Alternatives to inflation targeting in Mexico

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The paper addresses Mexico's experience with inflation targeting which became operational in the aftermath of the 1994/95 tequila crisis. Using VAR econometrics over the post-1980 time series data, we find that monetary policy of the Banco de México was asymmetric with respect to exchange rate movements –tightening when exchange rates depreciated, but not loosening when exchange rates appreciated. This lent a bias in favor of an over-valued exchange rate, leading to contractionary effects on output. We propose a more "neutral" monetary policy so that the central bank of Mexico responds symmetrically to real exchange rate movements and thereby avoids the bias toward over-valuation. This policy may continue to be implemented within the boundaries of inflation targeting wherein the central bank would promote a "stable and competitive" real exchange rate by establishing a sliding floor to the exchange rate in order to prevent excessive appreciation, but by allowing it to float freely otherwise.

I. Introduction

Inflation targeting (IT) has become increasingly popular over the past decade. As a nominal anchor for monetary policy with a public and explicit commitment to maintain economic discipline, inflation targeting is being promoted as a general framework in order to reduce and control the inflation rate, improve predictability, accountability and transparency (Sheridan, 2001). It is also argued to improve the output-inflation trade off (Clifton *et al*, 2001), as well as to reduce output variability (Svensson, 1997).

Yet, there are also a number of concerns regarding the adoption of an IT regime. There is an important concern about the ability of the Central Bank to control the inflation rate in particular under the presence of fiscal or external shocks. In the case of emerging market economies there is further a special concern about the relationship of IT with exchange rate movements, imperfect and poorly regulated financial markets and weak monetary institutions. In effect, there are important concerns about the effectiveness of an IT regime under weak fiscal conditions, poorly regulated financial systems, large potential external shocks, low institutional credibility and currency substitution phenomena (Fraga, et. al., 2003 and Calvo and Mishkin, 2003). There is also a major concern that important shifts in exchange rates will affect the general competitiveness of the economy, the current account deficit and generate external shocks on the inflation rate. In this case,

exchange rate shocks to the inflation rate are followed by a general appreciation of the real exchange rate affecting the general performance of the economy. Goldfajn and Gupta (2003) argue also that an appreciation of the real exchange rate is related with higher nominal interest rates or a tight monetary policy that makes economic recovery more difficult.

This paper addresses Mexico's experience with inflation targeting. Section II presents some background on the operation of monetary policy in Mexico since the 1994-95 peso crisis. Section III assesses empirically a number of important issues in the evaluation of IT: the effects of the real exchange rate on output, the question of the pass-through of exchange rate movements into inflation and the asymmetric response of monetary policy in the face of exchange rate shocks. Section IV considers alternatives to IT as currently implemented. Section V concludes.

II. Inflation targeting in Mexico: some background

In the 1990s, Mexico experienced a variety of monetary and exchange rate regimes. More precisely, the monetary regime went through three stages: nominal exchange rate targeting with a crawling band regime before the 1994 crisis, monetary targeting for a short period after the crisis, followed by a transition to inflation targeting that by now has been largely completed. With the 1994 crisis the exchange rate regime shifted from a crawling band to floating.

The experience with the crawling band regime and its crisis has been analyzed widely (see, for example, Lustig and Ros, 1998, and Ros, 2001). It was during this period, in 1993, that the Central Bank was given independence and a mandate to preserve price stability. After the 1994-95 peso crisis, monetary policy focused on the growth of monetary aggregates and limits to credit growth as a means to control the inflationary effects of the sharp peso devaluations and rebuild the damaged credibility of the Banco de México. More precisely, the central bank established as its nominal anchor an intermediate target for the growth of the monetary base. As the country moved to a

flexible exchange rate regime, an assumption of no international reserves accumulation was made. The ceiling on the growth of the monetary base was thus in essence a growth ceiling on net domestic credit. This monetary policy framework was soon abandoned as the policy failed to stabilize inflationary expectations, the exchange rate and inflation itself. The main reasons for this failure were the instability of the relationship between the monetary base and inflation and the fact that the central bank has no control of the monetary base in the short run.

The peso crisis had strong inflationary effects, taking the inflation rate from single digits to over 50 percent. These inflationary effects were largely brought under control by means of a tight fiscal policy and an incomes policy negotiated with unions and business confederations. After this, the main objective of monetary policy became the reduction of inflation in a gradual and sustainable way. At the same time, the monetary policy regime moved towards influencing the level of interest rates establishing borrowed reserves as its key instrument with the monetary base becoming less relevant and the inflation target more important in the conduct of policy.

The transition to inflation targeting was accelerated in January 1999 when the Banco de México announced a medium term inflation objective, and since 2000 the Central Bank publishes quarterly inflation reports to monitor the inflationary process, analyze inflation prospects and discuss the conduct of monetary policy. By now Mexico is considered to have in place the main components of an inflation targeting framework: an independent monetary authority (since 1993) that has inflation as its only policy objective, a flexible exchange rate regime, the absence of other nominal anchors and a “transparent” framework for the implementation of monetary policy (Schmidt-Hebbel and Werner, 2002).

Table 1 shows the inflation targets since the 1994-1995 crisis, actual inflation performance, the growth projections and performance as well as the evolution of the real exchange rate. After a rough start when in 1995 the inflation objective was missed by over 30 percentage points, the central bank’s record has been improving over time with

its inflation target being met in 5 years since 1999 and inflation tending to converge towards its medium term target range of 3 percent plus or minus one percentage point.

Table 1.

Inflation, growth and the real exchange rate

	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Inflation target (%)	19	10	15	12	13	10	6.5	4.5	3 ± 1	3 ± 1	3 ± 1	3 ± 1
Actual inflation (%)	52.0	27.7	15.7	18.6	12.3	9.0	4.4	5.7	4.0	5.2	3.3	4.1
GDP growth projection	n.a.	> 3	> 4	5	3	4.5	n.a.	1.5	3.0	3.0 to 3.5	3.8	3.6
Actual GDP growth	-6.2	5.1	6.8	4.9	3.7	6.6	-0.1	0.7	1.3	4.2	3.0	4.5
Real exchange rate (end of the year) (index)	141.4	127.8	114.1	116.1	105.8	100.0	92.5	102.3	106.2	103.2	98.5	98.7

Source: Banco de México. The real exchange rate is defined as the nominal exchange rate to the United States dollar, multiplied by the ratio of foreign (consumers' price index of United States) to domestic price levels (consumers' price index of Mexico).

Along with the success in bringing down inflation, the growth performance has been disappointing. More precisely, in the second half of the 1990s, under the stimulus of a very competitive exchange rate, the economy rapidly recovered from the 1995 recession and grew at rates that often surpassed the growth rate projected by the central bank and the government. However, from 2001 to 2003, growth sharply decelerated to rates that for three years in a row were below or barely above the rate of population growth. That is, the economy recorded a decline in per capita incomes from 2000 to 2003 before recovering in 2004. Overall performance since 1994 to 2004 has been unsatisfactory with GDP growth below 3% per year, well below the historical rates of the period 1940 to 1980 (6 to 6.5 percent).

III. The empirical evidence

In this section we address three relevant questions for the evaluation of the IT regime. First, what are the short term and long run effects of the real exchange rate on output? Have these effects changed with trade liberalization and integration with the United States economy? Second, how important is the pass-through of the exchange rate to prices? Has IT modified the pass-through? Third, does IT have a bias towards exchange rate appreciation? If so, and the real exchange rate has long run effects on output, the regime is not neutral with respect to economic growth. Our data set consists of quarterly data for the period 1980 to 2003 and 1999 to 2003. The selection period was due to data limitations. A definition of the variables is included in the appendix.

III.1. The real exchange rate and output

The net effect of the real exchange rate on output is not clear-cut because there are alternative transmission channels with opposite effects in the short and long runs. In order to assess the long run impact of the real exchange rate on output we proceed to estimate a vector autoregressive model (VAR) model including output (Y_t), investment (INV_t), United States output (YUS_t) and the real exchange rate[1] (SR_t). The unit roots tests indicated that these variables are all I(1) and therefore it is necessary to consider the option of possible cointegration[2] among them. The statistics of the Johansen (1988) procedure[3] (Table 2) indicates the presence of at least one cointegrating vector (lower case letters refer to the natural logarithm of the series) already correcting for certain instability in the cointegrating space.

[1] The real exchange rate is defined as: $SR_t = S_t(Pus/P)_t$, where S is the nominal exchange rate; Pus, the consumer price index of the United States: and P, the consumer price index of Mexico.
[2] The time span of the data is certainly not enough to consider the results of the cointegrating vector as a long run solution. Therefore, it is not possible to make long term inferences on the basis of these results but it represents a valid approximation for the period.
[3] The cointegration tests without any dummies are reported in the Appendix in Table A-2.

Table 2.

Statistics of the Johansen procedure including output, investment, United States output and the real exchange rate. Period 1981:01-2003:04

$$y_t = \beta_1 * inv_t + \beta_2 * yus_t + \beta_3 * sr_t$$

H_0	Constant	Trend	Trace	95%
r = 0	m0	0	63.09*	47.21
r ≤ 1	m0	0	20.57	29.68
r ≤ 2	m0	0	6.10	15.41
r ≤ 3	m0	0	0.01	3.76

Notes: (*) Significant at the 5% level; Trace = Trace test; r= number of co-integrating vectors. Number of lags in the VAR = 4; The VAR includes constant unrestricted.

Normalizing this vector as an output equation (equation 1) indicates the presence of a positive relationship between output, investment, United States output and the real exchange rate. Therefore, a devaluation of the real exchange rate has a positive impact on Mexican economic growth in the long run.

(1) $$y_t = 0.478 * inv_t + 0.320 * yus_t + 0.019 * sr_t$$

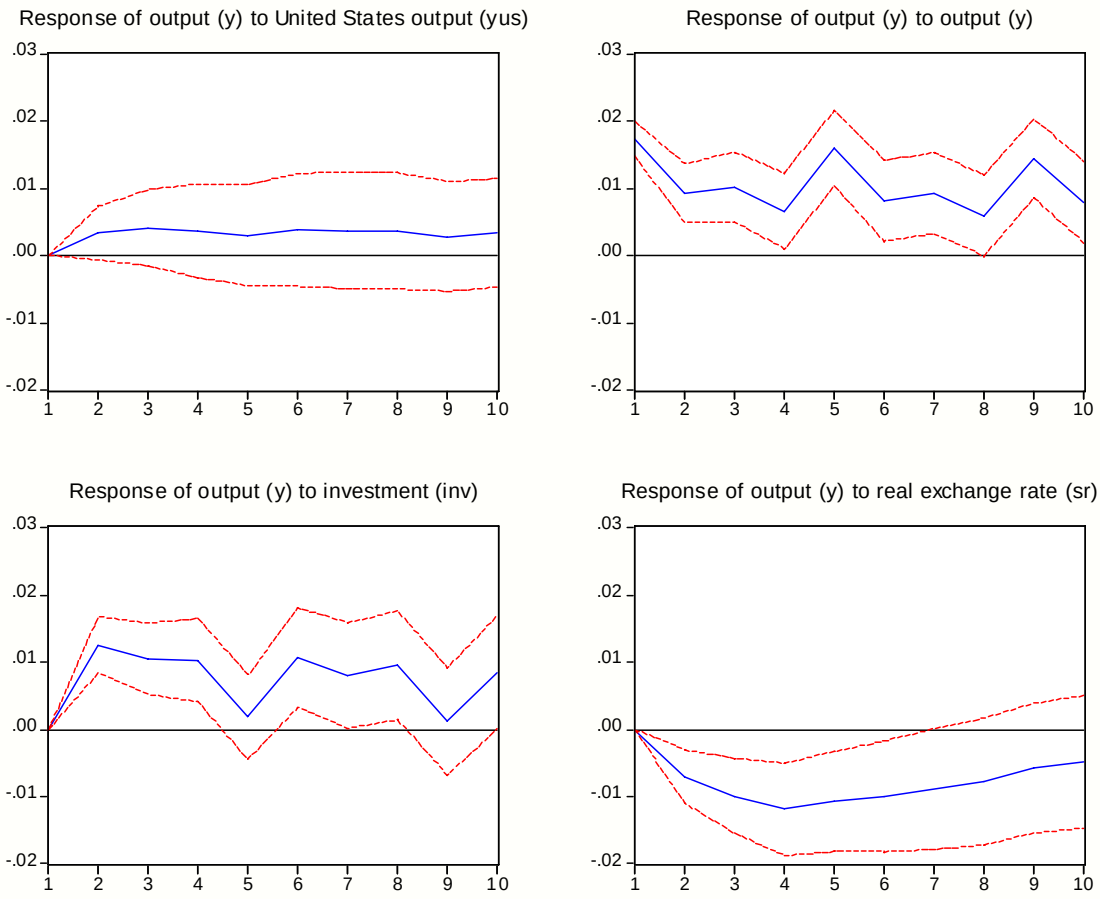
The series included in the estimated VAR are all considered initially as endogenous variables. Under these circumstances, the causal relations among these variables are not clear while the normalization of the cointegrating vector already implies a particular classification between endogenous and exogenous variables. Thus, it is important to take the results with some caution due to the potential endogeneity problem. Therefore, we perform an impulse response exercise in the VAR including, in the following order: yus_t, y_t, inv_t and sr_t.

The impulse response function incorporates information on contemporaneous effects since it ignores the contemporaneous correlations of residuals. Using the Cholesky decomposition and the new order of the variables in the system, our impulse response

analysis confirms the positive effect of investment and United States output on Mexico's economic growth and indicates that the real exchange rate has an initial negative effect that tends to disappear in the long run (Figure 1).

Figure 1.

Impulse – Response Analysis for yus_t, y_t, inv_t and sr_t.



Note: In the graph, the horizontal axis refers to the 10 periods or quarters while the vertical axis shows the response of the inflation rate to a one standard deviation shock in each variable in the system.

The finding that an appreciation of the real exchange rate has long run contractionary effects on economic growth in Mexico contradicts previous results of impulse response analysis that the long run relationship between output and the real exchange rate is

negative (Kamin and Rogers, 1997). It is also worth noting that the effect of the real exchange rate on output has significantly increased after the beginning of the North American Free Trade Agreement (Table 3). Therefore, the Mexican economy seems to be more sensitive to exchange rate changes today than in the past.

Table 3.

Cointegration vectors of the Johansen procedure including output, investment, United States output and the real exchange rate.

$$y_t = \beta_1 * inv_t + \beta_2 * yus_t + \beta_3 * sr_t$$

Period	inv_t	yus_t	sr_t
1982(1)-1993(4)	0.852	0.328	0.475
1994(1)-2003(4)	0.761	0.420	0.855

III.2. The nominal exchange rate and inflation (Pass-through)

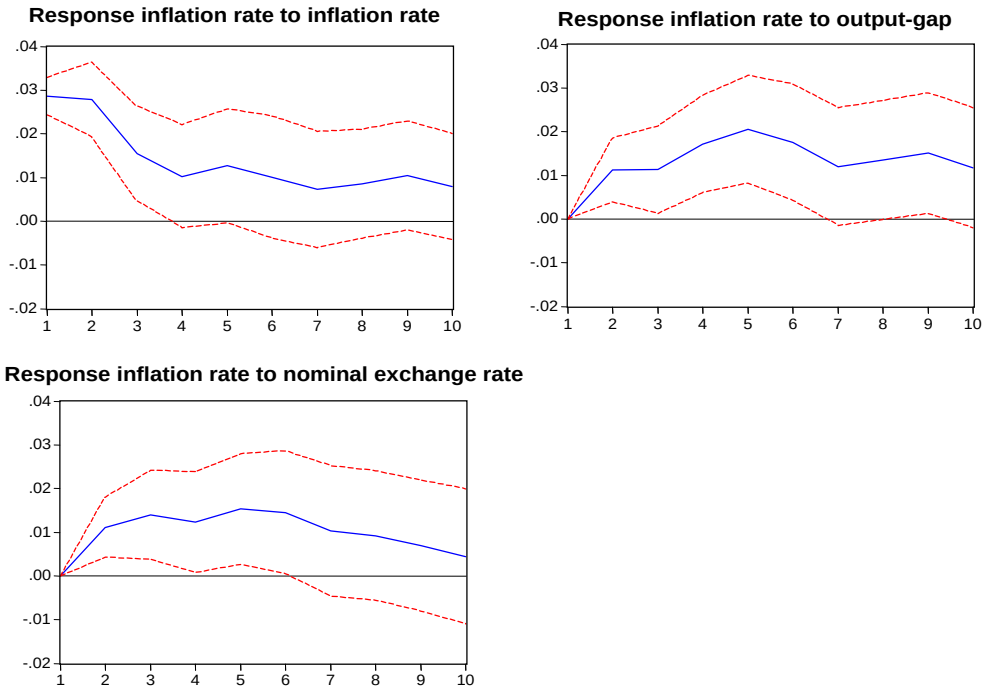
The positive impact of the nominal exchange rate on the inflation rate (pass-through) is one of the main concerns of the monetary authorities. Under these conditions, an IT regime is prone to suffer from external dominance. That is, the high sensitivity of inflation to any exchange rate depreciation could cause external inflation shocks that will make it difficult for the central bank to achieve its inflation target. It has also been argued that an IT regime reduces the pass-through problem due its ability to increase the credibility of the monetary authorities and therefore the importance of forward-looking variables (Schmidt-Hebbel and Werner, 2002, and Fraga, Goldfajn and Minella, 2003).

To evaluate the pass-through effect in Mexico, we first estimate a VAR including the inflation rate, the output gap and changes in the nominal exchange rate. The sample period covers quarterly data from 1986:01 to 2003:04. This specification is relatively

similar to a traditional Phillips curve and includes some elements of the VAR specification used in Schmidt-Hebbel and Werner (2002) or Fraga, Goldfajn and Minella (2003). That is, the output gap should have a positive impact on the inflation rate due cost pressures through the labor market and input costs while a devaluation increases import costs and tradable goods prices and has a positive impact on the inflation rate. Additionally, it is possible to argue that this VAR includes variables that are all I (0) (Table A-1 in the appendix). Therefore, this VAR, including the inflation rate, the output gap and changes in the nominal exchange rate, was used to generate the impulse response (Figure 2) and indicates that the output gap and the change in the exchange rate have both a positive impact on the inflation rate also reflecting the relevance of the pass-through effect.

Figure 2.

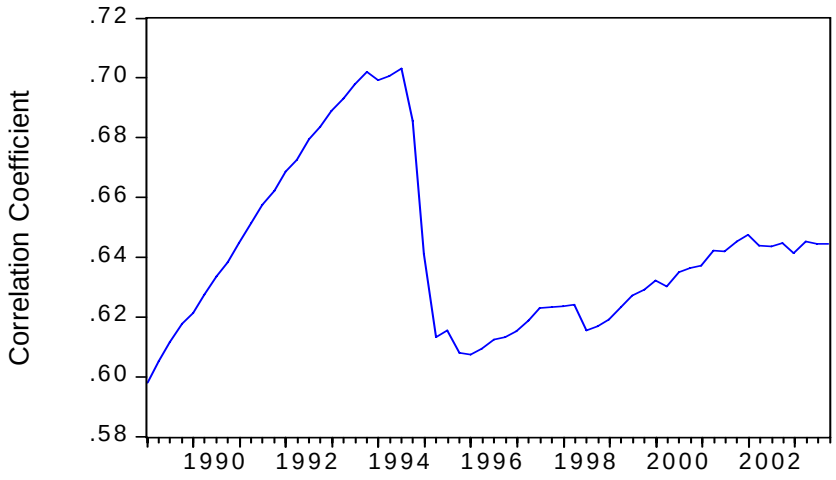
Impulse – Response Analysis for the inflation rate, the output gap and changes in the nominal exchange rate



Note: Period 1986:01-2003:04. In the graph, the horizontal axis refers to the 10 periods or quarters while the vertical axis shows the response of the inflation rate to a one standard deviation shock in each variable in the system.

Second, in order to evaluate the relevance of the pass-through in the Mexican economy we can consider the "rolling" correlation coefficient between the inflation rate and exchange rate depreciation. This correlation coefficient is estimated by adding one observation sequentially since 1989 (1). Figure 3 indicates the presence of a strong relationship between these two variables. The initial reduction of the pass-through, arguably related with the instrumentation of the IT regime, is not continuous and there is a persistence of a positive relationship between inflation and exchange rate movements.

Figure 3.
Rolling correlation coefficient between the inflation rate and exchange rate depreciation
Quarterly data 1989:1-2003:4



III.3. The response of monetary policy to exchange rate shocks

In this section, we look for asymmetric effects of the exchange rate on monetary policy. The hypothesis is that monetary policy shows an asymmetric response to movements in

the exchange rate. That is, the central bank raises the interest rate in response to a depreciating exchange rate but does not modify the interest rate in response to an appreciating exchange rate. The final result of this monetary policy is an appreciation of the real exchange rate.

We now explore the possibility of such an asymmetrical response of monetary policy to exchange rate movements with an econometric exercise. In order to assess the relevance of this asymmetric effect we use a two-step procedure similar to Cover (1992), Karras (1996) and Kim, Ni and Ratti (1998). This procedure contains initially an equation in order to obtain an equilibrium exchange rate through the use of the PPP hypothesis (Hallwood and MacDonald, 2000). We consider that a value above the equilibrium position is an undervaluation while a value under the equilibrium position is an overvaluation. These values are, afterwards, used to test for a possible asymmetric response of monetary policy to movements in the exchange rate.

Hence, the first equation describes the exchange rate using the purchasing power parity condition:

(1) $$S_t = \beta_0 + \beta_1 P_t / P_t^* + u_t$$

Where S_t denotes the nominal exchange rate, P_t denotes the national price index and P_t^* denotes the foreign price index.

The data base includes quarterly information from 1995(1) to 2004(4) on the nominal exchange rate and the price indexes of Mexico and United States. The estimation of equation (1) using ordinary least squares (OLS) indicates that the nominal exchange rate has a long-term relationship with the price index differentials.

The estimated long run equation is as follows:

(2) $$S_t = 3.36 + 1.202 * P_t / P_t^*$$

ADF(1) = -3.07

Then, using equation (2) we define two shock functions based on the differences between the fitted values and the actual values of the exchange rate (U).

$$\text{Pos } U^{+}_{t} = \max (\text{shock, zero})$$
$$\text{Neg } U^{-}_{t} = \min (\text{shock, zero})$$

The first function is associated to an undervaluation and the second one refers to an overvaluation. The second step of the procedure consists in estimating an interest rate equation including the positive and negative shocks given by the previous functions.

(3) $$R_t = \beta_0 + \beta_1 U_t^{+} + \beta_2 U_t^{-} + \beta_3 R_{t-1} + e_t$$

Equation (3) describes the impact of exchange rate deviations on the interest rate. This equation is estimated to find evidence of asymmetric effects of the exchange rate on the interest rate. The interest rate is the three months nominal interest rate on government bonds (CETES) (Mexico's Central Bank data base). Making use of such a procedure we get the following estimates:

(3)	R_t =	-0.087* U_{t-1}^{-}	+ 0.145* U_{t-1}^{+}	+ 0.76* R_{t-1}	- 23.6*D98(3)	– 20.7*D95(4)
	(t)	(-1.01)	(3.16)	(25.70)	(-7.95)	(-6.72)
	(p)	(0.26)	(0.00)	(0.00)	(0.00)	(0.00)

$R^2 = 0.82$

Normality test[4]: Jarque-Bera: $X^2(2) = 2.11(0.35)$

Autocorrelation: LM (4) = 0.169(0.952)

Heteroskedasticity: ARCH (4) = 1.211(0.326)

Period: 1995:1-2004:4

[4] The non-normality can be attributed to an outlying value in 1995:2 when debt and financial crisis took place in Mexico.

The long run solution is:

(4) $$R_t = -0.371 * U^{-}_{t-1} + 0.615 * U^{+}_{t-1}$$

The main results indicate that only in the case of an undervalued exchange rate we find a statistically significant coefficient. According to such estimates a tight monetary policy is carried out by the central bank whenever there is an undervalued exchange rate; however an overvalued exchange rate is not followed by an easy money monetary policy. The previous estimates thus confirm that the exchange rate has an asymmetric impact on monetary policy.

IV. Problems with inflation targeting and alternatives

As discussed in section 1, the recent past has been characterized by success in the inflation front and a poor growth performance. Two of our findings in section 2, the positive effect of the real exchange rate on output and the significant pass-through of the exchange rate movements on prices, suggest that those two aspects, success in the inflation front and poor growth performance, are linked through the evolution of the real exchange rate (see table 1). After the sharp depreciation of 1995, the real exchange rate has been appreciating over time, a trend that was only interrupted in 2002-03. From end of 1995 to 2002, the real exchange rate fell by 35 percent (and by 27 percent from 1995 to 2004). With a relatively stable nominal exchange rate, in an increasingly open economy, government policy has provided a strong disinflationary pressure. At the same time, real appreciation, through the loss of competitiveness of the economy, has contributed to a poor growth performance.

Our third finding in section 2, on the asymmetric response of monetary policy to exchange rate shocks, indicates that real appreciation may be the result of a built in bias in monetary policy towards real exchange rate appreciation. This bias has to do with the high pass-through. Over the past few years the central bank has been trying to break the

link between exchange rate and prices by increasing the “short” in response to “sharp” depreciations. In doing so, it has reversed the depreciation itself. Because the economy has been in a process of disinflation in which the central bank has barely met its inflation targets, the process is not symmetrical, i.e., there is no similar incentive to reverse the appreciations that may take place as a result of shocks to the exchange rate.

Alternatives

Inflation targeting is certainly a more flexible framework for monetary policy than the previous monetary frameworks such as the use of some monetary aggregate to control the inflation rate. That is, inflation targeting considers additional factors in order to control inflation such as the exchange rate. Additionally, the hypotheses that prices and the monetary aggregate have a stable relationship and that money can considered as the exogenous variable do not appear to be valid. For example, Carstens and Werner (1999) find that base money is essentially accommodating to exogenous shocks in the Mexican case. Therefore, IT represents a new framework with could include additional possible options.

A first option is to move monetary policy towards a more neutral stance (i.e. a more symmetric response to exchange rate shocks). In this sense, monetary authorities should try, at least, to use a reduction in the amount of “el corto” in the case of an appreciation of the real exchange rate. This is more likely and feasible than in the past as inflation tends to converge towards the long run target and, as a result of either an enhanced credibility of the central bank or a less inflationary environment, the pass-through of the exchange rate on inflation tends to fall. In this case, monetary policy has more degrees of freedom because the authorities have established a reputation against inflation. In this context, a neutral monetary policy does not imply that the central bank will lose credibility in its commitment to control inflation. A neutral monetary policy will have at least two main impacts. First, it will allow a monetary policy with less bias against economic growth. That is, if the side effect of a contractionary monetary policy is a reduction, at least in the short run, of economic growth, a neutral monetary policy will

contribute, in the margin, to a more dynamic economic growth. Second, a neutral monetary policy will not contribute to an overvaluation of the real exchange rate and, therefore, will not have an additional bias against economic growth through the real exchange rate channel.

A second option is to shift from the current consumer price index (CPI) target to a *domestic inflation target* (i.e. a measure of inflation purged from the direct effects of the exchange rate on imported goods in the CPI). Such a move would further reduce the pass-through effect of the exchange rate on the *targeted* price index and contribute to eliminate the asymmetric response of monetary policy to exchange rate shocks. In this case, a transitory shock on the nominal exchange rate will not generate a direct response in the interest rate. Under these circumstances monetary policy will be more focused on the long term path of the inflation rate and therefore it will not overreact to transitory shocks.

These two options preserve the inflation targeting framework. A third, more radical departure from the current framework, would be to combine inflation targeting with *real* exchange rate targeting. More precisely, the central bank would promote a competitive exchange rate by establishing a sliding floor to the exchange rate in order to prevent excessive appreciation (an “asymmetric band” with a floor and no ceiling as in Ros, 2001). This would imply intervening in the foreign exchange market at times when the exchange rate hits the floor but allow the exchange rate to float freely otherwise.

Such a proposal is free from some of the orthodox objections that have been made to real exchange rate targeting. In particular, it does not require knowledge of the adequate or equilibrium real exchange rate but only of the danger zone in which overvaluation severely hurts the growth process. This is because under our proposal the Central Bank does not target a particular real exchange rate but only establishes a floor on it is value, leaving the real exchange rate to move freely above this threshold. Moreover, there is no problem with the amount of reserves required to defend the exchange rate since the Central Bank only defends the floor (which requires to accumulate rather than deplete reserves as would be the case if the Central Bank defended a ceiling). Of course, there is

an additional orthodox objection when it comes to defending a floor to the exchange rate and this is that the Central Bank may lose control of the money supply and this could imply giving up the achievement of the inflation target (for a fuller discussion see Frenkel and Rapetti, 2004). The problem arises at times of excess supply of foreign currency as a result, in particular, of massive capital inflows. It is worth noting, however, that speculative capital inflows will tend to be deterred to the extent that the central bank clearly signals that it will prevent the appreciation of the domestic currency thus stabilizing exchange rate expectations. If necessary, however, the central bank can impose capital account regulations on short-term capital flows in order to recover control over the money supply.

V. Conclusions

The main conclusions that emerge from our analysis can be summarized as follows. Inflation in Mexico has declined, in part during the IT regime, from levels over 50% in 1995 to around 5% in 2004. There has also been a reduction of the pass-through of exchange rate movements into inflation possibly as a result of an enhanced central bank credibility (with its stabilizing influence on inflation expectations) or of lower inflation itself. These achievements have, however, come with a cost, an almost continuous appreciation of the real exchange rate that has had contractionary effects on output in the long run. Our empirical analysis clearly supports these assertions (the reduction of the pass-through and the negative effect of real appreciation on output). It also suggests that real appreciation has been fed by an asymmetrical response of monetary policy to exchange rate movements: depreciations are followed by a tightening of monetary policy while appreciations are not reversed by a relaxation of monetary conditions. The alternative to the current framework is to give a more prominent place to the achievement of a competitive and stable real exchange rate in the design of monetary and exchange rate policy.

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APPENDIX

Database

Y = Real Gross Domestic Product (GDP) in millions of Mexican pesos of 1993, Instituto Nacional de Geografía, Estadística e Informática (INEGI), http://www.inegi.gob.mx.

YUS = Real Gross Domestic Product (GDP) in billions of US dollars at prices of 2000, (the series is already seasonally adjusted), US Department of Commerce: Bureau of Economic Analysis.

P = Mexican consumer price index (base 2002 = 100), Bank of Mexico, http://www.banxico.org.mx.

P* = US consumer price index (base 1982-84 = 100), US Department of Commerce: Bureau of Economic Analysis.

GAPY = Deviation of the real Gross Domestic Product (GDP) from potential output obtained using the Hodrick-Prescott filter.

S = Exchange rate (pesos per US dollar), 48-hour interbank exchange rate. The data is taken from the last day of each quarter, Bank of Mexico. http://www.banxico.org.mx.

SR = Real exchange rate defined as S (P*/P) where S is the nominal exchange rate, P refers to domestic prices, and P* to foreign prices.

R = Nominal interest rate on three-month treasury bills (CETES 91 days). Average of the last month of the quarter, Bank of Mexico, http://www.banxico.org.mx.

R* = Nominal interest rate 3-Month Treasury Bill, Board of Governors of the Federal Reserve System