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The Inflation Stabilization in Bolivia Revisited

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Introduction

Bolivia experienced a severe case of hyperinflation between April 1984 and August 1985. In those seventeen months, consumer prices increased by a factor of 625. The monthly inflation rate went as high as 182 percent, in February 1985. As a background information it should be mentioned that Bolivia was not a country of chronic high inflation until the early 1980s. The Bolivian hyperinflation ceased abruptly after a severe stabilization program was announced in late August 1985.

In this short paper I examine the conditions on which high inflation appeared, why it accelerated, what factors contributed to stop it, and finally what were the costs of stabilization. The following bench mark dates may be useful in order to follow the discussion:

- 1982 - March 1984: high inflation erupts and accelerates.
- April 1984 - August 1985: aggravation of inflation and it degenerates in hyperinflation.
- September 1985: successful stabilization is implemented.

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I. The Origins of High Inflation

Between 1975 and 1982, Bolivia had accumulated high fiscal deficits -mostly as a result of an ambitious public investment program to enhance growth- that were financed mainly with foreign debt. When the Latin American and East European debt crisis erupted in 1982, the net resource transfers to Bolivia from abroad became, suddenly, largely negative.

The change in sign in the resource transfers caused a twofold problem: a fiscal crisis and a Balance of Payments (BoP) crisis. A dominant feature of the Bolivian economy is that most foreign exchange is earned by the public sector. Not only the main exporters are public enterprises, but the public sector was abler than the private sector to gain access to the foreign financing. In normal times, the BoP of the public sector has a large surplus, while the opposite is true for the private sector. But, early in 1982, due to the negative foreign resource transfers to the public sector, little foreign exchange was left to be used by the private sector. As the private sector anticipated the BoP difficulties of the public sector, it hastened the depletion of the foreign exchange reserves by running of them. The BoP crisis became apparent very soon. The different measures to control it, in 1982, were, by and large, insufficient. With the BoP deficit uncontrolled, the Bolivian peso rapidly depreciated, inflation took momentum, debt soared in the private sector, and capital flight increased its pace.

The BoP deficit acted synergic ally with the fiscal woes. The primary surplus of the consolidated public sector (i.e. current revenues less current expenditures <u>before</u> interest payments) was insufficient to cover the interest charges on the foreign debt, even if some cuts were done in expenditures. Capital expenditures were also sharply reduced. The external difficulties shifted the financing of the deficit of the public sector from foreign sources to domestic ones. The flows of foreign financing was mostly negative because of the amortization payments. Table 1 shows the extent of the deterioration of the public finances. Internal financing meant essentially monetary emission, whose expansion put a pressure again on the BoP and the exchange rate.

Table 1

Summary of Operations of the Consolidated Public Sector, 1980-1987
(As Percentage of GDP)

	1980	1981	1982	1983	1984[p]	1985[e]	1986[e]	1987[e]
1. Current Account Balance	-2.3	-0.6	-8.9	-16.6	-20.4	-7.1	-0.8	-5.6
2. Capital Revenue and Grants	0.3	0.5	0.6	4.1	0.3	0.2	1.1	0.9
3. Capital Expenditure	7.0	7.2	7.4	5.2	3.9	3.0	4.3	5.1
4. Net Lending	0.1	0.3	0.2	0.0	0.0	0.0	0.0	0.0
5. Overall Balance (lines 1+2-3-4)	-9.1	-7.6	-15.9	-17.7	-24.0	-9.9	-4.0	-9.8
6. Financing (-line 16)	9.1	7.6	15.9	17.7	24.0	9.9	4.0	9.8
6a. External Financing (Net)	5.1	12.3	-0.7	-0.7	5.0	3.8	5.3	5.2
6b. Internal Financing (Net)	4.0	-4.7	16.6	18.4	19.0	6.1	-1.3	4.6

Source: World Bank, Bolivia: Updating Economic Memorandum, June 1988
Notes: [p] Preliminary
[e] Estimates

In October 1982, a new government took power. As a first measure, a system of fixed exchange rates was reestablished -after a strong devaluation of the official exchange rate- together with exchange rate controls. An attempt was also made to redress the fiscal situation by increasing the public sector prices. Dollar-denominated contracts between residents were converted in Bolivian peso-denominated contracts, in the so-called "de-dollarization" measure, in order to alleviate the debt of the private sector.

The official BoP deficit was eventually controlled, but at the price of a sharp reduction in imports. The uncertainty created to savers by the de-dollarization measure worsened the capital flight through illegal channels and the black market for dollars received a renewed impulse. With a heavy service of the foreign debt, an unchecked fiscal deficit financed moreover by monetary emission, with (illegal) capital flight, and a closed economy because of the exchange rate controls, the stage was set for the acceleration of inflation.

II. The Acceleration of Inflation and Hyperinflation

Table 2 traces the evolution of the inflation rate. Notice there that in the second quarter of 1984, the Bolivian economy entered in a hyperinflation, if one follows the conventional definition of Cagan (1956). Hyperinflation evolved with the interplay of four factors. First, the public tried to evade the inflation tax by reducing their real domestic money holdings. In this context, the public rapidly changed their domestic money for goods or, more conveniently, for dollars. Second, as inflation went on, the government had to augment the rate of its financing by money creation, to obtain the same level of real resources. The increase in the rate of money creation rapidly led to higher inflation. Third, the real value of the government revenues was eroded by inflation (because of the Olivera-Tanzi effect). The overall deficit reached 24 percent of GDP in 1984. Fourth, the badly performed devaluations of the official exchange rate and corrections of administered prices gave an impulse to inflation.

Table 2

Quarterly Inflation Rates, 1980-1989
(Percentages at Annual Rates)[a]

1980	Q1	44.6	1981	Q1	70.5	1982	Q1	174.4	1983	Q1	1236.5	1984	Q1	610.4
	Q2	0.0		Q2	10.2		Q2	126.3		Q2	122.9		Q2	3.765.6
	Q3	27.5		Q3	31.0		Q3	759.5		Q3	577.9		Q3	661.1
	Q4			Q4	-0.4		Q4	363.2		Q4	843.3		Q4	12.767.0
1985	Q1	126.269.9	1986	Q1	325.6	1987	Q1	18.9	1988	Q1	5.1	1989	Q1	7.7
	Q2	5.265.3		Q2	41.4		Q2	7.1		Q2	43.9			
	Q3	35.139.4		Q3	20.5		Q3	6.3		Q3	26.9			
	Q4	95.9B		Q4	4.6		Q4	10.9		Q4	13.6			

Source: Basic data from the Bolivian National Institute of Statistics
Notes: [a] Final month of quarter over final month of previous quarter, at annual rates
[b] The stabilization program was announced on August 29, 1985

The first three factors have appeared in other hyperinflationary contexts and have been amply documented in the literature. The fourth factor has been common in many Latin American attempts at stabilization, but it has somewhat deserved less attention. The inflation rate went to a higher plateau after each failed stabilization attempt.

Most of the time, the official exchange rate and the administered prices strongly lagged inflation, and recurrent but discrete corrections had to come forth. The official exchange rate, for instance, was absurdly overvalued; premiums in the parallel exchange rate market reached sometimes over 1300 percent!. Similarly, prices of the public enterprises were completely misaligned, during long periods, with other prices.

It is important to note that inflation was closely, but not perfectly, correlated with the depreciation of the exchange rate in the parallel (or black) market. The direct impact of exchange rate depreciation in the parallel market on the cost of imported inputs was the most obvious. With the passage of time, the amount of imports bought at the official exchange rate was greatly reduced. As important as the direct impacts were the indirect impacts that worked in a two ways. First, the parallel rate strongly protected some domestic industries, most of them with a structure where producers were price setters. They used this power to the limit. Second, the parallel exchange rate frequently created "surprises" to the fiscal budget, fueling demands for wage rises and therefore increasing expenditures, while income was determined to a large extent by the official exchange rate.

Misaligned prices of the public enterprises contributed directly to the fiscal deficit. Some prices of private producers were also controlled, frequently below equilibrium. These controls led to the creation of black markets. In addition, they contributed to a significant and unplanned monetary emission, as producers asked for increasing amounts of credit from the Central Bank as a relief for he liquidity constraints that they were facing because of the low prices they were obliged to charge. These credits became a source of a quasi-fiscal deficit as important as the deficit of the non-financial public sector.

Corrections in administered prices and devaluation of the official exchange rates caused immediately a high jump in the inflation rate, followed by a short-lived strong reduction in that rate. One theory is that the corrections were just revealing the repressed component of inflation and that is why the inflation rate initially jumped but afterwards decreased. The short-lived characteristic of those stabilization attempts was due to the fact that they created an almost politically unbearable cut in the value of the real money stock and real wages. The government had to cave in to the demands for more expansive policies, after a few weeks.

A contending theory, to the more monetarist explanation given above, is that the corrections in administered prices changes the set of relative prices and the immediate high inflation reflected the dynamics of the convergence to a new equilibrium in relative prices. Moreover, with lags in the adjustment of some prices, an inflation process can be generated that, after the correction in administered prices, initially soars as a first round effect, afterwards it goes to close to zero, but since it has still impulse starts increasing again. The subsequent round effects gave rise to demands for wage increases that pushed inflation further.

Finally, a mention to wage policy is obligatory. The civilian government that took power in October 1982 had as its main constituency the organized labor unions which had high expectations in regard to wage hikes. As the international situation obliged to real depreciations of the exchange rate, real wages had rapidly declined in the last months of the military government of 1982. The new government tried to fulfill its commitments to the workers, unwisely increasing the nominal wages in the public sector, fixing higher minimum wages for the private sector, and creating a system of wage indexation based on a "trigger" clause. This clause stipulated that wages were to be revised every six months or whenever the accumulated inflation rate hit 40 percent. The wage regime gave a lot of dynamism to inflation.

III. The Stabilization Package of August, 1985

The deterioration of the economy by 1984, obliged the government to call to early elections. The elections were won by an opposition party. Three weeks after its inauguration, the new government issued Supreme Decree 21060, that contained a wide range of economic reforms that concern stabilization and liberalization of markets.

The stabilization program is surprising for its simplicity. It is very orthodox in nature. Exchange rate unification plays a key role. Unification itself is made sustainable by tight monetary and fiscal policies. The main measures are:

- The establishment of managed regime of flexible exchange rates. The public is free to trade in the foreign exchange marker, but the Central Bank sells foreign exchange in an auction process, in which it sets a lower bound for all the bids and the amount that it is willing to sell. The price set in the auction becomes the official exchange rate. Exporters are obliged to surrender their proceeds to the Central Bank at the official exchange rate. The measure is actually binding only for exporters in the public sector.
- An initial steep increase in oil derivatives and other prices of public enterprises. These prices contain a heavy tax component.
- The increase in public prices was followed, shortly after, by a tax reform, where consumer taxes occupy a center place.
- The dismissal of about 10 percent of the labor force employed in the public sector.
- Wages were frozen in the public sector at their pre-stabilization levels for about seven months. All bonuses were consolidated in a single wage. Public investments were frozen for six months.

- The temporary freeze of the accounts held by the public enterprises in the Central Bank. This measure was simultaneously a fiscal and a monetary measure.
- Debt service payments to the foreign commercial banks were suspended, but negotiations continued in search of a fundamental solution.

In addition, to the measure given above, virtually all price controls were lifted and barriers to foreign trade were dismantled. For instance, almost all quantitative restrictions, to exports and imports were eliminated, and import tariffs were substantially reduced. In regard to financial markets, Bolivian residents can hold assets in the denomination of their choice, in Bolivia or outside Bolivia. Ceilings on interest rates have disappeared. The labor market was also liberalized by returning to a system of individual free contracting by the private enterprises.

IV. Results to Date

The hyperinflation was abruptly halted in few days (see again Table 2). The completeness of the stabilization measures, the fact that the hyperinflation bore the embryo of stabilization, and that there was a strong social demand for stability, facilitated the process. Stabilization started in the foreign exchange market. It was made possible because of the tight money situation resulting from the combination of de-monetization caused by the pervious inflation and the credible limits on money issuance self imposed by the fiscal stance. The recovery of the fiscal accounts can be observed going back to Table 1.

In the following six month to the announcement, there were two bursts of high inflation fueled in part, but not only, by a dramatic fall in the prices of Bolivia's two main exports: tin and natural gas. Since February 1986, an almost complete stability was obtained.

Table 3

Economic Growth and Employment

	Annual Average 1981-85	**1986^{p}**	**1987^{p}**	**1988^{p}**
Growth Rates (%)				
Gross Domestic Product at Market Prices	-2.1	-2.9	2.2	2.7
Urban Labor Force	4.0	4.1	4.1	4.1
Urban Labor Market				
Participation Ratio (%)	45.4	47.1	46.3	48.8
Unemployment Rate (%)*	7.0	10.2	10.2	11.5

Source: Basic data from the Bolivian National Institute of Statistics

Notes: ^{p} Preliminary

* Based on household survey data for eight main cities

The costs of the stabilization in terms of foregone output and employment were low although not nil (Table 3). Gross Domestic Product (GDP) declined in 2.9 percent in 1986 -the year after the program was announced- but the rate of growth of GDP had been negative during the whole period of high inflation. In addition, the negative impact on growth of the fall in export prices, that is has already been mentioned, should not be underplayed. The costs of high inflation on output were essentially related to the opacity of markets. Stabilization changed the nature of costs by creating a more Keynesian type of unemployment, with slacks in the demand for goods and in the labor market.

Unemployment increased 3 percent with regard to the rate prevailing during the high inflation years. The figures on unemployment have to be interpreted with extreme care, since there are other (unofficial) higher estimates. More than a loss in jobs, the stabilization program caused a change in the quality of jobs, with a significant number of workers changing their status of wage-earners to self-employed.

The initial cuts of government social expenditures, especially on education and public health, may have long-run costs. As a measure to alleviate the hardships of the very poor in the transition period following stabilization, the government created the Social Emergency Fund. This fund has been very successful.

The stabilization program brought some new problems and/or made explicit some hidden fundamental problems. After stabilization, real interest rates soared, creating therefore severe obstacles to recovery. They have been coming down but very slowly. Stabilization carried also some overvaluation of the exchange rate, at least as compared to the prevailing parallel market rate. The medium term political sustainment of the program depended from a recovery of real wages and this indeed has happened in the private sector and in the public enterprises (the wages of the bureaucracy are still very low). A exchange rate correction, however, may imperil the stabilization program.

In 1987, GDP grew at a positive rate for the first time since 1981. GDP performance in 1988 was even better although the growth rate remains modest (2.7 percent per annum). The stabilization program has gained international credibility and Bolivia has been enjoying positive net foreign resource transfers since 1987. This has enhanced Bolivia's prospects for economic recovery. The stabilization program is being followed by slow but sustained growth.

References

Bernholz, Peter (1988). "Hyperinflation and Currency Reform in Bolivia: Studied from a General Perspective". Journal of Institutional and Theoretical Economics (JITE), No. 144, Tübingen. (December), pp. 747-771

Cagan, Phillip (1956). "The Monetary Dynamics of Hyperinflation", in Milton Friedman, ed., Studies in the Quantity Theory of Money. Chicago: Chicago University Press. pp. 25-117

Kiguel, Miguel A., and Liviatan, Nissan (1988). "Inflationary Rigidities and Orthodox Stabilization Policies: Lessons from Latin America". The World Bank Economic Review, Vol. 2, No. 3 (September), pp. 273-298

Morales, Juan Antonio (1988a). "Inflation Stabilization in Bolivia", in M. Bruno, G. di Tella, R. Dornbusch and S. Fischer, ed., Inflation Stabilization: The Experience of Israel, Argentina, Brazil, Bolivia and Mexico. Cambridge, MA: MIT Press, pp. 307-360

------------------------------- (1988b). "The End of the Bolivian Hyperinflation", Vierteljahres Berichte, No. 114, Bonn, pp. 385-402

Sachs, Jeffrey (1986) "The Bolivian Hyperinflation and Stabilization". Cambridge, MA: NBER Working Paper, No. 2073 (November)