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Inflation Targeting in Developing Countries

Inflation targeting (IT) was the dominant monetary policy paradigm for the last two decades. There are now 17 emerging and developing economies that practice IT with a median-targeted inflation rate of 3 per cent.[1] A recent review (Roger, 2010)[2] observes, "A growing number of countries are making a specific inflation rate the primary goal of monetary policy, with success". This "success" claimed is summed up as follows:

- Both inflation-targeting and non-inflation-targeting low-income economies experienced major reductions in inflation rates and improvements in average growth rates. Although non-inflation-targeting countries continued to have lower inflation and higher growth than the inflation-targeting countries, those that adopted inflation-targeting saw larger improvements in performance.

- Both inflation-targeting and non-inflation-targeting low-income economies also experienced large reductions in the volatility of inflation and output, with the countries adopting inflation-targeting registering bigger declines, especially in inflation volatility.

One might note the following about these claims: first, in terms of prevailing inflation and growth rates, non-IT countries do better than IT countries. Second, the larger improvement in IT countries may be because they had higher median initial inflation (16 per cent vis-à-vis 10 per cent in non-IT) and a lower median initial growth rate (3per cent vis-à-vis 4.5 per cent in non-IT). Inflation declined in both IT and non-IT countries, implying that central banks may not need to have an explicit quantitative target for inflation. Furthermore, there is strong evidence that the decline in inflation might not be due to IT, but rather to the general decline in worldwide inflation or to the general reversion to a more typical inflation rate (Ball & Sheridan, 2003).[3]

Distinguished participants at a recently held conference at the IMF (7 to 8 March, 2011) argued for "wholesale re-examination of macroeconomic policy principles" in the wake of the Great Recession of 2008 to 2009. In particular, both the IMF's Managing Director and the Director of the IMF's Research Department noted that the IT paradigm was dominant in the pre-crisis period, but that it needs to be revisited.[4]

Inflation-Growth Relationship

The nature of the inflation-growth relationship is not straight forward. As Milton Friedman (1973, p. 41)[5] noted: "Historically, all possible combinations have occurred: inflation with and without [economic] development, no inflation with and without [economic] development". Asking "Is inflation harmful to growth?", and based on their cross-country econometric analysis, Bruno and Easterly (1998, p. 3)[6] concluded that "The ratio of fervent beliefs to tangible evidence seems unusually high on this topic."

Using data from 140 developed and developing countries from 1960 to 1998, Khan and Senhadji (2001)[7] found that the threshold level of inflation above which inflation significantly slows growth was 11 to 12 per cent for developing countries.[8] Based on inflation and economic growth data from 80 countries over

the period 1961-2000, Pollin and Zhu (2006)[9] found that higher inflation is actually associated with moderate gains in GDP growth up to a threshold of approximately 15 to 18 per cent inflation. Sepehri and Moshiri (2004)[10] showed that the estimated turning points varied widely, from as high as 15 per cent per year for lower-middle-income countries to 11 per cent for low-income countries, and 5 per cent for upper-middle-income countries.

Using advanced econometric tools to correct some major limitations of the previous analyses, Brito and Bystedt (2010)[11] found that IT actually resulted in lower output growth during adoption.[12] Moreover, if economic growth is slowed, then the growth rate of potential output is also lowered.[13]

IT may negatively affect growth and development in a number of ways, including high interest rates, an appreciated real exchange rate, and financial volatility. Maintaining very low inflation rates requires significant real interest rate increases, which adversely affect investment with negative consequences for growth and development (Epstein, 2008).[14] Moreover, in economies with relatively unrestricted capital mobility and reasonably developed capital markets, the high interest rates associated with IT often attract short-term portfolio investment inflows. Such capital flows can lead to real exchange rate appreciation, hurting exports and facilitating import penetration (Galindo & Ros, 2008).[15] Tradable sectors will be negatively affected by appreciation, leading to resource reallocation to the non-tradable sector. If productivity levels are lower in the non-tradable sector on average, the outcome will be slower growth and delayed industrialization. Additionally, short-term capital inflows may increase the risk of financial fragility. A rapid reversal of these flows can lead to currency collapse and, in turn, a broader economic crisis, thereby placing the IT country in a fragile position.

Sources of Inflation Matter

Most developing countries are prone to supply shocks due to their high dependence on agriculture. Their high dependence on primary commodity exports and imported energy also make them prone to external shocks. Indeed, the correlation coefficient between median inflation rates in least developed countries (LDCs) and a global food price index is 0.82.[16]

Supply-side shocks may, thus, simultaneously reduce growth and raise inflation. Tightening monetary policy in response to this kind of shock may worsen the situation. Output fluctuations will be greater when macroeconomic policies focus on price stability in the face of such shocks as the burden of adjustment falls on only one variable – the output.

Monetary tightening in response to supply-side inflation will undermine output growth due to excessive volatility in growth. Empirical research points to a robust negative cross-country relationship between growth and growth volatility, and a significant negative correlation between growth and medium-term business cycle fluctuations (See, e.g, Ramey & Ramey, 1995; Kroft & Lloyd-Ellis, 2002).[17] [18]

IT Beyond Growth

The superiority of IT in terms of growth performance cannot be ascertained unequivocally. We compare 12 IT countries with 12 non-IT countries with similar characteristics, such as Human Development Index (HDI) scores, level of income per capita, and location within in the same, or a nearby region.[19]

While a number of factors, especially labour market institutions, can affect labour productivity and other employment indicators, including poverty, we find an interesting association between IT or non-IT and the median values of these indicators for the period 2000-2007. For example, median labour productivity is higher in non-IT than in comparable IT countries – US$ 14,999 in non-IT versus US$ 14,027 in IT in constant 1990 PPP$. While there is not much difference between IT and non-IT countries in the median unemployment rate (around 10 per cent) and median poverty rate (around 27 per cent), vulnerable unemployment is higher in IT countries – around 37 per cent – than in non-IT countries – around 30 Per cent.. Higher vulnerability may be due to the pro-cyclicality of the IT regime, with the burden of adjustment falling mainly on labour.

Some Anomalies Reconsidered

First, most proponents of strict inflation targeting presume that inflation is caused by excess money supply, as Milton Friedman famously claimed in 1970, "inflation is always and everywhere a monetary phenomenon".[20] The US Federal Reserve Bank has been printing money faster since the late-1990s, but, inflation did not accelerate. The Fed has turned to quantitative easing twice since the onset of the Great Recession. Instead of accelerating, the inflation rate remained well below the "desired" rate of 2 to 3 per cent. Japan has been facing deflationary pressure despite significantly easing monetary policy since 1995.

The breakdown of the relationship between money supply and inflation may be due to various factors. First, as in the case of Japan, it may be due to a "liquidity trap" as people hold excess cash instead of spending it. This can happen if people expect prices to fall further or

still fear losing jobs. Second, when output is far below potential, excess spending by people to get rid of excess cash can be accommodated without raising prices.[21] Third, and most importantly, the breakdown of a strict relationship between money supply and consumer price inflation could be due to the availability of a large range of consumer products from cheaper production locations such as China, India, Vietnam or Bangladesh. This is the main reason why monetary expansion translates into significantly higher prices for capital assets, particularly real estate and equities, instead of a higher consumer price index.

The second anomaly is the belief that money is neutral. That is, "in the long term monetary policy can influence nominal, but not real variables". However, the proponents of IT also believe that "high inflation harms growth and the equitable distribution of income; and [that] expectations and credibility significantly influence the effectiveness of monetary policy".[22] These two propositions seem to be at odds with each other. If monetary policy (money) affects inflation which, in turn, affects growth, surely money is not neutral, and affects real variables as well.

The third anomaly is the belief that "central banks cannot consistently pursue and achieve multiple goals, such as low inflation and low unemployment, with only one basic instrument — the policy interest rate".[23] There is a belief among central bankers that there is a "divine coincidence" (to use Olivier Blanchard's phrase) that controlling inflation will control unemployment. This is certainly true when central banks use only one instrument. However, there is no reason why central banks cannot use other available instruments or devise new ones to achieve multiple objectives.

For example, while central banks can use traditional interest rate instruments (or other instruments, such as reserve requirements) to keep inflation moderate, specialized credit regulation can be a second instrument directed to employment creation.

Of course, specialized and directed credit programs create distortions in financial markets and are prone to rent-seeking. However, the cost of distortions must be weighed against the cost of market imperfections in the financial sector. Quite often, in countries that have abandoned specialized credit programs as part of financial sector reforms, there has been a massive shift of resources from rural and small-scale sectors to urban and commercial activities.[24] This has had adverse effects on GDP as well as poverty.

Central banks can consider a number of options in designing specialized credit programs. In India, for example, all banks (public and private) are required to lend at least 40 per cent of their net credit to "priority sectors". If banks fail to do so, they must lend to specific government agencies at very low interest rates as a penalty. Studies by Banerjee and Duflo (2008)[25] found that most banks complied with the regulation and the program contributed significantly to expansion in agriculture and small industries.

Concluding Remarks

There is ample evidence to suggest that targeting low, single-digit inflation is not necessarily good developmental macroeconomic, or even monetary, strategy. One should distinguish between the need to safeguard price stability as a principle and the restrictive notion of targeting a specific inflation rate.

As the preamble of the IMF's *Article of Agreement IV* notes, "each member shall (i)

endeavour to direct its economic and financial policies toward the objective of fostering orderly economic growth with reasonable price stability, with due regard to its circumstances". The preamble not only expects monetary policy to simultaneously attain both reasonable price stability and orderly growth, but also, contrary to the IT regime, it does not specify any specific quantitative target. Additionally, there is no presumption of the suitability of a less than 5 per cent target that is universally applicable if due regard is to be given to country circumstances.

The fact that the IMF's *Article of Agreement IV* expects simultaneous achievement of reasonable price stability and growth, and does not specify a numerical target for inflation, suggests both the availability of more than one instrument and flexibility in the use of such instruments.

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[1] Authors' calculation based on available data from central bank websites.

[2] Roger, Scott (2010). Inflation Targeting Turns 20. *Finance & Development*, March.

[3] Ball, Laurence and Niamh Sheridan (2005). Does inflation targeting matter? In B.S. Bernanke and M. Woodford, eds. *The Inflation Targeting Debate*. Chicago: University of Chicago Press, pp. 249-276.

[4] 'IMF triggers debate on crisis lessons', IMF Survey online, March 8, 2011 available at imf.org/external.

[5] Friedman, Milton (1973). *Money and Economic Development*. Toronto: Lexington Books.

[6] Bruno, Michael, and William Easterly (1998). Inflation crises and Long-run Growth. *Journal of Monetary Economics*, 41, pp. 3-26.

[7] Khan, Mohsin, and Abdelhak Senhadji (2001). Threshold Effects in the Relationship between Inflation and Growth. *IMF Staff Papers*, 48(1).

[8] They also note that "The positive effect of inflation on growth is only present for inflation rates lower than…. 18 % for developing countries." (p. 16). This implies that the upper bound is 18%.

[9] Pollin, Robert, and Andong Zhu (2006). Inflation and Economic Growth: A Cross-Country Non-linear Analysis. *Journal of Post Keynesian Economics* 4, pp. 593-614.

[10] Sepehri, Ardeshir, and Saeed Moshiri (2004). Inflation-Growth Profiles Across Countries: Evidence from Developing and Developed Countries. *International Review of Applied Economics* 18, pp. 191–207.

[11] Brito, Ricardo, and Brianne Bystedt (2010). Inflation targeting and emerging economies: panel evidence. *Journal of Development Economics* 91, pp. 198-210

[12] The Brito and Bystedt study focused on a panel sample of 46 developing countries (13 IT countries) between 1980 and 2006.

[13] That is, potential output depends on actual output. This is what one can expect from the "learning by doing" effect within the endogenous growth model.

[14] Epstein, Gerald (2008). An employment targeting framework for central bank policy in South Africa. *International Review of Applied Economics* 22(2), pp. 243-258.

[15] Galindo, Luis Miguel, and Jaime Ros (2008). Alternatives to inflation targeting in Mexico. *International Review of Applied Economics* 22(2), pp. 201-214.

[16] Authors' estimates.

[17] Ramey, Garey, and Valerie Ramey (1995). Cross-Country Evidence on the Link between Volatility and Growth. *American Economic Review* 85(5), pp. 1138-1151.

[18] Kroft, Kori, and Huw Lloyd-Ellis (2002). Further Cross-Country Evidence on the Link between Growth, Volatility and Business Cycles. Queens University Working Paper.

[19] The developing IT countries are: Brazil, Chile, Colombia, Guatemala, Mexico, Peru, Philippines, Indonesia, Ghana, Thailand, Turkey, and South Africa. The comparable non-IT countries are: Argentina, Ecuador, Honduras, Uruguay, Panama, India, Jordan, Kenya, Sri Lanka, Lebanon, and Botswana. The choice of this sample is no more or no less arbitrary than other selection procedures.

[20] Friedman, Milton (1970). *The Counter-Revolution in Monetary Theory*. First Wincott Memorial Lecture, Delivered at the Senate House, University of London, 16 September.

[21] This seems to be the case as most advanced economies are still reeling from the Great Recession and the unemployment rate is hovering between 9% and 10% in OECD countries.

[22] See, for example, Roger (2010).

[23] Roger, *op cit*.

[24] Professors Yunus and Mahmud have raised concerns about commercial banks' urban leading from rural deposits (*The Daily Star*, June 2, 2005, p. 1).

[25] Banerjee, Abhijit, and Esther Duflo (2008). Do Firms Want to Borrow More? Testing Credit Constraints Using a Directed Lending Program. Processed, MIT.