

# Inflation Targeting and Fear of Floating in Brazil, Mexico and South Korea

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## Abstract

We present evidence on Fear of Floating (*FF*) practices before and after the adoption of Inflation Targeting (*IT*) for three emerging countries that faced important exchange rate crises in the 1990's (Brazil, Mexico and South Korea). We start using the methodologies proposed by Calvo and Reinhart (2002) and Ball and Reyes (2008), and check the probabilities of observing small monthly exchange rate changes, combined with large movements in policy instruments (international reserves and interest rates), which should indicate some degree of exchange rate targeting. This initial exercise suggests a progress towards greater exchange rate flexibility after *IT*. We then use a VAR model to analyse the monetary policy response to exchange rate and inflation shocks, and detect a drastic reduction in direct intervention in the foreign exchange market after *IT*, accompanied by a stronger response to inflation. These findings are consistent with the *IT* framework, and suggest a reduced role for *FF*.

*Keywords:* Inflation Targeting, Fear of Floating

*JEL Classification:* E31, E42, E52, E58, F31, F41

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## Resumo

O artigo apresenta evidência sobre “medo de flutuar” (Fear of Floating) antes e depois da adoção do regime de metas para a inflação em três economias emergentes que passaram por fortes crises cambiais nos anos 1990 (Brasil, México e Coréia do Sul). Inicialmente as metodologias de Calvo and Reinhart (2002) e Ball and Reyes (2008) são utilizadas, checando a probabilidade de se observar pequenas variações mensais na taxa de câmbio, combinadas com fortes movimentos nos instrumentos da política monetária (juros e reservas internacionais), o que seria um indicativo de “medo de flutuar”. Esse primeiro exercício indica uma mudança em favor de maior liberdade cambial após a adoção do regime de metas. Em seguida, um modelo VAR é usado para se analisar a reação da política monetária a choques na inflação e no câmbio, e uma drástica redução na intervenção no mercado de câmbio é detectada, acompanhada por maior resposta a choques inflacionários. Esses resultados são consistentes com a teoria sobre regime de metas para a inflação.

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## 1. Introduction

Most of the emerging countries that adopted an explicit inflation targeting (*IT* hereafter) regime had previously pegged their nominal exchange rate to a stable low-inflation currency as means to achieving price stability during the 1990's. However, the recent experience has shown that in a world with high capital mobility, conventional pegged exchange rates are rather fragile (see Fischer (2001) and Calvo and Mishkin (2003)). In this sense, the adoption of *IT* by those countries can be better viewed as a response to the breakdown of their pegged exchange rate systems, than as a planned policy shift. Therefore, there is great debate regarding the true commitment of emerging countries to *IT* and floating exchange rates, which, as pointed-out by Agénor (2002), leads to lower levels of monetary policy credibility.

In this paper we look at three emerging countries that adopted *IT* after abandoning a pegged exchange rate system (Brazil, Mexico and South Korea). We investigate whether the adoption of *IT* was accompanied by an actual shift in monetary policy conduct from exchange rate targeting (a “Fear of Floating” regime)<sup>1</sup> to *IT* (a “Fear of Inflation” regime). The main problem faced in this task is one of identification, as under both regimes it is natural for monetary policy to respond to exchange rate shocks. In the exchange rate targeting regime the response is obvious, but even in the *IT* regime there will still be incentives to respond if exchange rate shocks are expected to pass-through into domestic inflation.<sup>2</sup> In fact, some degree of exchange rate smoothing may be necessary under *IT* if movements of the exchange rate may influence the Central Bank's ability of attaining the inflation targets (e.g. Eichengreen (2004); Ball and Reyes (2004); Mishkin (2004)). In this sense, an important aspect of this paper is that it investigates this issue both before and after *IT*, which should help understanding the impact of this regime switch on the monetary policy response to exchange rate shocks.

Initially, we apply the methodology proposed by Calvo and Reinhart (2002) and further developed by Ball and Reyes (2008) to distinguish between “free-floaters” from “dirty-floaters”. The approach basically consists in computing the probability of observing monthly percent changes within a certain range for exchange rate and policy instruments (international reserves and interest rates). The underlying hypothesis is that under a pegged exchange rate regime, the variability of exchange rates should be low, while the variability of policy instruments should be high, as they are used to prevent the exchange rate from floating. For a flexible regime, the opposite results should hold. Unlike the original studies, we apply this methodology not with the intention of classifying countries in terms of exchange rate regimes,

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<sup>1</sup> See Calvo and Reinhart (2002).

<sup>2</sup> Hausmann et al. (2001) have found a significant relationship between exchange rate pass-through and interventions in the foreign exchange market. They argue, however, that this relationship tends to breakdown when they control for the ability of countries to borrow in their own currency.

but yet to check whether the regime change has meant a movement towards greater exchange rate flexibility, as one would expect should these countries had truthfully adopted *IT*.

After establishing if the exchange rate has been freer after *IT*, we focus with more detail on the monetary policy response to exchange rate shocks. We apply a VAR approach to check the responsiveness of the policy instruments to exchange rate and inflation shocks. Our argument is that in the exchange rate targeting regime one would expect that policy instruments show

- (i) weak reaction to inflation shocks, and
- (ii) a strong reaction to exchange rate shocks.

In contrast, in an *IT* regime one would expect

- (i) a strong reaction to inflation shocks, and
- (ii) a weak reaction to exchange rate shocks, conditional on a certain inflation level.

In other words, monetary policy may be tightened under *IT* following a currency depreciation, but not with the same magnitude that would be seen under an exchange rate targeting regime.

We expect that the combined evidence from Calvo and Reinhart's, Ball and Reyes's and the VAR approaches should give a clearer view on the degree of commitment of the analysed countries with respect to *IT* and a floating exchange rate. In fact, the results suggest that that the adoption of *IT* meant a movement towards greater exchange rate flexibility. Moreover, we show that direct interventions in the exchange rate are milder after *IT*, and that the monetary policy response to inflation shocks is stronger. Furthermore we observe that, in general, exchange rate interventions by the Central Banks have moved away from a direct stance, through the use of international reserves, to an indirect stance, using interest rates. This suggests the use of interest rate rules common in *IT* regimes. Following these findings we argue that interventions in the foreign exchange market should not be necessarily seen as Fear of Floating but, potentially, as a required policy for the attainment of the inflation targets.

The rest of the paper is as follows. Section 2 applies Calvo and Reinhart's and Ball and Reyes's methodologies to test for exchange rate flexibility against the Fear of Floating hypothesis. Section 3 presents evidence on the monetary policy's response to inflation and exchange rate shocks within the VAR framework. Section 4 concludes.

## 2. Assessing Exchange Rate Flexibility

There are two basic instruments of exchange rate intervention: interest rates and international reserves. The international reserves can be used to directly intervene in the foreign exchange market, selling or buying foreign currency and hence controlling the price of foreign currency in terms of the domestic one. The interest rates can be used in an indirect manipulation, known in the literature as

the “interest rate defence of the currency”.<sup>3</sup>

Previous studies on Fear of Floating (*FF* hereafter) have compared the variability of interest rates, exchange rate and international reserves for countries that claim to follow a free-floating regime. The seminal contribution to this literature was the methodology proposed by Calvo and Reinhart (2002). They presented their results in terms of the probability of observing monthly percent changes within a certain range for nominal exchange rates, international reserves and nominal interest rates. The ranges suggested are  $\pm 2.5\%$  changes in exchange rates and international reserves, and 50 basis points change in interest rates. The proposed test can be formalised as follows:

$$P[|\Delta e| < x/peg] > P[|\Delta e| < x/float] \quad (1)$$

$$P[|\Delta R| < x/peg] > P[|\Delta R| < x/float] \quad (2)$$

$$P[|\Delta i| < y/peg] > P[|\Delta i| < y/float] \quad (3)$$

Where  $x$  is equal to 2.5%,  $y$  is equal to 50 basis points,  $\Delta e$  is the nominal exchange rate change,  $\Delta R$  is international reserves change, and  $\Delta i$  is the change in nominal interest rates.

The premise behind their analysis is that under a fixed exchange rate regime the variability of exchange rates should be low, while the variability of interest rates and reserves should be high, as they are used to prevent the exchange rate from floating. For a flexible regime, the opposite results should hold.

Ball and Reyes (2008) suggested some modifications on Calvo and Reinhart's (2002) approach. Firstly, they criticized the use of nominal interest rates, suggesting, instead, the use of real interest rates. They justified this change arguing that the nominal interest rate moves broadly in step with inflation, so it is important to break the link between the two variables before one can analyse whether interest rates are responding to inflation or to exchange rate changes. Secondly, they dropped the arbitrary ranges defined by Calvo and Reinhart (2002) and replaced it by standard deviations of each series, which they argued to be more accommodative to studying country differences.<sup>4</sup> Finally, they advocated the inclusion of an analysis of the variability of inflation, so as to check if the Central Bank cares more about inflation or exchange rate stability. Their methodology can be formalised as follows:

$$P[|\Delta e| > sd/FF] < P[|\Delta e| > sd/IT] \quad (4)$$

$$P[|\Delta P| > sd/FF] < P[|\Delta P| > sd/IT] \quad (5)$$

<sup>3</sup> The term refers to the controversial policy stance of many emerging countries of raising interest rates when the exchange rate is under pressure. For an overview, see Flood and Jeanne (2005).

<sup>4</sup> Ball and Reyes (2008) argued that, for e.g., a developed country may “fear” floating, but the interest rates will rarely change by more than 50 basis points, whereas an emerging country, in a much more volatile environment, may be a true floater but consider 50 basis points a small change in interest rates to have the intended effects on output and inflation. These differences may be important even within the emerging countries group.

$$P[|\Delta R| > sd/FF] < P[|\Delta R| > sd/IT] \quad (6)$$

$$P[|\Delta r| > sd/FF] < P[|\Delta r| > sd/IT] \quad (7)$$

Where  $sd$  is the standard deviation of each series,  $\Delta r$  is the change in real interest rates,  $\Delta P$  is the change of the price index (the rate of inflation),  $FF$  stands for Fear of Floating and  $IT$  for Inflation Targeting. The expected results from Ball and Reyes' (2008) approach is that under  $IT$  we should see more variability in exchange rates and less in inflation and policy instruments than under  $FF$ .<sup>5</sup>

In this paper we use both methodologies discussed above not to classify the countries in terms of their exchange rate regimes, as in the original studies, but yet to observe whether there was a movement towards greater exchange rate flexibility after the adoption of  $IT$  in Brazil, Mexico and South Korea. This is a relevant question, since the literature on  $IT$  ranks exchange rate flexibility as an essential precondition for its adoption. In this sense, establishing if the exchange rate has been freer to float after  $IT$  is an important first step in order to identify their true commitment to this monetary policy framework.

## 2.1. Data

Data was obtained from the IMF's International Financial Statistics database. The inflation rate is the monthly rate of growth of the consumer price index. We use nominal exchange rate movements, which are defined as the monthly change of the national currency per unit of dollar. A positive variation means depreciation, and a negative variation means appreciation of the national currency. International reserves data is the monthly change of foreign exchange reserves. The interest rate used is the money market rate. The period of analysis corresponds to the interval that spans from 1991M1 to 2005M12 for South Korea and Mexico<sup>6</sup> and 1995M1 to 2005M12 for Brazil. The analyses were made in two sub-periods: before and after the regime change. For setting the sample breaks we have followed the official date of adoption of  $IT$ , as found in each Central Bank's website. They are as follows: 1998M4 for South Korea; 1999M1 for Mexico; and 1999M6 for Brazil.

<sup>5</sup> A drawback of both Calvo and Reinhart's (2002) and Ball and Reyes' (2008) approaches is that the policy instruments may change even if the Central Bank has no intention to stabilize the exchange rate. In turn, changes in policy instruments can affect the exchange rate and generate some extra volatility. To help dealing with these issues Ball and Reyes (2008) also suggested analysing the correlation between policy instruments changes and inflation and exchange rate changes, in order to identify the Central Bank's intentions. In this paper we provide a more robust analysis of the monetary policy's intentions, through the estimation of VAR models.

<sup>6</sup> Although Mexico has officially abandoned its pegged exchange rate in 1995M1, many authors have shown that the exchange rate was still the main focus of monetary policy until the adoption of  $IT$  in 1999M1 (see, for e.g., Ball and Reyes (2004)). In this sense we have opted to use a longer sample period for this country, starting in 1991. Nevertheless, we have also applied our tests to Mexico with a sample that spans from 1995M1 to 2005M12, and our results for the pre- $IT$  sample were very similar. This finding reinforces the argument that although Mexico has officially abandoned its peg in 1995M1, little changed in actual policy before the formal introduction of  $IT$ .

## 2.2. Results

The results from Calvo and Reinhart's (2002) *FF* analysis are reported in Table 1. When reading the table it is important to bear in mind that smaller probabilities suggest more variability. In general, they show that the adoption of *IT* meant greater exchange rate flexibility, translated into higher probabilities of exchange rate changes that exceed the  $\pm 2.5\%$  range. The results are rather impressive, with the exception of Mexico. In the case of Brazil, before *IT* the exchange rate moved within the bounds 92% of the time; after, exchange rate changes were confined within the bounds only 48% of the time. For South Korea, the exchange rate was confined within the bounds 93% of the time before *IT*, and 78% after. Regarding the monetary policy instruments, we observe less variability of both nominal interest rates and international reserves for all the economies in the sample. This is more evident across the range for interest rates, which may be indicating a move towards greater use of interest rate smoothing policies common in *IT* regimes.<sup>7</sup>

Table 1

*FF* analysis: Calvo and Reinhart's (2002) methodology

	Before <i>IT</i>			After <i>IT</i>		
	$\Delta e$	$\Delta i$	$\Delta R$	$\Delta e$	$\Delta i$	$\Delta R$
Brazil	92%	23%	43%	48%	68%	48%
Mexico	83%	17%	29%	83%	46%	75%
South Korea	93%	38%	51%	78%	89%	67%

Note: The numbers are the probabilities of changes confined within the bounds presented in equations (1) to (3).

Table 2 shows the results for Ball and Reyes' (2008) *FF* analysis. As discussed in the previous subsection, the results show the probability of having a monthly change of each variable that is greater than its standard deviation. In other words, larger probabilities suggest more variability. If the analysed countries have truthfully adopted *IT* we expect to see more variability of the exchange rate, and less variability of inflation and policy instruments (real interest rates and international reserves).

The conclusions are similar to those found using Calvo and Reinhart's (2002) approach. The results show a strong movement towards a freer exchange rate, with much more volatility after *IT*. For Brazil the probability of the exchange rate moving by more than one standard deviation in a given month increased from just 7% to 30% after *IT*; for Mexico it increased from 10% to 33%; and for South

<sup>7</sup> Sack and Wieland (2000, p. 205) define interest rate smoothing as the tendency of Central Banks to change interest rates "in sequences of small steps in the same direction and reverse the direction of interest rate movements only infrequently". The main reason for this type of behaviour is to avoid unnecessary economic instability brought about by large swings in interest rates.

Korea from 5% to 29%. Inflation, on the other hand, becomes less volatile only for South Korea. Monetary policy instruments, however, do not appear to show a clear pattern, which makes it difficult to find a correct classification for each country according to the metric applied. Although for most of the economies greater exchange rate flexibility is seen after *IT*, more variability of interest rates and international reserves is also observed in some cases. For Brazil the international reserves seem to be more volatile after *IT*, but real rates seem to be less. The same applies to South Korea. In the case of Mexico both policy instruments have a higher variability after *IT*.

Table 2

*FF* analysis: Ball and Reyes' (2008) methodology

	Before <i>IT</i>				After <i>IT</i>			
	$\Delta e$	$\Delta R$	$\Delta P$	$\Delta r$	$\Delta e$	$\Delta R$	$\Delta P$	$\Delta r$
Brazil	7%	13%	46%	20%	30%	23%	59%	18%
Mexico	10%	13%	48%	14%	33%	20%	61%	24%
South Korea	5%	21%	45%	26%	29%	33%	37%	23%

Note: The numbers are the probabilities of changes that exceed the bounds presented in equations (4) to (7).

We can get two conclusions from this initial exercise:

- (i) the exchange rate has been freer after *IT*; and
- (ii) some interventions in the foreign exchange market still seem to occur, which may, or may not, be a symptom of *FF*.

In the next section we will further investigate this last point, as we assess the policy response to nominal shocks within a VAR framework, which enables feedback effects between the variables to be accounted for.

### 3. *IT* and *FF* Practices

Some previous studies have tried to analyse interventions in the exchange rate in an *IT* regime looking at impulse responses. For example, Reyes (2003) used a VAR model of interest rates, international reserves and exchange rates to analyse the *FF* hypothesis for Brazil, Mexico and Chile, and showed that both interest rates and international reserves react to exchange rate shocks in all three countries. Ball and Reyes (2004) also used a VAR model to check for policy responses to exchange rate movements in Mexico, and showed that the monetary policy was very reactive to exchange rate shocks. Park (2001) used a VAR for South Korea, and concluded that the country was clearly pursuing *FF* practices, as policy instruments reacted strongly to exchange rate changes.

The main advantage of using a VAR model over the results presented in the previous section is that it allows conditioning on the behaviour of all the variables of the system. In this sense, we use data on import prices ( $P^*$ ), nominal exchange

rates ( $e$ ), international reserves ( $R$ ), nominal interest rates ( $i$ ), real output ( $y$ ) and consumer prices ( $P$ ) in order to check the responsiveness of interest rates and international reserves to different shocks. Our analysis is complementary to the studies cited above because we compare the results prior and after the adoption of  $IT$ , thus investigating the role of the regime change. Moreover, we worry not only about the reaction of monetary policy to exchange rate shocks, but also to inflation shocks.

We use generalized impulse responses, as described by Pesaran and Shin (1998). This methodology constructs an orthogonal set of innovations that, unlike Choleski decompositions of the covariance matrix, does not depend on the VAR ordering, thus presenting more robust results. The number of lags of the VAR models was determined using the Schwarz Information Criterion (SIC). The results are shown in Table 3.

Table 3  
Lag length selection (SIC)

Lags	Mexico		South Korea		Brazil	
	Before $IT$	After $IT$	Before $IT$	After $IT$	Before $IT$	After $IT$
0	29.37941	21.31693	28.68440	24.86988	36.17971	31.02148
1	<b>26.98206*</b>	<b>18.67945*</b>	<b>28.57934*</b>	<b>24.55362*</b>	<b>34.75313*</b>	<b>28.48107*</b>
2	27.35782	19.86382	29.62233	25.28325	36.31639	28.79907
3	28.22268	21.10311	30.71940	26.14722	38.12935	29.94539
4	29.57385	22.28483	31.65388	27.16594	39.37961	30.88787

### 3.1. Data

As in the previous section, we use monthly data from 1995M1 to 2005M12 for Brazil, and 1991M1 to 2005M12 for Mexico and Korea, with the same sample breaks. As before, data was obtained from the IMF's IFS database; the price variable is the consumer price index; nominal exchange rate is the national currency per unit of dollar; international reserves data is the foreign exchange reserves; and nominal interest rates are the money market rates. In addition, we use the industrial production index as a proxy of real output, as monthly GDP data was not available. Finally, import prices are the index of dollar price of imports. This data was not available for Mexico, so as a proxy of foreign costs faced by this country we used the U.S. producer price index.

Some standard ADF unit root tests were applied to the data collected, and most variables are best described as non-stationary. The exceptions are interest rates for Brazil and Mexico, and import prices for Brazil. Therefore, for these countries these variables were modelled in levels, while all the other variables were used in first-differences.



Table 4  
ADF unit root tests

		Mexico	South Korea	Brazil
$e$	(0)	-1.236 (2)	-1.801 (1)	-1.420
$\Delta e$	(0)	-10.25** (1)	-9.319** (1)	-7.871**
$i$	(1)	-3.208** (1)	-1.926 (1)	-2.749*
$\Delta i$		- (0)	-10.30**	-
$P$	(1)	-0.220 (3)	-1.069 (1)	0.331
$\Delta P$	(0)	-3.901** (2)	-9.062** (0)	-4.537**
$R$	(0)	0.917 (1)	2.913 (0)	-1.993
$\Delta R$	(0)	-16.21** (0)	-9.164** (0)	-10.57**
$P^*$	(2)	2.706 (1)	-1.699 (1)	-4.804**
$\Delta P^*$	(0)	-11.08** (0)	-9.324**	-
$y$	(2)	-0.687 (1)	1.536 (0)	-0.441
$\Delta y$	(1)	-8.973** (1)	-8.614** (0)	-13.62**

Notes: The numbers are the test statistic of ADF unit root tests under the null of non-stationarity. Numbers in parentheses are the number of lags, as defined using the Schwarz Information Criterion. \* indicates the rejection of the null at the 10% confidence level. \*\* indicates rejection of the null at the 5% confidence level. The symbol  $\Delta$  indicates first-differences.

### 3.2. Results

The VAR estimations results are presented here using impulse response functions, following one standard error shock to inflation and to the exchange rate, both before and after *IT*. As the standard errors are different for each period, it is important to bear in mind differences in the shocks. These are reported in Table 5.<sup>8</sup> We also present bootstrapped confidence bands for the impulse responses.

While observing the impulse responses it is important to note some basic aspects: the sign and size of the effect, its significance and its persistence. The expected movement of the variables following an exchange rate or an inflation shock is a positive change in nominal interest rates, and a negative change in reserves. As mentioned before our main argument is that some exchange rate smoothing may be accepted under *IT*; nonetheless, Central Banks should not move the exchange

<sup>8</sup> Higher standard errors for the exchange rate before *IT* are not a sign of a freer exchange rate regime; it is only capturing the effect of the large swings in exchange rates brought about by the currency crises that, ultimately, led to *IT* and a floating system. It is worth-noting that this result is consistent with Agénor's (2002) argument that by enhancing macroeconomic stability, an *IT* regime may provide more stability to a flexible exchange rate than a pegged arrangement that is subject to recurrent speculative pressures (and possibly forced devaluations) due to perceived inconsistencies in macroeconomic policies. In this sense, the methodologies of Calvo and Reinhart (2002) and Ball and Reyes (2008) applied in the previous section are a much better way of observing exchange rate flexibility.

rate to artificial levels. In this sense we should observe, after *IT*, a stronger response to inflation than to exchange rate shocks, although some response to exchange rate is still acceptable.

Table 5  
Shock definitions (Sd. Errors)

	Ex. Rate	Inflation
Mexico before <i>IT</i>	5.246	1.198
Mexico after <i>IT</i>	1.711	0.405
Korea before <i>IT</i>	5.324	0.524
Korea after <i>IT</i>	2.245 0.	441
Brazil before <i>IT</i>	5.284	0.700
Brazil after <i>IT</i>	4.133	0.508

Firstly, the results show that before *IT* both policy instruments (reserves and interest rates) responded strongly to exchange rate changes in all countries, whereas the inflation response was weak and generally not significant, with the exception of Mexico. In particular, reserves seemed to respond strongly (and significantly) to exchange rate shocks across countries, in a clear direct intervention stance. This is consistent with a framework that worries more about the exchange rate than about inflation, thus indicating that these countries were indeed pegging the exchange rate.

After the adoption of *IT* some response to exchange rate shocks is still observed for all three countries, but in general it is milder than before. The only clear exception is Mexico's interest rates response, which is basically the same in both periods (adjusting for differences in shocks); nonetheless, there are no more signs of international reserves response to exchange rate shocks for this country after *IT*. Regarding South Korea, we found signs of international reserves response to exchange rate shocks after *IT*, but milder than before the regime change. Furthermore, the interest rates response to exchange rate shocks for this country has become much weaker and not significant. Finally, for Brazil we observe, after *IT*, no sign of international reserves use to fight exchange rate movements. Moreover, we note only a weak response of interest rates to exchange rate shocks, which is not statistically significant. This finding reduces considerably the strength of the *FF* critique for Brazil.

Turning our attention now to the instruments' response to inflation shocks after *IT*, we observe that the response of interest rates has become stronger and more persistent across countries. This finding indicates that, as expected, all three Central Banks seem to have changed their approach towards inflation, becoming more aggressive especially in their interest rates decisions. This is particularly noticeable for Brazil. Regarding Mexico, we acknowledge that the interest rates response is only slightly significant; however, it is highly persistent. Finally, it is

Response to Generalized One S.D. Innovations  $\pm 2$  S.E.

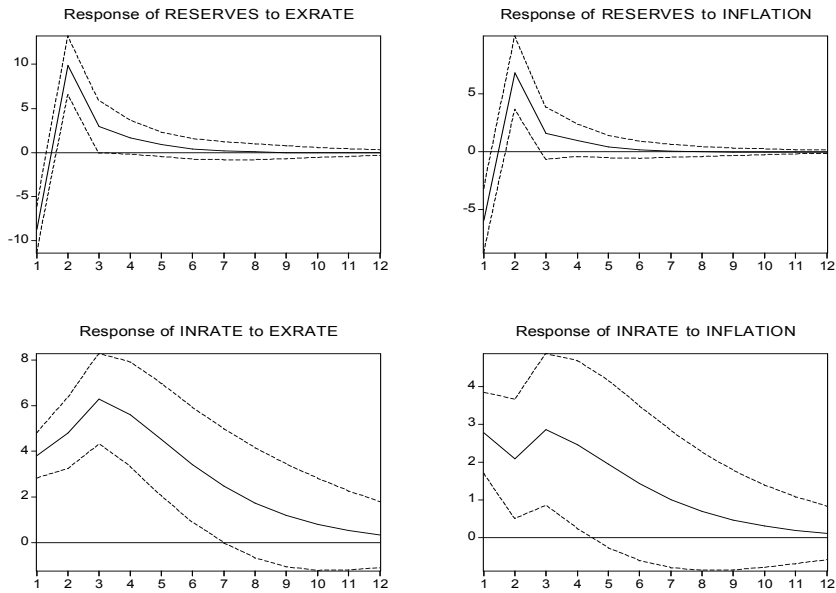


Fig. 1. Mexico before IT

Response to Generalized One S.D. Innovations  $\pm 2$  S.E.

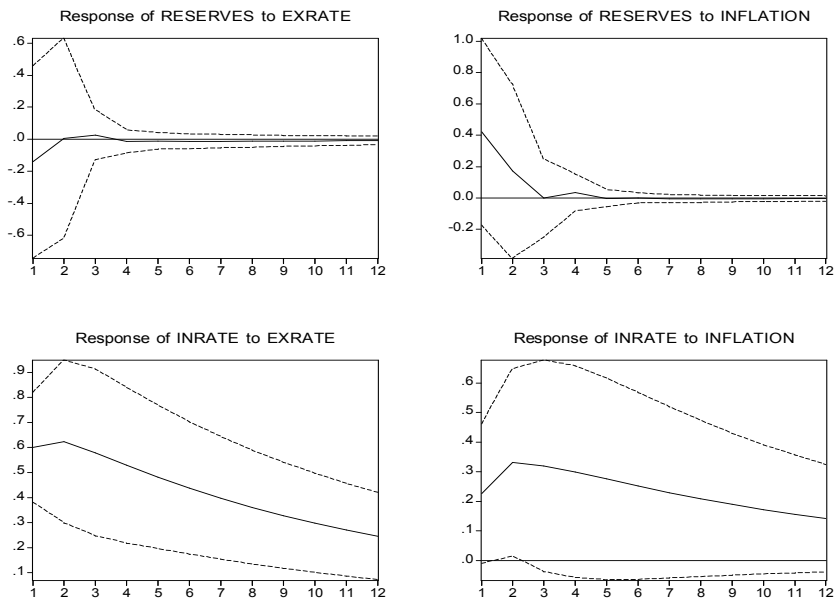


Fig. 2. Mexico after IT

Response to Generalized One S.D. Innovations  $\pm 2$  S.E.

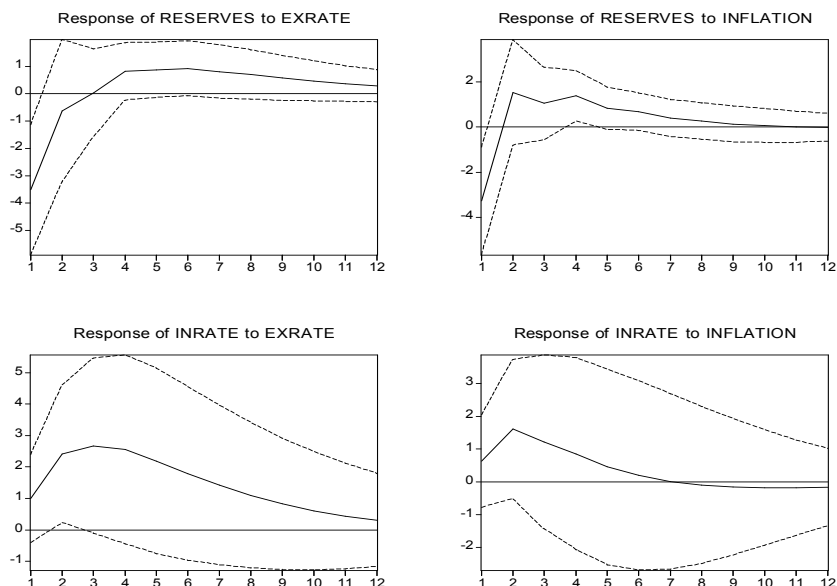


Fig. 3. Brazil before IT

Response to Generalized One S.D. Innovations  $\pm 2$  S.E.

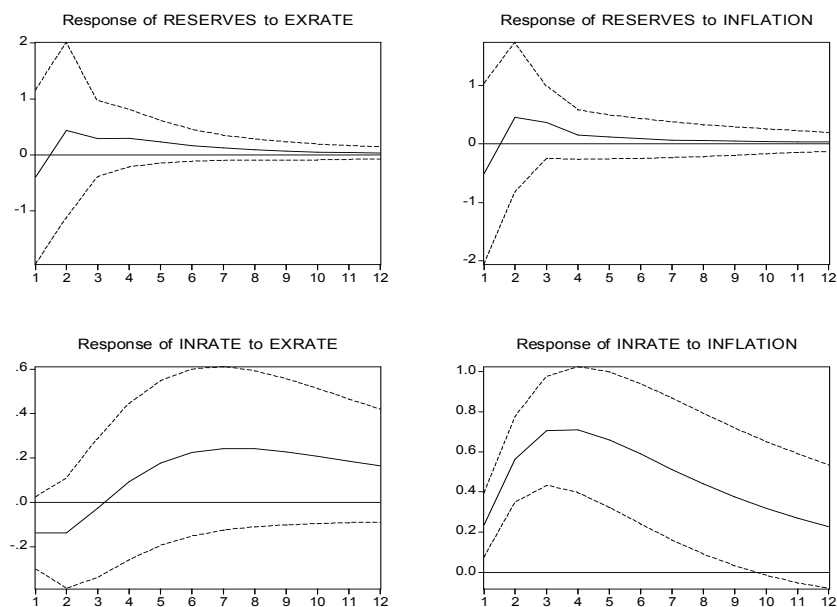


Fig. 4. Brazil after IT

Response to Generalized One S.D. Innovations  $\pm 2$  S.E.

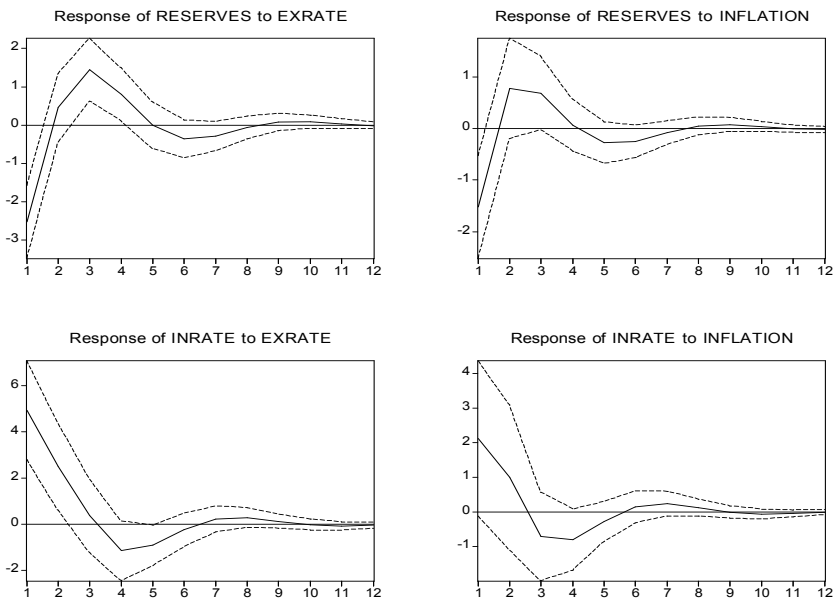


Fig. 5. South Korea before IT

Response to Generalized One S.D. Innovations  $\pm 2$  S.E.

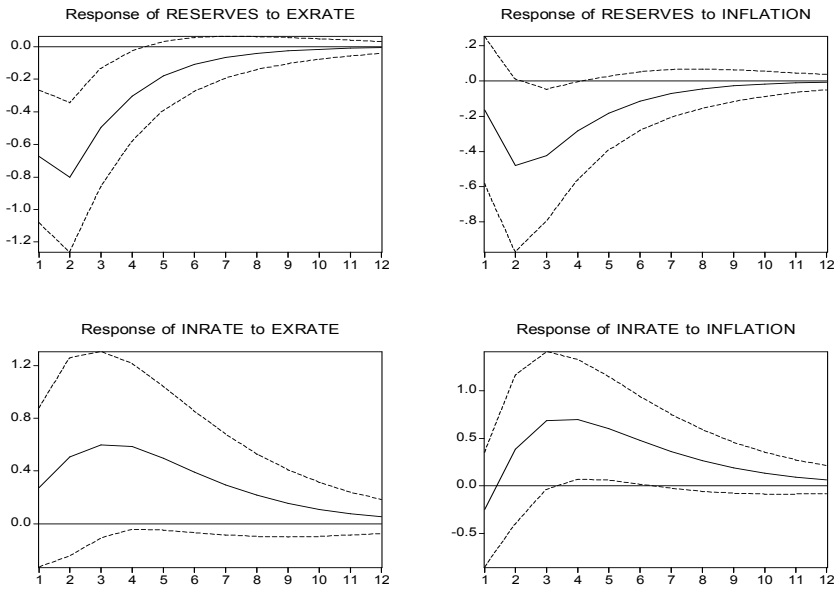


Fig. 6. South Korea after IT

worth noting that for South Korea there are also signs of international reserves response to inflation shocks after *IT*, reinforcing the view of “fear of inflation”.

As observed by Ball and Reyes (2004) it is very difficult to determine whether a country is pursuing a strict *IT* regime or is actually practising *FF*. As discussed before, the risk of misclassifying a country’s policy is that it may put in question the real intentions of the Central Bank, and thus undermine its credibility. However, our intention here is not classifying the countries but rather analyzing changes in monetary policy reaction after the adoption of *IT*. In this sense our results show that the adoption of *IT* was in fact followed by an actual shift in monetary policy behaviour that in general became more worried about inflation than about the exchange rate.

#### 4. Conclusion

We have presented evidence on the monetary policy reaction to exchange rate and inflation shocks for three emerging countries. In contrast to previous studies, we use this evidence to address if there has been a change in monetary policy after the adoption of Inflation Targeting (*IT*). We ask if this new regime meant a movement towards greater exchange rate flexibility, and to what extent the intervention of the Central Bank presents features of “Fear of Floating” or simply reflects “Fear of Inflation”.

Our results allow us to draw three main conclusions. First, exchange rate variability has generally increased after *IT*. Second, although some Central Banks kept on reacting to exchange rate shocks, the interventions in the foreign exchange market have decreased. This intervention has also become more indirect through the use of interest rates, which suggests the use of policy rules common in *IT* regimes. Third, the monetary policy response to inflation shocks has become stronger and more persistent after *IT*, suggesting the prevalence of “Fear of Inflation” over “Fear of Floating”.

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