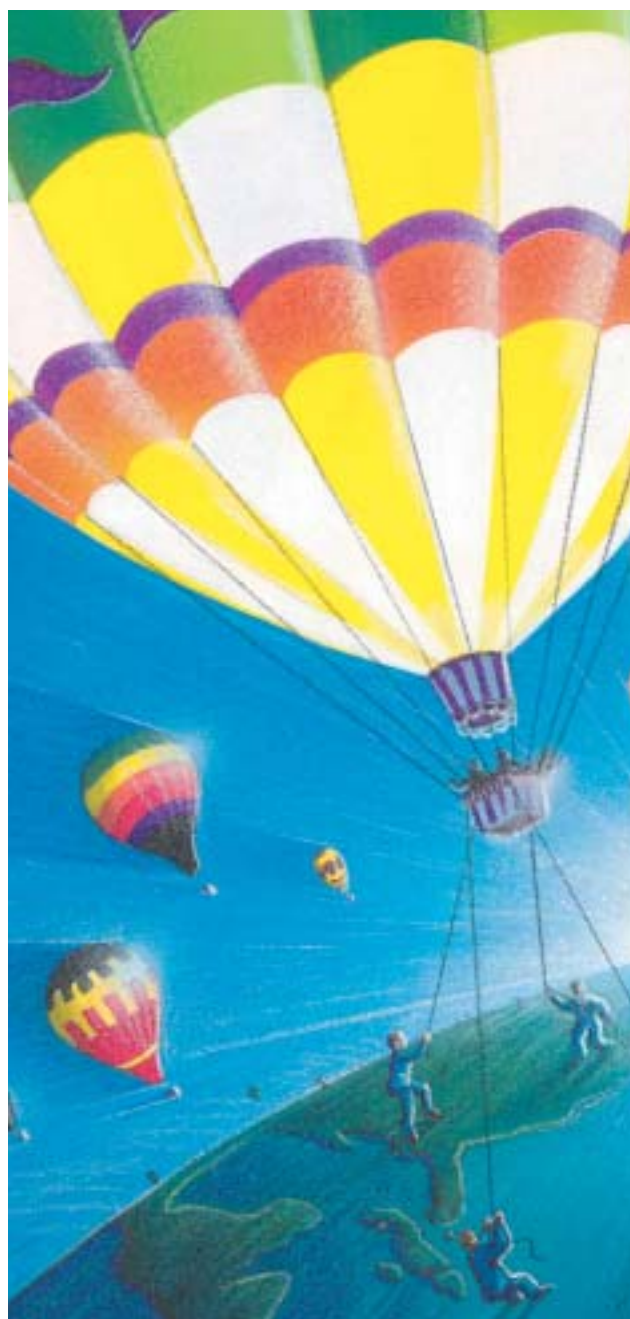


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# Beating Inflation

The importance of luck, timing, and political institutions

A. Javier Hamann and Alessandro Prati



COUNTRIES experiencing high inflation typically make several disinflation attempts, some of which succeed only temporarily. Perhaps the best-documented cases of failed stabilizations are in Latin America: the Southern Cone *tablita* experiments of the late 1970s and early 1980s (the authorities preannounced the currency's rate of depreciation in an effort to guide inflation expectations) and the heterodox programs of the mid-1980s (stabilization efforts were supported by price and wage controls). At the same time, some Latin American countries—like Bolivia in the mid-1980s and Nicaragua and Peru in the early 1990s—have enjoyed spectacular success. Outside Latin America, Israel's stabilization in the mid-1980s is a well-known success, and Iceland, having failed to tame inflation in the mid-1970s, finally succeeded in the mid-1980s.

To our knowledge, there has been only one attempt to identify empirically the reasons many disinflations ultimately fail (Francisco José Veiga's 1999 article, "What Causes the Failure of Inflation Stabilization Plans?" in the *Journal of International Money and Finance*). We therefore undertook a study of 51 stabilization episodes (see box and table). Our focus on the durability of stabilization and the scope of our study—in terms of sample size and the range of questions addressed—distinguish our analysis from the rest of the literature on disinflation. We found that luck, initial conditions, and political institutions were the most important factors in the success or failure of disinflation. The evolution of nonpolicy macro variables—such as the real exchange rate, GDP growth, and international reserve levels—and policy variables—such as monetary and fiscal adjustment—played a lesser but still important role. This finding may reflect the fact that macroeconomic adjustment itself depends on initial conditions and political factors and should not be interpreted as meaning that macro policies are not important.

## Good luck

If a country trying to stabilize prices and wages is unlucky enough to be exposed to severe external shocks—for example, a decline in demand for its exports—during its disinflation, the likelihood of failure is increased. A shock such as an increase in U.S. interest rates makes failure more likely for a country with an open capital account. These variables remain statistically significant after controlling for *nonpolicy*

and *policy* variables, suggesting that external shocks have effects beyond those that operate through domestic macro-economic variables. Luck is thus an important factor in the eventual success or failure of a stabilization program.

### Timing and initial conditions

The key role of prestabilization conditions confirms several predictions made in the theoretical literature on inflation stabilization, including some that, at first glance, may seem counterintuitive.

*Past failures reduce the chances of success.* Countries with a longer history of high inflation at the start of a stabilization program are more likely to fail. This seems to support the theory that long-lived inflation fosters the development of institutions and practices, such as indexation, that make stabilization more difficult. We also find that stabilizations that succeed (fail) initially are, other things being equal, more likely to succeed (fail) in the following year, indicating the importance of the government's credibility. Thus, whether or not a disinflation strategy succeeds depends on a country's past experience with inflation and on its current government's initial actions and reputation.

*Bad initial conditions may help.* Our findings provide strong support for the "crisis hypothesis"—that is, a sudden deterioration in prevailing conditions is needed to force a political consensus in favor of stabilization. Thus, paradoxically, higher inflation rates before a stabilization program tend to be associated with a greater probability of success.

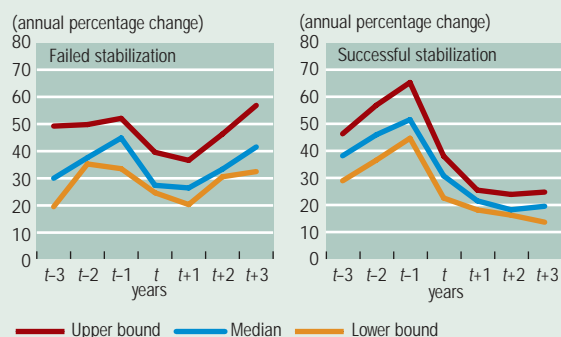
*Some good initial conditions may also be conducive to success.* For example, a relatively high level of international

Chart 1

### The path of inflation<sup>1</sup>

In countries whose stabilization programs did not meet Criterion 1 and were thus deemed to have failed (see box and table), inflation rebounded after a year.

(sample median and 95 percent confidence intervals)



Sources: IMF, *International Financial Statistics* (various years); national sources; and authors' estimates.

Note: *t* represents the year of stabilization. The x-axis shows the three years preceding and the three years following stabilization.

<sup>1</sup>To limit the impact of outliers, inflation rates (*x*) were rescaled using the formula  $x/(100+x)$ .

reserves at the onset of the stabilization plan provides policymakers with some insurance against early adverse developments and reduces the chances of failure.

To the extent that policymakers were able to choose when to begin a stabilization plan, these results indicate that timing may be as important as policy design in determining the ultimate fate of a stabilization plan and that policy choices made at the start of a stabilization plan are very important.

*Exchange rate-based stabilizations are more likely to succeed.* Since the exchange rate anchor is found to contribute to the success of disinflation even after controlling for monetary and fiscal adjustment, we conclude that exchange rate anchors

### How we selected episodes and measured success and failure

We selected the 51 stabilization episodes in our study using a numerical rule: annual inflation must have been at least 40 percent in the two years preceding stabilization, declined by at least one-fourth during the stabilization year, and remained below its prestabilization level during the following year. The rationale for these thresholds is discussed in Hamann (2001).

To determine whether or not a stabilization succeeded, we applied two different criteria (see table). Under the first criterion, stabilization is deemed to have failed if, at any time during the first three years following stabilization, inflation exceeded three-fourths of the rate prevailing in the year before stabilization. This criterion produced 34 successful and 17 failed stabilizations. The second (and stricter) criterion for success required that inflation remain at or below the level it reached during the stabilization year for the following three years. This criterion resulted in a sample with 20 successful and 31 failed stabilizations. Our key results were invariant to the two criteria, as well as to a third (not dichotomous) measure of success.

Chart 1 (based on Criterion 1) shows that the path of inflation for the successful countries is quite different from the path

for those deemed to have failed: following a noticeable decline in the stabilization year, inflation declined further in the successful group but remained practically unchanged in the failing group. In the second and third poststabilization years, the differences in inflation levels become more marked and statistically significant, suggesting that this simple criterion separates the data set into two groups with very distinct poststabilization paths for inflation.

To carry out econometric tests, we organized our data set as a panel with 3 poststabilization years for each of the 51 stabilization episodes and conducted a specification search in stages, by gradually adding blocks of explanatory variables. The first block included measures of *external* and *initial conditions*, including the stabilization plan's nominal anchor. We then added measures of *political developments* and *institutions* to the best specification from this first stage. We interpreted the initial models as the reduced form of a more complicated structural model. In the final stage of the specification search, we added the poststabilization path of *nonpolicy* and *policy* variables, lagging all regressors by one year to avoid simultaneity problems.

## Disinflation: A tough battle

The authors studied 51 stabilization programs in 31 countries. According to one test, one-third failed. A stricter test produced a 61 percent failure rate.

	Stabilization date	Exchange rate anchor?	Successful?	
			Criterion 1 <sup>1</sup>	Criterion 2 <sup>2</sup>
Argentina (1)	1977		Yes	Yes
Argentina (2)	1980	Yes		
Argentina (3)	1986	Yes		
Argentina (4)	1991	Yes	Yes	Yes
Bangladesh	1975		Yes	Yes
Bolivia	1986		Yes	Yes
Brazil (1)	1966	Yes	Yes	Yes
Brazil (2)	1991		Yes	
Chile (1)	1965		Yes	Yes
Chile (2)	1975		Yes	Yes
Congo, Dem. Rep. of (1)	1969		Yes	
Congo, Dem. Rep. of (2)	1980			
Congo, Dem. Rep. of (3)	1985			
Costa Rica	1983		Yes	Yes
Dominican Republic	1992		Yes	
Ecuador (1)	1990		Yes	
Ecuador (2)	1994	Yes	Yes	
Ghana (1)	1978			
Ghana (2)	1985			
Guinea	1988		Yes	
Guinea Bissau (1)	1990			
Guinea Bissau (2)	1993		Yes	
Guyana	1992		Yes	Yes
Iceland (1)	1976			
Iceland (2)	1984	Yes	Yes	
Indonesia	1967		Yes	
Israel	1986	Yes	Yes	Yes
Jamaica	1993		Yes	
Lebanon (1)	1988		Yes	Yes
Lebanon (2)	1993		Yes	Yes
Mexico (1)	1984			
Mexico (2)	1989	Yes	Yes	
Mozambique	1988		Yes	Yes
Nicaragua	1991	Yes	Yes	Yes
Nigeria	1990			
Peru (1)	1986	Yes		
Peru (2)	1991		Yes	Yes
São Tomé & Príncipe	1992			
Sierra Leone (1)	1988		Yes	
Sierra Leone (2)	1992		Yes	Yes
Somalia (1)	1982			
Somalia (2)	1985			
Syrian Arab Republic	1988		Yes	Yes
Turkey (1)	1981		Yes	
Uganda (1)	1982			
Uganda (2)	1989		Yes	Yes
Uruguay (1)	1969	Yes	Yes	
Uruguay (2)	1976			
Uruguay (3)	1981	Yes		
Uruguay (4)	1992	Yes	Yes	Yes
Zambia	1994		Yes	Yes
Total number of stabilizations	51		34	20
Percentage that succeeded			67	39
Exchange rate-based stabilizations (number)		13	9	5
Percentage that succeeded			69	38

Source: Hamann (2001).

<sup>1</sup>Stabilization is deemed a failure if, at any time during the three subsequent years, inflation exceeded three-fourths of the rate prevailing in the year before stabilization.

<sup>2</sup>Stabilization is deemed a failure if, at any time during the three subsequent years, inflation exceeded the level it reached during the stabilization year.

may play a role in coordinating expectations (as opposed to only imposing macroeconomic discipline), as has been suggested by other economists. An important caveat is, however, that a significant effect of exchange rate anchors can be identified only after controlling for other initial conditions and

external shocks. In contrast, a simple bivariate analysis shows that the failure rate of exchange rate-based stabilizations is similar to that of stabilizations with other nominal anchors (see table). The choice of a nominal anchor is, then, only one of the many factors that determine success or failure.

*Countries with open financial sectors are better off.* We find that an open capital account at the beginning of a stabilization program tends to improve the chances of success—although it may also amplify the effect of external shocks, as explained above. There is little evidence that a more open current account contributes to successful disinflation.

### Role of political institutions

Durability and other key features of political regimes and institutions contribute to the success of a stabilization plan.

*Countries with long-lived political institutions are more likely to succeed.* This outcome is consistent with the view that political instability is associated with high inflation and the reliance on seigniorage (money creation) as a source of revenue.

*A government with a strong executive branch is more likely to succeed.* This outcome is *not* driven by successful stabilizations in nondemocratic regimes in our sample and thus lends support to theories that presidential regimes have a greater ability to limit government expenditure.

*Democracies with majoritarian electoral rules tend to succeed.* We find that the use of majoritarian (as opposed to proportional) electoral rules in the subset of democratic countries within our sample tends to reduce the likelihood of failure. Majoritarian electoral rules have been shown, in fact, to be associated with lower levels of government expenditure and deficits and, therefore, a smaller need to resort to the inflation tax.

*New governments are less likely to fail.* Executives who have been in power for less than three years are more likely to succeed. This finding is consistent with reputation models: new governments choose lower levels of inflation independently of their preferences or ability to precommit to a given level of inflation. It is also consistent with the notion that new governments may stand to lose more political capital than those that have been in office for a while.

*Social cohesion makes success more likely, but, surprisingly, political cohesion does not.* We find that increases in social tensions augment the likelihood of failure but that more polarized governments are more likely to succeed. This may reflect the success some “national unity” governments—in which the major parties agree to cooperate—have in slowing inflation, despite high polarization scores. This finding throws into question the relevance of the “war of attrition” model, in which one political party ends up shouldering all the costs of stabilization.

### Nonpolicy macro variables

*A real appreciation of the exchange rate can derail stabilization programs.* Because the failure of a disinflation attempt tends to be associated with a large real depreciation, we controlled

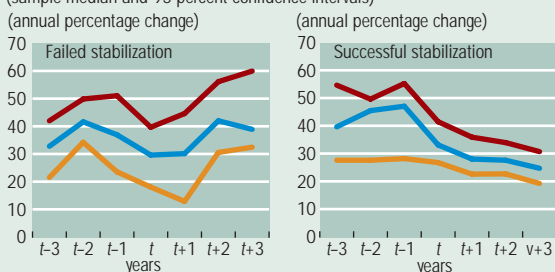
Chart 2

## Increasing the chances of success

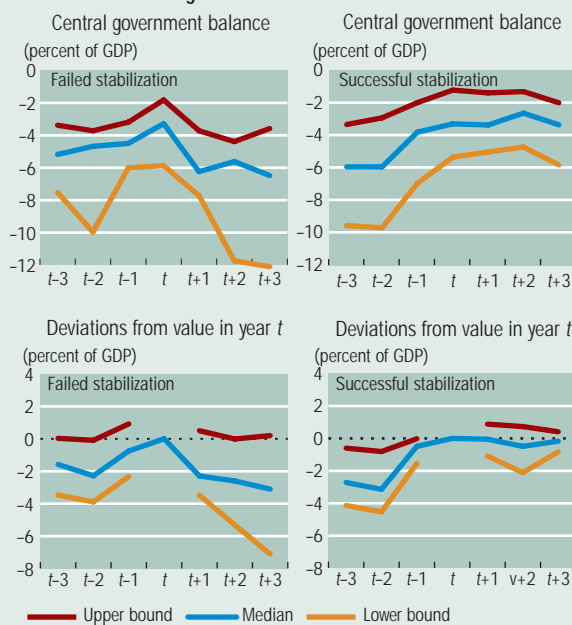
Sustained monetary and fiscal adjustment is critical.

Reducing bank credit growth,<sup>1</sup> as in the right panel, increases the probability of a successful disinflation . . .

(sample median and 95 percent confidence intervals)



. . . as does reducing fiscal deficits.



Sources: IMF, *International Financial Statistics* (various years); national sources; and authors' estimates.

<sup>1</sup>To limit the impact of outliers, credit growth rates ( $x$ ) were rescaled using the formula  $x/(100+x)$

for whether or not a stabilization effort had already failed to distill the effect of a *real appreciation* on the probability of failure. We find the effect to be statistically significant, pointing to the perils of excessive appreciation during stabilization.

*There is no evidence of a sacrifice ratio.* Successes tend to be associated with higher GDP growth. Growth may contribute to the success of disinflation both directly—by improving the fiscal position of the government—and indirectly—by creating the consensus needed to sustain the adjustment effort. In addition, the positive association between growth and successful stabilizations indicates that, at least in our sample, there is no evidence of a sacrifice ratio (output losses needed to reduce

inflation), irrespective of the anchor used. This result must be interpreted with care, however, because, in some of our tests, GDP growth appears to be beneficial only as long as it does not cause an economy to grow above its potential.

*International reserves play an important role.* An increase in international reserves following stabilization is associated with success. A faster accumulation of international reserves may, in fact, reduce the vulnerability of the stabilization program to external shocks and instill confidence in it, especially when it is based on an exchange rate anchor.

## Monetary and fiscal adjustment

Although monetary and fiscal adjustment increases the likelihood of success, it may not be sufficient. As one would expect, the failure to sustain initial gains in disinflation can also be traced to insufficient policy adjustment. Chart 2 shows clearly that the countries that relaxed the initial adjustment in their monetary and fiscal stance failed to reduce inflation, whereas countries whose stabilizations were successful sustained or even strengthened the initial adjustment. Econometric analysis confirms that reducing fiscal deficits and bank credit growth increases the probability of success. Interestingly, most of the variables capturing the importance of luck, timing, and political institutions remain statistically significant even when we include policy variables in the regression. This suggests that factors other than monetary and policy adjustment are key determinants of success.

It is also remarkable that fiscal adjustment and monetary adjustment are both statistically significant. The fact that the fiscal adjustment variable remains significant after controlling for credit growth suggests that smaller deficits have an effect on the disinflation process over and above their direct mechanical effect on monetary growth. Conversely, the fact that domestic credit growth remains significant after controlling for fiscal developments suggests that fiscal developments do not fully account for disinflation and that domestic credit conditions are also important. A stabilization program can, for example, be derailed if fiscal tightening is accompanied by capital inflows that lead to a domestic credit boom. ■

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