

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

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Abstract: While some Post-Keynesian economists argue that inflation targeting regime (ITR) is not compatible with the Post-Keynesian theory, other Post-Keynesian economists hold that ITR, under certain conditions, can be compatible with the Post-Keynesian approach. This calls for the question of what institutional arrangement of ITR is more appropriate for the fulfilment of the goal of maximum economic growth and, at the same time, of maintaining a stable and low rate of inflation. Furthermore, there is the question of whether ITR is sufficient for the conduct of monetary policy aimed at stabilizing the economy. We evaluate other instruments of monetary policy – such as ‘prudential credit controls’ – to manage aggregate demand when the economy is overheating in order to avoid the bad effects of the increase of interest rate on real variables. Emerging countries should adopt a more flexible ITR regime that could allow the central bank pursues its double mandate with the use of a higher numerical target, core inflation, larger convergence horizon, etc. But this is 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 can be adopted.

Key-words: Inflation targeting, aggregate demand, Post-Keynesian Economics.

Resumo: Enquanto que alguns economistas pós-keynesianos argumentam que o regime de metas de inflação (ITR, em inglês) não é compatível com a teoria pós-keynesiana, outros economistas pós-keynesianos sustentam que o ITR, sob certas condições, pode ser compatível com tal teoria. Isto coloca a questão de qual arranjo institucional do ITR é mais adequado para alcançar o objetivo de um maior crescimento econômico e, ao mesmo tempo, de manter a inflação baixa e estável. Além disto, há a questão se o ITR é suficiente ou não. Neste artigo, avaliam-se outros instrumentos de política monetária, tais como controle prudencial do crédito para gerenciar a demanda agregada quando a economia está sobre-aquecida de modo a evitar os efeitos da taxa de juros sobre as variáveis reais. Países emergentes devem adotar um ITR mais flexível que permita o banco central perseguir o duplo mandato com o uso de uma maior meta numérica, núcleo de inflação, maior horizonte de convergência, etc. Mas isto não é suficiente: outros instrumentos complementares podem ser usados, como controle sobre os fluxos de capitais.

Palavras-chave: metas de inflação, demanda agregada, teoria pós-keynesiana.

Área 5.1. Economia Monetária e Financeira

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Introduction

While some Post-Keynesian economists argue that inflation targeting regime (ITR), based on the ‘New Consensus Macroeconomics’ - that implies the use of interest rate policy to control demand inflation - and neoclassical assumptions/concepts (classical dichotomy, NAIRU etc.), is not compatible with the Post-Keynesian theory, other Post-Keynesian economists hold that ITR, under certain conditions, can be compatible with the Post-Keynesian approach. In particular, the latter one argue the ITR, when used with a more soft approach, is compatible with the double mandate of the central banks. This calls for the question of what institutional arrangement of ITR is more appropriate for the fulfilment of the goal of maximum economic growth and, at the same time, of 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. We evaluate other instruments of monetary policy – such as ‘prudential credit controls’ – to manage aggregate demand when the economy is overheating in order to avoid the harmful effects of the increase of interest rate on real variables. Emerging countries should adopt a more flexible ITR regime that could allow the central bank pursues its double mandate with the use of a higher numerical target, core inflation, larger convergence horizon, etc. But this is 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.

This paper aims at: (i) discussing whether ITR is compatible with Post-Keynesian approach; and (ii) defining an institutional arrangement of ITR more appropriate for emerging economies with long-term history of high inflation. In that sense we will show that ITR is compatible with Post-Keynesian approach and a flexible institutional arrangement for ITR is required for emerging economies to conciliate the objectives of price stabilization and sustainable economic growth.

This article is organized in six sections including the present introduction. In section 2 we analyze the theoretical compatibility between ITR and Post-Keynesian 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 Post-Keynesian 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 in order to reduce the problem of *inflationary bias* that arise when monetary policy was conducted with discretion. A “constrained discretion”, to use Bernanke’s famous terminology, can be attained by the adoption of a monetary policy framework where central bank’s actions and goals are transparent and accountable.

Transparency and discipline in the operation of monetary policy require a nominal anchor for monetary policy. In the 1990s, a growing number of countries has 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 velocity circulation of money². The exchange-

¹ See Walsh (2001, pp. 467-472).

² As Carlin and Soskice (2006) pointed out, in United Kingdom was common that, when the monetary authorities tried to control a particular monetary aggregate, there was a sequential response from financial system which generates close substitutes to money, hence getting rid of the target established. Changes in money demand (or the instability of money transactions velocity) undermine the link between monetary growth target and inflation. These problems mentioned had lead to the end of this practice in USA, Canada and UK.

rate target was in most cases abandoned in the 1990's 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* establishes that ITR is a good institutional framework to assure and maintain low rates of inflation and to minimize output fluctuations³. The reason is that ITR is supposed to produce a “constrained discretion” that combines flexibility and credibility in a 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); 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.

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

- i) It is based on the axiom of money neutrality⁴ 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, 2006);
- ii) It assumes that inflation is largely the result of excess aggregate demand, that is, a situation where aggregate demand is bigger 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 Sawyer, 2005, p.966). More specifically, PKE assumes that nominal variables affect

³ About this consensus, see among others Woodford (2003).

⁴ About the importance of the axiom of money neutrality for mainstream economics see Davidson (2002, p.41) and Carvalho (1992, p.32).

real variables in the long-run because changes in nominal short-term interest rates have permanent effects over investment decision in capital assets (cf. 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. As a direct corollary of long-run non-neutrality of money, there is no sense in defining price-stability as the most important or the sole goal of monetary policy as it is required by an ITR.

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 (cf. Davidson, 2006, pp. 693-694). If *spot prices* are higher than forward prices, then a quantity adjustment will occur which will guarantee the elimination of inflation produced by excess demand (*Ibid*, p. 697). Forward prices, however, are not influenced by demand conditions, but are determined by flow supply prices of goods and services, which depend upon the profit margins desired by entrepreneurs and real wages desired by labour 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).

This is the basis of the so-called *structuralist view of inflation*, 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 more 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 Post-Keynesian economics. One example is Palley (2006a, 2006b). According to him, ITR could make sense for Post-Keynesian economics 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 labour market adjustment by facilitating relative wage and price adjustment in sector 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 order words, monetary policy should be guided by M.U.R.I (minimum unemployment rate of inflation), that

⁵ One possible example of income policy is the T.I.P or Taxes Based Income Policy, suggested by S. 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 (cf. Davidson, 2006, p. 702).

represents the point where the overall labour market greases effect of inflation is greatest. Once inflation rises above a threshold level workers resist real wage reductions, so that inflation loses its labour market grease effect (Palley, 2006a, p.248). In this approach, a ITR is a desirable framework for achieving the lowest level of unemployment compatible with a stable rate of inflation (Palley, 2006, p.248-249).

Another example of the issue at hand is Setterfield (2005). This author elaborated a macroeconomic model with Post-Keynesian 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 Post-Keynesian 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.

Despite the growing consensus about the theoretical compatibility of ITR within PKE, the empirical literature about the success of ITR in fighting inflation is still controversial. 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 year four and reversed to the benchmark level of the simulation in year five. 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 great (negative) effects over capital accumulation. 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 form of “prudential credit controls” should be adopted in cases that is 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 Post-Keynesian Economics refers to the *institutional design* of the system. In other words, is there any alternative 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 compatibility of ITR and Post-Keynesian Economics.

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 labelled as the institutional arrangement of ITR, an enormous quantity of elements, from the numerical definition of the target to the principles of accountability and transparency inherent of this monetary policy regime. ITR in a country can have many *institutional designs*: its institutional format is crucial to assure the targets accomplishment and credibility building. In the moment that ITR is adopted, the 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 higher and 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 (inflation, output, employment, etc) 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)⁶. 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 favoured for economic growth.

The main aspects of institutional arrangement of the ITR are: (i) the definition of the objectives of central banks; (ii) the numerical definition of the inflation target; (iii) the definition of which price index will be used, including the escape clauses; (iv) the definition of the convergence period of the current inflation to the target; (v) the definition of 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). On the other hand, others practices had a superficial role over some economics variables. For instance, 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 with the achieving of the inflation target does not have this objective in that terms – *de jure* commitment does not guarantee *de facto* commitment⁷.

⁶ One exception is Oreiro and Rocha (2008). These authors show in an empirical level, with the assistance of dynamic panel analysis, that in a sample of 23 ITR countries, a more flexible arrangement for ITR is associated with higher GDP growth than less flexible arrangements.

⁷ Brazil is an example of this procedure.

Thus, items (ii), (iii), (iv), (v) and (viii) are the framework of the institutional arrangement in ITR, the “core” of this monetary policy regime, whose characteristics have directly impacts on economic performance and inflation. So, by choosing the institutional aspects of the “infra-structure” of institutional arrangement 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 just 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 (the Brazilian case) 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. One can note in Table 1 that there is no preponderance by one of these options over the others.

Table 1. Institutional Arrangements of Inflation Targeting Regime, 2007

Country	Target	Inflation measure	Commitment horizon
South Africa	5% +/-2%	CPI excluding mortgage interest cost	12 months after its announcement
Brazil	4.5% +/-2.0%	CPI	Calendar-year
Chile	3% +/-1%	CPI	2 years
Korea	3% +/-0.5%	Core CPI	3 years in long-term and 12 months in short-term
México	3% +/-1%	CPI	4 years in long-term and 12 months in short-term
Thailand	0 a 3.5%	Core CPI	Long-term
Turkey	4%	CPI	3 years with annual intermediate targets

Source: Farhi (2007)

The choice of 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 behaviours are out of influence of the monetary policy – working with what is denominated “core inflation”⁸. Thus, by analysing Table 1, one can see that in the less flexible group

⁸ 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

(headline inflation index) are Brazil, Chile, Mexico and Turkey; in the more flexible group (core inflation) are South Africa, South Korea and Thailand.

Related to (ii) and (iii), the setting of one year to the convergence the current inflation to the target is seen as a less flexible procedure and, in contrast, convergence in the medium and long term are 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. Of course, beyond the discussion between flexibility in the ITR is the very known trade-off credibility versus flexibility, a particular concern for emerging economies that had recent history of high inflation.

The discretionary interest rate versus monetary policy rules subject is related to Taylor's (1993) seminal work. He argues that CB should change nominal interest rate when GDP and/or inflation are above/below their natural levels in according to an optimal rule of monetary policy. Accordingly, this mechanism avoids government's inflationary bias, especially with respect to the output-growth trade-off in the short-run. In spite of these rules can be considered extremely restrictive and non-optimal facing supply shocks (Taludhar 2005), mainly in case that they are used in a more mechanical way, many empirical studies shown that a lot of central banks followed those rules⁹. Thus, there is a predominance of this less flexible arrangement vis-à-vis a more flexible one (discretionary case).

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 volatility of the exchange rate of developing countries associated to the high mobility of capital flows have severe impacts over the inflation rate and over growth and employment rate.¹⁰; this may requires the adoption of others instruments by central banks .

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 Consumer Price Index in representing the economy's underlying inflationary pressures.

⁹ See Klau and Mohanty (2004), for many developing countries, and Barbosa (2007) for the Brazilian case.

¹⁰ Section 4 provides a broader analysis of macroeconomic results in a ITR context for developing countries.

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 system¹¹, 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 made use of some form of income policy as a *complementary instrument* for inflation control. The historical experience with income policies 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 Argentina, on the other hand, are the most prominent examples of failed adoption of income policies (the so-called *heterodox shocks*) as a device for inflation control, in part due to the unsolved 1980s’ external debt problem.

The theoretical explanation for the failure of income policies may relies upon the fact that the working of such policies demands 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 easy task in economies with a *high level of centralization of wage bargaining* as, for example, in Sweden or Norway (cf. 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 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 growth rate. Following the classification developed here, an environment where ITR is “enough” is considered less

¹¹ Basically to control the rate of credit expansion directed to finance the increase in consumption expenditures.

flexible arrangements 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 above illustrates this classification.

Figure 1. Range of Flexibility for Institutional Arrangements of ITR

(ii) Target	Single point	.....	Wide range
(iii) Price index	Baseline	.....	Core
(iv) Convergence period	1 year	.....	Long term
(v) Interest rate setting	Rules	.....	Discretionary
(viii) Is ITR enough?	Yes	.....	No
	Less Flexible Arrangements	Intermediate Arrangements	More Flexible Arrangements

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 behaviour. 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 are more sensitive to exchange rate fluctuations, probably due to the existence of an inflationary memory (Eichengreen, 2002)¹². A lot of emerging economies had experiences with high inflation¹³ and consequent price stabilisation plans, in general countries that were impacted by 1980s external debt, as it was the case of Latin American economies (Argentina, Brazil, Mexico and Peru)¹⁴, 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 group of countries ITR was adopted in most cases 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 pursuit 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

¹² 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.

¹³ 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. Carvalho (1992, ch 11) discusses the difference between high inflation and hyperinflation.

¹⁴ During the nineties South Africa, Russia and Turkey also experimented high levels of inflation.

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 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). 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 jeopardise 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.

Interest rate policy when used for controlling aggregate demand for price stabilisation 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 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 channel¹⁵. 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), analysing 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

¹⁵ 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%.

emerging economies' monetary authorities. On this regard, Goldstein (2002) suggests the adoption of a mixing of economic policies in what he denominated "managed floating plus", in which the exchange rate variation would be managed in order to be compatible with the inflation targets.

Since Tobin (1972) we know that when there is downward nominal wage rigidity, inflation can help grease the wheels of labour 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 to reduce unemployment as it works as mechanism of accommodation of the real disequilibria in the economy, due to supply shocks, negotiation of labour contracts, etc. Although we recognise that such adjustments can be easier to be done in emerging countries, as they have a more flexible labour market (and even a greater "labour reserve army") than in developed economies, once the latter ones have more organised labour unions, the presence of stronger external shocks asks for a more flexible ITR *if* the objective of economic policy is both price stability and economic growth. ITR is not the only economic policy framework for price stabilisation purposes, as some emerging economies experiences show (for instance, China and India¹⁶), but it is probably necessary for such economies that had recent history with high inflation in order to show some and more clear commitment of the economic authorities with price stabilisation. What should be the more appropriate ITR for emerging economies that had recent history of high inflation? Furthermore, 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

¹⁶ For an analysis of economic performance of China and India, see Paula (2008).

low level of centralisation of wage bargaining. So, the conciliation between price stabilisation 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 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 for CB to 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 signalling the temporary nature of a situation of excess demand. Under such conditions, a longer

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 inflation¹⁷.

We have to stress that in some situations of permanent excess demand, the use of other instruments rather than interest rate policy must be required. As we have seen, 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”.¹⁸

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 labour markets. As we have already stressed, according to Tobin (1972) when there is downward nominal wage rigidity, inflation can help grease the wheels of labour market adjustment by facilitating relative wage and price adjustment in sectors with unemployment of labour force. So, a positive, although small rate of inflation, is necessary for robust economic growth. Based on Sarel’s work, Padilha (2007) 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.

¹⁷ 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.

¹⁸ 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).

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 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 sterilised intervention. The increased monetary reserves can put downward pressure on the short-term interest rate in case of unsterilised 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 sterilised intervention (Mohanty and Turner, 2006).¹⁹

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-

¹⁹ There are some concerns about the prolonged use of foreign exchange intervention to resist currency appreciation. One concern is related to the fact that a large portfolio currency asset exposes the central bank to potential valuation losses for currency appreciation. A second concern is related to the carrying costs of reserves, that are determined by the difference between the return on domestic assets and foreign assets. Finally, continuous reserve accumulation might at some point raise problems for the central bank in controlling monetary growth. The assessment of the recent experience of exchange reserve accumulation in emerging countries (Mohanty and Scatigna, 2005; Mohanty and Turner, 2006) shows evidences that such countries have so far been successful in sterilising reserve operations. On one hand, carrying costs have been low or even negative in an important number of countries (including China, India and South Korea), although they have been high in some countries (Indonesia and Brazil). On the other hand, many central banks may have used reserve accumulation to expand the monetary base to deliberately ease monetary policy in an environment of low inflation and large excess capacity.

adequacy standards, reporting requirements, or restrictions on the ability and terms under which domestic financial institutions can provide funding to certain types of projects²⁰ (Epstein et al, 2003, p.6-7). 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 policies²¹. 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 also to define an institutional arrangement of ITR more appropriate for emerging economies with long-term history of high inflation. In this connection we showed that ITR is compatible with Post-Keynesian approach and a flexible institutional arrangement for ITR is required for emerging economies to conciliate the objectives of price stabilization and sustainable economic growth.

This flexible institutional arrangements includes the use of core inflation, a larger convergence horizon to target inflation, and a numerical target higher for emerging economies than developed ones, and also includes the use of complementary instruments, according to the circumstance, such as the use of prudential credit controls as an instrument of demand management and ‘capital management techniques’ as a tool to reduce exchange rate volatility.

²⁰ 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.

²¹ 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 (towards longer maturity 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).

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