Inflation Targeting : Is New Zealand's Experience Relevant to Developing Countries?

The sixth L.K. Jha Memorial Lecture

Delivered by Donald T. Brash
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Introduction

Mr. Governor, Ladies and Gentlemen,

I am deeply honoured to have been invited to give this sixth Memorial Lecture in memory of Shri L.K. Jha .

I never had the privilege of meeting L.K. Jha, although I did visit India in the late sixties when he was Governor of the Reserve Bank of India and I was a staff member of the Commission on International Development - better known as the Pearson Commission. But, from all that I have read of him he was one of India's most distinguished sons - an economist of distinction, a Governor of the Reserve Bank of India, a distinguished diplomat, a respected leader in the Indian Civil Service, the Deputy Chairman of the Brandt Commission, Chairman of the General Agreement on Tariffs and Trade in the late 'fifties, Governor of Jammu and Kashmir, and so much more. He was, too, an ardent supporter of liberalisation, and had no doubt that, in the long run, it would improve the competitiveness of the Indian economy to the benefit of the Indian people. He would, I am sure, have been an enthusiastic supporter of many of the changes in India's economy in recent years, while no doubt urging a still faster rate of progress.

I am also honoured to have been invited to give this Lecture by my good friend, Dr Bimal Jalan. I mentioned a moment ago that, in the late sixties, when L.K. Jha was Governor of the Reserve Bank of India, I was a staff member of the Pearson Commission. Dr Bimal Jalan was also a staff member of the Commission at that time. And since there were only 13 of us on the staff in total, Dr Jalan and I got to know each other very well. I developed a very healthy respect for him and indeed a strong friendship with him, at that time. Our paths have diverged in the years since then, and it is for this reason a particular pleasure to be here in Mumbai at a time when he has assumed the enormous responsibility of guiding India's central bank.

The Governor has suggested that I talk today about inflation targeting in New Zealand, and in particular comment on whether New Zealand's experience with inflation targeting might be of relevance to developing countries. I am delighted to do that. But let me say at the very beginning that, while New Zealand's experience with inflation targeting has, I believe, been a positive one, I do not want to lecture you, or developing countries more generally, about what is best for you or other developing countries. Every country has circumstances and traditions which are a little different and, while I believe that inflation targeting is an approach to monetary policy formulation which deserves serious consideration, the ultimate decision about how best to run monetary policy must obviously be made by each country in the light of their circumstances and traditions.

The background to New Zealand's move to explicit inflation targeting

To understand why we in New Zealand moved to inflation targeting, it is worth recalling some of the history. It has some similarities to the experiences of other countries recently.

Prior to the mid-eighties, the Reserve Bank of New Zealand was closely modelled on the Bank of England. We provided advice to the Minister of Finance, but the day-to-day decisions on monetary policy were made by him. The legislation under which we operated required us, in formulating our advice, to have regard for the inflation rate, employment, growth, and a range of other good things.

And the result? We never experienced hyper-inflation, but we did have one of the worst inflation rates among OECD countries (above 10 per cent per annum for more than a decade). Importantly for the subsequent political recognition that such inflation did not enable us to grow any faster, our growth rate was the lowest in the OECD. Monetary policy followed a cycle which looked suspiciously like the three-yearly election cycle. And in 1984, the whole business culminated in a foreign exchange crisis which looks in retrospect remarkably like some of those experienced in East Asia in recent times - where the previously-pegged exchange rate came under huge pressure and eventually gave way. The economic damage inflicted by that crisis on the balance sheets of banks and corporate was relatively mild compared with the damage which has been sustained in, say, Thailand or Indonesia, but that was partly because the Government itself had, through the Reserve Bank, sold a lot of forward exchange contracts. Honouring those contracts was very expensive for New Zealand taxpayers.

So what to do then? Initially, we devalued and began freeing up the financial sector. In March 1985, we floated the New Zealand dollar with the explicit objective of enabling monetary policy to focus on the single objective of reducing inflation, without having that objective complicated by concerns for maintaining a fixed exchange rate. While still formally simply advisers to the Minister of Finance, the Reserve Bank was given clear instructions by the Minister that we now had the single objective of achieving price stability, and that he had no interest in knowing the mechanics of how we achieved it. We were given *de facto* independence.

Not long afterwards, the Minister asked the Bank to suggest ways in which it might be possible to change the legislative framework in order to prevent the cynical manipulation of monetary policy for short-term political objectives by any future government. So we set about studying the literature on central banking, and examining the relationship between governments and central banks in other parts of the world.

The 1989 Act

What emerged from this study was the Reserve Bank of New Zealand Act 1989, which became law on February 1, 1990. It was based on six principles:

- Monetary policy does affect the inflation rate, but can not successfully be used to engineer a sustainably higher rate of economic growth or a sustainably higher level of employment. This principle was absolutely fundamental, and of course was totally at variance with the assumption underlying previous legislation. It was at variance also with much of the post-war orthodoxy, which assumed that there was an enduring trade-off

between inflation on the one hand and employment and growth on the other, that countries could choose to have low inflation with high unemployment or, more likely, could choose to have a bit more inflation in the interests of getting a bit more growth. (This view had been deeply entrenched in New Zealand, perhaps because the economist whose name is often, unfairly, associated with this belief, Bill Phillips, was New Zealand's best - known economist.) But it was clear well before our legislation was passed that there is no such enduring trade-off, that, in the jargon, the long-run Phillips curve is vertical. Our own experience prior to 1984 - of high inflation and very poor growth - demonstrated the point conclusively.

- Secondly, in these circumstances, where there is no enduring trade-off between inflation and growth, the most sensible inflation rate for monetary policy to target is price stability. By 1989, quite a lot of empirical work had already been done in a variety of countries which suggested that high inflation was damaging to economic performance, and that low inflation, or price stability, was beneficial. We did not have the benefit of some of the recent studies of course, debating the relative merits of price stability and 'low but positive' inflation rates (often associated with the names of economists such as Paul Krugman, and Akerlof, Dickens, and Perry). But price stability in some sense seemed the appropriate goal, and the 1989 Act makes the Bank responsible for using monetary policy for the single objective of 'achieving and maintaining stability in the general level of prices'.
- Thirdly, in a democratic society, it is appropriate that the elected government have an explicit role in defining what ‘price stability’ means, and the speed at which it should be achieved. This seems to follow from the fact that, while there is no long-term trade-off between inflation and growth, there is clearly a trade-off in the short-term. Hence, the 1989 Act required there to be a written agreement, a *Policy Targets Agreement*, between the Minister of Finance and the Governor of the Bank, signed on the appointment or re-appointment of the Governor, giving specific content to ‘stability in the general level of prices’. This gave government an explicit role in defining the objective of monetary policy, subject to the need to have that objective consistent with some reasonable interpretation of the statutory objective of ‘stability in the general level of prices’. Moreover, the Act provided that the *Policy Targets Agreement* could be changed during the course of a Governor’s term of office by mutual agreement of the Minister and the Governor. Indeed, where Minister and Governor can not agree, the Act provides for an ‘over-ride’ whereby, if the government feels circumstances warrant the complete abandonment of the price stability objective, the *Policy Targets Agreement* can be set aside, by the unilateral decision of the government, for a period of 12 months. The first *Policy Targets Agreement* defined our target as inflation between 0 and 2 per cent annually, as measured by the CPI, achieved before the end of 1992.[1]
- The fourth principle on which the 1989 Act was built was based on the observed fact that, internationally, central banks which are independent of political control seem to do a much better job of keeping inflation low than do central banks which are subject to

[1] It is not entirely clear where our original target of 0 to 2 per cent annual inflation came from. It has been said that its source was a capricious remark by the Minister of Finance who, when confronted by journalists wanting to know whether he was ‘finally satisfied’ that price stability had been achieved when the CPI first fell below 10 per cent, responded that ‘No, I’m aiming at genuine price stability-you know, something like 0 to 2 per cent’. That may or may not be true, but it is certainly clear that well before the 1989 legislation was passed, in early 1988, the Minister was publicly espousing a target of 0 to 2 per cent inflation as the Reserve Bank’s only monetary policy objective. By 1989, the Bank’s *Annual Report* referred to our objective of achieving such an inflation rate no later than the end of 1992. By then, the target was not the capricious observation of the Minister of Finance but a well-justified definition of price stability in a situation where we suspected measurement bias in the CPI of about 1 per cent; in other words, 0 to 2 per cent was regarded as ‘genuine price stability plus or minus 1 per cent’.

political direction. So the Act provides that, once the *Policy Targets Agreement* between Minister and Governor has been signed, the Governor should be entirely independent in the formulation and implementation of monetary policy. The Governor has absolutely no obligation to consult with the Minister, with the Treasury, or indeed with the Board of the Bank. Note that the combination of these two principles-of political involvement in the definition of the objective of monetary policy but complete independence on how that objective is achieved-made the New Zealand approach internationally unique at that time. We were neither to enjoy the complete independence of the Federal Reserve or the Bundesbank nor to suffer the complete political subservience of the Bank of England (at that time) or of our own history. A clear distinction was made between goal independence and instrument independence-we had the latter but not the former.

- But, fifthly, it was taken as axiomatic that, with total instrument independence should go accountability, and the 1989 Act required that in two main ways. First, the Governor was required to provide a comprehensive report to Parliament at least six-monthly, explaining how he saw the inflation situation and how monetary policy would be conducted to ensure that price stability was maintained (We now produce these so-called *Monetary Policy Statements* four times a year, and I am examined on them on almost every occasion by the Finance and Expenditure Committee of Parliament). Secondly, the Act provided that the Governor could be dismissed for all the usual reasons (bankruptcy, criminal conviction, insanity, and so on) and for 'inadequate performance' in meeting the terms of the *Policy Targets Agreement*. The Act does not provide that I am dismissed automatically for the slightest breach of the inflation target, but the threat of dismissal for breaching the target certainly focuses the mind! (Incidentally, as already mentioned, the *Policy Targets Agreement* is between the Minister and the Governor, not between the Minister and the Bank, and it is the Governor who has decision-making freedom not, technically, the Bank. And that was quite deliberate. When I questioned the Minister on this when the legislation was being drafted, he replied 'We can't fire the Bank. We can't even realistically fire the whole Board. But we sure as hell can fire you!').
- Finally, the 1989 Act mandated a very high level of transparency. The Act transparently requires that monetary policy be focused on the single objective of achieving and maintaining stability in the general level of prices. The Act transparently requires that the Minister and Governor agree a *Policy Targets Agreement*, and that the *Agreement* immediately be made public. The Act transparently requires that any change to the *Policy Targets Agreement* be made public immediately, whether agreed by Minister and Governor or arising from the 'over ride provision'. The Act transparently requires the Governor to report to Parliament on a regular basis. And it is almost impossible to overstate the importance of this transparency. It is this above all, which prevents the cynical manipulation of monetary policy for political ends. The Act explicitly allows the inflation target to be modified provided the government is willing to tell the public that that is being done. The obligation to tell the public about any change in the target effectively means that monetary policy cannot be used for political ends, because monetary policy achieves short-term increases in economic activity largely by producing surprise inflation. It is hard to see what political gain would be achieved by a government which announced, in an election year, that the inflation target was to be increased to, say 5 to 8 per cent. The effect on interest rates and the exchange rate would not be conducive to winning votes!

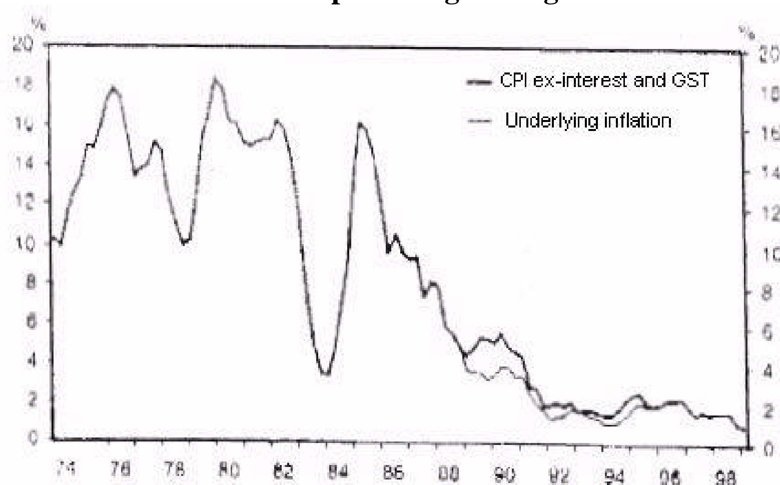
The results

So that was the framework established by the 1989 Act, and we have now completed more than one full business cycle within that framework. Looking back from the experience of a decade, I believe it has served us very well. It clearly makes sense to focus monetary policy on delivering price stability. It clearly makes sense in my view to give the elected government a say in defining what price stability should mean during the Governor's term of office. It makes sense to make the Governor or the Bank independent to make the technical judgements on how to deliver the agreed objective. It makes sense to hold the Bank or the Governor accountable for the outcomes. And it certainly makes sense that both the objectives and the *modus operandi* of policy are clearly understood by the public and financial markets.

It is not possible, of course, to be dogmatic about the contribution which this framework has made to the reduction of inflation in New Zealand. Many other countries have also maintained inflation at very low levels during the nineties. Nobody can be sure how inflation would have evolved in New Zealand without the framework established by that Act. Some academic commentators have pointed out that inflation was already falling quite strongly before the 1989 Act was enacted.

But in my own view, the framework was of major benefit in the New Zealand context, where we had two decades of very poor inflation performance. Yes, inflation was falling quite strongly prior to the 1989 Act becoming law on 1 February 1990, but of course the Bank had been acting under instructions from the Minister to focus exclusively on reducing inflation since at least 1985, and to focus on achieving a 0 to 2 per cent target since April 1988. We had also enjoyed complete operational independence since the mid-eighties. Little wonder, then that inflation was falling: *de facto*, we had had an explicit inflation-targeting regime several years before the 1989 law was passed in December of that year.

Figure-1 : CPI ex-interest & GST, and underlying inflation
Annual percentage change



As figure 1 above illustrates, inflation as measured by the CPI (excluding the estimated impact of our Goods and Services Tax and of interest rates, which in New Zealand are still included in the CPI) fell steadily in the late eighties, and reached the inflation target by the

end of 1991. The graph also shows what until late 1997 we referred to as 'underlying inflation', which was short-hand for the measure of inflation consistent with the intention of the *Policy Targets Agreement* (which permits us to disregard price shocks arising from certain changes in indirect taxation, significant changes in the terms of trade, changes in mortgage rates, and so on). That measure of inflation remained consistently within the then 0 to 2 per cent target from 1991 until June 1995, despite economic growth in 1993-95 which, by New Zealand standards, was exceptionally high. We exceeded the inflation target by 0.2 per cent in the year to June 1995, in part because of a very sharp spike in the prices of fruit and vegetables, returned to the target for the next six months, and then exceeded the target by a small margin throughout 1996. Our target was changed, by mutual agreement, to 0 to 3 per cent in December 1996, and in the year to March 1999 CPI inflation excluding interest rates was slightly below the middle of our target (at 1.0 per cent). So for more than eight years consumer price inflation has been within a range of 0 to 3 per cent, and for most of that time it has in fact been below 2 per cent.

I believe that the framework established by the 1989 Act has also played a useful role in reducing inflationary expectations in New Zealand. Again, it is difficult to prove this point because nobody knows how inflationary expectations would have evolved in the absence of the Act. But I believe it helped increase the credibility of the Bank's commitment to low inflation that it was widely understood that I ran a serious risk of losing my job if inflation fell outside the agreed and publicly-recognised inflation target. On each of the occasions in 1995 and 1996 when inflation slightly exceeded the 0 to 2 per cent target (and at its highest the excess was only 0.4 per cent), the Minister of Finance formally wrote to the non-executive Directors of the Bank asking them whether they felt my performance under the terms of the *Policy Targets Agreement* had been adequate. Both the letters from the Minister and the replies from the Directors of the Bank were made public, and everybody understood what was at stake.

In late 1990, not many months after the 1989 Act became law, the head of the New Zealand Council of Trade Unions wrote an article which appeared in one of the major newspapers[2]. The article argued that the Reserve Bank was focused on an undesirably narrow inflation objective, but that, as long as that was the case, unions would need to moderate wage demands to avoid increases in unemployment. In the weeks which followed, he actively, and with very considerable courage, campaigned for moderate wage settlements as a way of reducing unemployment. I myself have little doubt that the Reserve Bank Act played a part in encouraging employers and unions to adjust their wage settlements to levels which were quite quickly consistent with the inflation target.

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[2] *The Dominion*, 31 October 1990.

Figure-2 : New Zealand and USA 10 year bond yields

The same sort of effect on inflationary expectations was visible in financial markets. As Figure 2 shows, in early 1986 the yield on New Zealand government New Zealand dollar 10 year bonds was roughly 1000 basis points above the yield on US Treasuries. By early 1990, that margin had contracted to about 400 basis points. By early 1994, the yield on the New Zealand government securities was marginally below that on US Treasuries. In the last few years, the yield on New Zealand 10- year bonds has typically been a little higher than on US Treasuries, but the margin looks trivial in relation to that in the mid-eighties.

Another of the interesting by-products of the inflation-targeting regime has, I believe, been some stabilisation of the New Zealand dollar exchange rate. I don't want to overstate this: the New Zealand dollar has been through some pretty big swings in recent years. Against the US dollar, we appreciated by nearly 40 per cent between the beginning of 1993 and the beginning of 1997; and then we lost all of that appreciation (which means that we declined in percentage terms by nearly 30 per cent) over the next 18 months. But on a day-to-day and week-to-week basis, fluctuations in the New Zealand exchange rate have been rather less than those experienced by many other floating currencies – and this in a situation where the Reserve Bank has not intervened in the foreign exchange market for more than 14 years (since we floated in March 1985).

Why is this? I think it is because financial markets understand that, with a very explicit inflation target, there is a limit to how much movement we will accept in the exchange rate before we look to see some offsetting change in interest rates. No, we do not have an exchange rate target. We have an inflation target. But in a small open economy such as ours, no central bank with a commitment to low inflation can be indifferent to major movements in the exchange rate.

This is because the exchange rate has important direct and indirect influence over prices. Most importantly, a change in the exchange rate alters the demand for locally-produced goods and services, thereby altering domestic inflation pressures. Of course, the difficulty for a central bank is to know exactly *why* the exchange rate changes. This has important implications for the appropriate monetary policy response. Thus, if a sharp movement in the exchange rate seems to be related to, say, an adverse development in our external markets, as has been the case over much of the last two years, then we may judge that the adverse external development will have sufficient disinflationary impact on the economy to offset the

inflationary impact of an exchange rate depreciation, so that no offsetting increase in interest rates is necessary. Conversely, if the exchange rate change simply reflects some shift in investor preferences, with no justification in the real economy, then inflation pressures will have changed, and some adjustment in monetary policy will normally be appropriate.

A fourth contribution of the framework established by the 1989 Act was, I think it is fair to say an improvement in fiscal policy. Again, I don't want to overstate this point: there were a number of factors driving an improvement in New Zealand's previously rather poor record of fiscal performance, including some very determined Ministers of Finance. But the monetary policy framework played a useful part. This first became apparent in 1990 when the then Government introduced an expansionary Budget not long before the general election that year. We judged that that degree of fiscal stimulus would require us to tighten monetary policy somewhat if inflation (then running at over 5 per cent) was to be brought down to the 0 to 2 per cent target by 1992; so we did. Immediately, an editorial in New Zealand's largest daily paper noted that the Budget had 'rekindled inflationary expectations. The (Reserve Bank) was bound to lift interest rates… Electors are frequently bribed to their ultimate cost. This time the independence of responsible monetary control quickly exposes a fiscal fraud.'[3] The main Opposition party campaigned in the election on a commitment to get interest rates reduced, not by leaning on the central bank but by 'giving monetary policy some mates' through tighter fiscal policy and deregulation of the labour market.

Five years later, with several years of fiscal surplus behind it, the Government undertook to reduce income taxes subject to several conditions, one of which was that the Reserve Bank was satisfied that such tax cuts would not require a significant tightening of monetary policy.

To me, this is a good illustration of the benefit of having the precise specification of the objective of monetary policy a matter for formal and public agreement between Government and Bank. The Government makes a public commitment to the agreed inflation objective. It implicitly accepts that, if its fiscal policy increases inflationary pressures, the Bank will need to tighten monetary policy to ensure that the agreed objective is met. The Bank is protected from political pressure to ease monetary policy as long as the inflation rate is, and looks likely to remain, above the bottom of the inflation target range.

In contrast to these positive benefits from the 1989 Act, some people have noted that in the early nineties New Zealand also saw quite a strong increase in unemployment and a downturn in output, and have suggested that the Reserve Bank must accept the blame for that.

I know of no cases internationally where inflation has been reduced from a relatively high level to a very low level without some temporary adverse impact on employment and output, and New Zealand's experience was no different. Indeed, I have often acknowledged that the process of reducing inflation from a high level to a low level almost certainly had the effect of temporarily reducing employment and output. But I certainly am not willing to accept that the process of reducing inflation was the only factor in reducing employment and output in New Zealand in the early nineties, since a great many other policies had also been changed at about that time. While most of those other policy changes were highly desirable in the interest of the long-term growth of the New Zealand economy – reductions in protection against imports, reductions in subsidies for exports, privatisation and rationalisation of many heavily over-staffed government trading operations, for example – many of them also had

[3] *New Zealand Herald* editorial, 3 August 1990.

adverse short-term impacts on employment and output. For this reason, attempts to calculate the 'sacrifice ratio' involved in reducing inflation in New Zealand are almost inevitably doomed to failure.

What we know is that employment and output both fell at the beginning of the nineties. What we acknowledge is that the process of reducing inflation was a part of the reason for that. What we do not accept is that monetary policy was the only factor in that outcome. Moreover, as theory suggested would be the case, once wage- and price-setting behaviour adjusted to the new, low, level of inflation, employment and output both recovered quite quickly, with unemployment declining from almost 11 per cent in 1991 to 6 per cent in 1996. In other words, the increase in unemployment was a result of the process of reducing inflation from a high level to a low level, not a result of maintaining inflation at a low level. While unemployment has recently risen to over 7 per cent of the work-force, it remains well below its 1992 peak, and well below that in most of the countries of Europe, notwithstanding the impact on production and exports of the Asian crisis and two successive years of drought. We are confident that, provided inflation expectations remain broadly consistent with the inflation target, low inflation can be maintained without any ongoing cost in terms of employment or output.

Interestingly, a recent paper produced by the IMF[4] suggests that inflation-targeting countries as a group have recently improved their rate of economic growth compared to countries which are not inflation-targeters. Certainly, New Zealand's growth performance relative to other OECD countries has been markedly better in the 'nineties than in the previous two decades, although given all the other economic reforms which took place in New Zealand in the late 'eighties and early 'nineties it would certainly be inappropriate to attribute that improved growth performance primarily to the inflation targeting regime.

As an aside, it is perhaps worth stressing what has come as something of a surprise to some people in New Zealand and that is that our inflation range has both top and a bottom. One of our central banking colleagues once said to me that he thought that any fool could get inflation below 2 per cent by simply keeping monetary policy tight at all times. I agreed. But that is assuredly not the way we see inflation targeting, and of course it is not the way our inflation target is specified. Our obligation, currently, is to keep inflation below 3 per cent and above zero. I would not expect to be dismissed the instant inflation fell below zero, any more than I was dismissed when there was a small breach of the top of the target. Indeed, the *Policy Targets Agreement* recognises that there may be quite legitimate reason why inflation may, on occasions, move outside the 0 to 3 per cent target range. But there would certainly be questions asked if inflation fell below zero, and I would need to have a good explanation of that outcome. We began easing monetary policy in December 1996-and eased aggressively throughout 1998 – precisely because we take the bottom of the target as seriously as we take the top.

The formulation of monetary policy

Let me talk briefly about the actual achievement of the agreed inflation target, about the formulation of monetary policy. Does an inflation-targeting framework help in the actual delivery of price stability? I think it does, in three ways.

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[4] Brooks, Ray, 'Inflation and Monetary Policy Reform', *in Australia: Benefiting from Economic Reform*, 1998.

First, having an explicit inflation target is useful in anchoring inflation expectations and thus affecting wage – and price-setting behaviour. I have already mentioned that in the discussion of the results of the adoption of the new framework. We in the Reserve Bank devote a very considerable amount of energy to explaining what we are doing and why, not just to the financial markets but to the public more widely – groups of farmers, manufacturers, Rotarians, teachers, lawyers, anybody who will listen. I myself do more than 100 speeches all over the country in an average year, and my colleagues do a great many also. Perhaps six or eight of these speeches will be on-the-record, and these we will post to an extensive mailing list of Parliamentarians, business executives, school teachers, and so on. We produce our quarterly *Monetary Policy Statements*, and a series of brochures and pamphlets, many of them written in question-and-answer format, designed to deal with the monetary policy issues of greatest concern to the public. We have an Internet site, quite comprehensive and regularly updated, receiving over 20,000 hits per week at this stage. All of this communications work is designed to strengthen the credibility of the inflation target and thus both to increased the likelihood of achieving the target and to minimise any social cost in doing so.

Secondly, having an explicit inflation target provides a very useful discipline on the Reserve Bank itself, and helps considerably in keeping our deliberations focused. I have been at the Bank for little more than 10 years, during all of which time we have had an inflation target. But I am told by those of my colleagues who remember the days before we had an explicit inflation target that prior to the introduction of that target monetary policy discussions, and decisions, were very much more difficult. Those making the decisions and expressing the opinions often had a range of spoken and unspoken objectives in mind, some of them consistent and some of them inconsistent. Dr Mervyn King, Deputy Governor of the Bank of England, has reported the same change in discussions at the Bank of England. With a clear directive from the British Government to keep inflation as close as possible to 2.5 per cent, the members of the Bank of England's Monetary Policy Committee focus on that objective. It matters not whether the Committee members are 'doves' or 'hawks'. Indeed, the terms have no meaning in the context of an inflation target agreed with government. The central bank decision-makers are being asked to use their expertise and judgement to deliver an agreed target, not to express a view about whether the target should be higher or lower.

Thirdly, having an explicit inflation target often goes hand in hand with public inflation forecasting, and does so in our case. This has led Dr Lars Svensson of Sweden to suggest that central banks which do this are effectively making their inflation forecasts into a kind of instrument of monetary policy[5]. This certainly seems to be a fair characterisation of the role of our own inflation projections. Because financial markets know that we will, if need be, adjust our Official Cash Rate whenever we judge that monetary conditions are no longer consistent with maintaining the price stability target, markets are constantly weighing new economic data trying to assess its implications for the inflation target, with the exchange rate and interest rates adjusting on a real-time basis with the inflation objective constantly in view.

But alas, inflation targeting does not guarantee that a central bank practising it will be able to deliver consistently low inflation. All the debates about how to formulate monetary policy in order to deliver the best outcomes are still relevant. Should we use monetary aggregates? Should we use Taylor rules? Should we simply adjust interest rates so that the exchange rate

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[5] Svensson, Lars E.O., 'Inflation forecast targeting: Implementing and monitoring inflation targets', *European Economic Review*, Vol.41, 1997, pp.1111-1146.

moves in such a way that the direct price effects of the change in the exchange rate produce the desired effect on the domestic price level?

In our own case, we used to be rather strongly focused on the direct price effects of changes in the exchange rate. This was early on in the disinflation process, at a time when inflation was high and there was no ambiguity about the need to reduce it, at a time when we thought we could see a clear relationship between movements in the exchange rate and domestic prices, and at a time when, by contrast, we found it very difficult to measure the effects of interest rate changes on the inflation rate. This did not mean that we had an exchange rate target in the conventional sense, but rather that, after making our best estimate of all the factors affecting prices in the domestic economy, we 'solved' for the exchange rate which would keep inflation within the target range. So, for example, when inflationary pressures were strong we judged that there was a need for the exchange rate to appreciate somewhat in order to reduce the prices of imports and exportables. And vice versa. The financial markets understood this approach, and as a result the exchange rate tended to move very much in line with the need to keep inflation on target.

In the early nineties, this primary focus on the direct price effects of exchange rate movements got us into some difficulty. Interest rates were allowed to fall to very low levels, in part because, as indicated, we did not take interest rates as seriously as we took the exchange rate in the price formation process. At least in part as a consequence, the economy accelerated somewhat above a sustainable level, and inflation pushed to, and eventually slightly above, the top of the inflation target. We recognised that we had to pay more attention to the impact of interest rates, and this in turn caused us to start looking rather further into the future, in formulating policy, than had been necessary when we were primarily focused on the direct price effects of exchange rate movements (most of which came through into consumer prices within two to four quarters).

In recent years, we have developed what we believe to be a sophisticated model of the New Zealand economy which seeks to answer one question: given all we know about the structure of the economy, about the present state of the economy (and in particular the gap between actual and potential output) about the stance of fiscal policy, about wage behaviour, about prospects for the international economy (clearly of huge importance for a small country like New Zealand), and so on, what are the monetary conditions required to deliver inflation to somewhere close to the middle part of our inflation target in six to eight quarters' time?

Nobody pretends that is an easy question to answer, or that our model is flawless, but it seems to us that that is the right question. Note that I referred to the 'monetary conditions required to deliver inflation to somewhere close to the middle part of our inflation target in six to eight quarters' time'.

The reference to monetary conditions rather than to interest rates is a recognition that, in a small open economy, as I have already mentioned, a Central bank committed to delivering price stability has to be concerned with what is happening to the exchange rate, and not just what is happening to interest rates, since both affect inflation (Unfortunately, too much of the academic literature on monetary policy has been written by economists in the United States, an economy where, because of the relatively small share of international trade, the exchange rate can be, and has been, largely ignored in thinking about monetary policy issues).

But the reference to delivering inflation to 'somewhere close to the middle part of our inflation target in six to eight quarters' time' is a recognition that what we should be mainly concerned about is not the direct price effects of movements in the exchange rate but rather the longer term effects which arise out of the way in which changes in the exchange rate affect the demand for goods and services produced locally. Thus, for example, a depreciation in the exchange rate will have two kinds of effects on local prices. First, it will tend to push up prices for imports and exportables as the local currency equivalent of unchanged international prices increases. In New Zealand, these price effects tend to come through into consumer prices within about a year. We can not entirely ignore these price effects because of the risk that they spill over into inflationary expectations and thus into wage- and price-setting behaviour.

But the more enduring impact of an exchange rate depreciation is its second effect. The depreciation makes domestically produced goods cheaper relative to internationally produced goods, as already noted. As a result, local residents tend to buy domestically-produced goods in preference to imports. Foreigners tend to buy more of our exports. Both factors increase the demand for our output and increase local production relative to the economy's sustainable capacity to supply. This in turn has medium-term implications for the inflation rate.

Clearly, this approach does not guarantee that we will make no mistakes. No approach can do that for obvious reason that monetary policy works with 'long and variable lags' and the future is inherently unknowable. But in a world where controlling inflation by targeting monetary aggregates has been abandoned as unworkable by many central banks- and by targeting exchange rates has been abandoned as too dangerous by most of the rest- we believe that the direct and explicit targeting of inflation has a great deal of merit. That does not mean, of course, that we pay no attention to monetary aggregates, and it certainly does not mean that we pay no attention to the exchange rate. It does mean, however, that we look at monetary aggregates and movements in the exchange rate as two of many important influences on the inflation rate.

How relevant is all this to developing countries?

Let me turn finally to a consideration of whether inflation targeting is relevant to developing countries. I have heard a number of people argue that it is not.

First, it is sometimes suggested that inflation targeting is inappropriate in a situation of so called 'fiscal dominance', a situation, in other words, where the central bank is primarily concerned with assisting the government meet its need for revenue. Often this is a situation where government's revenue base is very poor, and as a result the government has a heavy dependence on the 'inflation tax' represented by seigniorage income, or on central bank credit. Certainly, in many developing countries government do depend on seigniorage income to a much greater extent than is true in developed countries. A recent study found that seigniorage income averaged between 1.4 per cent and 3.0 per cent of GDP in developing countries, compared to less than 1 per cent in developed countries.[6] In New Zealand's case, seigniorage amounts to less than 0.1 per cent of GDP.

I think it must be conceded that having a high dependence on central bank credit, or on seigniorage income, is a real constraint on the introduction of an inflation targeting regime, or

[6] Debelle, G., Masson, P., Savastano, M., Sharma, S., "Inflation targeting as a framework for monetary policy", *IMF Economic Issues 15*, 1998.

indeed on the introduction of any other rational monetary policy regime. Having said that, several countries have successfully introduced inflation targeting when their central banks were still in a position of 'fiscal dominance', at least where that is measured by the size of seigniorage income (Chile and Czech Republic are good examples). So while it may be more difficult to focus monetary policy on keeping inflation low where government has a high dependence on the 'inflation tax', it clearly is not impossible. Of course, to the extent that monetary policy is successful in eliminating inflation, the 'inflation tax' is commensurately reduced, and government needs to find alternative sources of revenue.

Secondly, it is sometimes suggested that in developing countries monetary policy should be used not just to attain a specified inflation rate but to encourage real economic growth and to maintain a competitive real exchange rate. There is obviously not the slightest debate that encouraging real economic growth and maintaining a competitive real exchange rate are crucially important objectives in most, probably in all, developing countries, indeed, probably in all countries, whether developing or developed. And it is accepted that monetary policy can sometimes stimulate demand and so encourage real economic activity in the short-term. Monetary policy can also influence the real exchange rate in the short-term. But there is absolutely no evidence that I am aware of that monetary policy is *able* to foster a higher rate of real economic growth in the long-term except by delivering predictably stable prices, or that monetary policy is *able* to have any sustainable effect on the real exchange rate. While most of the evidence for the inability of monetary policy to produce a sustainably faster rate of economic growth, or a sustainably more competitive real exchange rate, relates to the experience of developed countries, that evidence is so overwhelming that those who argue that monetary policy *can* improve real growth in the long term, or maintain a competitive real exchange rate in the long term, in developing countries need to have some pretty cogent arguments to support their claims. I have not myself seen those arguments.

Thirdly, it is sometimes suggested that inflation targeting is unsuitable for developing countries because it requires a sophisticated inflation forecasting ability in the central bank, or a sophisticated financial system, or a sophisticated measure of inflation. Certainly, a good ability to forecast inflation, a sophisticated financial system, and a robust measure of inflation are all desirable things to have. But when New Zealand began inflation targeting in the 'eighties, we had none of those things. Far-reaching economic restructuring meant that our econometric models were of little use. The financial system had just been freed from an extensive network of direct controls and was anything but sophisticated. Our best-known measure of inflation included interest rates and house prices, and indeed it still does. Poor tools make any monetary policy approach problematic, but it is not obvious that inflation targeting is more difficult than the available alternatives.

And in any event, what *are* the alternatives? At a conference hosted by the Swedish central bank in Stockholm last year, papers explored three main approaches which the European Central Bank might take to monetary policy – money aggregate targeting, exchange rate targeting, and inflation targeting.

Most people at the conference felt that the relationship between the growth in money aggregates and inflation was so unstable, at least over policy-relevant periods, that for central banks to focus exclusively on such aggregates was likely to produce a very unstable inflation rate. It was also argued that virtually no central banks today (the Swiss National Bank being a possible exception) do focus exclusively on money aggregates, for precisely this reason.

Most of those at the conference also accepted that using monetary policy to maintain a nominal exchange rate peg, or even a nominal exchange rate 'zone', was fraught with danger. Yes, exchange rate targeting has its advantages, perhaps the most important being the ability of a country with limited monetary policy credibility to borrow the credibility of the central bank of the country whose currency is 'targeted'. In certain circumstances, and with strong institutional and political commitment, that may be an optimal policy. But as the countries of East Asia have recently discovered, and the United Kingdom and Sweden discovered earlier in the decade, the risks are substantial. Pegged exchange rates seem to attract speculation like bees to honey – with often disastrous consequences. Pegged exchange rates seem to encourage banks and corporates to borrow overseas in foreign currency in the belief that that is a prudent and relatively inexpensive borrowing option – with often disastrous consequences.

Most of those at the Stockholm conference appeared to feel that inflation targeting, while in no sense a panacea, was the most sensible policy option for the European Central Bank.

Conclusion

And that is my conclusion for developing countries also. Clearly, inflation targeting is no panacea. It is no silver bullet. It is certainly no guarantee against monetary policy error. In many respects, it is a mistake to think of inflation targeting as some kind of new approach to monetary policy.

Rather, the formal and public adoption of an explicit inflation target is a frank recognition of what monetary policy can and can not do; in other words, it can influence the inflation rate. Inflation targeting is a way of helping to anchor inflation expectations, and thus both to assist in the achievement of the inflation target and to minimise the inevitable social and economic cost of achieving it. Through the transparency which is an essential element of an inflation targeting regime, inflation targeting helps to ensure that central bankers and governments are held to account for their use of one of the most misused powers developed in the 20th century.

It is hardly surprising, therefore, that an increasing number of countries, developed and developing alike, have adopted inflation targeting over the last decade. The developed country inflation targeters are well known – New Zealand, Australia, Canada, the United Kingdom, Sweden and until they joined EMU, Finland and Spain. But there are now a host of developing and transitional economies which have also adopted inflation targeting, including Albania, Botswana, Brazil, Chile, the Czech Republic, Israel, Jamaica, Mexico, Mongolia and Poland. Several countries in East Asia are giving serious consideration to the adoption of an inflation targeting approach to monetary policy. While the optimal approach to monetary policy will clearly depend to some degree on the traditions and constitutional structure of individual countries, I believe that explicit inflation targeting is an approach which is worthy of serious consideration.