A Post Keynesian Proposal for a Flexible Institutional Arrangement of Inflation Targeting Regime in Emerging Economies

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Abstract: The paper aims at discussing whether inflation target regime (ITR) is compatible with Post Keynesian approach (and in what conditions it can be), and mainly defining an institutional arrangement of ITR more appropriate for emerging economies with long-term history of high inflation. In this sense the paper held that ITR can be compatible with Post Keynesian approach if a flexible institutional arrangement is adopted. In particular, a flexible ITR arrangement can be required for emerging economies that had recent high inflation history in order to conciliate the objectives of price stabilization and sustainable economic growth.

Key-words: inflation targeting, Post Keynesian Economics, emerging economies.

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1. Introduction

Post Keynesian economists argue that inflation targeting regime (hereafter ITR), based on the New Consensus on Macroeconomics and neoclassical assumptions, is not compatible with the Post Keynesian theory. However, some Post Keynesian (PK) economists held that ITR can be compatible with the PK approach. In particular, the latter one argues that the ITR can be compatible with double mandate of the central banks. This calls for the question of which institutional arrangement of ITR is more appropriate for the fulfillment of the goal of maximum economic growth and, at the same time, maintaining a stable and low rate of inflation. Furthermore, there is the question of whether ITR is sufficient for the operation of monetary policy aimed at stabilizing the economy.

In this paper, we held that ITR in a more flexible arrangement should be adopted by emerging economies that had recent history of high inflation. These countries should adopt a more flexible ITR regime that allow the central bank pursues its double mandate with the use of a higher numerical target, core inflation, and a larger convergence horizon. However, this could be not enough: other complementary tools of economic policy could be used. For instance, considering the problems related to the effects of excessive capital inflows on exchange rate, controls on capital inflows could be adopted; on the other hand, ‘prudential credit controls’ could be used to manage aggregate demand when the economy is overheating in order to avoid the harmful effects of the increase of interest rate.

This paper aims at: (i) discussing whether ITR is compatible with PK approach, and particularly in what conditions it can be compatible; and mainly (ii) defining an institutional arrangement of ITR more appropriate for emerging economies with long-term history of high inflation. In this sense we seek to show that ITR can be compatible with PK approach if a flexible institutional arrangement is adopted; in particular, a flexible ITR arrangement can be required for emerging economies to conciliate the objectives of price stabilization and sustainable economic growth. We recognize that ITR does not emerge from the PK theory but instead it comes originally from the New Consensus on Macroeconomics. Even though we understand that it can be performed in a more soft arrangement in such a way that their results may be somehow compatible with Keynesian objectives of economic policy.
The paper is organized in six sections including the present introduction. In section 2 we analyze the theoretical compatibility between ITR and PK economics. In section 3 we discuss the main components of institutional arrangements of ITR. Section 4 is dedicated to macro analysis of emerging economies under ITR. In section 5 we present a PK proposal for flexible institutional arrangement of ITR in emerging economies and section 6 concludes the paper.

2. Is Inflation Targeting Compatible with Post Keynesian Economics?

The new consensus on macroeconomics establishes that a low and stable inflation rate is of paramount importance for long-run growth (Arestis and Sawyer, 2006b, p.5) and that there is no long-run trade-off between inflation and unemployment (Fontana and Palacio-Vera, 2007). Another feature of the new consensus is that discretion in the operation of monetary policy should be limited in order to assure a low and stable rate of inflation and to minimize the variability of output growth. Although the adoption of a simple k-per cent rule, as suggested by Friedman (1968), may not be an optimal monetary policy in an uncertain environment¹, the mainstream literature on monetary policy argues that central banks discretion must be institutionally restricted – by the adoption of the independence of central bank - in order to reduce the problem of inflationary bias that arise when monetary policy was conducted with discretion.

Transparency and discipline in the operation of monetary policy require a nominal anchor for monetary policy. In the 1990s, a growing number of countries adopted an Inflation Targeting Regime (hereafter ITR). The ITR is a framework for monetary policy where i) a numerical target or range for inflation rate is defined as the most important or the sole goal of monetary policy; ii) the target rate of inflation is supposed to be achieved by means of appropriate changes in nominal short-term interest-rates set by Central Bank (hereafter CB); iii) monetary policy is conducted by an independent CB (Sawyer, 2006). The widespread use of ITR has been taken place partially due to the failure of the other nominal anchor strategies to control the rate of inflation. Alternative nominal anchors are the exchange rate targeting and the monetary targeting. In the monetary targeting case, the problem was due to the fact that the empirical relation between inflation and monetary aggregates became very tenuous in the 1970s, probably

due to the direct result of financial innovations that occurred from that time on, which produce a remarkable instability in the circulation velocity of money. The exchange-rate target was in most cases abandoned in the 1990s after the emergence of a great number of successive currency crises in several countries (Argentina, Brazil, Russia, East Asia Countries) as a result of the perverse combination between a fixed-exchange rate regime with liberalized capital accounts.

So, the New Consensus on Macroeconomics (NCM) establishes that ITR is a good institutional framework to assure and maintain low rates of inflation and to minimize output fluctuations. The reason is that ITR is supposed to produce a ‘constrained discretion’ that combines some flexibility with credibility in an ideal way, permitting the CB to react to unforeseen recessions by means of the appropriate change in short-term interest rates in order to minimize output fluctuations around the long-run trend of output (Bernanke et al, 1999). More importantly, it also reduces the degrees of freedom of CB to produce inflation surprises in order to explore the short-run trade-off between inflation and unemployment in the short-run.

This optimism about the virtues of ITR is not shared by Post Keynesian and other heterodox economists. For most Post Keynesian economists, ITR cannot be considered an appropriate framework for monetary policy since:

i) It is based on the axiom of money neutrality since it assumes the existence of a natural rate of unemployment, determined by the supply side of the economy and largely independent of monetary policy (Arestis and Sawyer, 2005; Palley, 2006a);

ii) It assumes that inflation is largely the result of excess aggregate demand, that is, a situation where aggregate demand is higher than equilibrium output determined by the supply side of the economy.

Post Keynesian Economics (hereafter PKE), on the other hand, assumes that money is non-neutral in the short and in the long-run, what means that there is no long-run equilibrium for the economy that is independent of monetary policy (Carvalho, 1992, p. 38); furthermore, that economy cannot be understood without reference to the level of aggregate demand – important not only in the determination of the level of economic activity but also through its influence on the rate of investment (Arestis and

2 About this consensus, see among others Woodford (2003).
More specifically, PKE assumes that nominal variables affect real variables in the long-run because changes in nominal short-term interest rates have permanent effects over investment decision in capital assets (Arestis and Sawyer, 2006b, p.16). Changes in the level of investment expenditures affect not only the level of aggregate demand through the standard Keynesian investment multiplier, and hence the current level of unemployment, but also the equilibrium rate of unemployment – that is, the level of unemployment for which inflation is constant through time – due to its effects over the level of capacity utilization and, through this variable, the level of real wage that firms are ready to pay for their workers.

A fall in investment expenditures, due to a tight monetary policy, will result in an increase in the current level of unemployment and an increase in the level of unemployment for which inflation is constant through time. So, the equilibrium rate of unemployment is dependent upon the time path of the current level of unemployment, becoming an equilibrium that is path-dependent. The time path of the current level of unemployment, on the other hand, is determined by the dynamics of aggregate demand which is largely influenced by the operation of monetary policy (Arestis and Sawyer, 2005, p.967). Money is non-neutral over the long-run equilibrium configuration of the system.

Another disagreement of Post Keynesians with the inflation targeting framework is about the nature of the inflationary process. For Post Keynesians, a situation of excess of aggregate demand can only produce a pressure for increase in the prices in spot markets (Davidson, 2006, pp. 693-694). If spot prices are higher than forward prices, than a quantity adjustment will occur in order to assure the elimination of inflation produced by excess demand (Ibid, p. 697). Forward prices, however, are not influenced by demand conditions, but determined by flow supply prices of goods and services, which depend upon the profit margins desired by entrepreneurs and real wages desired by labor unions. This means that a persistent increase in the level of prices could only occur as a result of a distributive conflict between wages and profits (Ibid, p.699).

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Rowthorn (1999) developed a wage bargaining model where the target real wage by labor unions and desired mark-up by firms depends on the ratio between capital and effective labor. This means that a decrease in the rate of capital accumulation relative to natural rate of growth will produce a decrease in that ratio and a change in the unemployment rate for which target real wage and desired mark-up are compatible one to another. For realistic values of the parameters of the model, more precisely, an elasticity of substitution between capital and labour less than one, a decrease in the rate of capital accumulation will be followed by an increase in the equilibrium rate of unemployment.
This is the basis of the so-called *structuralist view of inflation*\(^4\), according to which inflation is the result of a conflict between workers and capitalists over the distribution of income and from cost factors, such as prices of raw materials, specially oil (Arestis and Sawyer, 2005). In this framework, if the *target wage* of workers and the *target mark-up* of firms are exogenously determined, then inflation rate is insensitive to changes in the short-term interest rate by the CB (Palley, 1996, p.182). In the general case, however, where *target real wage* and *target profit margin* are both sensitive to changes in the rate of unemployment, a tight monetary policy can induce unions to accept a lower target for real wages and/or entrepreneurs to accept a lower profit margin, restoring the equilibrium over the distribution of income and stopping the acceleration of inflation. The costs of such policy, however, are high as “monetary policy by the central bank are implicitly indorsing an incomes policy based on ‘fear’ of loss of jobs and sales revenues for firms that produce goods and services domestically” (Davidson, 2006, p.701).

For Post Keynesians a more reasonable policy to control inflation in the case of a distributive conflict between profits and wages would be the adoption of some sort of income policy that encourage the conciliation between capitalists and workers demands by other means than an increase in the rate of unemployment (*Ibid*, p.700)\(^5\). Although a tight monetary policy can be used to reduce the rate of inflation in a setting where *target real wage* and *target mark-up* rates are sensitive to changes in unemployment rate, the reduction in the rate of inflation should be pursued by means of an income policy that equalizes both targets at a very low level of unemployment.

More recently, some Post Keynesian economists begin to reconsider the theoretical compatibility between ITR and PKE. One example is Palley (2006a, 2006b).

\(^4\) According to Rowthorn (1999, p.3), one of the founding fathers of the theory of conflict inflation, this theory can be summarized as follows: “i) unanticipated inflation is the outcome of inconsistent claims on total output; ii) unanticipated inflation cannot be permanently sustained because it leads to accelerating and ultimately explosive price increases; iii) to prevent unanticipated inflation, ex-ante claims on total output must be mutually consistent and add-up to ex-post total output. Consistency is brought about through variations in the level of economic activity, in particular through unemployment and its influence in wage (price) formations; iv) the “non-accelerating rate of unemployment” (NAIRU) is that level of unemployment which eliminates unanticipated inflation”.

\(^5\) One possible example of income policy is the Taxes Based Income Policy (TIP), suggested by Weintraub (1958). TIP required the use of the corporate income tax structure to penalize the largest domestic firms in the economy if they agreed to wage rate increases in excess of some national productivity improvement standard (Davidson, 2006, p. 702).
According to him, ITR could make sense for PKE if one postulates the existence of a *backward bending* long-run Phillips curve. The logic of his reasoning is based on the idea that for very low levels of inflation, workers have some kind of ‘money illusion’, as inflation can help grease the wheels of labor market adjustment by facilitating relative wage and price adjustment in sectors with unemployment, what creates a negative relation between inflation and unemployment over a limited range of the long-run Phillips curve. For this range of the long-run Phillips curve, monetary policy should be conducted in order to achieve that rate of inflation that minimizes the unemployment rate. In other words, monetary policy should be guided by M.U.R.I (minimum unemployment rate of inflation), that represents the point where the overall labor market greases effect of inflation is optimal. Once inflation rises above a threshold level workers resist real wage reductions, so that inflation looses its labor market grease effect (Palley, 2006a, p.248). In this approach, inflation targeting is a desirable framework for achieving the lowest level of unemployment compatible with a stable rate of inflation (Palley, 2006a, p.248-249).

Another example of the issue at hand is Setterfield (2005). This author elaborated a macroeconomic model with PKE features, where output is demand determined, inflation results from a distributive conflict between workers and capitalists and Central Bank defines an explicit target for the rate of inflation as well as a target for real output. In other words, his model involves policy making that “explicitly recognizes both the importance of aggregate demand conditions for real economic activity and the ‘conflicting claims’ basis of the inflation process” (Setterfield, 2005, p.15). In this framework it is possible to show that the long-run equilibrium of the system is stable what demonstrates the potential desirability of an ITR for the stability of an economy with PKE features. A policy implication of this approach is that (i) it is high rates of inflation (in excess of 10% or more) that policy should seek to address, and (ii) real economic performance should be given priority by monetary authorities.

In a review of recent empirical literature about the relation between interest rates and inflation, Arestis and Sawyer (2006b) found that the macroeconometric models for the Euro zone (the ECB area-wide model) shown a small effect of interest rate changes over the rate of inflation. More precisely, they found that a one per cent increase in the short term interest rate in the Euro zone for two years produced a peak reduction of 0.16 percentage point in the second year, which is reduced to only 0.08 percentage reduction in inflation rate in the fourth year and reversed to the benchmark level of the simulation
in the fifth year. However, the impact of interest rate changes over investment expenditure is substantial. They report that a one per cent increase in short-term interest rates for two years reduced investment expenditure in 0.39 percentage points after five years.

This evidence suggests that interest rate variations can have long-lasting effects over investment and the stock of capital, showing the long-run non-neutrality of monetary policy (Arestis and Sawyer, 2006b, p.16). This result shows that monetary policy should be conducted in a way to produce moderate changes in short-term interest rates in order to avoid huge (negative) effects over capital accumulation and over the equilibrium rate of unemployment. The low elasticity of inflation to interest rates also calls into question the possibility of controlling the rate of inflation only by means of an interest rate policy, as it is supposed by the ITR framework. In face of this empirical evidence, Arestis and Sawyer (2006a) suggest that some sort of ‘prudential credit controls’ should be adopted in cases that are necessary to limit the rate of expansion of aggregate demand.

Given the notorious effects of interest rate changes over output and investment, an important issue of the debate about the compatibility of ITR and PKE refers to the institutional design of the system. In other words, is there an institutional design for an ITR that could reduce the costs associated to interest rate changes and/or minimize the required changes in interest rates for the accomplishment of the inflation target? More specifically, can we define different degrees of institutional flexibility of an ITR, so that a more flexible ITR could, in principle, be compatible with a better performance of output growth than a less flexible ITR? A positive answer to these questions could pave the way to establish the (at least some) compatibility of ITR and PKE.

3. Institutional Arrangements of Inflation Targeting Regime

There is a great variety of institutional aspects that characterizes the inflation targeting regime (ITR). These aspects when treated as whole are labeled as the institutional arrangement of ITR, an enormous quantity of factors, from the numerical definition of the target to the principles of accountability and transparency inherent of

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6 Due to the long run effects of capital accumulation over unemployment rate, moderate changes in short-term interest rates are required for the CB’s to accomplish their double mandate: keep inflation low and stable and maximize the rate of economic growth.
this monetary policy regime. In the moment that ITR is adopted, policy-makers have a wide range of institutional operation issues to determine: the use of core inflation or headline inflation to guide the targets; to establish a point inflation target or bands of many wide ranges; to announce a time horizon of one year or a longer period of target convergence, etc.

Each of these options can give to the CB specific fashion: it can be tight, in a sense that the ITR is build with strong emphasis toward target success despite any operational cost of convergences; or the ITR can be more flexible, when the regime tends to take into account the costs and time horizons needed to get the targets’ hit. This means that we can define a range of institutional flexibility for ITR, where a higher level of flexibility is associated with a looser monetary policy and less frequent and minor increases of nominal interest rates. This pattern of interest rate movements should produce a less volatile path for output growth and investment expenditures.

In general, the literature that evaluates with the success of the ITR disregard the role developed by the institutional arrangement in attainment of satisfactory results over macroeconomic variables such as inflation, output, and employment, focusing predominantly in technical aspects related to the implementation of the monetary policy from a empirical point of view (Heenan et al 2006, p.3). In this sense, it is necessary an evaluation of the institutional arrangement impacts over others economic variables, like employment and growth, allowing to estimate if and how the adoption of ITR contributes (or not) to guarantee an environment that is favored for economic growth.

The main aspects of institutional arrangement of the ITR consists in the definition of: (i) the central banks objectives; (ii) the quantitative target for inflation; (iii) the price index that will be used, including the escape clauses; (iv) the convergence period of the current inflation to the target; (v) the modus operandi of the interest rate setting – rules versus discretionary; (vi) the degree of independence of central bank; (vii) the accountability and transparency procedures; and (viii) the discussion about the necessity to adopt complementary instruments to the monetary policy (Taludhar, 2005; Palley, 2006).

However, some aspects are common practices disseminated among the countries that adopt the ITR: almost every central bank has, at least, partial independence, i.e. enjoy operational autonomy to achieve the pre-defined target (vi); all central banks also adopt some transparency procedures like reports about the evolution of the inflation in the past and in the future, about the monetary policy instruments, among others (vii).
addition, the fact that a CB has price stability as its major goal in an explicit level (item i) does not mean much as long many central banks that are strongly committed at achieving inflation target does not have this objective in explicit terms.

Thus, items (ii), (iii), (iv), (v) and (viii) are the core of the institutional arrangement in ITR, whose characteristics directly impacts economic performance and inflation. So, by setting those institutional aspects among all possible choices, one can, even at a not deep level, evaluate the flexibility of the chosen arrangement in general terms, allowing making some inference between institutional arrangement and others variables beyond inflation.

With regard to the definition of the numerical target for inflation (item ii) central banks can set a point target (see, for example, the Turkey’s ITR features in the Table 1), set a tolerance range around a central point target (Brazil’s and Chile’s cases, among many others) or set only a range for inflation target, without a central point (Thailand). In this case, a point target is less flexible than a range around a point target and the use of a range for inflation target is the more flexible arrangement in item ii.

<table>
<thead>
<tr>
<th>Country</th>
<th>Target</th>
<th>Inflation measure</th>
<th>Commitment horizon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>4.5% +/-2%</td>
<td>CPI</td>
<td>Calendar year</td>
</tr>
<tr>
<td>Chile</td>
<td>3% +/-1%</td>
<td>CPI</td>
<td>Calendar year</td>
</tr>
<tr>
<td>Colombia</td>
<td>3.5% - 4.5%</td>
<td>CPI</td>
<td>Calendar year</td>
</tr>
<tr>
<td>Mexico</td>
<td>3% +/-1%</td>
<td>CPI</td>
<td>Calendar year</td>
</tr>
<tr>
<td>Peru</td>
<td>2% +/-1%</td>
<td>CPI</td>
<td>12 months accumulated inflation</td>
</tr>
<tr>
<td>Poland</td>
<td>2.5% +/-1%</td>
<td>CPI</td>
<td>12 months accumulated inflation</td>
</tr>
<tr>
<td>South Africa</td>
<td>3 - 6% (excluding mortgage interest cost)</td>
<td>CPI</td>
<td>12 months accumulated inflation</td>
</tr>
<tr>
<td>South Korea</td>
<td>3% +/-0.5%</td>
<td>CPI</td>
<td>3-year average</td>
</tr>
<tr>
<td>Thailand</td>
<td>0-3.5% (excluding raw food and energy)</td>
<td>Core CPI</td>
<td>Quarterly average</td>
</tr>
<tr>
<td>Turkey</td>
<td>4.0%</td>
<td>CPI</td>
<td>Calendar year</td>
</tr>
</tbody>
</table>

Source: Authors’ elaboration with information from the central bank of each country.
Consumer prices are a common practice disseminated among CBs. However, the choice of the measure of the inflation index is also a point of divergence among inflation targeting countries. The high-inflationary history of some developing countries made that many of those central banks adopted the headline consumer price index. However, some of them exclude items considered very sensitive to supply shocks or whose behaviors are out of influence of the monetary policy – working with what is denominated ‘core inflation’\(^7\). Thus, by analyzing Table 1, one can see that in the less flexible group (headline inflation index) are Brazil, Chile, Colombia, Mexico, Peru, Poland, South Korea and Turkey; in the more flexible group (core inflation) are South Africa and Thailand.

The setting of one year period of convergence of current inflation to the target is seen as a less flexible procedure and, in contrast, convergence in the medium and long term is seen as a more flexible case. The idea beyond this analysis is the fact that to non-foreseeable shocks have lag effects in the economy, so as to one year period the achievement of the target – if possible – will be very costly in terms of growth and employment rates. For longer periods it is possible to attenuate these effects, without any harder response in the interest rate.

With this regard, one can see by analyzing Table 1 that going from the less flexible countries to the more flexible ones it is possible to divide them in four groups: Peru, Poland and South Africa (12 months accumulated inflation); Thailand (quarterly average); Brazil, Chile, Colombia, Mexico and Turkey (calendar year); and in the more flexible convergence period are South Korea (3-year average). The rationale behind this classification is the frequency that a central bank is evaluated about the fulfillment of the target. In the first case, CBs are evaluated about this issue every month; in the last one, CBs are evaluated on the average of 36 months inflation.

It is worth to highlight that almost all countries use a tolerance range for inflation target (Brazil, Chile, Mexico, Peru, Poland and South Korea) or simply an inflation target band with no central point (Colombia, South Africa and Thailand). Brazil, Colombia, South Africa and Turkey have a higher inflation target than the other

\(^7\) Core inflation can be defined as a measure of inflation that excludes certain items which face volatile price movements. It eliminates products that can have temporary price shocks because these shocks can diverge from the overall trend of inflation and give a false measure of inflation. Core inflation is thought to be an indicator of underlying long-term inflation and generally is considered more accurate than changes in the CPI in representing the economy's underlying inflationary pressures.
countries. Of course, in terms of the setting of inflation target one should consider the recent inflation trend in the last years.

In general terms, by combining all those features, it seems that a pattern emerge from the Table 1 information: countries that had recent history of high inflation (Brazil, Chile, Colombia, Mexico, Peru, Poland and Turkey) makes use of a more rigid ITR, while other countries (South Korea, South Africa and Thailand) adopt a more flexible arrangement.

Finally, there is a debate about the necessity to implement other economic policies beyond the common instruments associated to ITR. Additional policies can be adopted in order to achieve better results over the growth and employment rates without to disregard inflation. In this sense, the high exchange rate volatility of developing countries associated to the high mobility of capital flows have severe impacts over the inflation rate and over growth and employment rate\(^8\); this may requires the adoption of others instruments by central banks.

The ITR institutional design also requires the definition of the instruments that CB has at its disposal to control the rate of inflation. In the conventional framework of ITR, nominal short-term interest rate is the only instrument of monetary policy used by the CB. In a more ‘flexible’ design, however, CB can also use some form of ‘prudential credit controls’ in order to limit the rate of credit expansion by the banking system\(^9\), contributing to reduce the rate of aggregate demand growth, without recurring to frequent and/or huge increases in nominal short-term interest rates which have a negative impact over the rate of capital accumulation.

Flexible ITR institutional design could also make use of some form of income policy as a complementary instrument for inflation control. The historical experience with income policies in emerging countries as a tool for reducing the level of inflation shows just some few cases of success, being Israel and Mexico almost the only successful experiences of reducing high levels of inflation by combining income policies with exchange rate anchor. Brazil and Argentine, among others, are prominent examples of failed adoption of income policies as a device for inflation control, in part due to the unsolved 1980s’ external debt problem.

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\(^8\) Section 4 provides a broader analysis of macroeconomic results in a ITR context for developing countries.

\(^9\) Basically to control the rate of credit expansion directed to finance the increase in consumption expenditures.
The theoretical explanation for the failure of income policies may rely upon the fact that the success of such policies requires the implementation of wage and price agreements between a very large number of agents, unions and firms, in a nation-wide scale. The implementation of such agreements could be an feasible task in economies with a high level of centralization of wage bargaining as, for example, in Sweden or Norway (Carlin and Soskice, 2006, ch.4). But in economies with medium or low level of centralization of wage bargaining as in Germany, France and almost all developing nations, the effective implementation of such agreements must be almost impossible. This means that for such countries, income policies could only have a complementary function, if any, in relation to the aggregate demand policies and other policies as a device for inflation control.

Thus, additional instruments like capital controls, credit control and/or income policies should be adopted in order to optimize the use of the economic policy instruments, minimizing negative effects over the output growth rate. Following the classification developed here, an environment where ITR is ‘enough’ is considered less flexible while more flexible arrangements occurs when ITR is ‘not enough’ requires the use of some propositions made above.

As a result, it is possible to determinate a wide range that includes the main institutional arrangements of ITR. Following (ii), (iii), (iv), (v) and (viii) sequence, in the less flexible side are: point target / headline consumer price index / one year of convergence / rules / ITR is enough. In the opposite side, the more flexible ones are characterized by: wide range / core inflation / long term / discretionary / ITR is not enough. Obviously, most part of the developing countries are in an intermediate situation, combining less and more flexible instruments. Figure 1 illustrates this classification.

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10 We discuss these instruments in section 5.
Thus, based on this scheme, we can ask what is the best institutional arrangement of ITR for developing countries? Is the more flexible arrangement better than the less flexible one? Is there any connection between flexibility of ITR and macroeconomic performance? We will deal with these issues in the section 5. However, first we focus on the macro institutional features of ITR in emerging countries.

4. Macro institutional environment of ITR in emerging countries

In global financial markets, financial market prices – including exchange rate – have been excessively volatile. Capital markets in emerging countries are more thin and segmented than in developed countries, subject to shocks unrelated to domestic macroeconomic conditions and contagion. Emerging economies tend to be relatively more vulnerable to the consequences of exchange rate fluctuations than are developed economies. Exchange rate volatility is higher in emerging countries than in developed ones as the former ones have small and less liquid foreign exchange markets that make such economies more vulnerable to one-way expectations and herd behavior. Indeed they face problems related to the ‘asymmetric financial integration’ as emerging market economies have much larger and volatile capital flows compared to the size of their capital market and economies more generally (Greenville, 2000; Studart, 2002).

In particular, exchange rates can influence inflation (“exchange rate pass-through”) through the prices of traded final goods and imported intermediate goods, and their impact on agent’s inflation expectations. Ho and McCauley (2003) show evidences that: (i) income is negatively and significantly correlated with pass-through as lower-income economies have a larger portion of traded goods in the consumption basket; (ii)
“exchange rate pass-through has tended to be stronger in Latin America than in Asia even though Latin American are not necessarily more open than their Asian counterparts” (p.6).

The explanation for such difference is that countries with histories of high inflation – as it is the case of many Latin American countries - are more sensitive to exchange rate fluctuations, probably due to the existence of an inflationary memory (Eichengreen, 2002). A lot of emerging economies had experiences with high inflation and consequent price stabilization plans, in general countries that were impacted by 1980s external debt, as it was the case of Latin American economies (Argentina, Brazil, Chile, Colombia, Mexico and Peru), or suffered problems related to transition to a market economy (Poland and Russia), while other economies did not have so intensive inflationary episodes, as typically was the case of the Asian emerging economies (Malaysia, South Korea, Thailand, etc.). In both groups, countries that adopted ITR in most cases implemented it after currency crises.

The implications of these findings on emerging countries’ ITR are clear and evident because of the risk that exchange rate volatility poses to emerging countries to pursue their inflation targets. Indeed, Ho and McCauley (2003, p.22) report that of the 22 target misses by emerging countries in 1998-2002, 10 (45%) were associated with exchange rate moves of over 10% in the aggravating direction, i.e. six cases of overshooting related to large depreciations and four cases of undershooting to large appreciations. Alternatively, developed countries had only two of out of nine (22%) target misses related to large exchange rate moves.

It is interesting to note that in general economies that had a recent history of high inflation (Brazil, Chile, Mexico and Turkey) make use of headline inflation index as the index reference for their ITR, while the other emerging economies that did not have such experience make use of core inflation or a ‘purged’ inflation index (see Table 1).

11 Choudhri and Hakura (2001) did an empirical comparison of pass-through in 71 countries, from 1979 to 2000 to test the hypothesis that a low inflationary environment leads a low exchange rate pass-through to domestic prices. They found a strong evidence of a positive and significant association between the pass-through and the average inflation across countries and periods. Furthermore, the expected effect depends on the inflation regime. For high inflation regimes, the effect of monetary shocks tends to be more persistent and is likely to be reflected in exchange rate changes to a larger degree.

12 According to Carvalho (1992, p.193) a high inflation regimes emerges when due the chronic and high inflation “the continuous disappointment of expectations leads agents to question the rules of the game themselves” and, consequently, new rules of contracting (indexed contracts, for instance) are developed.
The explanation is related to the necessity of countries that had recent chronic inflationary experiences to adopt a more credible ITR, with a more rigid institutional arrangement, that includes a headline inflation index — a more understandably index for the eyes of society.

After the liberalization of capital account, a general trend in the emerging countries since the end of the 1980s, the capacity of monetary policy to influence short term interest rates for domestic purposes and resist exchange rate movements simultaneously was somehow eroded. In this connection, Tobin (1978) stated that the main macroeconomic problem related to integrated financial markets is not the choice of the appropriate exchange rate regime but the excessive short-run capital mobility that reduces the autonomy of national governments to pursue domestic objectives with respect to employment, output and inflation: “the mobility of financial capital limits viable differences among national interest rates and thus severely restricts the ability of central banks and governments to pursue monetary and fiscal policies appropriate to their internal economies” (p. 154).

Under these conditions, economic authorities have to face some policy dilemmas. One potential dilemma is that inflation and exchange rate developments can be such that they call for opposite monetary policy action — for instance, using monetary policy to counter adverse exchange rate movements may jeopardize the inflation target, although frequently emerging market inflation target have in practice responded with some flexibility to the various challenges posed by exchange rate fluctuations, using not only monetary policy (Ho and McCauley, 2003). Mohanty and Scatigna (2005) report that a number of emerging countries relied on interest rate interventions to stem exchange rate volatility. The solution of some dilemmas of economic policy in emerging economies can be ‘solved’ by the use of non-traditional tools of economic policy, such as credit controls and capital controls, as we will see in the next section.

In general, interest rate policy when used for controlling aggregate demand for price stabilization purposes is less effective in emerging countries than in developed countries. There are two reasons for such difference. Firstly, the credit channel transmission mechanism of monetary policy is less effective in emerging countries than in developed ones. The main reason is that the ratio of credit to private sector over GDP is higher in developed countries, what means that in the latter ones monetary policy is more effective to affect aggregate demand. Indeed, the ratio of credit to private sector over GDP during the nineties (on average) was 84% in developed countries, while it
was only 28% in Latin America, 26% in Eastern Europe and Central Asia, 12% in Middle East and North Africa – the only high standard in emerging countries was in East Asia and the Pacific, 72% (IADB, 2005, p.5). Secondly, due to the low development of stock market in most emerging countries, consumption expenditure is not sensitive to the wealth effect, as it is in the US, so that interest rate has also low impact on consumption through this channel\textsuperscript{13}. Consequently, monetary policy in some emerging country should be more tightened (interest rate should be higher) than in developed economies in order to affect aggregate demand; as a result, the sacrifice ratio of a deflation policy frequently is higher in emerging economies than in developed countries.

Finally, we should note that emerging economies in general are more vulnerable to external shocks than developed economies. The empirical studies show that the impact of external shocks on domestic inflation is more intensive in emerging economies than in developed ones. Mohanty and Klau (2001), analyzing the experience of 14 emerging countries during the 1980s and 1990s, found that external supply shocks, in special food and energy prices, are important determinants of domestic inflation. Primary products have an important participation in the household’s consumption in emerging countries due to the patterns of consumption associated with relatively low incomes. Such prices are particularly volatile to climate and eventually geopolitics factors.

We conclude this section extracting two lessons for our discussion. The first one is related to the fact that emerging countries in general are more vulnerable to external shocks than developed countries. As a result, such economies are more prone to face issues related to cost-push inflation. The second lesson is that exchange rate considerations can be expected to play a more prominent role in emerging countries, considering the important influence of the exchange rate on domestic inflation in these countries. Consequently, exchange rate movements pose some essential challenges to emerging economies’ monetary authorities. On this regard, Goldstein (2002) suggests the adoption of a mixing of economic policies in what he denominated ‘managed

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\textsuperscript{13} According to IADB (2005, p.5), the ratio “credit and market capitalization over GDP” during the nineties was 149% in developed countries, 48% in Latin America, 38% in Eastern Europe and Central Asia, 80% in Middle East and North Africa – and again the only exception in emerging countries was East Asia and the Pacific, 150%.
floating plus’, in which the exchange rate variation would be managed in order to be compatible with the inflation targets.

According to Tobin (1972) when there is downward nominal wage rigidity, inflation can help grease the wheels of labor market adjustment by facilitating relative wage and price adjustment in sectors with unemployment. On this regard a positive but somehow low inflation can help economic growth and reduce unemployment as it works as mechanism of accommodation of the real disequilibria in the economy, due to supply shocks, negotiation of labor contracts, etc. Although we recognize that such adjustments can be easier to be done in emerging countries, as they have a more flexible labor market (and even a greater ‘labor reserve army’) than in developed economies, once the latter ones have more organized labor unions, the presence of stronger external shocks asks for a more flexible ITR in case of emerging economies. ITR is not the only economic policy framework for price stabilization purposes, as some emerging economies experiences show (for instance, China and India\textsuperscript{14}), but it is probably necessary for such economies that had recent history with high inflation in order to show a more clear commitment of the economic authorities with price stabilization. What should be the more appropriate ITR for emerging economies that had recent history of high inflation? Should emerging economies target more or less the same level of inflation rate of the developed economies or are there reasons for targeting a higher inflation rate? We focus our analysis on these questions in the next section.

5. A proposal for a flexible institutional arrangement for emerging economies’ ITR

As we have seen in the previous sections, Post Keynesians argue that the use of interest rate policy to control inflation and aggregate demand have harmful impact over investment and, consequently, over the growth rate of capacity output. Furthermore, we have seen that alternative instruments of inflation control like income policies are not able to do the job in most countries, mainly in the case of emerging countries due to the low level of centralization of wage bargaining. So, the conciliation between price stabilization and sustainable economic growth in the long term requires a moderate use of interest rate policy to control inflation. Furthermore, due to the weak effects of interest rate variations over consumption expenditures in most emerging countries, it

\textsuperscript{14} For an analysis of economic performance of China and India, see Paula (2008).
also requires the use of other complementary instruments for demand management, such as credit controls. Finally, in order to avoid the undesirable effects of intensive capital flows over the nominal and real exchange rates, capital controls could be necessary.

A moderate use of interest rate policy to control inflation requires the distinction between supply and demand shocks, temporary and permanent situations of excess demand, the reduction of exchange rate volatility, and the recognition that emerging countries, for structural reasons, have to operate with higher inflation rates than developed countries.

Interest rate policy is an efficient instrument for controlling demand inflation, but is not efficient to control inflation caused by supply shocks. For this reason, CB must react through interest rate changes only to inflation pressure caused by situations of excess demand. This objective could be accomplished by the use of inflation rate measurement by means of an inflation index that excludes those products that are more sensitive to supply shocks, such as food and energy. This means the selection of a core inflation index instead of a headline inflation index as the measure of inflation to be targeted.

Furthermore, CB should react only to situations of permanent excess demand. A temporary excess demand, due to a high rate of growth of effective demand that induce an increase in investment expenditures, must be accommodated by CB through a more passive monetary policy. In order that CB can give a chance to economic growth, interest rate increases must be considered only in situations of excess demand that are not followed by an increase in the rate of capital accumulation. So, if investment expenditures are increasing in a rate higher than the overall aggregate demand, then *ceteris paribus* capacity output growth will be increasing in the medium-term signaling the temporary nature of a situation of excess demand. Under such conditions, a larger horizon of convergence (more than one year) to inflation target is desirable in order to smooth the effects of temporary demand shocks over the measured rate of inflation.\(^\text{15}\)

We have to stress that in some situations of permanent excess demand, the use other instruments rather than interest rate policy must be required. As we have seen, the

\(^{15}\) A larger convergence horizon (more than year) to inflation target means that the relevant measure of inflation is the average of the last 18 or 24 months. This enlargement of convergence horizon produces a smooth series of inflation rate than the one produced by a shorter convergence horizon.
The credit channel transmission mechanism of monetary policy is less effective in emerging countries than in developed ones – the main reason is the low ratio of credit to private sector over GDP in emerging countries. In this particular concern, Arestis and Sawyer (2006a, p. 858) suggest that “appropriate forms of credit control may be focused on sectors where ‘over exuberance’ is developing, rather than use the blunt instrument of interest rate changes which affects all sectors of the economy”.

Some empirical studies as, for instance, Sarel (1996), show the existence of a minimum inflation rate below which growth rate is reduced. The reason for that is the nominal wage rigidity that prevails in labor markets. As we have already stressed, according to Tobin (1972) when there is downward nominal wage rigidity, inflation can help grease the wheels of labor market adjustment by facilitating relative wage and price adjustment in sectors with unemployment of labor force. So, a positive, although small rate of inflation, is necessary for robust economic growth. Padilha (2007), using a sample of 55 developed and under-developed countries in the period 1990-2004, replicated the methodology used by Sarel (1996) for a larger time span and showed that for emerging countries the minimum rate of inflation is 5.1% per year and for the developed countries is about 2.1% per year. The difference between the minimum level of inflation in emerging and developed countries is due to the fact that a higher rate of output growth in the former generates a higher rate of increase of prices of non-tradable goods relative to the observed in developed countries. This means that for emerging countries to have the same rate of inflation as developed countries, the rate of increase of prices of tradable goods have to be higher in the latter. This requires a nominal exchange rate appreciation of emerging countries currency relative to developed countries currency, what can be done only by means of a tight monetary policy with harmful effects over investment and growth. Based on this reasoning we can state that the catching-up of emerging countries to developed countries demands, amongst other reasons, different target levels of inflation.

As we have seen in the former section, devaluation of exchange rate is one of the main sources of cost-push inflation in emerging countries. Empirical works show that

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16 Examples of prudential credit controls can be taken from the period 1945-75 in the UK: “intervention through moral suasion on banks to discriminate by type of borrower (a supply-side constraint); and through specifying minimum deposits and maximum payback periods for consumer loans (a demand-side measure)” (Arestis and Sawyer, 2006a, p. 858). Credit controls can be introduced by different ways, even in a more light mode as in the case of reduction of the term of some credit operations (automobile finance, for instance).
interest rates have been one of the instruments used to deal with the movements of exchange rate, as they affect the capital account and thereby affect the real and nominal exchange rate. For this reason economic authorities should have a more active role concerning exchange rate, avoiding its volatility and seeking somehow to affect its long term trajectory (for instance avoiding excessive depreciation or appreciation).

One possibility is the use of official intervention in the foreign exchange market, that may exert direct influence on nominal exchange rate as it alters the relative supply of domestic and foreign currency assets. On one hand, the countries’ ability to resist currency depreciation is limited by its stock of foreign exchange reserves and its access to potential credit lines. Reserve accumulation can be seen as an insurance against future negative shocks and speculation against domestic currency, as emerging economies have limited access to the international capital market. On other hand, the ability to avoid currency appreciation may require the use of sterilized intervention. The increased monetary reserves can put downward pressure on the short-term interest rate in case of no-sterilized intervention, so that bank credit would tend to expand and inflationary pressure would eventually arises. However, if central banks have a target for the short-term rate, then they would attempt to offset increases in bank reserves selling domestic assets or issuing their own securities, an operation known as sterilized intervention (Mohanty and Turner, 2006).

Another possibility to help the management of exchange rate regime (that is not excluding with official intervention) in emerging countries is the use of ‘capital management techniques’ that includes ‘capital controls’, that is norms that manage volume, composition, and/or allocation of international private capital flows, and/or ‘prudential domestic financial regulations’, that refer to policies, such as capital-adequacy standards, reporting requirements, or restrictions on the ability and terms under which domestic financial institutions can provide funding to certain types of projects (Epstein et al, 2003, p.6-7). Prudential controls can include: (i) to limit the opportunities for residents to borrow in foreign currency and to monitor them when they do, and (ii) to keep very tight constraints on banks’ ability to have open foreign exchange positions or indirect exposure through foreign exchange loans.

For economies that are practicing domestic interest rate higher than offshore interest rate, reserve requirements on capital inflows can be used as a complementary
tool for monetary and exchange rate policies. For countries which domestic interest rate is lower than offshore interest rate there is no need of capital controls on inflows as there is no arbitrage gains involved, as have been the case of China, Malaysia and South Korea since end of 1990s.

6. Conclusion

This paper aimed at discussing whether ITR is compatible with Post Keynesian approach, and mainly to define an institutional arrangement of ITR more appropriate for emerging economies with long-term history of high inflation. Our point in the paper is that ITR can be compatible with Keynesian approach under certain conditions. In particular, a flexible institutional arrangement for ITR is required for emerging economies to conciliate the objectives of price stabilization and sustainable economic growth, as such economies have some specificities, as problems related to a ‘asymmetric financial integration’.

As we have discussed, Post Keynesian economists show that the excessive use of interest rates policy for price stabilization purposes can affect the equilibrium unemployment rate (NAIRU) due its effect on capital accumulation and productive capacity. For this reason, monetary policy is non-neutral in the long run. Our proposal for flexibility of ITR in emerging economies starts precisely from this issue. In order that central bank can perform its double mandate (price stability and economic growth) interest rate fluctuations should be reduced at the minimum need. Under ITR operation, CB walks on a ‘knife edge’: if it make use of a very tight monetary policy it runs the risk of inducement of a permanent increase of unemployment rate (due the effect of interest rate on capital accumulation); however, if it does not manage interest rate in order to deal with inflationary pressures CB can face the risk that inflation would be

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17 Capital controls can be used for different and sometimes related objectives, such as (i) to reduce the vulnerability of a country to financial crises, including capital flight during any currency crisis; (ii) to drive a wedge between onshore and offshore interest rates in order to provide monetary authorities with some policy autonomy at least in the short-run; (iii) to maintain some short-term stability of nominal exchange rate and to reduce exchange rate pressures derived from excessive capital inflows. For this purpose capital controls can be used to change the composition and maturity structure of flows and to enhance monetary authorities’ ability to act in the exchange foreign market. Although the effectiveness of capital controls are very controversial, evidence suggests that the macroeconomic benefits of capital management techniques can outweigh the microeconomic costs as show some recent experiences. See, for instance, Magud and Reihart (2006).
‘out of control’ (that is a particular concern of countries that had recent history of high inflation). This means that a flexible ITR will be one where CB will not follow a mechanic rule, but will exert a considerable amount of discretion over the determination of short-term interest rate, guided more by the ‘art’ than the ‘science’ of monetary policy.\textsuperscript{18}

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\textsuperscript{18} A flexible ITR will share a great number of common features with the discretionary monetary policy under Greenspan’s era on FED. About the desirability of discretion in the operation of monetary policy, Greenspan states that: “Policy rules ... anticipate that key causal connections observed in the past will remain fixed over time (...) But we have found that very often historical regularities have been disrupted by unanticipated change (...) The evolving patterns mean that the performance of the economy under any rule, were it to be rigorously followed, would deviate from expectations.... In an ever changing world, some element of discretion appears to be an unavoidable aspect of policymaking” (Greenspan, 1997, p.1).


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