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Social Affairs

DESA Working Paper No. 38
ST/ESA/2007/DWP/38

June 2007

Central banks as agents of employment creation

Gerald Epstein

Abstract

Employment creation has dropped off the direct agenda of most central banks. The so-called "global best practice" approach to central banking has not focused on economic growth or employment generation but rather on keeping inflation in the low single digits. However, the policy record shows that employment generation and economic growth are often not by-products of inflation focused central bank policy. This chapter argues that there should be a return to the historical norm of central bank policy in which employment creation and more rapid economic growth join inflation and stabilization more generally as key goals of central bank policy. Supporting this argument, the chapter summarizes major lessons of a multi-country research project undertaken by an international team of economists which show that, within the constraints of contemporary economic conditions, there are viable alternatives to inflation targeting that can focus more on important social, real sector outcomes such as employment generation and poverty reduction.

JEL Classification: E5; E6; N1; N2; O2.

Keywords: inflation targeting; employment; central bank; poverty reduction.

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Central banks as agents of employment creation

Gerald Epstein[1]

Ironically, employment creation has dropped off the direct agenda of most central banks just as the problems of global unemployment, underemployment and poverty are taking centre stage as critical world issues (Heintz, 2006a). The ILO estimates that in 2003, approximately 186 million people were jobless, the highest level ever recorded (ILO, 2004a). The employment to population ratio—a measure of unemployment—has fallen in the last decade, from 63.3 per cent to 62.5 per cent (ILO, 2004b). And as the quantity of jobs relative to need has fallen, there is also a significant global problem with respect to the quality of jobs. The ILO estimates that 22 per cent of the developing world's workers earn less than $1 a day and 1.38 billion (or 57 per cent of the developing world's workers) earn less than $2 a day. To reach the Millennium Development Goal of halving the share of working poor by 2015, sustained, robust economic growth will be required. The ILO estimates that, on average, real GDP growth has to be maintained at 4.7 per cent per year to reduce the share of $1 a day poverty by half by 2015, and significantly more than that to reduce the share of $2 a day poverty by half. According to the ILO, "of the seven regions under consideration in this paper, only the three Asian regions and the Middle East and North Africa region appear on track to meet the $1 target, and East Asia is the only region on track to reduce $2 working poverty by half" (Kapsos, 2004: v; Heintz, 2006a). In addition, IMF economists estimate that economic growth needs to be sustained at 7 per cent per year or more to reach the Millennium Development Goal of reducing poverty by half by 2015 (IMF, 2005: 8).

Yet, for the past decade or more, the so-called 'global best practice' approach to central banking has not focused on economic growth or employment generation; instead, it pursues formal or informal 'inflation-targeting', in which keeping a low rate of inflation—in the low single digits—has been proposed as the dominant and often exclusive target of monetary policy. In this inflation-focused monetary policy, other important goals, such as rapid economic growth and employment creation, are seen as inappropriate direct targets of central bank policy; rather, they are viewed as hoped for—even presumed—by-products of an inflation focused approach to monetary policy (Allen, Baumgartner and Rajan, 2006). Thus, according to this orthodox approach to monetary policy, the focus of policy is on 'stabilization', rather than 'growth' or 'development', with an implicit assumption that once 'stabilization' is achieved, economic growth, employment creation, and poverty reduction will follow.

This orthodox view not only specifies the appropriate target of monetary policy, but also the appropriate tools or instruments. The orthodox approach has emphasized indirect, market-based instruments of policy, such as short term interest rates, as the primary and often exclusive tool of monetary policy (Masson, Savastano and Sharma, 1997). This is in contrast to the 'direct', quantitative tools often used by central banks which have involved credit allocation methods, interest rate ceilings, and other ways to direct credit to priority economic sectors and goals. In short, the orthodox approach has narrowed both the goals and the tools of monetary policy.

1 The author thanks José Antonio Ocampo and Jomo K.S. for help, and all the members of the PERI/Bilkent Alternatives to Inflation Targeting Project, and PERI colleagues, including Robert Pollin, James Heintz, Leonce Ndikumana, Erinc Yeldan, Roberto Frenkel, and Arjun Jayadev, for many helpful discussions and Lynda Pickbourn for excellent research assistance. I also thank the funders of the PERI/Bilkent Alternatives to Inflation Targeting project, including UN-DESA, Ford Foundation, Rockefeller Brothers Fund and PERI for their support. Of course, remaining errors are mine alone.

After several decades of experience with this inflation-focused –market-based approach, the policy record has been rather disappointing for many countries. In a number of countries, inflation has come down, to be sure, but it is questionable to what extent the drop in inflation is due to changes in domestic monetary policy, rather than the overall global fall in inflation (Ball and Sheridan, 2003; Roger and Stone, 2005). But even if domestic monetary policy *has* reduced inflation, the hoped for gains in employment have, generally, *not* materialized; and, for many countries following this orthodox approach, economic growth has not significantly increased. The key point, then, is this: despite what the orthodox approach maintains, employment generation and economic growth, are *not* automatic by-products of 'stabilization-focused' central bank policy.

Yet, surprisingly, despite a disappointing record, this almost single-minded focus on inflation is gaining a more secure foothold in monetary policy circles, and the circles are widening to include an increasing number of developing countries. This is occurring even as inflation becomes less and less of a global problem while unemployment and underemployment become increasingly dire. According to a recent report by the International Monetary Fund (IMF), an increasing number of central banks in emerging markets are planning to adopt inflation targeting as their operating framework (see Table 1). An IMF staff survey of 88 non-industrial countries found that more than half expressed a desire to move to explicit or implicit quantitative inflation targets. More relevant to our concerns, nearly three-quarters of these countries expressed an interest in moving to 'full-fledged' inflation targeting by 2010 (Allen, Baumgartner and Rajan, 2006: 8). To support and encourage this movement, the IMF is providing technical assistance (TA) to many of these countries and is willing to provide more (Table 5.1, and further discussion below). In addition, the IMF is considering altering its conditionality and monitoring structures to include inflation targets. In short, despite little evidence concerning the success of inflation targeting in its promotion of economic growth, employment creation and poverty reduction, and mixed evidence at best that it actually reduces inflation itself, a substantial momentum is building up for full fledged inflation targeting in developing countries. Promotion efforts by the IMF and western-trained economists are at least partly responsible for this increasing popularity.

While it might seem obvious that price stabilization-focused central bank policy represents the only proper role for central banks, in fact, looking at history casts serious doubt on this claim. Far from being the historical norm, this focus by central banks on price stabilization to the exclusion of development represents a sharp break from historical practice, not just in the developing world, but also in the now developed countries as well (Epstein, 2006b). In many of the successful currently developed countries, as well as in many developing countries in the post-Second World War period, development was seen as a crucial part of the central bank's tasks. Now, by contrast, development and employment has dropped off the priority 'to do' list of central banks in most developing countries.

The theme of this chapter is that there should be a return to the historical norm of central bank policy: in particular, employment creation and more rapid economic growth should join inflation and stabilization more generally as key goals of central bank policy. This chapter outlines why a shift away from inflation targeting, the increasingly fashionable, but extremist and destructive approach to central bank policy and a move back toward a more balanced approach is both feasible and desirable. Of course, the paper does NOT argue that stabilization, including a moderate inflation rate, is unimportant. Indeed, historically, some central banks went much too far in downplaying the stabilization role, sometimes with disastrous consequences. But this does not mean that the optimal policy is to go to the other extreme and ignore the developmental role entirely. As I try to show in this paper, balancing between the price stabilization and developmental roles is both desirable and feasible for many central banks. In this context, for many countries, a focus on employment creation is a desirable goal of monetary policy.

Table 1.
Inflation targeting countries, current and potential

Country	When adopted	Current Inflation target (% p. a.)	Technical Assistance requested from and given by IMF
Current Targeters (in order of adoption)			
Emerging Markets			
Israel	1997	1-3	
Czech Republic	1998	3 (+/- 1)	
Poland	1998	2.5 (+/- 1)	
Brazil	1999	4.5 (+/- 2)	
Chile	1999	2-4	
Colombia	1999	5 (+/- .5)	
South Africa	2000	3-6	
Thailand	2000	0 – 3.5	
Korea	2001	2.5-3.5	
Mexico	2001	3 (+/-1)	
Hungary	2001	3.5 (+/-1)	
Peru	2002	2.5 (+/-1)	
Philippines	2002	5-6	
Slovak Rep.	2005	3.5 (+/- 1)	
Indonesia	2005	5.5 (+/- 1)	
Romania	2005	8.8	
Industrial Countries			
New Zealand	1990	1-3	
Canada	1991	1-3	
United Kingdom	1992	2	
Sweden	1993	2 (+/- 1)	
Australia	1993	2-3	
Iceland	2001	2.5	
Norway	2001	2.5	
Candidates for Inflation Targeting			
Costa Rica, Egypt, Turkey, Ukraine (4)	Near Term: 1-2 years		Yes
Albania, Armenia, Botswana Dominican Republic, Guatemala, Mauritius, Uganda (8)	Medium Term: 3-5 years		Yes
Angola, Azerbaijan, Georgia, Guinea Morocco, Pakistan, Paraguay (6)	Medium Term: 3-5 years		No
Belarus, China, Kenya, Kyrgyz Republic, Moldova, Serbia, Sri Lanka, Vietnam, Zambia (9)	Long term: more than 5 years		Yes
Bolivia, Honduras, Nigeria, Papua New Guinea, Sudan, Tunisia, Uruguay, Venezuela (8)			No

Source: Allen, Baumgartner and Rajan (2006: Tables 1, 2).

Of course, central banks need not, and indeed, *cannot* be the only institution having an employment generation role. But, in most developing countries, central banks need to cooperate with other institutions by doing much more than simply keeping inflation rates in the low single digits. To bring this about, many institutions will have to play a supporting role. Among them is the IMF, which by modifying its conditionality and monitoring program approach is enshrining inflation control as a dominant policy. The IMF should

change its advice to a more balanced position between inflation control and employment generation and poverty reduction.

The rest of the paper is organized as follows. In the next section, we briefly survey the current structure and impacts of inflation focused monetary policy, including a discussion of inflation targeting. The third section discusses alternatives to inflation-focused central banks, concentrating on the results of a multi-country research project. This section shows that there are viable, socially productive alternatives to inflation targeting, including those that focus on employment generation, and make the case that these alternatives should be further developed. The fourth and penultimate section discusses the historical practice of central banking in developed and developing countries, and, in particular, its developmental role. The final section concludes.

Structure, Promise and Impacts of Inflation Focused Monetary Policy

According to its advocates, 'full fledged' inflation targeting consists of five components: absence of other nominal anchors, such as exchange rates or nominal GDP; an institutional commitment to price stability; absence of fiscal dominance; policy (instrument) independence; and policy transparency and accountability (Mishkin and Schmidt-Hebbel, 2001: 3; Bernanke and others, 1999). In practice, while few central banks reach the 'ideal' of being 'full fledged' inflation targeters, many others still focus on fighting inflation to the virtual exclusion of other goals. The overriding announced goal of inflation targeting central banks is typically 'price stability', usually defined to be an inflation rate in the low single digits (Bernanke and others, 1999: 99). In addition, inflation targeting is usually associated with changes in the law that enhance the independence of the central bank (Bernanke and others, 1999: 102; Mishkin and Schmidt-Hebbel, 2001: 8).

The major claims made by advocates of inflation targeting are that it will[2]:

- Reduce the rate of inflation
- Enhance the credibility of monetary policy
- Reduce the *sacrifice* ratio associated with contractionary monetary policy
- Help to attract foreign investment

The evidence on these claims is mainly in the negative. It is true that countries that adopt inflation targeting often achieve lower inflation rates. But there is strong evidence that this decline in inflation might not be due to inflation targeting itself, but rather to the general decline in worldwide inflation or to a simple reversion to a more normal inflation rate (Ball and Sheridan, 2003; for a contrary view, though, see Allen, Baumgartner and Sharma, 2006, further discussed below). In addition, most evidence indicates that inflation targeting central banks do not reduce inflation at any lower cost than other countries' central banks in terms of foregone output. That is, inflation targeting does not appear to increase the credibility of central bank policy and therefore, does not appear to reduce the 'sacrifice ratio' (see Bernanke and others, 1999, and Epstein, 2000, for detailed surveys of the literature). Typically, central banks that reduce inflation do so the old-fashioned way: by raising interest rates, causing recessions or slowing growth, and by throwing people out of work.[3] Moreover, there is no evidence that countries adopting inflation targeting manage to attract more usable foreign investment.

2 See Bernanke and others (1999), Mishkin and Schmidt-Hebbel (2001) and Roger and Stone (2005) for recent surveys.

3 Clifton, Leon and Wong (2001) report some findings that inflation targeting might have improved the inflation/unemployment trade-off in OECD countries, but they do not look at emerging market countries.

A recent study by IMF economists, using a complex econometric model and policy simulations, reports findings that inflation targeting economies experience reductions in the *volatility* of inflation, without experiencing increased *volatility* in real variables such as GDP. According to these estimates, inflation targeting central banks do enhance economic 'stability' relative to other monetary rules, such as pegged exchange rates and monetary rules (Allen, Baumgartner and Rajan, 2006). While intriguing, these results are only as strong as the simulation model on which they are based, and are only as relevant as the relevance of the questions they pose, moreover, they are only as broad as the alternatives they explore. On all these scores, these IMF results are problematic. First, they do not simulate the impact of inflation targeting relative to other possible policy regimes, such as the real targeting regime discussed below. Second, the model is based on estimates of potential output that are themselves affected by monetary policy (Tobin, 1980). Hence, if monetary policy slows economic growth, it also lowers the rate of growth of potential output, and therefore reduces the gap between the two, thereby *appearing* to *stabilize the economy*. But in fact, it does so at the expense of slowing growth or even generating stagnation. This highlights the third key point: even if it could be shown that inflation targeting does a good job at stabilization, it is crucial to remember that the stabilization role of monetary policy is only one of the tasks facing central banks; the other task is to contribute directly to economic growth, employment creation and poverty reduction, and the IMF study fails to look at the impact of inflation targeting on the rate of growth of employment, or on the quality of employment. Yet, these are the issues at stake here.

Asymmetries and Misses in Inflation Targeting Regimes

Experiences with inflation targeting present another odd feature: inflation targets are frequently missed, and often by a great margin. Moreover, inflation rates are just as likely to be too low as too high, and sometimes, more so (see Table 2). In other words, monetary policy is often more likely to be too tight than too loose. Yet, despite often missing the targets, countries which have adopted inflation targeting do not give it up. This presents several asymmetries which are possibly costly for employment and growth. If under inflation targeting, inflation is often too low, that means that central banks may be keeping monetary policy *too tight*, with possible negative implications for employment and growth. Second, why do countries continue to adopt inflation targeting even though the targets are often missed? With a stunningly Panglossian faith, IMF economists surmise: "These misses do not seem to reflect 'bad' monetary policy; otherwise, the regime would surely have been abandoned or substantially modified" (Roger and Stone, 2005: 37). [4]

Table 2.
Inflation outcomes of inflation targeting countries

	Frequency of Deviations (%)		
	Total	Below	Above
All Countries	43.5	24.2	19.3
Stable Inflation Targets	32.2	21.7	10.6
Disinflation Targets	59.7	27.7	10.6
Industrial Countries	34.8	22.5	12.3
Emerging Market Countries	52.2	25.9	26.2

Source: Roger and Stone (2005: 22, Table 7).

Note: These outcomes are measured relative to the edges of target ranges.

Another more likely interpretation is that once countries adopt inflation targeting, they are locked into it. They feel they cannot abandon it for fear that abandoning inflation targeting will send the 'wrong' signal to investors and could prove costly in terms of 'investor confidence', leading perhaps to exchange rate

4 They offer an alternative answer as well: "Another way to answer this question is to note the lack of alternative regimes" (Roger and Stone, 2005: 38). I will discuss this point more below.

instability and capital flight. If this 'fear of inflation' is true, then countries maintain the inflation targeting framework, even if they often miss the targets.

Some might argue that this means an inflation targeting regime is a 'paper tiger', and that it therefore cannot have significant effects for good or ill. But I believe this is a mistaken interpretation. For one thing, as just mentioned, inflation targeters are just as likely, if not more likely, to have a monetary policy that is too tight in the sense that inflation is too low. But second, as long as central banks have an inflation targeting framework, they can argue that they do not need to worry about other objectives *except insofar as they affect inflation*. But, of course, this absolves central banks entirely of their developmental obligations, and eliminates a key tool of macroeconomic policy from the developmental arsenal that attempts to expand good jobs, among other goals. Inflation targeting central banks can simply say: "Employment creation? That's not MY department!"

Pre-requisites for Inflation Targeting

Even if it could be shown that, in theory, inflation targeting or inflation focused central bank policy are the appropriate policy for countries that could undertake such a regime, there is still the question of whether a country has the ability to successfully undertake inflation targeting. This issue has typically gone under the rubric of whether countries satisfy the structural and institutional 'pre-requisites' for inflation targeting.

There has been a substantial evolution in the IMF's attitude toward this question in recent years. Masson, Savastano and Sharma, (1997), in a widely cited IMF working paper, argued that the institutional pre-requisites for successful inflation targeting were: 1) the ability to carry out an independent monetary policy, that is free of fiscal dominance, or a commitment to another nominal anchor, like the exchange rate, and 2) a quantitative framework linking policy instruments, such as a short term interest rate, to inflation. They concluded that: "These pre-requisites are largely absent among developing countries, though several of them could with some further institutional changes and an overriding commitment to low inflation make use of an IT framework" (Masson, Savastano and Sharma, 1997: 1). This is not exactly a ringing endorsement of the possibilities of successful inflation targeting in the developing world.[5]

Fast forward ten years and one gets a very different assessment from IMF economists. In an IMF report, 'Inflation Targeting and the IMF', IMF economists revisit this question in a section entitled 'Are Developing Countries Good Candidates for Inflation Targeting?' Here, the IMF argues that the pre-requisites are too rigid and agree with those who argue that the "list of initial conditions is not meant to constitute strict prerequisites for IT" (IMF, 2006: 17). The IMF claims that: "Our findings also suggest the need for a more nuanced, less 'mechanical' view of necessary, as opposed to desirable, conditions for successful adoption of inflation targeting" (p. 17).

Hence, there has clearly been a shift in focus by the IMF, from raising serious concerns about whether inflation targeting is appropriate for most developing countries, to a view that suggests that virtually any central bank can adopt targets if the government simply has the "will to make it so". This implies a much stronger advocacy of inflation targeting by the IMF than seemed apparent in the past. This is also reflected in the IMF's changing views on conditionality.

5 Eichengreen and others (1999) and Eichengreen (2002), among other economists, have concurred with Masson, Savastano and Sharma (1997).

Inflation Targeting and IMF Conditionality

As indicated above, the promotion of inflation targeting has implications for the type of conditionality the IMF imposes in conjunction with its lending programs. As the IMF states, "Conditionality in Fund-supported programs is intended primarily to ensure that Fund resources are used to support adjustment toward sustained external viability, and thereby to safeguard the capacity to repay the Fund. Traditionally, monetary conditionality consists of limits on monetary aggregates—specifically, a floor is set for the level of net international reserves (NIR) and a ceiling is established on the net domestic assets (NDA) or on base money" (IMF, 2006).

The IMF is concerned, however, that this NDA-NIR approach could allow for higher inflation than they might like, if, for example, larger than necessary increases in net international reserves result from inflows of capital (see Epstein and Heintz, 2006; Allen, Baumgartner and Rajan, 2006). As a result, inflation targeting might require a further tightening of monetary conditions for countries undergoing IMF programs in order to maintain inflation rates in the low single digits. To the extent that such tightening slows employment growth even further, inflation targeting as part of IMF conditionality could have even more severe impacts on employment and poverty impacts for developing countries than the current NDA-NIR conditionality.

Why the Focus on Inflation?

There is a further, more basic problem with inflation targeting and the neo-liberal approach to central bank policy more generally. Why is there such a focus on fighting inflation to the exclusion of other goals? As reported in Bruno and Easterly (1998) and Epstein (2000), there is a great deal of evidence that moderate rates of inflation, inflation up to 20 per cent or even more, has no predictable negative consequences on the real economy: it is not associated with slower growth, reduced investment, less foreign direct investment, or any other important real variable that one can find.

Some IMF economists and others have argued more recently that earlier results are misleading. They claim that there are non-linearities, such as threshold effects, that imply that inflation begins to harm economic growth at much lower levels than claimed by Bruno (1995) and others (Ghosh and Phillips, 1998; Kahn and Senhadji, 2001; Burdekin and others, 2004). Some of these find that inflation begins to harm growth in developing countries at rates as low as 3 per cent. However, an even more recent paper by Pollin and Zhu (2006) finds that, taking into account non-linear impacts of inflation on economic growth, inflation and economic growth are sometimes positively related, especially when the cause of inflation is demand expansion. More generally, they find that for developing countries, inflation below about 15 per cent is not harmful for economic growth, and can, indeed be beneficial (Pollin and Zhu, 2006: 606). Hence, they conclude that, there is little justification, at least on growth grounds, to focus the economy on bringing inflation down to the low single digits, especially if such policy has economic costs.

Apart from growth effects, however, many economists have argued that inflation harms the poor more than the rich. Hence, on distribution grounds, inflation reduction into the low single digits should be a priority. While more research is necessary to fully investigate this claim, important recent work by Jayadev (2006a, 2006b) calls this conventional wisdom into question. Jayadev looks at survey data on people's preferences about inflation versus unemployment. Whereas previous researchers had asked if people disliked inflation, Jayadev investigated the more appropriate question: which is a bigger problem—inflation or

unemployment? This question better reflects the idea that there is a trade-off between the two, at least in the short to medium term. When people are asked this trade-off question, interesting and highly relevant results emerge. Jayadev (2006a) finds that those in the lowest quintile of the income distribution are more likely to perceive unemployment as a more serious problem than inflation, while those in the top quintile are more likely to have the opposite view. Jayadev (2006b) finds similar results when he divides the sample by classes, rather than by income groups. He finds that workers, and in particular, low-skilled workers, on average, find unemployment a more serious problem than inflation (Jayadev, 2006b).

Of course, all agree that very high levels of inflation, above 40 per cent, can have very serious impacts on growth and, possibly, the distribution of income. But there appears to be very little justification for monetary policy oriented toward keeping inflation in the low single digits, especially when employment and poverty are significant problems.

In addition to these concerns, Braunstein and Heintz (2006) find that dis-inflationary monetary policy in developing countries, like that undertaken in connection with inflation-focused monetary policy regimes, has a disproportionately negative employment effect on women, relative to men. Their excellent work is highly suggestive that there may be important gender effects of monetary policy, suggesting that this area needs much more research than it is currently receiving.

Central Bank Policy for Employment Creation

One reason that 'inflation-focused monetary policy' has gained so many adherents is the common perception that there is no viable alternative monetary policy that can improve growth and employment prospects. There are three main factors accounting for this perception. First, many economists believe the pre-Keynesian natural rate—or, alternatively, the 'non-accelerating inflation rate of unemployment' (NAIRU)—view of the labour market that claims that, left to their own devices, market forces will automatically bring the economy to full employment and, furthermore, any attempt to reduce unemployment further will only result in ever worsening inflation.

However, there is substantial evidence that the NAIRU theory is not empirically well based. The natural rate, or NAIRU, if it exists, does not seem to be constant; importantly, it seems to be affected by macroeconomic policy itself; in some countries, its effects are asymmetric, with increases in unemployment reducing inflation, but reductions in unemployment not increasing inflation; and it no longer even seems central to the work of mainstream economics (see Eisner, 1997; Baker, 2000; Ball and Sheridan, 2003; Ball and Mankiw, 2002; Pollin, 2005; Hall, 2005).

Second, in an internationally financially integrated economy with high levels of international capital flows, monetary policy can be extremely challenging. In particular, it might be very difficult to gear monetary policy by targeting monetary aggregates, or by pegging an exchange rate along with trying to promote employment growth. This is often seen as the so-called 'trilemma' which says that central banks can only have two out of three of the following: open capital markets, fixed exchange rates, and an autonomous monetary policy geared toward domestic goals. While this so-called 'trilemma' is not strictly true as a theoretical matter, in practice, it does raise serious issues of monetary management (Frenkel and Taylor, 2006). From my perspective, the real crux of the problem turns out to be one leg of this 'trilemma', namely the fact that orthodox economists, by and large, have taken for granted that eliminating capital controls is the best policy,

and that virtually complete financial liberalization with respect to the foreign sector is the optimal policy. Yet, recent evidence amply shows that open capital markets can create very costly problems for developing countries and that many successful developing countries have used a variety of capital management techniques to manage these flows in order, among other things, to help them escape this so-called 'trilemma' (Prasad and others, 2003; Ocampo, 2002 ; Epstein, Grabel and Jomo, 2005).

Third, few economists have developed and proposed concrete alternatives to inflation targeting monetary policy in the current context, so those searching for alternatives have trouble finding models. There is some truth to this last point, but economists are in the process of rectifying this problem, and I report on these efforts in this section. The main point of this section is this: there *are* viable alternatives to inflation-focused monetary policy (including inflation targeting), alternatives that can promote more and better employment and poverty reduction. Moreover, these alternatives are also responsive to the needs to keep inflation at a moderate level and to maintain an exchange rate that is not excessively volatile: in short, these alternatives are responsive to stabilization needs as well as developmental needs.

In this section, I report on country studies undertaken by a team of researchers working on a PERI/Bilkent project on alternatives to inflation targeting, as well as a United Nations (UN) sponsored study of employment targeting economic policy for South Africa.[6] The countries covered in this project are Argentina, Brazil, Mexico, India, The Philippines, South Africa, Turkey, and Viet Nam. As will be illustrated by these studies, one size does *not* fit all. A range of alternatives were developed in these papers, all the way from modest changes in the inflation targeting framework to allow for more focus on exchange rates and a change in the index of inflation used, to a much broader change in the overall mandate of the central bank to a focus on employment targeting, rather than inflation targeting. Some of the alternative policies focus exclusively on changes in central bank policy, while for other countries, changes in the broad policy framework and in the interactions of monetary, financial and fiscal policy are proposed. Some incorporate explicit goals and targets, while others prefer more flexibility and somewhat less transparency. But all the studies agreed that the responsibilities of central banks, particularly in developing countries, while including maintaining a moderate rate of inflation, must be broader than that, and should include other crucial 'real' variables that have a direct impact on employment, poverty and economic growth, such as the real exchange rate, employment, or investment.[7] They also agree that in many cases, central banks must broaden their available policy tools to allow them to reach multiple goals, including, if necessary, the implementation of capital account management techniques (Ocampo, 2002 ; Epstein, Grabel and Jomo, 2005).

Alternatives to Inflation Targeting: Variations on a Theme

Modest, but Useful Adjustments to the Inflation Targeting Regime

Some of the country studies in the PERI/Bilkent project proposed only modest changes to the inflation targeting regime. In the case of Mexico, for example, the authors argue that the inflation targeting regime has allowed for more flexible monetary policy than had occurred under regimes with strict monetary targets or strict exchange rate targets (Galindo and Ros, 2006). They suggest modifying the IT framework to make

6 For the PERI/Bilkent project, see Epstein and Yeldan (eds), forthcoming; and Pollin and others (2006).

7 It is true that so-called 'Taylor Rules' that estimate policy rules governing monetary policy often find that central banks react to the deviation between 'potential output' and actual output (the 'output gap'), but, far from implying that central banks care about unemployment, these results can be justified by noting that the output gap affects future inflation, so the central bank focusing solely on inflation might still be concerned with the output gap (Eichengreen, 2002).

it somewhat more employment friendly. In the case of Mexico, Galindo and Ros find that monetary policy was asymmetric with respect to exchange rate movements—tightening when exchange rates depreciated, but *not* loosening when exchange rates appreciated. This lent a bias in favour of an over-valued exchange rate in Mexico. So Galindo and Ros (2006) propose a 'neutral' monetary policy so that the central bank of Mexico responds symmetrically to exchange rate movements and thereby avoids the bias toward over-valuation without fundamentally changing the inflation targeting framework.[8]

In his study of Brazil, Nelson Barbosa-Filho also proposed extending the inflation targeting framework, but as we will see shortly, in a more dramatic way. He writes "because of Brazil's past experience with high inflation, the best policy is to continue to target inflation while the economy moves to a more stable macroeconomic situation. So far the great gain from inflation targeting has been the increase in the transparency and accountability of monetary policy in Brazil" (Barbosa-Filho, 2006). But he goes on to say, "The crucial question is not to eliminate inflation targeting, but actually make it compatible with fast income growth and a stable public and foreign finance" (Barbosa-Filho, 2006). As discussed in the next section, in order to do that, Barbosa-Filho joins a number of the country case study authors in proposing a monetary policy to maintain a stable and competitive real exchange rate (SCRER) which, they argue, will have a number of significant benefits for many of these economies and their peoples.

A Competitive and Stable Real Exchange Rate

As just indicated, a number of authors, following the lead of Frenkel and Taylor (2006), Frenkel and Ros (2006) and Frenkel and Rapetti (2006), argue that central bank should maintain a moderate inflation rate *and* should maintain a competitive and stable real exchange rate. They note that the real exchange rate can affect employment, and the economy more generally, through a number of channels: (1) By affecting the level of aggregate demand (*the macroeconomic channel)* (2) By affecting the cost of labour relative to other goods, and thereby affecting the amount of labour hired per unit of output (*the labour intensity channel)* and by affecting employment through its impact on investment and economic growth (*the development channel)* (e.g. Frenkel and Ros, 2006: 634-637). While the size and even direction of these channel effects might differ from country to country, in many countries, including countries in Latin America, maintaining a competitive and stable real exchange rate is likely to have a positive employment impact through some combination of these effects. For example, Frenkel and Ros find that most Latin American countries experiencing increases in unemployment in the 1990s, were characterized by significant appreciations in their real exchange rate. As Frenkel and Rapetti (2006) show, following the economic crisis in Argentina, maintaining a competitive real exchange rate has proven to have a strong positive impact on the recovery in employment.

From the point of view of monetary policy, the challenge is how to design a policy to maintain a stable and competitive real exchange rate (SCRER) so that it does not get undermined by massive speculative capital flows. The danger is that if the markets see the central bank trying to manipulate the exchange rate, then the exchange rate will be subject to attacks and such attacks will undermine the ability of the central bank to prevent the currency from excessively appreciating or depreciating (Frenkel and Rapetti, 2006; Frenkel and Taylor, 2006).

First, it should be noted that many developing countries already take exchange rate movements into account when formulating monetary policy, including implementation of inflation targeting (e.g. Ho and

8 Galindo and Ros (2006) also propose shifting from a CPI target to a domestic inflation target which would purge the exchange rate impact on the 'target' inflation rate and further reduce the basis for the monetary policy bias toward exchange rate appreciation.

McCauley, 2003). So, the so-called bi-polar view of exchange rate regimes—in which countries either have perfectly floating exchange rates or adopt a foreign currency or a currency board as a 'hard peg'—does not seem accurate. Most developing countries find themselves having to manage their exchange rates to some degree or other. Ho and McCauley point out that many of these countries, especially many of the success stories of East Asia, use capital account management techniques to help them maintain a stable and competitive exchange rate.

Second, central banks can, and do, adopt various types of capital controls and other types of capital account management techniques, to help manage exchange rates in the face of speculative capital flows (Ocampo, 2002; Epstein, Grabel, Jomo, 2005). This is an example where central banks may need to expand their range of policy tools in order to incorporate multiple targets.

In the PERI/Bilkent project, a number of country study authors proposed a new framework for central banks in which they should include a "stable and competitive real exchange rate" (SCRER) as an "intermediate goal". These countries included Argentina, Brazil, Mexico, the Philippines and Viet Nam (see Frenkel and Rapetti, 2006; Barbosa-Filho, 2006; Galindo and Ros, 2006; Lim, 2006; Packard, 2006). In all these cases, the authors argued that such a policy would help their economies pursue a more employment oriented growth path, while maintaining inflation in check. They all suggested that the countries they studied might need to impose short-term capital controls and other capital account management techniques to help them manage the exchange rate while maintaining moderate inflation.

For the case of Brazil, Barbosa-Filho (2006) developed a more elaborate policy framework which includes, as in the papers mentioned above, a focus on a competitive and stable real exchange rate. But, in addition, given Brazil's large public debt, Barbosa-Filho also proposes that the central bank target a reduction in the real interest rate, which would reduce the Brazilian debt service burdens and help increase productive investment. In terms of the familiar targets and instruments framework, Barbosa-Filho proposes that the Brazilian central bank choose exports, inflation and investment as ultimate targets, and focus on the inflation rate, a competitive and stable real exchange rate and the real interest rate as intermediate targets. Barbosa-Filho also elaborates on the monetary policy tools that can be used to reach these intermediate and ultimate targets. To maintain the SCRER, Barbosa-Filho proposes an asymmetric managed floating exchange rate regime in which the Brazilian central bank places a (moving) ceiling on the appreciation of the exchange rate, and, when necessary implements tight macroeconomic policy to prevent speculative attacks leading to excessive depreciations. The central bank should also attempt to lower the real interest rate. In order to achieve these goals, the central bank can use direct manipulation of the policy interest rate, bank reserve requirements and bank capital requirements (Barbosa-Filho, 2006).

Brazil is not the only highly indebted country in our project sample. Turkey is another case with that problem. Developing an alternative to inflation targeting using a computable general equilibrium (CGE) model for the case of Turkey, Voyvoda and Yeldan simulated the impact of a shift in policy from a strict inflation targeting regime, to one which had a focus on the competitiveness of the real exchange rate.[9] They find that such a shift generates much more rapid growth and employment creation, but at the expense of some worsening of the government debt position, relative to the strict inflation targeting and fiscal surplus regime currently in place (Voyvoda and Yeldan, 2006).

9 Another important change was from a primary fiscal surplus to a more relaxed fiscal stance.

Frenkel and Rapetti, in the case of Argentina, show that targeting a stable and competitive real exchange rate has been very successful in helping to maintain more rapid economic growth and employment generation. In the case of India, Jha also argues against an inflation targeting regime, in favour of one that "errs on the side of undervaluation of the exchange rate" with possible help from temporary resort to capital controls (Jha, 2006: 30-31). Jha argues that, to some extent, such a policy would be a simple continuation of policies undertaken in India in the past. In Vietnam, Packard concludes, "a strict inflation targeting (IT) regime is not appropriate for Vietnam. IT's rigid rules constrain policymakers to operate in a framework that requires inflation to take priority over more pressing development objectives.… I argue that a stable and competitive real exchange rate is (a) superior alternative, precisely because it sets as a target a key macroeconomic relative price that is realistic, sustainable, and growth enhancing" (Packard, 2006).

For Mexico, Galindo and Ros propose a more fundamental alternative to inflation targeting. They propose combining inflation targeting with real exchange rate targeting (Galindo and Ros, 2006). "More precisely, the central bank would promote a competitive exchange rate by establishing a sliding floor to the exchange rate in order to prevent excessive appreciation (an 'asymmetric band'). This would imply intervening in the foreign exchange market at times when the exchange rate hits the floor (i.e. an appreciated exchange rate) but allows the exchange rate to float freely otherwise" (Galindo and Ros, 2006). They point out that such a floor would work against excessive capital inflows by speculators because they would know the central bank will intervene to stop excessive appreciation. If need be, Galindo and Ros also propose temporary capital controls, as do some of the other authors from the PERI/Bilkent project.

More Comprehensive Alternatives to Inflation Targeting

Other country case studies propose more comprehensive policy alternatives to simple inflation-focused monetary policy, including inflation targeting. Joseph Lim proposes a comprehensive alternative to inflation targeting for the case of the Philippines. Lim argues that the Philippine government has been seeking to achieve a record of dramatically higher economic growth, but that its monetary policy has been inappropriate to achieving that goal. He therefore proposes an 'alternative' that "clearly dictates much more than just a move from monetary targeting to inflation targeting". Lim argues that any viable alternative for the Philippines must take into account several key constraints or realities: 1) Easier monetary policy, by itself, will not stimulate investment or growth because it is accompanied by weak financial confidence and stricter financial requirements on banks. 2) Fiscal policy is highly constrained because of a large public debt. 3) High economic growth, by itself, will not necessarily enhance the quality of growth—i.e., improving the growth of good jobs with good wages. 4) Volatile external accounts and foreign exchange rates undermine rapid and high quality growth.

Lim's proposals include: 1) Maintenance of a stable and competitive real exchange rate (SCRER), either by pegging the exchange rate or intensively managing it as in South Korea. 2) To help manage the exchange rate, capital account management techniques are likely to be needed. 3) This should include strong financial supervision to prevent excessive undertaking of short-term foreign debt, and tax based capital controls on short-term capital flows, as was used, for example in Chile, an explicit stating of output and employment goals, as the central bank transitions from a purely inflation-targeting regime. Lim argues that these policies can have beneficial impacts on the current Philippine problems of high fiscal deficits, lack of financial confidence and unemployment. 4) Incomes and anti-monopoly policies to limit inflation to moderate levels, and 5) Targeted credit programs, especially for export-oriented and small and medium sized enterprises that can contribute to productivity growth and employment.

These policy proposals in broad outlines are similar to those proposed by Epstein (2006a) for the case of South Africa, which, in turn, have been developed in a much broader framework and in more detail by Pollin and others (2006).

An Employment Targeted Economic Program for South Africa

In March 2005, to pick one recent, indicative date, South Africa had an unemployment rate of anywhere from 26 to 40 per cent, depending on exactly how it is counted. South Africa's government has pledged to cut the unemployment rate by 50 per cent, bringing the official unemployment rate to 13 per cent by the year 2014 (see Pollin and others, 2006: xiii). Pollin and others (2006) developed an "employment-targeted economic program" designed to accomplish this goal, with a focus on monetary policy, credit policy, capital management techniques, fiscal policy and industrial policy. Here, 'employment targeting' replaces inflation targeting as the proposed operating principle behind central bank policy, and moderate inflation becomes an additional constraint which the central bank must take into account when formulating policy (Epstein, 2006a).

Under this framework, the central bank, along with other key government institutions, identify an employment (or, in this case, an 'unemployment rate') target. Then, on the basis of models and estimates of the South African macro-economy a set of monetary policy instruments are determined—*along with a number of other policy tools such as credit policy and fiscal policy*—which, together, can achieve the target unemployment rate, while maintaining a moderate inflation rate and an acceptable level of exchange rate variability. In the particular model developed by Epstein in Pollin and others (2006), a simulation model shows that if the South African Reserve Bank lowers the interest rate from 11 to 7 per cent and holds it at that level for 5 years, economic growth will increase, on average, by 0.5 per cent per year, inflation will go up by 1 percentage point and the increase in exchange rate variability will be quite modest. In combination with other policies, such as credit guarantees and subsidized credit for labour-intensive sectors, as well as capital management techniques and incomes policies if necessary, the unemployment rate can be halved by 2014, as proposed by the South African government.

Hence, in the case of South Africa, as part of a coherent economic program, an employment-targeting central bank apparently can plausibly achieve a significant reduction in unemployment, while keeping inflation and exchange rate variability in check (Epstein, 2006a; Pollin and others, 2006).

Summary

The major lesson of these case studies and auxiliary materials is that there are well thought out and plausibly viable alternatives to inflation targeting that can focus more on important social, real sector outcomes such as employment generation, poverty reduction, export promotion and investment enhancement. If inflation targeting is resilient as the 'big idea' of modern central bank policy because many perceive that there is no alternative, these case studies provide an antidote by showing that viable alternatives are plausible and can be further developed and implemented. Indeed, as I argue in the next section, doing so would be consistent with long-standing historical practice.

Central Banks as Agents of Economic Development

The employment targeting approach to central bank policy described in the previous section might seem quite alien to those schooled in the orthodox tradition of inflation targeting and financial liberalization. In fact, policies like those described above have been quite common historically in both currently developed and developing countries (Epstein, 2006b). Over the years, central banks have been seen as agents of economic development, not just agents of economic stabilization. And while sometimes central banks have failed quite spectacularly in this mission, there have been other important success stories, including important periods in the U.S., U.K., France, Germany, Japan, South Korea and India, to name just a few examples. In continental Europe, the banking system, often directed by the central bank in conjunction with the ministry of finance, helped to mobilize and direct credit for industrial development (Pollin, 1995; Grabel, 2000). Even in the U.S. and U.K. these policies were used to direct policy to promote social sectors such as housing; in the U.S. and the U.K., central bank policy and regulations were used to promote the financial sector as well (Epstein, 2006b).

As for developing countries, Alice Amsden describes the key role that investment banks played in the industrialization success stories such as South Korea, Taiwan, Malaysia, Brazil, Argentina and others, in mobilizing and directing savings to key industrial sectors, and in particular those specializing in exports (2001). In many of these cases, central banks were a key part of the government apparatus that played a supporting role by maintaining low interest rates, maintaining capital controls to help stabilize exchange rates at competitive levels, and sometimes engaging in direct lending for preferred purposes.

In some countries, engaging in these developmental roles, using a wide variety of instruments, was widely seen as a key part of the central bank's mission. After the Second World War, there was a major transformation of central banking in the developing world. In many respects, these changes paralleled those in the developed world just described. But in developing countries, central banks were much more emphatically *agents of economic development* than in many richer countries (Epstein, 2006b). As described by the renowned monetary historian of the New York Federal Reserve, Arthur I. Bloomfield:

> During the past decade there has been a marked proliferation and development of central banking facilities in the underdeveloped countries of the world, along with an increasing resort to the use of monetary policy as an instrument of economic control. Since 1945, central banks have been newly established and pre-existing ones thoroughly reorganized, in no less than some twenty-five underdeveloped countries. In other cases the powers of pre-existing central banks have been broadened.... in large part the recent growth of central banking in the economically backward areas has also reflected a desire on the part of the governments concerned to be able to pursue a monetary policy designed to promote more rapid economic development and to mitigate undue swings in national money incomes (Bloomfield 1957: 190).

Bloomfield goes on to describe the functions, powers, and goals of these central banks:

> Many of the central banks, especially those established since 1945 *with the help of Federal Reserve advisers* (emphasis added), are characterized by unusually wide and flexible powers. A large number of instruments of general and selective credit control, some of a novel character, are provided for. Powers are given to the central bank to engage in a wide range of credit operations with commercial banks and in some cases with other financial institutions….. These and other powers were specifi-

cally provided in the hope of enabling the central banks… to pursue a more *purposive* (emphasis added) and effective monetary possible than had been possible for most…. that had been set up… during the twenties and thirties… (that) for the most part (had) been equipped with exceeding orthodox statutes and limited powers which permitted little scope for a monetary policy *designed to promote economic development and internal stability* (emphasis added) (Bloomfield, 1957: 191).

Somewhat surprisingly, from the perspective of today's financial orthodoxy, the Federal Reserve Bank of New York helped to establish developing country central banks and encouraged them to have a broad range of monetary and credit powers, especially in contrast to the orthodoxy of the 1920s and 1930s. Of course, the Federal Reserve continued to be concerned about the importance of stabilization, controlling excessive credit creation and maintaining moderate inflation.

But (the central bank's) efforts need not, and in fact should not, stop here. The majority of central banks in underdeveloped countries have in actual practice adopted a variety of measures designed more effectively to promote the over-all development of their economies. Some of these measures are admittedly outside the traditional scope of central banking, but central banking in these countries should not necessarily be evaluated in terms of the standards and criteria applied in the more developed ones…. the central bank can seek to influence the flow of bank credit and indeed of savings in directions more in keeping with development ends (Bloomfield, 1957: 197).

Bloomfield describes the same tools of credit manipulation described earlier with respect to Europe, Japan and even the United States:

selective credit controls applied to the banking system, through help in establishing and supporting special credit institutions catering to specialized credit needs, and through influence over the lending policies of such institutions, it can help to some degree to re-channel real resources in desired directions, both between the public and private sector and within the private sector itself (Bloomfield 1957: 198).[10]

While many central banks in developing countries adopted a developmental mission, alongside their stabilization objectives, not all of them succeeded in balancing the two. By 1971, Andrew Brimmer of the U.S. Federal Reserve Board revisited the issue of central banking in the developing world, and concluded that many of these countries had sacrificed too much stability for the developmental results achieved (Brimmer, 1971). To be sure, there are many cases where central banks in the developing world failed to prevent balance of payments crises and excessively high levels of inflation, indeed, even hyper-inflation.[11]

Still, there are plenty of examples of success stories, where central banks supported government developmental goals, while maintaining key stabilization requirements, often by using a variety of monetary instruments, including credit subsidies, capital controls, asset-based reserve requirements, and interest rate ceilings. Today, of course, these policies would need to be tailored to modern conditions, as described above. But doing so, far from being a novel procedure, would, in fact, be well in the established tradition of central banking in both the developed and developing world.

10 Of course, Bloomfield (1957: 197) cautions that, "Such measures would for the most part be justified, however, only to the extent that they do not conflict with the overriding requirement of financial stability or involve the central bank in details of a sort that might distract its attention and energies from the effective implementation of a policy aimed at stability" .

11 See Maxfield (1997) and Fry (1995) for a discussion of some of these cases.

Conclusion

Mentioned earlier was the resilience of inflation targeting despite the common target misses; and also mentioned was the expressed desire of many developing countries to adopt inflation targeting despite its apparent success in reducing inflation or promoting economic growth, employment creation or poverty reduction. This chapter has argued that this inflation targeting 'fad', supported with technical assistance by the IMF, is far from benign. It creates in central banks a *culture* of inflation focus, or even inflation obsession. Millions of dollars are spent studying every aspect of inflation, but few aspects of unemployment; thousands of hours of the time of highly scarce, skilled economists are spent pouring over complex models designed to show how to get inflation down from 8 to 4 per cent, but not on how to create more and better jobs; and if other government officials or those in civil society ask the central bank to do something about employment creation, the central banks can respond, "that's not our job".

More than anything else, the cost of inflation-focused monetary regimes is to divert the attention of the some of the most highly trained and skilled economists and policy makers in developing countries away from the tasks that previous generations of central bankers took for granted as being their main job: to help their countries develop, to create jobs, and to foster socially productive economic growth. It is time to return to an earlier generation of central banking where central banks were seen as agents of economic development, including as agents of employment creation. But, it is always crucial to keep in mind this modern lesson: Central banks must balance their developmental goals with the crucial task of macroeconomic stabilization. Otherwise, both stabilization and development will be lost.

References

Allen, Mark, Ulrich Baumgartner, and Raghuram Rajan (2006). Inflation targeting and the IMF. Prepared by Monetary and Financial Systems Department, Policy and Development Review Department and Research Department, March 16, International Monetary Fund, Washington, DC.

Amsden, Alice (2001). *The Rise of the Rest: Challenges to the West from Late-Industrializing Economies*. Oxford University Press, New York.

Baker, Dean (2000). NAIRU: Dangerous dogma at the Fed. *Financial Markets and Society*. Financial Markets Center, Washington, DC, December. www.fmcenter.org

Ball, Laurence, and N. Gregory Mankiw (2002). The NAIRU in theory and practice. NBER working paper no. 8940, National Bureau of Economic Research, Cambridge, MA.

Ball, L., and N. Sheridan (2003). Does inflation targeting matter? IMF working paper no. 03/129, International Monetary Fund, Washington, DC.

Barbosa-Filho, Nelson (2006). Inflation targeting and monetary policy in Brazil. PERI working paper, Political Economy Research Institute, University of Massachusetts, Amherst. www.peri.umass.edu

Bernanke, Ben S., Thomas Laubach, Adam S. Posen, and Frederic S. Mishkin (1999). *Inflation Targeting: Lessons from the International Experience*. Princeton University Press, Princeton, NJ.

Bloomfield, Arthur I. (1957). Some problems of central banking in underdeveloped countries. *The Journal of Finance* 12 (2), May: 190-204.

Braunstein, Elissa, and James Heintz (2006). Gender bias and central bank policy: Inflation and employment reduction. PERI working paper, Political Economy Research Institute, University of Massachusetts, Amherst. www.peri.umass.edu.

Brimmer, Andrew F (1971). Central banking and economic development: The record of innovation. *Journal of Money, Credit and Banking,* 3 (4), November: 780-792.

Bruno, Michael (1995). Does inflation really lower growth? *Finance and Development*, September: 35-38.

Bruno, Michael, and William Easterly (1998). Inflation crises and long-run growth. *Journal of Monetary Economics* 41: 3-26.

Burdekin, R.C.K., A.T. Denzau, M.W. Keil, T. Sitthiyot, and T.D. Willett (2004). When does inflation hurt economic growth? Different nonlinearities for different economies. *Journal of Macroeconomics* 26: 519-532.

Clifton, Eric V., Hyginus Leon, and Chorng-Huey Wong (2001). Inflation targeting and the unemployment-inflation trade-off. IMF working paper WP/01/166, International Monetary Fund, Washington, DC.

Eichengreen, Barry, P. Masson, M. Savastano, S. Sharma (1999). Transition strategies and nominal anchors on the road to greater exchange rate flexibility. In Barry Eichengreen and others (eds). *Essays in International Finance*. International Finance Section, Department of Economics, Princeton University, Princeton, NJ.

Eichengreen, Barry (2002). Can emerging markets float? Should they inflation target? Processed, February, Department of Economics, University of California, Berkeley.

Eisner, Robert (1997). A new view of the NAIRU. In Paul Davidson and Jan Kregel (eds). *Improving the Global Economy: Keynesianism and the Growth in Output and Employment*. Edward Elgar, Brookfield, VT.

Epstein, Gerald (2000). Myth, mendacity and mischief in the theory and practice of central banking. PERI working paper, Political Economy Research Institute, University of Massachusetts, Amherst.

Epstein, Gerald (2006a). Employment targeting central bank policy in South Africa. Paper presented at the 'Alternatives to Inflation Targeting Monetary Policy for Stable and Egalitarian Growth in Developing Countries' conference, May 13-14, Centro de Estudios de Estado y Sociedad (CEDES), Buenos Aires.

Epstein, Gerald (2006b). Central banks as agents of economic development. WIDER working paper no. 2006-54, World Institute for Development Economics Research, United Nations University, Helsinki. http://www.wider.unu.edu/publications/rps/rps2006/rp2006-54.pdf

Epstein, Gerald, Ilene Grabel and Jomo K.S. (2005). Capital management techniques in developing countries: An assessment of experiences from the 1990s and lessons for the future. In Gerald Epstein (ed.). *Capital Flight and Capital Controls in Developing Countries*. Edward Elgar, Northampton, MA: 301-333.

Epstein, Gerald, and James Heintz (2006). Monetary policy and financial sector reform for employment creation and poverty reduction in Ghana. International Poverty Centre Country Study no. 2, Brasilia. http://www.undp-povertycentre.org/newsletters/CountryStudy02.pdf

Epstein, Gerald, and Erinc Yeldan (eds) (forthcoming). *Alternatives to Inflation Targeting for Stable and Egalitarian Growth*. Book manuscript. PERI, Political Economy Research Institute, University of Massachusetts, Amherst, MA

Frenkel, Roberto, and Martin Rapetti (2006). Monetary and exchange rate policies in Argentina after the convertibility regime collapse. PERI working paper, Political Economy Research Institute, University of Massachusetts, Amherst. www.peri.umass.edu .

Frenkel, Roberto, and Jaime Ros (2006). Unemployment and the real exchange rate in Latin America. *World Development* 34 (4): 631-646.

Frenkel, Roberto, and Lance Taylor (2006). Real exchange rate, monetary policy, and employment: Economic development in a garden of forking paths. Working paper no. 19, February, Department of Economic and Social Affairs (DESA), United Nations, New York.

Fry, Maxwell J. (1995). *Money, Interest and Banking in Economic Development*. 2nd Edition. The Johns Hopkins University Press, Baltimore.

Galindo, L.M., and Jaime Ros (2006). Inflation targeting Mexico: An empirical appraisal. Paper presented at the 'Alternatives to Inflation Targeting Monetary Policy for Stable and Egalitarian Growth in Developing Countries', PERI Working Paper, Political Economy Research Institute, University of Massachusetts, Amherst.

Ghosh, A., and S. Phillips (1998). Warning: Inflation may be harmful to your growth. *IMF Staff Papers* 45 (4): 672-686.

Grabel, Ilene (2000). Savings, investment and functional efficiency: A comparative examination of national financial complexes. In Robert Pollin (ed.). *The Macroeconomics of Saving, Finance and Investment*. University of Michigan Press, Ann Arbor: 251-298.

Hall, Robert E. (2005). Separating the business cycle from other economic fluctuations. NBER working paper no. 11651, National Bureau of Economic Research, Cambridge, MA, September. www.nber.org

Heintz, James (2006a). Growth, employment and poverty reduction. DFID discussion paper, Department for International Development, London, and Political Economy Research Institute, University of Massachusetts, Amherst. Available at: www.umass.edu/peri

Ho, Corrinne, and Robert N. McCauley (2003). Living with flexible exchange rates: Issues and recent experience in inflation targeting emerging market economies. BIS working paper no. 130, Bank for International Settlements, Basel.

ILO (2004a). *Global Employment Trends, 2004*. International Labour Office, Geneva.

ILO (2004b). *Global Employment Trends for Women, 2004*. International Labour Office, Geneva.

IMF (2005). Monetary and fiscal policy design issues in low-income countries. Policy Development and Review Department and Fiscal Affairs Department, 8 August, International Monetary Fund, Washington, DC.

Jha, Raghbendra (2006). Inflation targeting in India: Issues and prospects. PERI working paper, Political Economy Research Institute, University of Massachusetts, Amherst. www.peri.umass.edu .

Jayadev, Arjun (2006a). Differing preferences between anti-inflation and anti-unemployment policy among the rich and the poor. *Economics Letters* 91: 67-71.

Jayadev, Arjun (2006b). The class content of preferences: Towards anti-inflation and anti-unemployment policies. PERI working paper, Political Economy Research Institute, University of Massachusetts, Amherst. www.peri.umass.edu

Kahn, M.S., and A.S. Senhadji (2001). Threshold effects in the relationship between inflation and growth. *IMF Staff Papers* 48 (1): 1-21.

Kapsos, Steven (2004). Estimating growth requirements for reducing working poverty: Can the world halve working poverty by 2015? Employment strategy paper no. 2004/14, Employment Strategy Department, International Labour Office, Geneva.

Lim, Joseph (2006). Philippine monetary policy: A critical assessment and search for alternatives. PERI working paper, Political Economy Research Institute, University of Massachusetts, Amherst. www.peri.umass.edu

Masson, Paul R., Miguel A. Savastano and Sunil Sharma (1997). The scope for inflation targeting in developing countries. IMF working paper WP/97/130, International Monetary Fund, Washington, DC.

Maxfield, Sylvia (1997). *Gatekeepers of Growth; The International Political Economy of Central Banking in Developing Countries*. Princeton University Press, Princeton.

Mishkin, Frederic, and Klaus Schmidt-Hebbel (2001). One decade of inflation targeting in the world: What do we know and what do we need to know? NBER working paper no. 8397, July, National Bureau of Economic Research, Cambridge, MA.

Ocampo, Jose Antonio (2002). Capital-account and counter-cyclical prudential regulations in developing countries. WIDER Discussion paper, August, World Institute for Development Economics Research, United Nations University, Helsinki.

Packard, Tu Anh (2006). Monetary policy in Vietnam: Alternatives to inflation targeting. PERI Working Paper, Political Economy Research Institute, University of Massachusetts, Amherst. www.peri.umass.edu

Pollin, Robert (1995). Financial structures and egalitarian economic policy. *New Left Review* 214: 26-61.

Pollin, Robert (2005). *Contours of Descent*. Verso Press, London.

Pollin, Robert N., Gerald Epstein, James Heintz, and Leonce Ndikumana (2006). An employment-targeted economic program for South Africa. A study sponsored by the United Nations Development Program (UNDP), New York, and Political Economy Research Institute (PERI), University of Massachusetts, Amherst. www.peri.umass

Pollin, Robert, and Andong Zhu (2006). Inflation and economic growth: A cross-country nonlinear analysis. *Journal of Post Keynesian Economics* 28 (4), Summer: 593-614.

Prasad, Eswar, Kenneth Rogoff, Shang-Jin Wei, and M. Ayhan Kose (2003). Effects of financial globalization on developing countries: Some empirical evidence. Occasional paper no. 220, International Monetary Fund, Washington, D.C.

Roger, Scott, and Mark Stone (2005). On target? The international experience with achieving inflation targets. IMF working paper WP/05/163, International Monetary Fund, Washington, DC.

Tobin, James (1980). Stabilization policy ten years after. *Brookings Papers on Economic Activity* 1: 19-71.

Voyvoda, E., and Erinc Yeldan (2006). Macroeconomics of twin-targeting in Turkey: A general equilibrium analysis. PERI working paper, Political Economy Research Institute, University of Massachusetts, Amherst. www.peri.umass.edu.