

Excess Real Interest Rates and the Inflation Targeting Regime in Brazil: Monetary Policy Ineffectiveness and Rentiers' Interests

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Abstract:

This paper compares the real interest rate in Brazil with both inflation targeting (IT) non-IT countries selected by judgment sampling. Brazil has had since the stabilization plan in 1994 one of the highest real interest rates in the world, but nonetheless has not managed to have one of the lowest inflation rates. On the other hand, growth rates have been, on average, rather dismal when compared to other countries in the sample. These issues raise questions about the way that the IT regime has been institutionalized in Brazil since its adoption in 1999. This paper argues that these results are associated with the pressures from the rentier class on the monetary policy to obtain very high nominal interest rates in a context where inflation is not very sensitive to monetary policy instruments. The interest rate is kept above what would be necessary to maintain low inflation under normal conditions, but having damaging impacts on output growth, what can be seen as an indicator of monetary policy ineffectiveness.

Key Words: Real interest rate; inflation targeting; policy effectiveness; Brazilian economy

JEL Classification: E31, E52, E58, O54

1. Introduction

Since the implementation of the Real Plan, in 1994, which, by the way, has been considered the most successful plan for monetary stabilization, Brazil has had one of the highest nominal and real interest in the world. The adoption of the inflation targeting regime (ITR) in 1999 has not changed this scenario.¹ So, it raises the question: How monetary authorities have managed the monetary policy for the last twenty years? On the one hand, from July 1994 to January 1999, the monetary authorities decided, as a result of introducing a tight monetary policy, to maintain high nominal interest rates in order to attract capital flows to finance the current account deficit and to promote a policy of foreign exchange reserves accumulation. On the other hand, after the introduction of the ITR, the monetary policy has been operated religiously according to the New Macroeconomic Consensus (NMC) theoretical framework; that is, the interest rate target aims at bringing the inflation rate to its target or, at least, to its intervals tolerance.

Despite that, Brazil has had one of the highest nominal and real interest rates in the world, at the same time that the inflation rate, especially over the ITR period, has been relatively high: for the period 1999-2014, the annual average inflation (measured by headline CPI) rate was 6.6%. In addition, high interest rates have been associated with poor macroeconomic performance: over the

¹ The average annual nominal and real interest rate, from 1999 to 2014, were 14.2% per year and 7.1% per year, respectively. Authors' calculations based on statistical information from IPEADATA (2015). It is worth noticing that these are policy rates, and that, according to the ANEFAC (National Association for Executives in Finance, Business and Accounting), the annual nominal credit card interest rate in August 2015 reached 350.79% for nonbusiness holders (ANEFAC, 2015).

same period, the average growth rate was 3.1% per year², and there was a significant deterioration of budget deficits and public debt levels due to high interest payments. Therefore, given this poor overall performance, it seems that monetary policy in Brazil has been quite ineffective in fulfilling its single objective of low and stable inflation. At the same time, since ineffectiveness means excessive real interest rates, it can contribute to income and wealth concentration to the extent that interest rates are tools of monetary policy and at the same time an important source of revenues for the rentier class.

This paper aims at analysing and comparing the real interest rate in Brazil with other countries, both the ones adopting the ITR and the ones not adopting. That is, this work evaluates the Brazilian macroeconomic outcomes in the light of the international experience. Our main hypothesis is that the poor macroeconomic performance is associated with the pressures from the rentier class on the monetary policy to obtain very high nominal interest rates in a context where inflation is not very sensitive to monetary policy instruments. Thus, the interest rate has been kept above what would be necessary to maintain low inflation under normal conditions, but having negative impacts on output growth and fiscal results.

Besides this short introduction, the article has four sections: In section two, we summarize the discussion about the ITR regime and the macroeconomic model implemented by the Central Bank of Brazil (BCB) to operate the ITR, as well as it analysis the main results of the Brazilian experience with ITR. In section three, we compare the Brazilian monetary policy experience with other countries. In particular, the study compares international nominal and real interest rates, inflation rates, real GDP growth rates, and unemployment rates, using the World Bank database and information collected from central banks and other venues. In section four we discuss the results and provide an interpretation based on our hypothesis. Finally, section five summarizes and concludes the article.

2. The BCB macroeconomic model of ITR and the Brazilian experience with ITR³

This section describes the macroeconomic model utilized by the BCB, firmly embedded in the NCM theory, and analyses the Brazilian experience with ITR. As we know, the NCM model emerged in the beginning of the 1990s, and, since then, has become highly influential in terms of both macroeconomic thinking and macroeconomic policy, especially monetary policy (Arestis and Sawyer, 2008).

The NCM model is characterized by three equations: the IS equation representing the demand side; the Phillips curve (PC) equation representing the supply side; and the monetary policy

² Authors' calculation based on statistical information from IPEADATA (2015).

³ This section is based mainly on Arestis, Ferrari-Filho and Paula (2011) for understanding the ITR in Brazil.

rule (MPR) equation “derived from the government or central bank’s policy trade-off between output and inflation” (Carlin & Soskice, 2006: 81).⁴ The MPR is the underpinning for the ITR. The rule establishes the central bank behavior under conditions of demand shocks that deviate inflation from the target. In this view, the instrument of monetary policy is the short-run nominal interest rate. When actual inflation rates converge to the target inflation rate established by the monetary authority, the policy interest rate is assumed to be on its natural level, balancing supply and demand in the goods market. This means that output is at the potential level, given the resources and technology available.

Many post Keynesian authors, at both the theoretical and the empirical level, have criticized this approach. The review that follows is not exhaustive and just highlights some important themes in the Post-Keynesian literature. Setterfield (2006) claims that ITR is compatible with post Keynesian economics, but it must be modified to allow for distributive conflicts in determining inflation rates and the principle of effective demand in determining output. In this case, the central bank must also target output and employment. Lima and Setterfield (2008) defend the use of inflation targeting, but conditional to a mix of policies. Santos (2011) reaches the same conclusion, but using a different framework to deal with expectations.

Drummond and Porcile (2012) develop a Kaleckian model to cope with the external sector imbalances, capital flows, and real exchange rates. The authors show that monetary regimes based exclusively on inflation targets are less stable than the ones considering both inflation and employment. Caldentey and Vernengo (2013) argue that the ITR has its foundations in a closed economy setting, and is unlikely to work effectively in an open economy framework. Central banks pay attention to the external sector and to foreign exchange rates in their monetary policy decisions, thus not being able to focus exclusively on inflation rates. Considering the international existing empirical literature, Arestis and Sawyer (2008) conclude that interest rates do not impact the inflation rates over the long run, but have damaging impacts over capital accumulation.

Epstein and Yeldan (2009) bring forth several theoretical and empirical studies regarding inflation targeting. The monetary framework is considered flawed, mainly under conditions of frequent financial crises, and therefore the authors reject the ITR and exploit what they call socially useful policy alternatives that best fit countries’ experiences.

Regarding the Brazilian experience, the monetary authorities have adopted the NCM model since 1999, characterized by ITR, a target for primary fiscal budget as share of GDP and floating exchange rate regime. Focusing our attention on monetary policy, the BCB has followed religiously the theoretical framework that underpins the ITR strategy. According to Arestis, Ferrari-Filho &

⁴ The last equation represents the Taylor’s rule or the ITR.

Paula (2011), the main theoretical features of the BCB macroeconomic model, closely based on the NCM model, can be summarized as follows:

- (i) Price stability is monetary policy's primary long-term objective. In addition, the price stability goal may be accompanied by output stabilization so long as price stability is not violated.
- (ii) ITR is a monetary policy framework whereby public announcement of official inflation targets is required. In this approach, 'expected inflation' and the transparency of inflation forecasts is an important element of the policy.
- (iii) Monetary policy is the main instrument of macroeconomic policy, and it should not be operated by politicians, but by experts: 'independent' central banks.
- (iv) Fiscal policy is no longer viewed as a powerful macroeconomic instrument for stabilizing the economy. Hence, the economic authorities should adopt a fiscal target in terms of primary budget surplus.
- (v) The level of economic activity fluctuates around a supply-side equilibrium. It means that the level of effective demand does not play an independent role in the long-run level of economic activity.
- (vi) Finally considering that Brazil is an open economy, and has a long history of external imbalances and crises, exchange rate is of crucial importance, because it transmits certain external effects to interest rate and the inflation rate, among others. Given that, in the BCB macroeconomic model, the ITR may lead to a more stable currency since it signals a clear commitment to price stability in a floating exchange rate system.

The Brazilian ITR has been modelled similarly to the British ITR model. The Brazilian National Monetary Council (CMN), which has three members, the Minister of Finance, the Minister of Planning, and the President of the BCB, sets the inflation targets. In June of each year, the CMN establishes the inflation targets and their corresponding intervals of tolerance for the next two years. Besides the inflation target, CMN is also responsible for the approval of the main norms regarding monetary and exchange rate policies, as well as the regulation of the financial system.

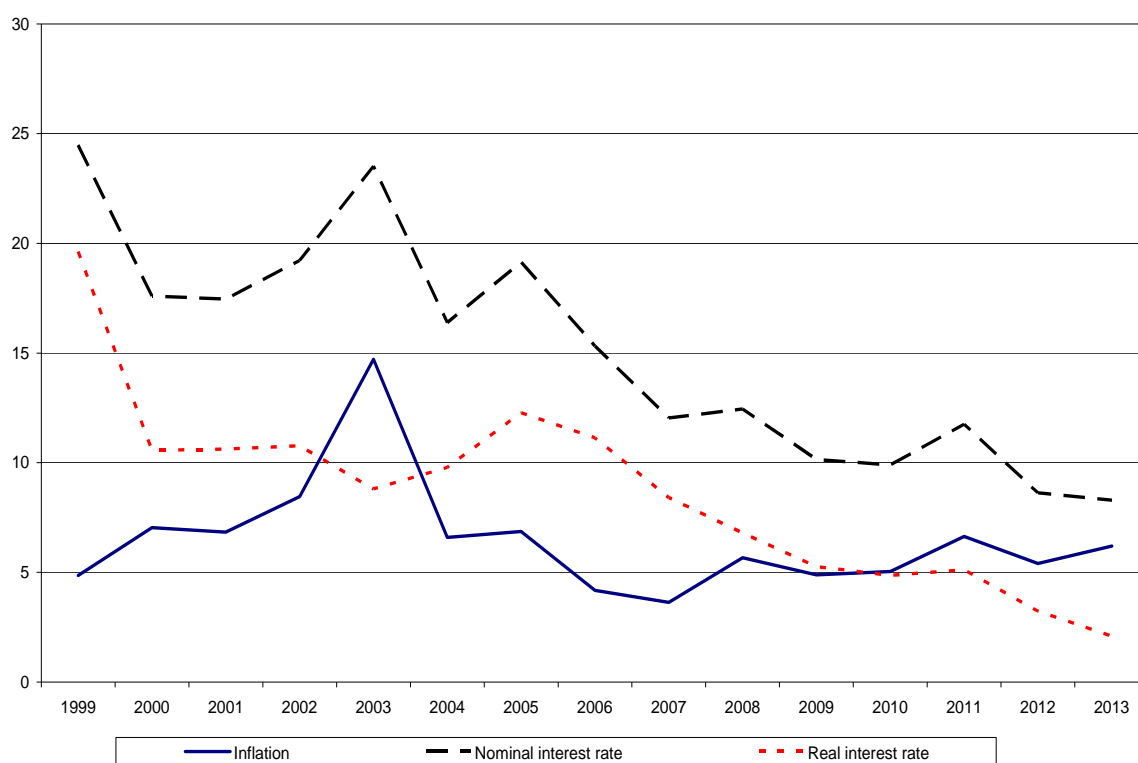
The interest rate target is set by the Comitê de Política Monetária (or COPOM for short, meaning Monetary Policy Committee) based on the interest rate from the Sistema Especial de Liquidação e Custódia (or Selic for short, meaning Special System for Custody and Settlement of Government Bonds), an interest rate for overnight interbank loans, collateralized by those government bonds. The interest rate target is fixed for the period between the COPOM regular meetings. The President of the BCB, though, has the power to change the Selic interest rate target anytime between regular COPOM meetings (every 45 days). This is made possible by the way the COPOM decides about policy rates. It can introduce a monetary policy bias at its regular meetings, whereas the bias refers to easing or tightening of monetary policy between meetings. Immediately

after the COMPOM meetings, the BCB publishes an Inflation Report, which provides specific information on economic conditions, as well as the COPOM's inflation forecasts upon which changes in the Selic interest rate are determined. The objective of this report is to inform the public and the financial market about the goals, design, and implementation of monetary policy.

Table 1 in the statistical appendix shows the point targets, the tolerance intervals, and inflation rates measure by the broad consumer price index (IPCA) for 1999–2014. By examining Table 1, it is noticeable, on the one hand, that over the period 1999–2014 the tolerance intervals were missed for the years 2001, 2002, and 2003 by a substantial margin, especially in 2002, while in 2004 the inflation target was only met after it was raised by mid-2003. On the other hand, the inflation rates were above the point targets in nine years (1999, 2004–2005, 2008, and 2010–2014). It may thus be concluded that ITR in Brazil was not completely successful over the sixteen years of its implementation, mainly because it has not been effective in maintaining a low and stable inflation.

Figure 1 shows the behavior of inflation and nominal and real interest rates for the period 1999–2013.

Figure 1 – Headline Inflation (CPI) and Selic Interest Rates in Brazil Under the Inflation Targeting Regime (1999–2013)

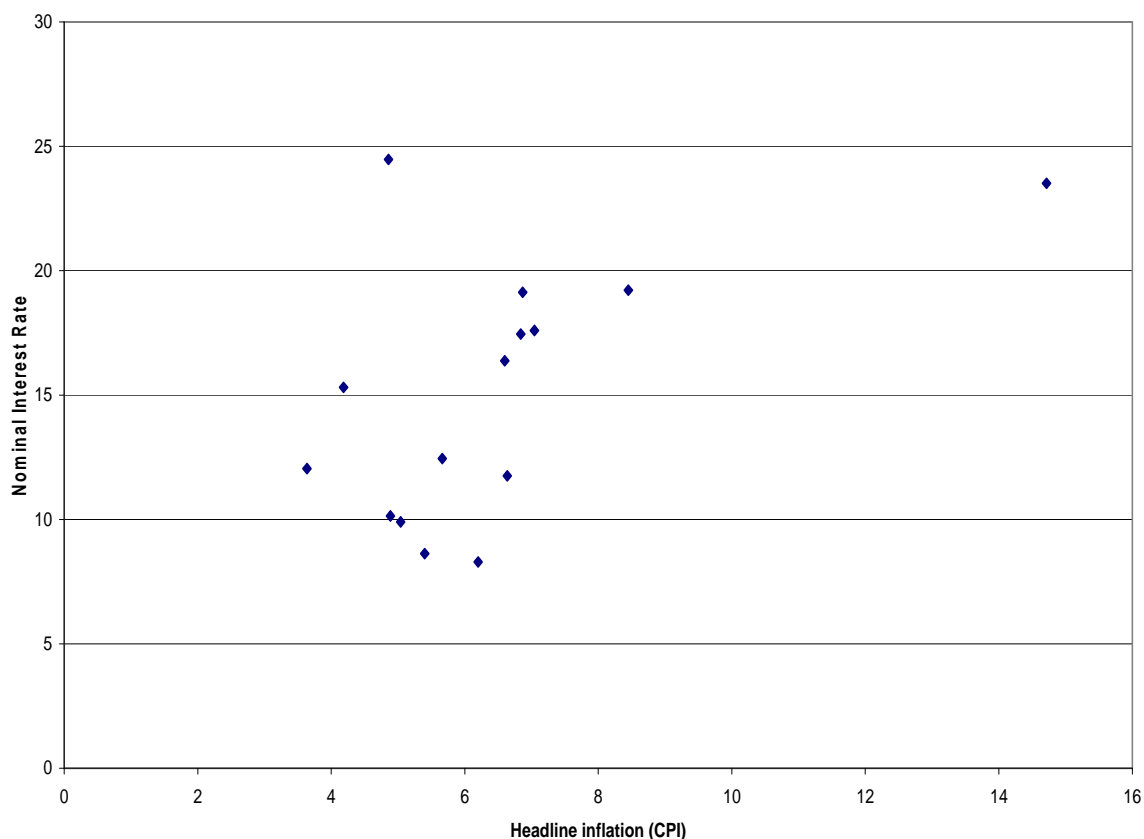


Source: Elaborated by the authors using data from the Brazilian Central Bank.

It shows that real interest rates have gradually fallen since 2005, first by both falling inflation and nominal interest rates, and then by continuing falling nominal interest rates and more

or less constant inflation rates. There does not seem to be an inverse relationship between nominal interest rates and headline inflation rates. Figure 2 below shows a positive relationship between contemporaneous inflation and nominal interest rates (with a coefficient of determination equal to 0.28). Lagging interest rates by one year reduces the R^2 but does not cause the positive relationship to disappear. The same is true for a 2-year lag. Removing the outlier for year 2003 (inflation rate of 14.72% and interest rate of 23.52%), does not eliminate the positive relationship. If one assumes lags in the implementation of monetary policy as suggested by Carlin and Soskice, 2005), these results go against inflation targeting, unless Brazil has some exceptionality in which inflationary inertia requires more than 2 years for higher interest rates to work its effects on inflation out. It is more likely that monetary policy in Brazil is ineffective, and excess real interest rates are a plausible result of ineffectiveness.

Figure 2 – Nominal Interest Rates and Headline Inflation Rates in Brazil (1999-2013)



Source: Elaborated by the author using data from the World Bank (inflation rates) and the Brazilian Central Bank (Nominal Interest Rate)

Given that poor ITR performance, a question arises: Why the Selic interest rate targets were not able to ensure better inflation rates from 1999 to 2014? For instance, Modenesi & Araújo (2013), based on an econometric analysis of the monetary policy transmission mechanism in Brazil,

show that inflation is not directly sensitive to the selic interest rate. In other words, a rise in the Selic generates small benefits in terms of a fall in the inflation rate.

Moreover, the literature that estimates the reaction function of the BCB, after the adoption of ITR, shows that the BCB reaction to inflation has been asymmetric: (i) the increases in the inflation rates generate a more than proportional reaction on the Selic; and (ii) BCB reacts very gradually (it means, it reduces the Selic very slowly) when there is a fall in the inflation rate and/or a sharp reduction in the output growth. This is a pertinent conclusion reached by Libanio (2010), who argues that the way that monetary policy has been conducted in Brazil under the ITR and floating exchange regime with a liberalized capital account brings about an upward bias in interest rates, which harms aggregate demand and, as a consequence, affects negatively economic growth. Using a vector autoregression (VAR) model, he produces evidences that shows that monetary policy has been procyclical and asymmetric in Brazil.

Considering that high interest rates have not affected directly the inflation rate, why the interest rate is still so high? According to Arestis, Ferrari-Filho & Paula (2011), the interest rate aims at stabilizing the exchange rate volatility, given that the exchange rate variations affect the GDP deflator (IGP), which in its turn affects the index of administered prices. As administered prices change, IPCA is also affected. Thus, periods of appreciation of the exchange rate have resulted in a decrease in the rate of inflation, with a time lag, while periods of depreciation of the currency have affected domestic prices via the exchange rate pass-through. Thus, observing the inflation performance from 1999 to 2014, it is possible to conclude that inflation targets were only met when international financial conditions allowed it. In other words, ITR was successful when the exchange rate appreciation helped the BCB efforts to maintain inflation under control.

Bresser-Pereira and Gomes (2009) provide another explanation. According to the authors, the interest rate is very high in Brazil also due to the interest/exchange rate trap, but “since the end of the 1980s, the BCB has been ‘captured’ rentiers who profit from high interest rates”. Vernengo (2005), analyzing the very first years of the ITR adoption, also shows that the distributive conflict is important for the inflation dynamics in Brazil, and that the monetary policy regime favors the financial sector and the rentier interests.

This suggests that in Brazil inflation has been mainly cost-determined, explained by negative or positive supply shocks (movements in the exchange rate, changes in the international prices of commodities etc.) and by partial inertia due to the indexation of the administered prices and minimum wage. In this context, considering that an increase in prices is not caused by a situation of demand-pull inflation, the monetary policy and high interest rate are ineffective to reduce and stabilize inflation rate. Equally plausible, Borio e Filardo (2007), based on empirical data, discuss the evidence that inflation is imported under globalization.

If monetary policy has not been effective in maintaining a low and stable inflation in Brazil, other two questions arise: Why inflation rate has not been affected by monetary policy? What are the main costs of an increase in the Selic interest rate? In order to answer these questions, Table 2 shows the Selic interest rates and the economic growth rates from 1999 to 2014.

Answering the first question, it is possible to observe, based on Tables 1 and 2 in the statistical appendix and Figure 2, that the relationship between monetary policy, mainly the Selic interest rate, and inflation is not direct. That is, despite the fact that price stability, under ITR, has required an excessively rigid monetary policy (see footnote 1), this relationship is at most weak. Focusing our attention on the second question, there is some evidence that high interest rates may cause weak economic activity. From 1999 to 2014, GDP has followed a stop-and-go pattern and its average growth rate hovered around 3.1% per year, significantly below the average growth rate of other emerging countries that have adopted an ITR (Arestis, Ferrari-Filho & Paula, 2011; Ferrari Filho & Schifino, 2010). Thus, high interest rates cause serious constraint on economic growth, through the price of credit (loan rates) and entrepreneurs' poor expectations. On the other hand, high interest rate increases public debt, which has been composed mainly of indexed bonds or short-term pre-fixed bonds.

To conclude this section, we can briefly summarize it as follows. First, monetary policy and high interest rate under ITR have not been efficient to reduce and stabilize the inflation in Brazil. This is because the main causes of the Brazilian inflation rate seem to be related to cost-push factors, such as movements in the exchange rate, changes in the international prices of commodities etc., and by partial inertia due to the indexation of the administered prices. Second, high interest rates have contributed to the poor performance of the GDP growth rate and to increasing the nominal fiscal deficit and public debt. Next section puts the discussion into an international perspective.

3. Comparing the Brazilian experience with other ITR and non-ITR countries

This section deepens the discussion by looking at other international experiences with inflation and monetary policy. Many empirical studies regarding ITR adopt a "before and after" approach, assessing the macroeconomic performance regarding inflation for two periods, one before the adoption of the IT and another after (Ball e Sheridan, 2003). They use non-adopting countries as a group control, and conclude that IT does not matter to achieve lower inflation rates, since non-inflation targeters have equally obtained such result. This method has been widely used and will not be replicated here. The method used in this work uses three groups for comparison with Brazil: (i)

the fully fledged inflation targeters⁵, without a control group, but also paying attention to countries with a past of hyperinflation and domestic debt default or restructuring, (ii) the BRICS countries, and (iii) countries assumed to have abnormally high nominal interest rates.

The first group is a natural choice. However, since IT countries have different experiences with inflation and interest rate management, the period covered cannot be the same, and the study adjusts for that by using averages and other descriptive statistics as comparison tools. The statistical annex provides the results. In the sample, considering the year of formal adoption, there are only eight countries more experienced than Brazil regarding IT. Subdivisions in terms of years of adoption are possible, but not carried out in this study.

The second group is perhaps arbitrary. Yet, all members are less developed or developing countries with a relatively good macroeconomic performance before the Great Recession. In this group, two countries are fully fledged IT (Brazil and South Africa). The third group was considered for the following reason. Conservative economist Steve Hanke (2014) modifies the traditional misery index by including the interest rate and real GDP per capita growth in the estimation. The author then creates a 2013 rank of countries, highlighting the most important contributing factor to the misery. Brazil figures among the worst countries ranked, and the major contributing factor is the interest rate. The top-five countries for which interest rates are the most important contributing factor were considered in the third group (Jamaica, Brazil, Nicaragua, Honduras e Costa Rica).

Overall, countries have different macroeconomic goals and strategies and this should bear in mind when doing international comparisons. For instance, Central America countries, considering the central bank statements on their websites, are more concerned with external balance and international reserves than with interest rates and inflation. On another matter, Colombia uses other instruments besides interest rates to control for inflation. This raises an important point regarding the anti-inflationary policies: monetary policy is not necessarily the only game in town, because inflation is not necessarily always and everywhere a monetary phenomenon. Also, Russia has a target, but it is not a full-fledged IT. India establishes price stability in terms of a target, but explicitly assumes that growth matters. Jamaica has a similar approach. Costa Rica has moved to IT, but has not concluded the transition. And so on.

Thus, information about headline CPI inflation, short-term interest rates, output, and employment were collected. The data appendix provides information about the data.

⁵ According to Hammond (2012), the 27 fully-fledged inflation targeters, as of start of 2012, were (with date of full adoption in parenthesis): Armenia (January 2006), Australia (June 1993), Brazil (June 1999), Canada (February 1991), Chile (September 1999), Colombia (October 1999), Czech Republic (December 1997), Ghana (May 2007), Guatemala (2005), Hungary (June 2001), Iceland (March 2001), Indonesia (July 2005), Israel (June 1997), Mexico (2001), New Zealand (December 1989), Norway (March 2001), Peru (January 2002), Philippines (January 2002), Poland (1998), Romania (August 2005), Serbia (January 2009), South Africa (February 2000), South Korea (April 1998), Sweden (1995), Thailand (May 2000), Turkey (January 2006) and United Kingdom (October 1992).

For the sake of measuring effectiveness, excess real interest rates are any existing positive real interest rate for the time considered. In the NMC, there is an optimum nominal interest rate fully compatible with achieving the IT. Since the nominal interest rate set by the central bank is only the lowest short-term interest rate, a zero real interest rate at the central bank represents a positive real interest rate in the financial sector, assuming a mark-up or spread (Rousseas, 1985).

Regarding inflation, according to table 3 in the statistical appendix, in comparison with the other fully IT, Brazil ranks 23rd regarding average, median inflation and minimum inflation (meaning in that case that other 22 countries had lower minimum inflation rates during their inflation targeting period). It has the second highest maximum inflation rate for the period considered, and ranks 21st regarding inflation volatility (meaning that other 20 countries had lower standard deviations). This means that the ITR in Brazil, to the extent that it is a valid method for stabilizing prices, has not been very successful in achieving low and stable inflation in comparison with other countries and not only considering the evolution of the regime in Brazil, as discussed in the previous section.

Comparing with the BRICS, Brazil has the third lowest (or third highest) average and minimum inflation rate, the second highest median, maximum and variable inflation rate. This means that countries more or less similar to Brazil in terms of level of development can have lower and more stable inflation rates without formally adopting an ITR. China is the single most effective country in stabilizing prices in the group, much better than IT countries like Brazil and South Africa.

Considering group 3, Brazil has the lowest average and median inflation in the group. It has the third highest maximum inflation rate for the period considered (or the third lowest maximum), the lowest minimum annual inflation rate and the second lowest standard deviation. However, it is difficult to state positively that those countries would be better if they had adopted an ITR.

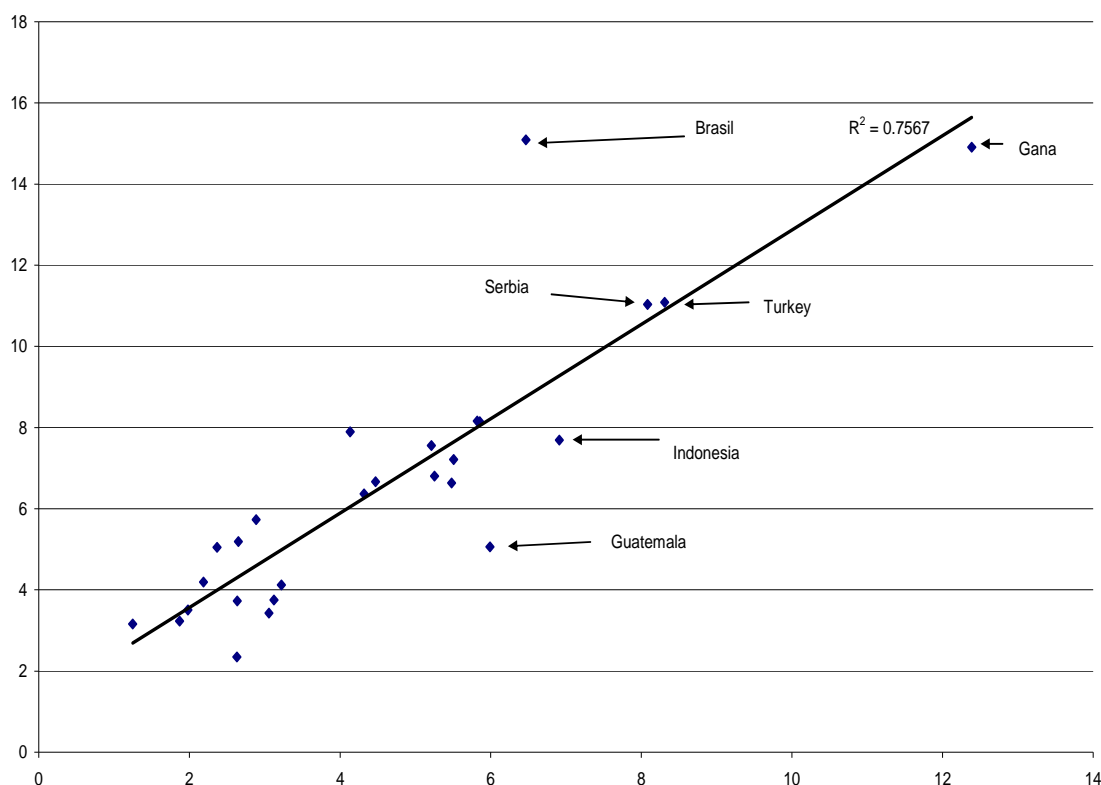
In terms of interest rates, Brazil has the highest average, median, and maximum nominal interest for all three groups. It has the third highest minimum nominal interest rate and volatility. Figure 3 below illustrates the combination of nominal interest rates and inflation rates for the IT group. Brazil is way off the mark regarding interest rates. As discussed above, since Brazil does not have the highest inflation rate neither among the IT countries, nor among the BRICS or the interest-caused welfare loss countries, the highest nominal interest rates must have another explanation.

In this regard, we also identified countries with episodes of hyperinflation in the twentieth or twentieth centuries as a subgroup on table 4. It is clear from the data that having had hyperinflation cannot explain higher current interest rates, although we did not control for the hyperinflationary memory based on the occurrence of hyperinflation. The same conclusion regarding high nominal interest rates is valid for another subgroup with countries that experienced default or restructuring

of their domestic debts. Having a high risk of default based on past behavior cannot explain the Brazilian anomaly. A combination of hyperinflation and debt problems does not change the picture.

As a result of the high nominal interest rates, Brazil has the higher average and median real interest rate for all three groups, with many countries showing negative averages and medians. Brazil has also the highest maximum real interest rate for his policy interval. Brazil keeps a positive minimum real interest rate whereas most countries in the three groups have negative rates for the minimum. In the volatility front, Brazil performs well only regarding groups 2 and 3. This means that, since average rates are high, rentier interests have a stable and reliable source of real income.

Figure 3 – Average Nominal Interest Rates and Headline Inflation Rates in IT countries for the IT



Source: Elaborated by the author using data from the World Bank (inflation rates) and the Central Banks (Nominal Interest Rates). See data appendix.

Brazil fares slightly better regarding unemployment rates, although it has the second highest average and median unemployment rates in groups 2 and 3. This is probably because of the center-left political coalition that has ruled Brazil since 2003, which tends to favor pro-labor policies. Regarding the maximum and minimum unemployment rates, it ranks either the second or the third in these groups. It has a better situation regarding many other inflation targeters, but there are countries that target inflation but show lower inflation rates.

Regarding real GDP growth rates, Brazil has the second lowest average and median rates in group 3, and the lowest average and median regarding group 2. In group 1 there are many countries with faster economic growth. Regarding the minimum rates, Brazil has one of the lowest for all groups, showing some resistance to slowdowns. Volatility has not been a remarkable characteristic of the Brazilian economy over the IT period.

In conclusion, the international comparison with different groups of countries strongly suggests that the ITR has not been working in Brazil, and therefore the monetary policy has been ineffective, with excessive real interest rates but not low inflation nor unemployment rates. GDP growth has also been subpar. The next section considers a few additional remarks about that experience.

4. Monetary Policy Ineffectiveness and Rentier's Interests in Brazil

Are there any other explanations for the high real interest rates in Brazil? Dutt (1990-91) argues, from a theoretical perspective, that higher nominal interest rates in less developed countries (LDC) will reduce inflation – by hiking real interest rates concomitantly - only when capacity utilization is full. This requires, from an empirical standpoint, a different set of statistics than the ones considered above. However, a different question concerns the level of interest rates necessary to bring inflation down under full capacity. Why would Brazil be required to have nominal interest rates well above most of the other countries in groups 1, 2, and 3 in order to be able to achieve lower inflation rates? For the same reason, since growth rates have not been high, than some idle capacity is likely to be taking place in Brazil. Therefore, there are high interest rates, high inflation rates and unused capacity.

Notwithstanding the solid arguments and evidence discussed in section two above, it seems that the political economy argument advanced by Vernengo (2006) and Bresser-Pereira and Gomes (2009) should be pursued with more intensity. Indeed, data from Samuels (2001) show that banks have been among the most important contributors to finance political campaigns in Brazil. Nevertheless, under supposedly autonomous central banks this link between financial interests, politics, and monetary policy would be more opaque. This has more to do with a structure of monetary policy in which central banks are structurally constrained to keep interest rates high, but in Brazil this framework has favored the rentier class on a unseen scale, with the result that monetary policy is ineffective in reducing inflation but very effective in transferring income to rentiers.

Exhibit 1 below provides a theoretical classification for the different combinations of interest rate and inflation rate as a way to measure the effectiveness of monetary policy. It shows the Brazilian anomaly as a rentiers' party, with excessive interest rates based not on low inflation,

but on exorbitant nominal interest rates, whereas other countries seem to have managed to subdue rentiers' interests, with nominal interest rates close to the inflation rates. Russia, on the other hand, would be an example of rentiers'hell. The recent episode in Brazil, when public banks were used to boost competition and reduce market interest rates, along with policy rates reductions by the central bank, led to all types of financial “revolt” in the Brazilian press, reinforces the argument. Another possibility is to consider interest expenditures as a source of cost for indebted firms. When interest rates rise, costs go up and firms transfer these higher costs to prices, feeding inflation. In this case inflation targeting is a self-defeating policy.

Exhibit 1 – A typology of monetary policy regimes (L = Low, H = high)

		Inflation Rate	
		L	H
Interest Rate	H	Rentiers' party/ineffective monetary policy	Rentiers potentially subdued/potentially effective policy
	L	Rentiers potentially subdued/potentially effective policy	Rentiers' hell/ineffective monetary policy

Source: Elaborated by the authors.

Therefore, it is hard to defend monetary policy under IT in Brazil as effective. Real interest rates are excessive on several grounds. This requires a specific definition of this policy stance. Conservative scholars and economists, as well as international financial institutions, when dealing with fiscal policy and budget deficits, frequently label the government behavior as irresponsible and the corresponding excessive spending levels as profligate as wasteful (Cardoso and Helwege, 1991; Altman and Haass, 2010). If this is the case, the same seems to apply to monetary policy in the specific setting of IT, at least in the Brazilian case. Using the same criterion, the BCB should be labeled irresponsible for maintaining very high nominal and real interest rates, with no trivial burdens on the fiscal budget deficits, as discussed in section two. In this case, the fiscal irresponsibility is more likely a side effect of irresponsible monetary policy. This policy is wasteful

regarding real GDP growth and employment levels when compared to other countries, although it is still profligate regarding the rentiers' interests served by this very monetary framework of unnecessary transfers from taxpayers.

5. Summary and conclusions

The descriptive statistical data and the discussion presented in the sections above above suggest that the ITR in Brazil has not been effective in fulfilling its objectives of keeping low and stable inflation and contributing to higher growth rates and low unemployment, as expected by its NMC defenders. The ITR in Brazil has not managed to achieve low inflation rates, despite the highest nominal and real interest rates of all the countries considered. This is valid both in terms of its evolution in Brazil as well as in comparison with other countries, both fully-fledged IT or not, and for countries with experiences of hyperinflation, domestic debt default or restructuring or a combination of both. Actually, the reverse is more likely to be true: the policy regime seems to be monetarily irresponsible and wasteful. Inflation seems to have different determinants, including external and supply shocks. In this case a policy of keeping the highest real interest rates in the world simply represents an income transfer policy.

Although the goal of this preliminary study is not to provide policy prescriptions, and keeping in mind that more meaningful research is always needed when practical matters are involved, if Brazil aims at achieving price stability, low unemployment and higher sustainable growth rates, the ITR does not seem to be the answer. An alternative is therefore necessary, for the sake of reducing inflation, boost real GDP growth and employment, and minimizing income concentration. And this is likely to be met with strong resistance from rentiers' interests.

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Statistical Appendix

Table 1. Inflation Targets and Inflation Rates (IPCA) in Brazil, %: 1999 to 2014

Year	Point Targets	Tolerance Intervals	Effective Headline Inflation Rates (IPCA)
1999	8	6 to 10	8.94
2000	6	4 to 8	5.97
2001	4	2 to 6	7.67
2002	3.5	1.5 to 6.5	12.53
2003	4	1.5 to 6.5	9.3
2004*	5.5	3.5 to 8	7.6
2005	4.5	2.5 to 7.5	5.69
2006	4.5	2.5 to 7.5	3.14
2007	4.5	2.5 to 6.5	4.46
2008	4.5	2.5 to 6.5	5.9
2009	4.5	2.5 to 6.5	4.31
2010	4.5	2.5 to 6.5	5.91
2011	4.5	2.5 to 6.5	6.5
2012	4.5	2.5 to 6.5	5.84
2013	4.5	2.5 to 6.5	5.91
2014	4.5	2.5 to 6.5	6.41

Source: BCB (2015).

Note: (*) The original inflation target for 2004 was 3.75% (with a tolerance interval of 2.5%). Subsequently, the BCB changed the inflation target to 5.5% and kept the $\pm 2.5\%$ of tolerance interval.

Table 2. Nominal Selic Interest Rate and Growth Rates in Brazil, %: 1999 to 2014

Year	Average Selic Interest Rate Per Year	Annual Selic Interest Rate, End of Period	Annual Growth Rate
1999	25.5	19	0.3
2000	17.4	15.75	4.3
2001	17.3	19	1.3
2002	19.2	25	3.1
2003	23	16.5	1.2
2004	16.4	17.75	5.7
2005	19.2	18	3.1
2006	15.2	13.25	4
2007	12	11.25	6
2008	12.7	13.75	5
2009	10.1	8.75	- 0.2
2010	9.9	10.75	7.6
2011	11.8	11	3.9
2012	8.6	7.25	1.8
2013	8.3	10	2.7
2014	11	11.75	0.1

Source: BCB (2015).

Table 3 – Inflation (Headline CPI)

Country(*)	Average Annual Rate	Median Annual Rate	Maximum Annual Rate	Minimum Annual Rate	Standard Deviation
Group 1					
Armenia (8)	5,48	5,10	8,95	2,56	2,53
Australia (21)	2,65	2,61	4,64	0,25	1,18
Canada (23)	1,98	1,86	5,62	0,19	1,06
Chile (14)	3,22	2,90	7,80	-1,40	2,32
Colombia (14)	5,25	5,30	9,22	2,02	2,16
Czech Rep. (16)	3,05	2,34	10,63	0,11	2,52
Ghana (7)	12,39	10,73	19,25	8,73	3,96
Guatemala (9)	5,99	6,22	11,36	1,86	2,93
Hungary (13)	5,21	4,88	9,16	1,73	1,96
Iceland (13)	5,82	5,17	12,68	2,06	3,16
Indonesia (8)	6,91	5,88	13,11	4,28	3,02
Israel (17)	2,89	2,11	9,00	-0,41	2,43
Mexico (13)	4,47	4,16	6,36	3,41	0,82
New Zealand (24)	2,37	2,30	6,10	0,28	1,32
Norway (13)	1,87	2,13	3,77	0,47	0,97
Peru (12)	2,63	2,54	5,79	0,19	1,42
Philippines (12)	4,32	4,00	8,26	2,29	1,76
Poland (16)	4,13	3,57	11,73	0,79	3,16
Romania (8)	5,51	5,69	7,85	3,33	1,44
Serbia (5)	8,08	7,69	11,14	6,14	1,86
South Africa (14)	5,85	5,52	11,54	1,39	3,07
South Korea (16)	3,12	2,76	7,51	0,81	1,54
Sweden (19)	1,25	1,04	3,44	-0,49	1,13
Thailand (14)	2,63	2,50	5,47	-0,85	1,68
Turkey (8)	8,31	8,66	10,44	6,25	1,47
U. Kingdom (21)	2,19	2,17	4,48	0,79	0,89
Brazil (15)	6,47	6,20	14,72	3,64	2,60
Group 2					
China (15)	2,07	1,82	5,86	-1,41	2,27
India (15)	6,76	6,15	11,99	3,68	3,01
Russia (15)	16,84	11,65	85,74	5,07	19,65
South Africa (14)	5,85	5,52	11,54	1,39	3,07
Brazil (15)	6,47	6,20	14,72	3,64	2,60
Group 3					
Costa Rica (15)	9,29	9,45	13,80	4,50	3,08
Honduras (15)	7,73	7,67	11,66	4,70	2,37
Jamaica (15)	10,22	9,29	22,02	5,95	4,21
Nicaragua (15)	8,20	7,19	19,83	3,69	3,97
Brazil (15)	6,47	6,20	14,72	3,64	2,60

(*) Number of years up to 2013 included in the statistics (for full inflation targeters, this means the entire period under inflation targeting).

Source: Elaborated by the author using the World Bank Database.

Table 4 – Nominal Interest Rates Set by the Central Bank

Country	Average Annual Rate	Median Annual Rate	Maximum Annual Rate	Minimum Annual Rate	Standard Deviation
Group 1					
Armenia (8) (#)	6,64	6,89	8,12	4,20	1,50
Australia (21)	5,19	5,15	7,50	2,74	1,18
Canada (23)	3,51	3,64	7,66	0,43	2,00
Chile (14) (#)	4,12	4,80	7,11	1,43	1,62
Colombia (14)	6,80	6,43	12,00	3,17	2,67
Czech Rep. (16)	3,43	2,38	13,35	0,41	3,31
Ghana (7) (§)	14,91	14,81	18,24	12,71	1,88
Guatemala (9)	5,06	5,13	6,92	3,19	0,99
Hungary (13) (#)	7,55	7,50	11,43	4,37	1,88
Iceland (13)	8,16	7,17	15,07	3,99	3,71
Indonesia (8)	7,69	6,89	11,87	5,75	1,99
Israel (17)	5,73	4,19	13,60	0,77	3,97
Mexico (13) (§)	6,66	6,78	11,89	3,98	2,22
New Zealand (24)	5,05	5,41	7,88	2,50	1,97
Norway (13)	3,23	2,24	6,97	1,50	1,93
Peru (12) (#)(§)	3,73	4,04	5,90	2,06	1,11
Philippines (12) (#)	6,37	6,99	8,49	3,09	1,81
Poland (16) (#)	7,89	5,50	20,05	2,94	5,64
Romania (8) (§)	7,21	7,00	9,68	4,82	1,78
Serbia (5)	11,03	11,06	13,33	9,10	1,59
South Africa (14)	8,14	7,72	12,09	5,00	2,55
South Korea (16)	3,75	3,97	5,03	2,07	0,99
Sweden (19)	3,16	3,15	8,52	0,51	1,97
Thailand (14)	2,35	2,17	4,64	1,10	1,09
Turkey (8)	11,09	8,59	19,68	4,75	6,29
U. Kingdom (21) (§)	4,19	4,67	7,23	0,50	2,27
Brazil (15)	15,09	15,31	24,48	8,29	5,16
Group 2					
China (15) (#)(§)	3,19	3,25	3,94	2,70	0,36
India (15)	7,08	7,49	8,54	4,92	1,11
Russia (15) (#)(§)	6,21	6,25	8,38	5,18	0,93
South Africa (14)	8,14	7,72	12,09	5,00	2,55
Brazil (15)	15,09	15,31	24,48	8,29	5,16
Group 3					
Costa Rica (15)	7,01	7,15	9,54	4,46	1,94
Honduras (15)	6,21	6,47	8,33	4,50	1,25
Jamaica (15)	12,52	13,58	19,60	5,78	4,03
Nicaragua (15) (#)	5,78	5,55	11,83	1,00	3,52
Brazil (15) (#)(§)	15,09	15,31	24,48	8,29	5,16

(#) Countries that experienced hyperinflation at some point in the twentieth or twenty-first century, according to Syklos (1995) and IMF WEO (several years).

(§) Countries (not state, provinces or cities within) that experienced domestic debt default or restructuring at some point in the twentieth or twenty-first century, according to Reinhart e Rogoff (2008)⁶.

Source: Elaborated by the author using information retrieved from Central Banks (see section on data).

⁶ Given the recent discussion about their flawed methods of investigation (Herndon et al., 2014), it is advisable to use their data with a grain of salt.

Table 5 – Real Interest Rates

Country	Average Annual Rate	Median Annual Rate	Maximum Annual Rate	Minimum Annual Rate	Standard Deviation
Group 1					
Armenia (8)	1,16	0,87	5,44	-2,00	2,38
Australia (21)	2,54	2,32	5,23	0,29	1,30
Canada (22)	1,69	1,68	6,15	-1,91	2,08
Chile (14)	0,90	0,97	3,51	-2,49	1,78
Colombia (14)	1,55	1,47	3,18	-0,26	1,11
Czech Rep. (16)	0,37	0,18	4,67	-3,29	2,09
Ghana (7)	2,52	4,01	5,23	-1,01	2,55
Guatemala (9)	-0,93	-1,29	3,65	-5,92	2,97
Hungary (12)	2,67	2,73	4,65	-0,14	1,53
Iceland (13)	2,34	1,77	8,04	-0,18	2,23
Indonesia (8)	0,78	1,30	2,36	-1,24	1,41
Israel (17)	2,85	3,02	8,18	-2,55	3,31
Mexico (13)	2,19	2,09	5,53	0,17	1,83
New Zealand (15)	2,67	3,25	5,50	-1,84	1,89
Norway (14)	1,50	1,10	5,43	-0,63	1,81
Peru (11)	0,87	0,60	2,93	-1,00	1,08
Philippines (12)	2,05	1,39	5,54	-1,72	2,25
Poland (16)	3,76	2,58	10,37	-0,05	3,26
Romania (8)	1,70	1,88	3,53	0,41	1,10
Serbia (5)	2,95	2,95	5,21	0,42	1,71
South Africa (12)	2,23	2,70	6,42	-5,43	3,01
South Korea (15)	0,92	0,59	3,94	-0,91	1,37
Sweden (19)	1,91	1,28	5,99	-1,20	1,89
Thailand (14)	-0,28	-0,26	2,27	-2,09	1,31
Turkey (8)	2,78	1,86	10,93	-3,26	5,55
U. Kingdom (21)	2,00	3,04	5,64	-3,98	2,82
Brazil (15)	8,62	8,80	19,62	2,09	4,37
Group 2					
China (15)	1,12	1,51	5,21	-2,16	2,21
India (13)	-0,06	0,63	4,86	-6,52	3,56
Russia (11)	-3,68	-3,27	0,26	-7,21	2,42
South Africa (12)	2,23	2,70	6,42	-5,43	3,01
Brazil (15)	8,62	8,80	19,62	2,09	4,37
Group 3					
Costa Rica (8)	-0,79	-0,14	2,59	-5,17	2,68
Honduras (9)	-0,46	-0,47	1,84	-3,08	1,65
Jamaica (15)	2,31	2,36	13,64	-8,25	5,76
Nicaragua (15)	-2,43	-3,75	5,57	-13,26	5,10
Brazil (15)	8,62	8,80	19,62	2,09	4,37

Source: Elaborated by the author using information retrieved from Central Banks (see section on data).

Table 6 – Unemployment Rates

Country	Average Annual Rate	Median Annual Rate	Maximum Annual Rate	Minimum Annual Rate	Standard Deviation
Group 1					
Armenia (8)	20,38	18,55	28,60	16,20	5,12
Australia (21)	6,51	5,90	10,90	4,20	1,82
Canada (22)	8,13	7,60	11,40	6,00	1,59
Chile (14)	8,03	8,05	9,70	6,00	1,09
Colombia (14)	12,71	11,90	16,60	10,50	2,05
Czech Rep. (16)	7,18	7,20	8,80	4,40	1,16
Ghana (7)	4,14	4,20	4,60	3,70	0,27
Guatemala (9)	2,91	2,80	4,10	1,80	0,68
Hungary (12)	8,20	7,50	11,20	5,70	2,14
Iceland (13)	4,35	3,30	7,60	2,30	2,03
Indonesia (8)	7,73	7,50	10,30	6,10	1,48
Israel (17)	8,14	8,40	10,70	5,60	1,56
Mexico (13)	3,94	3,50	5,30	2,50	1,01
New Zealand (15)	6,47	6,40	10,60	3,70	2,00
Norway (14)	3,54	3,40	4,60	2,50	0,65
Peru (11)	4,70	4,50	6,60	3,60	0,90
Philippines (12)	8,41	7,45	11,90	7,00	1,91
Poland (16)	13,26	11,60	19,90	7,10	4,46
Romania (8)	6,93	7,15	7,40	5,80	0,56
Serbia (5)	20,98	22,20	23,90	16,60	3,02
South Africa (12)	24,68	24,70	27,20	22,30	1,58
South Korea (15)	3,93	3,60	7,00	3,10	1,12
Sweden (19)	7,51	7,80	10,20	5,10	1,51
Thailand (14)	1,38	1,25	2,60	0,70	0,58
Turkey (8)	10,80	10,25	14,00	9,20	1,53
U. Kingdom (21)	6,76	6,20	10,50	4,70	1,74
Brazil (15)	8,26	8,40	9,70	5,90	1,28
Group 2					
China (15)	4,33	4,40	4,70	3,80	0,24
India (13)	3,96	3,90	4,40	3,50	0,33
Russia (11)	7,74	7,30	13,00	5,50	1,99
South Africa (12)	24,68	24,70	27,20	22,30	1,58
Brazil (15)	8,26	8,40	9,70	5,90	1,28
Group 3					
Costa Rica (8)	6,45	6,40	7,80	4,60	1,06
Honduras (9)	4,09	4,10	6,00	2,90	0,83
Jamaica (15)	12,62	12,40	15,70	9,40	2,13
Nicaragua (15)	6,49	6,20	8,00	5,00	1,06
Brazil (15)	8,26	8,40	9,70	5,90	1,28

Source: Elaborated by the author using the World Bank Database.

Table 7 – Real GDP Growth

Country	Average Annual Rate	Median Annual Rate	Maximum Annual Rate	Minimum Annual Rate	Standard Deviation
Group 1					
Armenia (8)	4,66	5,80	13,75	-14,15	8,69
Australia (21)	3,43	3,76	5,00	1,73	0,89
Canada (22)	2,36	2,61	5,12	-2,71	1,91
Chile (14)	4,17	4,45	6,04	-1,04	1,88
Colombia (14)	4,33	4,23	6,90	1,65	1,69
Czech Rep. (16)	2,38	2,50	6,88	-4,84	3,05
Ghana (7)	8,32	8,01	15,01	3,99	3,36
Guatemala (9)	3,60	3,28	6,30	0,53	1,64
Hungary (12)	1,73	1,81	4,79	-6,55	3,14
Iceland (13)	2,69	2,71	9,72	-5,15	4,07
Indonesia (8)	5,91	6,12	6,49	4,63	0,61
Israel (17)	3,82	3,87	8,92	-0,06	2,28
Mexico (13)	2,10	3,03	5,11	-4,70	2,75
New Zealand (15)	2,70	2,88	6,40	-1,87	2,06
Norway (14)	1,52	1,50	3,96	-1,63	1,45
Peru (11)	6,15	6,12	9,14	1,05	2,21
Philippines (12)	5,21	5,11	7,63	1,15	1,89
Poland (16)	3,78	3,81	7,20	1,21	1,72
Romania (8)	2,66	2,90	8,72	-6,80	5,14
Serbia (5)	0,09	0,58	2,60	-3,12	2,22
South Africa (12)	3,41	3,61	5,60	-1,53	1,82
South Korea (15)	4,20	4,22	10,73	-5,71	3,67
Sweden (19)	2,49	2,82	5,99	-5,18	2,53
Thailand (14)	4,14	4,90	7,81	-2,33	2,96
Turkey (8)	3,95	4,40	9,16	-4,83	4,64
U. Kingdom (21)	2,21	2,56	4,30	-4,31	1,83
Brazil (15)	3,15	2,73	7,53	-0,33	2,29
Group 2					
China (15)	9,71	9,30	14,16	7,62	1,87
India (13)	6,96	7,86	10,26	3,80	2,39
Russia (11)	4,98	5,25	10,00	-7,82	4,16
South Africa (12)	3,41	3,61	5,60	-1,53	1,82
Brazil (15)	3,15	2,73	7,53	-0,33	2,29
Group 3					
Costa Rica (8)	4,47	4,51	8,78	-1,02	2,76
Honduras (9)	3,71	3,86	6,57	-2,43	2,71
Jamaica (15)	0,78	1,08	3,50	-4,41	1,87
Nicaragua (15)	3,67	4,15	7,04	-2,76	2,34
Brazil (15)	3,15	2,73	7,53	-0,33	2,29

Source: Elaborated by the author using the World Bank Database.

Data Appendix

Data sources employed were mainly from World Bank (all inflation rates, except Nicaragua, 1999, whose source was indexmundi, and for Chile, Central Bank of Chile; for all unemployment rates after 1991; for New Zealand in 1990, indexmundi; all real GDP growth rates, except Jamaica, whose source was indexmundi for 2002-2006) and Central Banks (for all interest rates, except Canada, whose source was Statistics Canada, with target rate data starting in December 1992, China, whose interest rate was the monthly discount rate available at the St. Louis FRED, and Jamaica, whose source was trading economics). For Czech Republic interest rates, a simple average for 2-week repo rate, discount rate and Lombard rate was used. For Iceland's interest rates, a simple average for 7-day collateralized lending rate, current account rates and 28-day CB notes. For Mexico, the target rate was available only after 2008. The rate used was the weighted market rate. For New Zealand, interest rates were introduced as a tool to attempt to control the inflation in 1999. Before that, the bank used several other instruments such as influencing the supply of money and sending signals to financial markets via the Monetary Conditions Index (Reserve Bank of New Zealand, 2009)⁷. Turkey switched its key policy interest rate to the one-week repo rate in 2010. Before that, the rate used was the overnight rate. For the period 2006-2009, an average of lending and borrowing overnight rates were used⁸. In Turkey an interest rate corridor and required reserves are also used as tools to implement monetary policy. Peru adopted the ITR in January of 2002, but interest rate information was available only starting in September 2003. For the Philippines Central Bank, a simple average of annual overnight and term Repo rates, Reverse Repo rates, and Special Deposit Account rates were calculated. For South Africa, interest rate information was available starting in 2002. For South Korea, data were available starting in May of 1999. For the UK, since 2009 asset purchases have been used as an additional tool for implementing monetary policy. For the UK, from 1993 to 1996 the minimum Band 1 dealing rate, a discount rate, was used; from 1997 to 2005, the repo rate, and from 2005 to 2013, the official bank rate. For Russia, the interest rate was the average between 1-day and 7-day repo rates. For Costa Rica, data were available starting in 2006. Nicaragua has active and passive interest rates, in domestic and foreign currency. The study used the passive 30-day interest rates in domestic currency. Those rates are usually higher than

⁷ The average annual inflation rate before the introduction of the OCR (official cash rate) as the key policy rate (1990-98) was 2.35%, and after (1999-2013) it was 2.38%. This suggests that interest rates may not necessarily be the most efficient instrument for controlling inflation in capitalist economies under an ITR.

⁸ One of the arguments used was that the Central Bank is a net lender, not borrower. In this case, until 2009 there was a high excess interest rate causing net positive payment flows to the Central Bank. When the Bank switched to the 1-week repo rate policy, the excess interest rate became negative. Given that in the repo market the Bank is a net lender, since no borrowing rates are available, this means that the Bank now pays net positive flows to other money market institutions. So, the policy change can be seen as a way to increase rentiers' profits.

passive dollar interest rates for the same period. Finally, for Honduras information was available from 2005 on.

The data were then assembled for every year in which the country in the first group was under the ITR and real interest rates calculated as the difference between nominal interest rates and inflation rates. If the ITR was adopted from January to June, the full year was considered. If adopted from July to December, next year was used. If no information was given about the month of adoption, the full year was considered. Only the date of formal adoption was considered⁹. For groups 2 and 3, the starting year was 1999, the year Brazil adopted IT. Regarding the statistics, since nominal policy interest rates are modified over different intervals, an average rate weighted by the number of working or business days for the year was used. In the final step, the measures of macroeconomic performance were compared.

⁹ For example, Chile adopted partially in 1990 and moved to full adoption in September 1999. Ghana adopted informally in 2002 and formally in May 2007. Israel adopted informally in 1992 and fully in June 1997. Serbia adopted informally in September 2006 and fully in January 2009.