in Latin America in the 1980s. The burden of servicing large external debt has made the balance of payments of countries that pursued heterodox (as well as orthodox) programs very vulnerable. In Argentina and Brazil the weak external position undermined the stabilization efforts. In Mexico debt servicing problems were reflected more in slow growth than in higher inflation after the launching of the “Pacto de Solidaridad” plan.

A reference to one of the more successful of the heterodox programs so far, the Israeli stabilization plan, is instructive in this connection. The program’s success in eliminating the fiscal deficit accounts, to a large extent, for Israel’s outstanding performance. But we should also note that during the stabilization plan, Israel received a net transfer of resources from abroad (through foreign assistance and other means). Thus Israel has been able to run trade deficits. In Argentina, Brazil, and Mexico, in contrast, the resource transfer has been made to foreign countries, forcing these economies to run trade surpluses over the stabilization period.

DISTRIBUTIVE CONFLICT AND THE POLITICAL CYCLE. Although income redistribution was not an explicit objective of the heterodox programs, distributive

considerations have been present in the implementation of stabilization policies. The combination of a foreign exchange constraint with undervalued real exchange rates may produce an acceleration in inflation as labor tries to protect real wages and its share of national income, through rising nominal wages. The response of firms is to increase prices in order to keep the markups more or less constant. The result of this distributive game will be a sustained increase in inflation, if monetary policy is accommodating.

The political cycle in some respects helped, and in others hindered, stabilization. Dornbusch and Simonsen (1987) noted that the heterodox plans in both Argentina and Brazil had strong initial popular support. This political base of support, however, began to dissipate once the initial success was replaced by a resumption of inflation.

The political cycle also hampered the stabilization effort by encouraging overexpansionary policies intended to increase public support for the government at times of upcoming elections. A clear example of this was the expansionary cycle experienced by the Brazilian economy before the parliamentary elections in November 1986, at a time when the cruzado plan was under way.

Conclusion

The notion that the stabilization of a hyperinflation could be an almost costless process is not fully endorsed either by the European experiences of the 1920s or by the Bolivian experience in the mid-1980s. Although the speed with which inflation came to an end in those programs was indeed impressive, the short-run costs in both cases and the very slow recovery of growth in the aftermath of stabilization, as is neatly portrayed in the Bolivian case, suggest that stopping hyperinflation is not a simple and costless task.

The orthodox experiences in the Southern Cone in the 1970s show that traditional stabilization programs confined to tightening monetary and fiscal policy can be slow to reduce inflation. They may also entail high costs in output losses and cuts in real wages during the initial phase of the stabilization. Orthodox programs based on exchange rate management were able to reduce inflation more rapidly than traditional programs, but they led to overvalued real exchange rates and the accumulation of foreign debt. The costs of stabilization under exchange rate-based programs were thus simply postponed to the later stages of the anti-inflationary programs, when unsustainable current account deficits had to be corrected. It is interesting to note that the intertemporal distribution of the costs of stabilization, related to programs that rely mainly on one nominal anchor (for example, exchange rate-based stabilization), is also present in heterodox plans that use several nominal anchors to stabilize; both tend to defer the costs of stabilization until later in the stabilization process.

Heterodox stabilization led to sustained disinflation in Israel and Mexico, but the stabilization was relatively short-lived in Argentina and Brazil. The growth record during stabilization in those countries was not impressive, although severe recession was, in general, avoided.

Some implications relevant to the issue of designing policies to use in different inflationary situations do emerge from the diverse experiences examined. First, a stabilization plan that relies solely on reducing money growth and fiscal adjustment will produce more rapid results in reducing inflation in the short run in situations of temporary inflation. But in countries with a long inflationary history, where credibility problems are serious and well-developed indexation mechanisms exist, an exclusive reliance on restrictive monetary and fiscal policies may be costly and slow in producing disinflation in the short to medium run.

Second, the use of income policies—to supplement fiscal restraint—may help to reduce inflation, in the short run, without forcing the economy to go through a protracted recessionary period to break inflationary expectations (although some slack may still be required). To reduce inflation permanently requires nominal spending to grow at rates compatible with price stability in the medium and long run. To attain that, fiscal adjustment becomes a key component of stabilization.

Third, the experiences of stopping hyperinflation provide examples of both rapid disinflation achieved through restrictive monetary and fiscal policies and the key role played by stabilization of the exchange rate in successful stabilization. Last, but not least, the history of economic stabilization has amply shown that the availability of adequate foreign financing, as a support to the stabilization effort, is a crucial ingredient in the success of stabilization plans.

Notes

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1. Programs seeking to disinflate (through price controls) and expand the economy at the same time (through expansionary fiscal, monetary, and wage policies) have been labeled populist economic policies (see Dornbusch and Edwards 1989). Examples of such policies, which ultimately failed, are the economic policies followed by Peru under Alan Garcia in 1985, by Chile under Allende in 1970–73, and by Argentina under a Peronist administration in 1973–76.

2. One billion is 1,000 million.

3. Analytically, a decrease in the inflation rate has an ambiguous effect on aggregate demand. There are at least three effects that can operate in opposite directions: (1) real interest rates may rise if inflation slows down unexpectedly; (2) the purchasing power of wages and other income will rise when the inflation rate falls; and (3) real fiscal revenue increases when the inflation rate decreases because of the Keynes-Olivera-Tanzi effect. Effects 1 and 3 are contractionary and 2 is expansionary (see Taylor 1987).

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