Universidad de la República
Facultad de Ciencias Sociales
DEPARTAMENTO DE ECONOMIA

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Are stabilization programs expansionary?

Federico Echenique
Alvaro Forteza

Abstract

The empirical evidence presented in this paper casts serious doubts on the by now widely accepted "stylized facts" of the exchange rate based stabilization programs (ERBS) as they are stated in Kiguel and Liviatan (1992) and in Végh (1992). Even though the ERBS programs were associated with output booms, no evidence of booms *provoked by* the stabilization programs is found. Rather, exogenous capital inflows to Latin America seem to have caused both the output booms and the stabilization programs. Other stylized facts, namely that the ERBS programs cause real exchange rate appreciations and trade account deficits are not rejected by the analysis presented in this paper.

Resumen

La evidencia empírica presentada en el trabajo cuestiona los hechos estilizados asociados a los planes de estabilización basados en el tipo de cambio (ERBS) establecidos por Kiguel y Liviatan (1992) y Végh(1992). Existe una asociación entre ERBS y booms de nivel de actividad pero no se encuentra evidencia de booms provocados por la implementación de planes de estabilización. Entradas exógenas de capital parecen haber causado tanto los booms de nivel de actividad como los planes de estabilización. Hechos estilizados como la apreciación del tipo de cambio real y los déficits de cuenta corriente provocados por ERBS no son rechazados por el análisis conducido en el trabajo.

1. Introduction

Latin America has by now a long experience with high inflation. Not surprisingly, many attempts have been made to reduce the rate of growth of prices in the region. Unfortunately, most of the disinflation programs have failed: inflation reduced just temporarily, while large distorsions in relative prices, in absorption and in the external accounts have been associated with these programs.

Even though there is a broad consensus on the existence of distorsions associated with price stabilization programs in high inflation countries, there is a fundamental disagreement on the nature of these distorsions. According to the "traditional" view, stabilization programs provoke an initial recession, an exchange rate appreciation, and a deficit in the current account of the balance of payments, because of the rigidities in nominal contracts (Fischer, 1988; Taylor 1980, among others). The first of these "stylized facts" has been recently challenged in relation with the stabilization programs that use the exchange rate as the nominal anchor. Indeed, several recent empirical studies conclude that the exchange rate based stabilization programs (ERBS) are actually associated with an initial upsurge of economic activity rather than with an initial recession (Kiguel and Liviatan, 1992; Végh, 1992; Végh and Reinhart, 1994; and Végh and Reinhart, 1995). There is a growing related theoretical literature aimed at explaining these "booms" (Calvo, 1986; Calvo and Végh, 1993; Helpman and Razin, 1987; Roldós, 1995a and b; among others).

The purpose of this paper is to revise the empirical evidence about the ERBS programs in Latin America. The conflicting "stylized fact", namely whether the ERBS programs caused recessions or booms, is analyzed in section 2. No evidence of booms *provoked by* the ERBS is found. In section 3, the evidence for the existence of real exchange rate appreciation and trade account deterioration *imputable* to the ERBS programs is analyzed. The possibility that exogenous capital inflows to Latin America have conditioned the launching of the stabilization programs is explored in section 4. The main empirical findings are summarized in section 5. Section 6 ends the paper with some concluding remarks.

2. The empirical evidence on the booms

It has been shown that countries that launched ERBS programs experienced high rates of growth of output (Kiguel and Liviatan, 1992; Végh, 1992). There is however an important missing point in this analysis: basically the same high rates of growth of output took place at the same time in other countries that had not launched ERBS programs (table 1). This coincidence strongly suggests that the booms could have been caused by something else than the stabilization programs, and the analysis that follows attempts to show that this is indeed the case.

Table 1
GDP Growth

Countries with ERBS in 1967-1970[a]	4.0%
Other Latin American Countries 1967-1970[b]	4.9%
Countries with ERBS in 1978-1981[c]	4.0%
Other Latin American Countries 1978-1981[d]	4.7%
Countries with ERBS in 1991-1993[e]	6.2%
Other Latin American Countries 1991-1993[f]	4.9%

Notes. Average GDP Growth. Source: IFS, IMF. a) Argentina, Brazil and Uruguay. b) 18 countries, see the Appendix for a list. c) Argentina, Chile and Uruguay. d) 16 countries, see the Appendix. e) Argentina and Uruguay f) 14 countries, see the Appendix.

Another piece of evidence in favor of the boom hypothesis is provided by Reinhart and Végh (1994) by means of regression analysis on panel data for the seven Latin American countries that applied stabilization plans. The dependent variable is the rate of growth of output, and the explanatory variables are dummies that represent the stabilization programs. The idea is to show that there is a business cycle associated with these programs. To this end, Reinhart and Végh build four dummies. 'EE' stands for "exchange early" and takes value 1 in the first year of an ERBS program and 0 otherwise. 'EL' stands for "exchange late" and takes value 1 in the last year of an ERBS program and 0 in other years. 'ME' (money early) takes value 1 in the first year of a money based stabilization program, while 'ML' (money late) takes value 1 in the last year of a money program. Their results are reproduced as table 2.

Table 2
Panel Data Estimation
(Reinhart-Végh regression)

Dependent Variable	Constant	EE	EL	ME	ML
GDP Growth Rate	3.645	2.331	-5.454	-5.403	1.822
	(0.518)	(1.037)	(1.631)	(1.931)	(2.909)

Notes. Source: Reinhart and Végh (1994). Period: 1964-1993. Countries included are Argentina, Brazil, Chile, Dominican Republic, Mexico, Peru and Uruguay. Random effects estimates reported. Standard errors in parenthesis

Interestingly enough, the Reinhart-Végh regression reproduces very well the stylized business cycle associated with the stabilization programs. In particular, it is found an early boom and a recession later in the ERBS, while money based stabilization programs are associated with recessions from the very beginning.

These results, however, do not seem robust. The main problem of the regression in table 2 is that there seems to be some important missing variables. With the specification adopted, the business cycle can only be captured by the stabilization programs. In so far as a business cycle exists, this specification biases the results in favor of the stabilization-program-business-cycle hypothesis. If this equation were correct, the rate of growth of GDP in Latin American countries should be white noise when stabilization programs are not in place. Of course, this is not a very convincing description of the business cycle, and indeed Reinhart and Végh do not claim it is. However, such description is implied by their analysis. Otherwise, the residuals in Reinhart-Végh regression would exhibit a systematic behavior.

The Reinhart-Végh regression is not robust with respect to small changes in the dummies or the period of estimation. Notice that testing for changes in the dummies makes sense because it is not always clear whether a calendar year should

be considered the first year of a stabilization program or the last year of the prestabilization period. These weaknesses of the estimation could be a consequence of the existence of some important missing variables.

Which are the missing variables? The list could be long, but the fact that Latin American countries are small open economies suggests that international transmission mechanisms should be important.

Some evidence in favor of this hypothesis is provided by the principal components analysis for deviations from trend GDP in 18 Latin American countries presented in table 3. The striking fact is that the first two principal components explain more than seventy per cent of the whole variance. Table 3 reports similar results for private sector credit and fixed investment.

Table 3
Principal components, 18 Latin American Countries
Cumulative R squared

	First Component	Second Component	Third Component
Deviations from trend GDP[a]	0.429	0.706	0.798
Credit/GDP[b]	0.456	0.707	0.815
Fixed Gross Investment[c]	0.532	0.733	0.806

Notes. a) Residuals from a regression of GDP against a trend and a constant. 18 latinamerican countries, 1970-1993. Source: IFS, IMF b) Commercial bank loans to the private sector (line 22d in the IMF's IFS)as a percentage of nominal GDP. 12 latin american countries, 1970-1991. c) Per capita fixed gross investment (Source: World Bank) at constant prices. 18 latinamerican countries, 1960-1990.

These figures suggest, not surprisingly, that international transmission mechanisms or common external-to-the-region determinants are very important in Latin American business cycle. Thus, explanatory variables to capture these mechanisms or the external determinants should be included in the regression. Two such variables are the rate of growth of industrialized countries and the capital flows between Latin America and the rest of the world. [1] It is interesting to notice that the comovement of Latin American countries GDP seems to be associated with capital inflows to the region (see figure 1).

Figure 1

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[1] The rate of growth of industrialized countries is indeed exogenous in this regression, but there might be doubts with respect to capital flows. Capital inflows might be induced by the stabilization policy in those countries that launched an ERBS program (Calvo and Végh, 1993; among others). However, this qualification could only apply for the programs implemented in the largest countries in the region, which are the only ones that can significantly alter capital inflows to Latin America as a whole. Besides, the analysis in the next section suggests that capital flows in Latin America have been mainly exogenous.

The estimation of the regression that includes the growth of OECD countries and capital inflows to Latin America is presented in table 4 along with a reproduction of Reinhart and Végh's regression for this sample.

Table 4
Real GDP Growth
18 Latin American Countries 1971 - 1993

Regression	1	2
EE	0.037 (0.017)	0.028 (0.017)
EL	-0.056 (0.016)	-0.054 (0.016)
ME	-0.083 (0.019)	-0.086 (0.019)
ML	-0.004 (0.028)	-0.004 (0.028)
Industrial Countries' GDP Growth		0.616 (0.124)
Capital Inflows to Latin America		0.017 (0.003)
R Squared	0.07	0.21
Method	OLS	FE

Notes. Dependent variable is standardized (country by country) real GDP growth (source: World Bank). For regression 2 the sample period is 1971-1992. a) Source IFS, IMF. b) First difference of the log of total capital inflows to Latin American countries (Source: ECLAC Yearbook) Standard deviations in parenthesis

The results are now more robust. The R-squared is acceptable for panel data, while the estimation is quite robust against small changes in the variables and in the period of estimation. [2] The rate of growth of GDP of industrial countries[3] and the capital inflows to Latin America are highly significant variables in explaining the business cycle in the region. They also exhibit the expected sign. Therefore, these seem to be appropriate variables to control for determinants of the business cycle other than the stabilization programs. This control is crucial in order to single out the specific effects of these programs on the business cycle.

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[2] Other estimations are available upon request.

[3] The aggregate "industrial countries" is taken from the IFS. See the appendix for details.

Having made the controls, which are the systematic fluctuations in the rate of growth of GDP that can be attached to the stabilization programs? Only recessions! The dummies for "exchange late" (EL) and "money early" (ME) continue exhibiting negative and highly significative coefficients, but the coefficient of the dummy for "exchange early" (EE), that in Reinhart-Végh regression captured the boom, becomes now not significantly different from zero. The growth of the OECD countries and the capital inflows to the region seem to account now for the booms in output, leaving no explanatory power to the ERBS programs.

There is a common methodological point behind the empirical analysis in this section (both in tables 1 and 4): in order to test for the existence of a business cycle associated with the stabilization programs, systematic deviations with respect to the "ordinary" business cycle should be identified in connection with these programs. In the regression analysis presented in table 4, the "ordinary" business cycle is captured by the rate of growth of GDP in OECD countries and by capital inflows to Latin America. Further research will likely show that other variables are also important in explaining Latin American business cycle. Besides, techniques that allow for a more flexible and richer time structure are desirable for the analysis of an intrinsically dynamic topic like the business cycle. A better understanding of these issues will indeed help in testing for the consequences of the stabilization programs.

Easterly (1996) provides yet another piece of evidence connecting the ERBS programs with output booms, but without concluding that the former caused the latter. Like in the other papers discussed above, there is no attempt to control for other possible determinants of the business cycle. But unlike in previous literature, Easterly does not establish a causal direction between booms and plans, leaving open the possibility that the launching of the stabilization programs can be explained by the output expansion in the fashion of the new political economy. A related idea is explored in section 4 below.

3. Real exchange rate appreciation and trade account deficits

There is a general consensus on the existence of other two "stylized facts" associated with the ERBS programs, namely the real exchange rate appreciation and the trade account deficits. Still, it seems convenient to revise the empirical evidence in the light of the methodological point raised in the previous section. The real exchange rate appreciation, for instance, could be provoked by exogenous capital inflows, instead of being a consequence of the stabilization programs. However, the analysis in this section supports the commonly held view that the ERBS programs were associated with both, the real exchange rate appreciation and the trade account deficits.

Table 5

Panel Data estimates for Real Exchange Rate and Trade Balance in 13 Latin American Countries, 1970 - 1991

Dependent Variable:	Real E. Rate[a]	Trade Balance[b]
A1	-0.094 (0.061)	0.007 (0.013)
A2	-0.152 (0.076)	-0.025 (0.016)
A3	-0.249 (0.086)	-0.051 (0.018)
A4	-0.104 (0.080)	-0.032 (0.017)
Terms of Trade[c]	-0.072 (0.047)	
Capital Inflows to Latin America[d]	-0.033 (0.014)	
Lagged Real Exchange Rate	0.739 (0.04)	
Pre 79	0.253 (0.146)	
Post 79	0.311 (0.135)	
Capital Inflows/Nominal GDP		-0.877 (0.145)
Percentage change in Terms of Trade		0.076 (0.011)
R Squared	0.70	0.27
Method	FE	FE

Notes. Fixed effects estimates are reported. A structural break was found in the real exchange rate regression, which motivates the dummy variables Pre79 and Post79. Pre79 equals one for the years before 1979 (inclusive) and Post79 equals one for the years after 1979. a) Log of the real exchange rate (vis a vis the U.S.A.) using consumer price indexes. Source: IFS, IMF. Since real exchange rate data for Venezuela were no available 12 countries are included in this regression b) Nominal Trade Balance (Source: IFS, IMF)/ Nominal GDP (Source: World Bank). c) Log of terms of trade (Source: ECLAC Yearbook). d) Log of total capital inflows to Latin America(Source: ECLAC Yearbook). Standard errors are in parenthesis.

Table 5 contains the results of regressions with panel data. The dependent variable in the first one is the real exchange rate (RER) of each Latin American country vis-a-vis the USA (see the appendix for the details). Four dummies are included for the ERBS programs. A1, A2 and A3 stand for the first to the third year of the program, and take value 1 in year i (i=1,2,3) and 0 in other years. A4 stands for the fourth and following years of the program. Two other explanatory variables were included to control for the terms of trade and capital inflows to the region. The autoregressive component in the RER was captured including the lagged variable in the right hand side of the equation.

The results in table 5 show that the ERBS programs had an effect on the real exchange rate, independent of the effects of capital inflows. In other words, both capital inflows to Latin America and the ERBS programs tend to reduce the real exchange rate. The coefficient for the ERBS programs becomes significantly negative in the third year of the program.

The second regression in table 5 has the Latin American countries trade accounts as the dependent variable. The same four dummies described above are used to capture the possible effects of the ERBS programs. Capital inflows and the terms of trade are also included between the explanatory variables.

According to the regression analysis, both the capital inflows and the ERBS programs were associated with lower trade account surpluses. As in the real exchange rate equation the coefficient for the ERBS programs becomes significantly negative in the third year.

4. When do stabilization programs take place?

Having experienced high inflation for more than three decades, it is hardly surprising that many stabilization programs have been implemented in Latin America in this period. But, what determines the opportunity in which policymakers decide to launch a new program? The answer, being important by itself, might also help to understand the existence of conflicting views about the nature of the business cycle associated with the ERBS programs. It is argued in this section that the launching of a new ERBS program in Latin America is more likely in periods of positive capital inflows to the region. The availability of foreign credit seems to raise the policymakers willingness to run the risk of implementing an ERBS program. Capital inflows also provoke consumption booms, and hence the coincidence of the booms and the stabilization programs. Besides, capital inflows are to a large extent determined by external factors, and take place simultaneously in most Latin American countries. Therefore, consumption booms are not limited to those countries that launched an ERBS program.

There are three empirically testable hypotheses in the story of the previous paragraph:
    1) capital inflows *cause* GDP growth;
    2) capital inflows are positively *associated* with the number of countries that launch ERBS programs; and
    3) capital inflows are *exogenous* with respect to the ERBS programs.
The hypotheses (2) and (3) imply that capital inflows *cause* the ERBS programs (Engle, Hendry and Richard, 1983). The empirical evidence on these three hypotheses is presented below.

Hypothesis 1: (capital inflows cause GDP growth)

Table 6 contains the results of a causality test between capital inflows to Latin America and GDP. It is worth emphasizing that both variables are the aggregates of the whole region. According to this analysis, capital inflows Granger-cause GDP in Latin America, while the reverse is not true, i.e. there is one direction causality from capital inflows to GDP. [4]

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[4] Notice that the story of the first paragraph is compatible with both, two direction causality and one direction causality from capital inflows to GDP.

Table 6
Granger Causality Tests

Dependent Variable	L.A. GDP[a]	Capital Inflows[b]	Capital Inflows
F statistic[c]	3.3	0.8	1.5
p-value[d]	0.05	0.4	0.27
Durbin's h	0.01	-0.2	0.25
R-Squared	0.89	0.67	0.85
Number of lags	2	1	6

Notes. a) Latin American GDP (deviations from trend) Source: IFS b) Capital inflows at constant prices (Source: ECLAC Yearbook)c) F statistic for Granger non-causality d) Probability that a F-distributed (with the appropriate degrees of freedom) random variable should fall to the right of the value obtained for these regressions. The h and R squared statistics reported refer to the regression where lagged values of both variables are included. The sample period used is 1964-1991.

Hypothesis 2: (capital inflows are associated with the ERBS programs)

Qualitative response models seem to provide the adequate techniques to asses the association between ERBS programs and capital inflows to Latin America. Markov chain models were estimated for panel data and Poisson regressions were run for aggregate data.

In order to estimate a Markov chain model, the observations (country-year) were classified in three states of nature: no ERBS program (state 0), first year of an ERBS program (state 1) and mature ERBS program (second year and later, state 2). It was assumed that the states follow a Markov process with transition probabilities P_{ij}, where P_{ij} is the probability that a country be in time t+1 in state j given that it is in time t in state i. Some of these probabilities are obviously zero, e.g. it is not possible to find a mature program next year in a country that has no program this year. The process' stochastic matrix is:

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Here $\varphi(.)$ is the normal cumulative distribution function, x_t is the increase in capital inflows in year t with respect to the average of the previous three years and the greek letters are the parameters to be estimated. Assuming that the initial state is drawn from a degenerate distribution (assigning probability one to the state that actually occurred for each country) and that realizations across countries are independent, the parameters can be estimated for panel data through maximum likelihood (see Amemiya (1985)).The results are presented in table 7.

Table 7
Markov Chain Estimates

Parameters	Estimates	Standard Errors
β_0	-1.502	0.209
β_1	0.004	0.002
α_0	0.533	0.733
α_1	0.003	0.014
δ_0	0.673	0.342
δ_1	0.005	0.004

Notes. Since the method of estimation is maximum likelihood, estimators are asymptotically normally distributed and a t-style
test is appropriate. The 5 latin american countries that applied ERBS plans are included. The sample is 1965-1992.

According to this estimation, an increase in capital inflows significantly raises the probability that a country that was not stabilizing (with the exchange rate as the nominal anchor) initiates an ERBS program (β_1 is significantly positive).

If the number of ERBS programs per year is Poisson distributed and both non-autocorrelation and cross country independence are assumed, a Poisson regression can be estimated using maximum likelihood techniques:

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where x_t is, as before, a measure of the increase in capital inflows in t, y_t is the number of ERBS programs in Latin America in t and the betas are the parameters to be estimated. A positive β_1 would mean that the probabilities of observing one or more ERBS programs in Latin American countries rise together with the capital inflows to the region. Indeed, notice that:

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and:

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Two Poisson regressions are reported in table 8. The first one excludes the Argentinean 1985 Austral program and the Brazilian 1986 Cruzado program, while the second one includes the whole sample. In the first case, the coefficient β_1 is significantly different from zero at 10%, while in the second it is so at 1%. This difference suggests that the model does not fit well these two programs.

Table 8
Poisson Regression

Parameters	(1)	(2)
β_0	-1.61	-1.22
	(0.51)	(0.42)
β_1	0.0069	0.0049
	(0.0031)	(0.0028)

Notes. Standard errors in parenthesis. Regression 1 does not include the Austral and Cruzado plans while regression 2 includes all plans indicated in Reinhart and Vegh (1994). Sample period is 1964-1992.

The lack of a variable for inflation acceleration in the Poisson regression might be one reason for its apparently bad performance in fitting the Austral and Cruzado programs. It has been argued that the Austral program was motivated by the authorities' concern about an inflation that was going out of control, even when they were aware that external conditions were not favorable (for an interpretation of this experience on these lines see Canavese and Di Tella, 1988; Machinea and Fanelli, 1988). Similarly, Simonsen (1988) has pointed out that the 1986 Brazilian Cruzado program was an attempt to stop inflation when it was growing. External conditions for Brazil were favorable, according to Simonsen (1988) and Ortiz (1988), but not precisely because of increased capital inflows.

These results, being promising, are indeed preliminary. On the one hand, it seems remarkable that simple qualitative models including capital inflows as the only explanatory variable give an account of the opportunity of the ERBS programs in Latin America. But, on the other hand, there might be some missing explanatory variables, while the statistical models used so far might not be the most appropriate ones.

Economic theory, observation of some cases and even common sense suggest that there must be other relevant variables in explaining the ERBS programs not included in the statistical analysis presented above. The discussion of the Austral and Cruzado experiences is illustrative in this respect.

Also, as it is often the case, the statistical models used to test the association between capital inflows and the occurrence of ERBS programs require making some assumptions which might not be completely appropriate for the variables at handle. First, the Markov model is based on the assumption that cross-country observations of the ERBS programs are statistically independent. However, it cannot be ruled out that the implementation of a stabilization program in one country induce neighboring countries to follow. There might be a "demonstration effect". Also the exchange rate appreciation in the first country might create favorable conditions for launching an ERBS program in the following country. Second, Poisson regression estimation is based on the assumption that there is no autocorrelation. Yet, once an ERBS program has been initiated, it seems likely that the same program will continue at least for the second year. So, assuming non-autocorrelation in the number of stabilization programs in Latin America does not seem especially realistic. The estimation might still be consistent if λ_t above is correctly specified (see Winkelman and Zimmerman, 1995).

Hypothesis 3: (exogeneity of capital inflows)

Latin America has experienced large cyclical fluctuations in capital movements, which seem to be driven to a large extent by external to the region determinants. Calvo, Leiderman and Reinhart (1992) have shown the existence of a high

degree of comovement across countries in the behavior of capital inflows. They have interpreted this comovement as an evidence of the existence of common external shocks affecting Latin America. The important capital inflows to the region in the late seventies and in the early nineties can be associated, according to these authors, to reductions in the interest rates in the United States. In the seventies, the recycling of the petrodollars also played an important role in making funds available, while the recession that was taking place in the central economies reduced the opportunities for profitable investment in those countries. In the nineties, the reduction in interest rates was accompanied by weak performances in equity and real estate markets in the United States.

A strong comovement of the commercial banks credit to the private sector is revealed by the principal components analysis reported in table 3. This analysis provides some additional - though indirect - evidence of the comovement of capital inflows, and highlights the importance of the banking system in channeling those capitals (an hypothesis already advanced by Calvo, Leiderman and Reinhart, 1993).

Morandé (1988) provides another piece of evidence supporting the hypothesis of exogeneity of capital inflows, for the case of Chile between 1977 and 1982. He performs causality tests between the real exchange rate and capital inflows, concluding that capital inflows tend to Granger-cause the real exchange rate, while capital inflows are close to being exogenous.

Thus, if capital inflows have been mainly fostered by forces that are external to the region, they could not be just another consequence of the ERBS programs. They are mainly exogenous. Besides, the capital inflows considered in the Markov and Poisson models are the aggregate of the whole region, while countries implementing ERBS programs are never more than a few in each moment. Hence, it seems unlikely that the ERBS programs might cause significative capital inflows to the whole Latin America, save perhaps when the largest countries are stabilizing.

5. The stylized facts revisited

The empirical evidence presented in this paper could be summarized in the following set of "stylized facts" associated with the ERBS programs in Latin America during the last three decades:

i) Most ERBS programs were launched when Latin American countries received increased flows of capitals from abroad. The cyclical pattern of the capital inflows to the region seems to have been basically determined by conditions out of Latin America. Apparently, policymakers have been more willing to initiate stabilization programs when capitals were more easily available. Thus, in this sense, capital inflows caused the ERBS programs.

ii) The ERBS programs provoked recessions. No evidence of booms in output *caused by* the ERBS programs was found. Rather, capital inflows to Latin America provoked both output booms and the stabilization programs. Therefore, the output booms that are often ascribed to the ERBS programs actually took place simultaneously in most countries in the region, not only in those countries that were initiating stabilization programs.

iii) Real exchange rate appreciations and increasing trade account deficits are imputable to the ERBS programs. Capital inflows also had these effects, but the analysis in this paper indicates that the stabilization programs had independent significant effects on these variables, though not during the first two years of the programs.

This list of "facts" is not pretended to be complete, but just the set of regularities explored in this paper.

6. Concluding remarks

The empirical evidence presented in this paper casts serious doubts on the by now widely accepted "stylized facts" of the ERBS programs as they are stated in Kiguel and Liviatan (1992) and Végh (1992). It was shown that the empirical analysis in those papers lacked appropriate controls, and so overestimated the positive effects of the stabilization policies on output. In fact, no significant positive effects of the ERBS programs were found when variables that capture the "ordinary" business cycle were included, while the recessions remained. This result supports the "traditional" view that stabilization programs provoke just recessions, not booms (Fischer, 1988).

At the very least, the analysis in this paper suggests that the evidence on the booms provoked by the stabilization programs should be carefully reassessed. Even if, after some more empirical research, it is found that the ERBS programs can have positive effects on output, the order of magnitude of those effects will likely be smaller than what it has been considered so far. It is interesting to notice, in this respect, that recent attempts to calibrate several models of the stabilization programs have basically failed to obtain output growth in the orders of magnitude that have been observed in actual experiences of ERBS programs (Reinhart and Végh, 1994; Rebelo and Végh, 1995). The results in the present paper might help to explain those failures in a simple way: the models cannot reproduce such booms simply because they were not provoked by the stabilization programs. Thus, maybe the models are basically correct when they predict at most modest production and consumption booms associated with the stabilization policies.

A related "fact", that has been largely neglected in the literature, is that most ERBS programs were launched under favorable external conditions. It is precisely this "coincidence" what explains the overestimation of the effects of the

stabilization programs in previous empirical studies. [5] It is hypothesized in this paper that this was not a mere coincidence, but the result of the stabilization policies being endogenously determined by the external conditions. Capital inflows seem to have been key determinants of the opportunity of the ERBS programs in most experiences. In this respect, the evidence presented in this paper provides some empirical support for the theoretical analysis of Alesina and Drazen (1991), Casella and Eichengreen (1994) and Orphanides (1996). Therefore, both at the theoretical and the empirical level this line of research looks currently very promising.

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[5] It should be mentioned here that Kiguel and Liviatan (1992) have already noticed that most ERBS programs were initiated under favorable external conditions. Also Simonsen (1988) and Ortiz (1988) identified external conditions that were favorable to Brazil when the Cruzado program was launched. A similar point was made by Bruno and Piterman (1988) and by Cukierman (1988) for the 1985 Israeli stabilization program. However, somehow surprisingly, no further consequences for the analysis of the "stylized facts" associated with the ERBS programs seem to have been derived from this observation, (with few remarkable exceptions listed below).

Data Appendix

IFS refers to the International Financial Statistics, International Monetary Fund. ECLAC refers to the Economic Commission for Latin America and the Caribbean.

The differences between the data sets used are mainly due to data availability. Some countries were excluded from most estimations because of exceptional values in some variables (e.g. Nicaragua or El Salvador).

The aggregate "industrial countries" is taken from the IFS and includes Austria, Australia, Canada, Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, and U.S.A.

Table 1.

Countries with ERBS in 67-70 are: Argentina, Brazil and Uruguay. Other Latin American countries 67-70 are: Bolivia, Chile, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago and Venezuela.

Countries with ERBS in 78-81 are: Argentina, Chile and Uruguay. Other Latin American countries 78-81 are: Bolivia, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, Grenada, Guatemala, Haiti, Honduras, Mexico, Panama, Paraguay, Peru, Trinidad and Tobago and Venezuela.

Countries with ERBS in 91-93: Argentina and Uruguay. Other Latin American countries in 91-93: Bolivia, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Panama, Paraguay, Suriname and Venezuela.

Table 3

GDP (18 countries): Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay and Venezuela.

Credit (12 countries): Argentina, Bolivia, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Paraguay, Peru, Uruguay and Venezuela.

Fixed Gross Investment (18 countries): Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay and Venezuela.

Table 4

18 countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Honduras, Mexico, Panama, Paraguay, Peru, Puerto Rico, Trinidad and Tobago, Uruguay and Venezuela.

Table 5

13 countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Paraguay, Peru, Uruguay and Venezuela.

Table 7

5 countries: Argentina, Brazil, Chile, Mexico and Uruguay.

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