

THE SCOPE FOR INFLATION TARGETING IN URUGUAY

José Antonio Licandro¹

The views expressed in this paper are those of the author and do not represent those of the Central Bank of Uruguay.

ABSTRACT

Uruguay succeeded in implementing a stabilization plan featured by two economic policy pillars: a gradual reduction of exchange rate devaluation (the nominal anchor) and a time-consistent fiscal discipline (the real anchor). Nevertheless, since the challenge for actual policy making is to consolidate stabilization within a sound fiscal framework, monetary policy must be rethought in this context. From our viewpoint, the best option in Uruguay consist of adopting an inflation targeting approach, which necessarily preserves the exchange rate as the main policy instrument. Some idiosyncratic features of the Uruguayan economy are behind our conclusions: high dollarization, high passthrough between devaluation and inflation, and its particular location between two unstable countries, Brazil and Argentina. On the one hand, the currency substitution process makes interest rate policy very inefficient for stabilization objectives, since monetary and credit channels do not actually work. On the other hand, regional instability introduces high volatility in inflation and activity if Uruguay adopts any *hard peg system* (currency board or full dollarization).

Introduction

The stabilization program that started in the early nineties has been successful. The annual inflation rate was reduced from 130% at the beginning of the decade to a one-digit rate up today. This is a very important achievement for Uruguay because the country did not show a performance like this since the fifties. Two pillars featured the implementation of the plan: the exchange rate devaluation as a *nominal anchor* and the fiscal deficit reduction as a *real anchor*. However, the success of the plan imposes the need of rethinking some monetary policy issues, since the target is not now to reduce inflation. The target for future years should be the maintenance of a low and stable inflation rate. In fact, this goal is part of the Central Bank's responsibilities and a commitment of the new Administration that took office in March 2000.

¹ Some of ideas presented here were the result of several discussions among the Staff members of the Economic Research Department of the Central Bank of Uruguay. Nevertheless, the usual disclaimer applies.

The switching from a stabilization strategy to a stability-maintenance one requires a process of rethinking the nominal anchor and the role for exchange rate and monetary policies.

This search for different options can not be detached from the issues associated with the regional integration process launched with the MERCOSUR agreement. Under certain conditions, the creation of a regional common currency appears to be fruitful for Uruguay, since more than 70% of its trade takes place with the neighboring countries (G. Licandro, 1999). We hope that the recent macroeconomic coordination agreement reached in Florianopolis represents the first step in this path. Nevertheless, the regional common currency is not but a long run goal. Then, for the time being it is necessary to consolidate price stability as an individual strategy.

In any case fiscal sustainability is essential for price stability maintenance, even if the government can not issue money for fiscal reasons. This is the case of Uruguay since 1995, when the new chart of the Central Bank limited this possibility. When inflation rate is low and the deficit is large in intertemporal terms, the policy inconsistency puts pressure on the Debt to GDP ratio and this could turn into a debt crisis. Nevertheless, for simplicity here we will discuss some issues related to monetary policy without fiscal considerations.

With the fiscal accounts under control and stabilized prices, the role of the monetary and exchange rate policies should be redesigned. On the one hand, it is not obvious that the exchange rate should keep on acting as the monetary anchor. The exchange rate devaluation was a key ingredient in the strategy of reducing inflation. Nevertheless, a fixed exchange rate could generate some problems itself in terms of the macroeconomic management in a stabilized economy. This remains valid if the policy option is oriented towards hard peg systems like the Argentinean convertibility or the Ecuadorian full dollarization regime. On the other hand, a monetary rule could be implemented within a floating exchange rate regime.

However, in recent years a selected group of countries has preferred to manage price stability by following the *inflation targeting* approach. The success of its implementation in terms of price stability maintenance and some recent theoretical developments make it attractive to include this approach in the search for post-stabilization policy options.

The purpose of the paper is to explore the scope for inflation targeting in Uruguay and to evaluate the pros and cons of this alternative vis à vis some traditional options like hard pegs or interest-rate based policies. In Section 1 we broadly review how monetary policy works, emphasizing the issue of transmission channels. In Section 2 we introduce the concept of *inflation targeting* and discuss its relationship with two key aspects: exchange rate regime and Central Bank's credibility. Section 3 focuses on some idiosyncratic Uruguayan characteristics: high dollarization, high devaluation-inflation passthrough, and strong regional dependence. In Section 4 we try to shed some light about a convenient option for price stability maintenance in Uruguay, taking into account the country-specific features described before. We argue that a floating exchange rate regime is not an optimal alternative in the Uruguayan case and that inflation targeting could work better than traditional *hard peg* options. Moreover, we suggest that inflation targeting in Uruguay is conceivable with an active exchange rate policy.

1. Monetary policy and transmission channels

It is well known that the Central Bank can control inflation rate only in an indirect and imperfect way, mainly because price-setting decisions are decentralized in market economies. In order to get a better understanding of the role of monetary policy we must review both alternative monetary instruments available to the policymakers and the different monetary channels.

Following Svensson's (2000) survey, the main monetary channels are:

- (i) **Aggregate Demand** . Through interventions in monetary market, the Central Bank influences interest rates, thus indirectly affecting private

sector expenditure decisions: consumption and investment. In this case the interest rate is the key monetary instrument.

- (ii) **Expectations**. In a rational-agents framework, Central Bank's credibility plays a relevant role in decentralized price-setting decisions. If the monetary authority is able to convince private sector about its targets in terms of inflation and the private sector knows how monetary instruments work, then expectations must be taken themselves as a transmission channel for monetary policy. In such a framework, Central Bank's credibility can be thought as an instrument.

- (iii) **Exchange rate**. The more open the economy the more important the exchange rate impact on the price-setting process. The exchange rate directly affects import and export prices through the PPP rule. When tradable goods and services have a high weight in the consumption basket, the exchange rate directly influences domestic prices. Additionally, if imported intermediate goods are important in the non-tradable goods and services production processes, the exchange rate also affect non-tradable prices. As soon as the Central Bank is able to somehow influence the exchange rate, this constitutes a powerful instrument to affect inflation.

On the one hand, the first two transmission channels influence prices indirectly and their effects usually appear with a considerable lag (two periods in a standard model). On the other hand, the third channel is more direct and the lag is significantly smaller than those in the previous cases.

2. Inflation Targeting

(i) Basic Concepts

The main feature of the inflation targeting policy consists of having the Central Bank committed in keeping the inflation low in the medium and long run. Such commitment is implemented through an announced inflation forecast for a

certain horizon, which is supported by the use of available instruments, usually interest rate.

This aspect neatly distinguishes this approach from more traditional rules based on setting a fixed exchange rate or monetary target with flexible exchange rates. In particular, this leads Bernanke *et al.* (1999) to consider the inflation targeting approach as a sort of “monetary policy framework” rather than a monetary rule itself.

(ii) Inflation Targeting and Exchange Rate Regimes

Once an inflation rate target is set, the Central Bank will choose the mix of instruments to achieve it. Within this setting, all transmission channels are valid in order to reach the announced goal. Nevertheless, since the authorities can not manage interest rates and exchange rates at the same time, it becomes necessary to choose the proper case-specific instruments to achieve the inflation target. Obviously, the mix of instruments will crucially depend on the specific features of the economy, since the efficiency of any combination of them will vary case by case.

Thus, an inflation targeting policy can be developed under several exchange rate regimes. If the monetary policy chosen by the authorities implies the control of aggregate demand to reduce inflation, the exchange rate can not be used as a stabilization instrument to affect prices in the tradable sector. In this case, the exchange rate regime will be a floating system. On the other hand, if the authorities choose an exchange rate-based stabilization policy, the monetary policy will not be available and the exchange rate will be fixed or monitored somehow.

Similar considerations can be done related to other policies. For example, if we have a monetary rule to control inflation, the privileged instrument will be the money quantity management and the exchange rate will be freely determined. On the other extreme, if we define an exchange rate rule to stabilize, the instrument will be the exchange rate management.

In other words, the exchange rate regime is related to the instruments of the monetary policy and to its objectives. This distinction becomes very important in order to understand the inflation targeting approach, since it is often associated inherently to a free floating exchange rate system. In fact, several analysts point out that a free exchange rate regime is a crucial requirement to develop an inflation targeting policy. This assessment is not supported by the theory although it can be plausibly due to the fact that most of the countries with inflation targeting manage interest rates in order to affect inflation through aggregate demand. Thus, most of actual cases of inflation targeting are associated to free floating regimes.

These considerations are relevant for the Uruguayan case. Since the Central Bank of Uruguay does not have the aggregate demand channel available, an inflation targeting policy would surely imply the use of the exchange rate as a main instrument.

(iii) Central Bank Credibility and Nominal Anchor

As developed above, inflation expectations constitute a transmission channel that monetary policymakers can exploit. They play a crucial role in the process of prices and wages setting. Consequently, the commitment to price stability and the specific inflation rate announcement will be key ingredients to have a successful policy.

These factors are inevitably associated with the concept of “nominal anchor”. According to the economic literature (Bruno, 1989), in fiduciary monetary systems, the nominal anchor plays the role of reference for the currency value. This becomes particularly important during the implementation of stabilization programs, since the nominal anchor is key to develop credibility and coordinate private sector expectations on future inflation rates.

In stabilized economies (as currently Uruguay), the nominal anchor keeps on playing the same task. Under an inflation targeting regime, the commitment with

stability itself constitutes the nominal anchor, since the economic agents will assume that the credible Central Bank will take the required measures to keep inflation within the announced range (Bernanke *et al.*, 1999). However, contrary to what happens in the implementation of a stabilization plan, the nominal anchor is no longer embodied in the policy instruments (monetary aggregates or exchange rates). Even in cases in which the monetary or the exchange rate rules are absent, with inflation targeting the Central Bank's announcement is the nominal anchor since the authorities commitment is the coordinator of expectations.

This subtle “dematerialization” of the nominal anchor under inflation targeting stresses the relevance of the Central Bank's credibility as a precondition for its implementation. This fact contrasts with the stabilization program process in which the “instrumental” nature of a rigid rule usually becomes crucial to generate credibility in the economic plan.

3. The Uruguayan Case

Several specific features of the Uruguayan economy must be taken into consideration in order to choose the post-stabilization path in terms of monetary and exchange rate policies. The most important characteristics are listed below.

(i) Influence of the exchange rate on domestic prices

First of all, we must point out that Uruguay is a small open economy and, consequently, the influence of the exchange rate on domestic prices is very important. In fact, the weight of tradables in the goods and services consumption typical bundle can be estimated close to 50% (Bergara *et al.*, 1995 and Fernández, 1997). Moreover, some preliminary estimations by Bucacos (1999) report a high passthrough of nominal devaluation on domestic inflation. The econometric analysis developed in order to formalize the Uruguayan inflation suggests that the elasticity of prices with respect to the exchange rate in the long run equation is 0.50. This represents the highest elasticity of all the variables individually taken. Furthermore, from the error correction model it

emerges that a 1 percent increase in the exchange rate leads to a 0.83 percent increase in the Consumer Price Index in the first twelve months following the initial shock.

All these studies stress the importance of the exchange rate in Uruguayan price-setting process. This feature implies that the exchange rate policy can be a very powerful instrument in controlling inflation, due to the broad influence of the exchange rate as a transmission channel.

(ii) High dollarization

A second relevant characteristic of the Uruguayan case is represented by the high degree of dollarization, which is extended to all traditional functions of money: exchange means, measurement unit and value reserve.

This feature can be clearly seen by considering that more than 80% of deposits and loans in the banking system are foreign-currency denominated. Moreover, this aspect is more drastic if we take into account that almost all public debt is issued in U.S. dollars.

Consequently, domestic currency plays a very marginal role in the saving and investment process. The low degree of penetration of domestic currency, another symptom of the same phenomenon, also suggests that the Uruguayan peso has also been substituted as a means of exchange. In particular, the monetary base represents less than 5% of GDP. Additionally, the domestic currency has been substituted by the U.S. dollar as a unit of measure for several kinds of transactions. Although there are no formal statistics about that, it must be noted that prices in some key markets (housing, cars, etc.) are set in foreign currency.

The high dollarization severely constraints monetary policy and, thus, inhibits it to have any significant influence on aggregate demand. The relevant interest rates for saving, investment and consumption decisions are those related to foreign currency rather than those associated with domestic currency. As a

consequence, the Central Bank is not able to basically affect the price setting process in the Uruguayan economy, since this transmission channel is virtually absent. In other words, the monetary policy of the U.S. Federal Reserve rather than that of the Central Bank of Uruguay is more able to influence the spending decisions in Uruguay.

Another consequence derived from the high dollarization process refers to the fact that drastic changes in the real exchange rate provoke very significant wealth redistribution. For example, the net wealth of an economic agent who sells in Uruguayan pesos and borrowed in foreign currency (a not uncommon situation) negatively depends on the real exchange rate. Devaluation will mean a reduction in his net wealth, since the value of his liabilities will increase *vis à vis* the value of his assets or future earnings.

This situation enhances the fragility of the financial intermediation system because some debtors are exposed to that problem, affecting their future ability to repay their debts. This fragility could result in a systemic problem if the economic situation leads to the need of significantly change the equilibrium real exchange rate. Thus, policy makers must take this constraint into consideration.

(iii) Regional Instability and Volatility of Relative Prices

Another feature that must be taken into account refers to the macroeconomic instability that affects Uruguay's main trade partners. In fact, Argentina and Brazil represent close to 70% of Uruguayan trade of goods and services. Obviously, their economic performance significantly influence the behavior of the Uruguayan economy (Masoller, 1998).

Furthermore, the effects of the regional macroeconomic instability in the past have gone beyond those strictly associated with trade flows and economic activity. The particular regional insertion of Uruguay leads to the presence of an important set of goods and services which prices are determined strictly in regional markets (Bergara *et al.*, 1995 and Dominioni and Licandro, 1996). Thus, basically all shocks and instabilities in the neighboring countries, as well

as their impact on such “regional” goods and services, quickly affect domestic price indexes (Bucacos, 1999).

In the Central Bank’s perspective, this idiosyncratic characteristic makes the design of monetary/exchange rate policies more difficult, even in a macroeconomic stable framework, because it must be taken into consideration the fact that the economy is importing inflation or deflation from the region.

(iv) The depth of the exchange rate market

Finally, it must be noted that the depth of the exchange rate market is very low in the Uruguayan case. In order to get an idea of magnitude, the volume of daily electronic interbank market operations since 1997 averages 2.5 million dollars.

This feature makes the exchange rate very sensitive to small transactions. Then, in the case of a free-floating regime, the exchange rate is expected to show a very significant variability.

4. Inflation targeting vs. other alternatives in Uruguay

(i) Why should we discard a free float?

Several of the idiosyncratic characteristics of the Uruguayan economy suggest that the choice of a free float would not be advisable.

In the first place, if we opt for a free float, the price of the exchange rate can fluctuate without restrictions. In that case, in a regional framework of high volatility and in the absence of future markets for the Uruguayan peso, there would be a strong increase in exchange rate uncertainty, that would impact trade flows, and financial assets prices. This argument’s importance is enhanced by the thinness of our exchange rate market, which increases the volatility of the exchange rate.

As said before, given the influence of the exchange rate on domestic prices, it is very likely that the exchange rate volatility turns into inflation volatility.

Furthermore, the same volatility would affect the prices of foreign-currency denominated assets worsening the distributional and wealth effects already mentioned. The Uruguayan translation of the so called “fear of floating” by Calvo and Reinhart (2000) could be “panic of floating”.

Finally, the extremely high dollarization ratios of Uruguay make almost impossible to work out monetary policy either through the interest rate or reserve requirements. Then, it is clear that Uruguay, if its main concern is inflation control, has no incentives to allow the exchange rate to float.

As a summary of our previous points we can conclude that, given the idiosyncratic characteristics of the Uruguayan economy, the management of monetary-exchange rate policy has in the exchange rate the most powerful instrument. Then the exchange rate should be the basic policy tool, either under a fixed exchange rate regime or under an inflation targeting system.

(ii) Why is it better inflation targeting than an exchange rate rule in Uruguay?

The question that follows is: ¿what would work best in Uruguay to maintain inflation stability: an exchange rate rule or inflation targeting with an exchange rate instrument?

First, it is important to note that both policies are effective to control inflation, even more, as is the case of Uruguay, when the Central Bank has a strong level of international reserves to prevent or control speculative attacks.

To answer this question, let us use the price formation equation of Licandro and Vaz (1994):

$$\pi = \pi^* + \hat{e} + \beta \cdot \hat{p}_r + \gamma \cdot \hat{p}_n$$

π - CPI change

π^* - relevant foreign inflation rate

e - spot exchange rate

P_r - price of regional goods relative to tradable goods.

P_n - price of non-tradable goods relative to tradable goods.

$\hat{\cdot}$ - variation.

$\exists y$ (- regional and non-tradable goods weights in the CPI.

The above equation tells us that in the Uruguayan economy the inflation rate can be factored out as the sum of: (a) the inflation of the goods we trade with the rest of the world; (b) the devaluation rate; and (c) the variation of relative prices of regional and non-tradable goods weighted by their participation in the CPI.

Exchange rate rules

Let us assume now that we choose a fixed exchange-rate rule. In this case, domestic inflation would be equal to international inflation plus the changes in relative prices of regional and non-tradable goods weighted by their participation on the CPI.

Then, the variability of the inflation rate would be determined by the variability of international inflation, a regional price shock and a domestic price shock.

Considering that the international inflation in US\$ and regional inflation can be highly volatile, particularly in a very unstable region like the one Uruguay lives in, it is easy to perceive that keeping stable the inflation rate is a rather difficult task. Under a fix regime, the exchange rate cannot compensate the relative price shocks and they are reflected directly and entirely on the inflation rate.

This situation is not unfamiliar to Uruguay, where imported inflation (regional and international) is very volatile. In fact, in some opportunities it has reached two digits and in others, as it was the case in 1999, it has been negative.

Adopting a fixed exchange rate rule ($\hat{\epsilon}=0$), in our highly volatile neighborhood, would imply to admit living with two-digit inflation rates in some years, as well as accepting deflation in some others. Neither scenario seems advisable. The first one could generate indexation, a phenomenon that we have struggled to overcome, and the second one could require painful adjustments and have negative real effects, as it is widely recognized in the literature

Inflation targeting with an exchange rate tool.

A way to achieve a stable low inflation is a policy of inflation targeting that allows the compensation of sudden changes in imported inflation through changes in the exchange rate.

According to the price formation equation, and taking into account the predictable changes in the exogenous components, it is possible to design a policy of inflation targeting relatively stable through the adequate management of the exchange rate.

Let us set an example. Suppose that the international framework is as follows:

- a) $\pi^* = 3\%$
- b) $P_r = 4\%$

Furthermore, let us assume that the weight of regional goods on the CPI (α) is 20% and that the relative price of non-tradables stays stable.

If we keep a devaluation rate like the one we have (7.4% annual) domestic inflation would amount to:

$$\pi = 3\% + 7.4\% + 0.2 \times 4\% = 11.2\%$$

In this example it is possible to appreciate that, under these circumstances, the Uruguayan economy would have a two-digit inflation, which is totally unacceptable.

To moderate the inflation rate the Central Bank could modify the devaluation rate. In the example, the Central Bank could reduce the devaluation rate to zero, causing inflation to drop to 3.8%.

We could think of an example of deflation. Let us assume that international inflation is 1% and that regional deflation is 8%. In that case, the variation of domestic prices would be:

$$\pi = 1\% + 0.2 \times (-8\%) = -0.6\%$$

With this examples we try to illustrate that it is rather difficult to stabilize inflation in Uruguay with a fixed exchange rate regime.

This problem could be avoided under an inflation targeting system. When imported inflation is high, the devaluation rate should be reduced and viceversa.

Flexible inflation targeting.

As we have already seen, an appropriate management of the exchange rate may viabilize an inflation targeting policy that could help us to reduce the volatility of inflation, specially in an economy like Uruguay, deeply affected by price shocks, mainly of a regional kind.

With a strict inflation targeting criterium, the devaluation rate could be set in a way such that domestic inflation remains unchanged. This kind of target would be entirely focused on the inflation rate. It is also well known that the different shocks that hit the economy imply adjustment costs. Therefore, focusing entirely on the inflation rate would be a way to privileged inflation stabilization policy above any other policy. This kind of policy is called “strict inflation targeting” in the literature (Svensson, 1998).

That kind of policy could be too stringent when a country is hit by strong relative price shocks. In fact some kind of flexibility on the inflation objective could be desirable if it smoothes the cycle or facilitates the adjustment of relative prices.

The trade-off between output and inflation variability can be represented through the use of quadratic loss functions like the one used by Svensson (1998), i.e.:

$$C = 1/2 \left[(\pi - \tilde{\pi})^2 + (y^2) \right];$$

Where the first term corresponds to the deviation of inflation with respect to the target, and y represents the deviation of output with respect to a long run trend.

If a government places a positive value on both objectives, it would be willing to take a little inflation volatility in order to achieve output stability. In this case the resulting policy is known as “flexible inflation targeting.”

The second aspect, regarding the difficulties found in the relative price adjustment process, is referred to a discussion of a rather empirical matter: It is argued that a positive inflation rate favors the adjustment. When such an adjustment involve the need of a real exchange rate depreciation, in a fixed exchange rate regime the economy would require negative nominal variations of both domestic prices and salaries, which are very difficult to achieve in presence of nominal rigidities. If the Central Bank can maintain a positive devaluation rate in place, the adjustment can take place without negative nominal changes in wages and non-tradable goods prices, reducing the cost of the process. (Bernanke et al. (1999).)

5. Conclusions

This paper intends to shed some light on how to redesign the monetary/exchange rate policies and, in particular, on the scope for inflation targeting in the stabilized Uruguayan economy.

Several country-specific features were taken into account in the analysis: a) broad influence of the exchange rate on domestic prices; b) high degree of dollarization, including assets and liabilities in the financial system; c) insertion in a particularly unstable region, and d) low depth of the exchange rate market. The main conclusions are listed below.

- (i) The idiosyncratic characteristics of the Uruguayan economy let us rule out the convenience of implementing a monetary rule based on a free floating exchange rate regime. The relevance of the exchange rate in this specific case leads the Central Bank to take it as a privileged policy instrument.
- (ii) The exchange rate appears to be the most powerful policy instrument because it plays a key role in the domestic price-setting process and the Central Bank is able to affect it somehow.
- (iii) The *inflation targeting* approach is compatible with an exchange rate regime like the target zone currently working in Uruguay.
- (iv) An *inflation targeting* policy with the exchange rate as the main instrument appears to be a better alternative to stabilize the inflation rate than any rule based on fixing the exchange rate. This is due to the particular international insertion of the Uruguayan economy, which expose it to periodic shocks affecting the price level.
- (v) This policy could be design within a flexible strategy, which enhances the advantages of the *inflation targeting* over the exchange rate rules. This flexibility could allow the Central Bank to maintain the price stability without ruling out the possibility of using the exchange rate policy to facilitate eventual relative prices adjustments. This would allow reducing costs in terms of output and employment.

Had chosen the *inflation targeting* approach, we should develop the (obviously complex) implementation strategy Thomas Edison pointed out that the making of a proper policy involves one percent of conceptual design and ninety nine percent of implementation. Here, we intended to help in that modest one percent. The remaining ninety nine percent should be the subject of future research

References

Bergara, Mario, Daniel Dominioni and José Antonio Licandro (1995): "Un modelo para comprender la "Enfermedad Uruguaya". Revista de Economía, Vol.2, Nro,2, Segunda Época. Banco Central del Uruguay.

Bernanke, Ben; Thomas Laubach, Frederic S. Mishkin and Adam S. Posen (1999): "Inflation Targeting. Lessons From The International Experience". Princeton University Press.

Bruno, Michael (1992): "Alta inflación y anclas nominales en una economía abierta". En "Lecciones de la crisis: los programas de ajuste en América Latina". CEMLA, 1995.

Bucacos, Elizabeth (1999): " La formación de precios en Uruguay: 1988.01-1998:12". Working Paper 4/99 Central Bank of Uruguay, November (Mimeo).

Calvo, Guillermo and Carmen Reinhart (2000): "Fear of Floating: Theory and Evidence". Manuscript, Center for International Economics, University of Maryland.

Dominioni, Daniel y José Antonio Licandro (1996): "Shock regional y devaluación compensatoria. Un modelo de equilibrio general con tres bienes". Revista de Economía Vol. 3, Nro.1. Banco Central del Uruguay.

Fernández Castro, Rosanna (1997): "El Plan de Estabilización de 1990". Revista de Economía, Vol.4, Nro. 2, Segunda Época. Banco Central del Uruguay.

Licandro Ferrando, Gerardo (1999): "¿Qué debe hacer Uruguay si Brasil avanza a algún régimen de tipo de cambio fijo?. Serie de Informes y Notas 5/99. Central Bank of Uruguay (Mimeo)

Licandro, José Antonio, y Daniel Vaz (1994): " Una visión sobre la Inflación en el Uruguay: Análisis y Perspectivas". Anexo III del Libro Azul.

Masoller, Andrés (1998): "El deterioro de la situación regional y su impacto sobre la economía uruguaya en los próximos meses". Working Paper 3/98 Central Bank of Uruguay. October (Mimeo).

Svensson, Lars E.O. (1998): "Inflation Targeting as a Monetary Policy Rule". Working Paper 6790. National Bureau of Economic Research, Inc. November.

Svensson, Lars E.O. (2000):"Open-economy inflation targeting".
Journal of International Economics 50, 155-183.