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Inflation Targeting and Output Stabilization in Australia

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Inflation targeting has been adopted as the framework for monetary policy in a number of countries, including Australia, over the past decade. The adoption of a framework that focuses explicitly on inflation reflects the growing realization that the major contribution that monetary policy can make to economic growth and welfare in the long run is the maintenance of a low and stable inflation rate. Empirical evidence confirms the detrimental effects of higher inflation on economic growth.

However, some have criticized inflation targeting for its perceived focus on inflation as the only goal for monetary policy, to the exclusion of other goals, most notably output (see, for example, Friedman and Kuttner, 1996). Although the empirical evidence suggests the absence of a trade-off between inflation and output in the long run, there is ample evidence of a trade-off in the short run. The short-run trade-off, often represented by the short-run Phillips curve, implies a trade-off between output variability and inflation variability. Thus an exclusive focus on returning inflation to the target rate as quickly as possible may come at the expense of excessive volatility in output.

Given that the ultimate goal of policy is not inflation stabilization per se but rather welfare maximization, is inflation targeting too narrow a framework for monetary policy? Does inflation targeting pay sufficient attention to output stabilization, as, for example, a nominal income targeting framework might? This chapter considers these questions, drawing on the existing theoretical and empirical literature as well as Australia's recent experience with inflation targeting. The chapter argues that inflation targeting does take output stabiliza-

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tion into account. In general, the inflation targeting framework has sufficient flexibility to allow policymakers to make use of the short-run trade-off between output and inflation. The extent to which it does so in part reflects certain design features of the inflation targeting framework, such as targeting bands and the choice of policy horizon, that have been adopted in practice in the inflation targeting countries. Medium-term price stability can be maintained while still allowing some degree of short-run inflation variability, thus providing scope for lower output variability.

The Trade-off Between Output Variability and Inflation Variability

The role of output stabilization in inflation targeting depends crucially on the nature and length of lags in the impact of monetary policy on the economy. In many economies, changes in interest rates first affect output and then affect inflation indirectly through the effect of interest rates on the output gap. These effects take place with different lags, which in turn give rise to a trade-off between output variability and inflation variability. The interaction between output and inflation and the consequent effects on the variability of each can be illustrated by considering the impact of demand and supply shocks on the economy.[2]

First, consider a positive demand shock that increases output above its potential, leading to an increase in inflation. The policy response in this case is to increase interest rates to counteract the inflationary impulse. The extent to which interest rates are adjusted will depend on the weight that the central bank gives to output stabilization in its policy deliberations. The larger the weight given to output stability, the smaller the interest rate response. A smaller interest rate response decreases the variability in output but increases the extent to which inflation remains above the target, which implies increased variability in inflation.

The variability trade-off arises because of the differing lags between the impact of a change in interest rates on output and the impact on inflation. Absent the lag structure, output stabilization concerns would be irrelevant in the case of a demand shock: interest rates would be adjusted to close the output gap, returning output and inflation to their targets immediately. There would then be no trade-off between output variability and inflation variability.

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[2]These issues are considered in greater detail in Svensson (1997) and Ball (1997).

In the case of a supply shock that increases inflation only, output remains at potential. Regardless of the lag structure, there is then a trade-off between output variability and inflation variability. A negative output gap is required to return inflation to its target rate. The larger the output gap generated, the quicker inflation returns to target, thereby decreasing inflation variability but at the expense of increased output variability.

Demand shocks and small supply shocks can be accommodated by appropriate design of the inflation targeting framework (as discussed below). However, large negative supply shocks that result in a large increase in the price level and the inflation rate, and possibly open up a negative output gap, create more difficulties for the policymaker. Some trade-off between inflation variability and output variability is unavoidable.

The trade-off between inflation variability and output variability can be made more stark in an open-economy context where the transmission of changes in monetary policy to inflation is particularly rapid. For example, changes in short-term interest rates may result in immediate changes in the exchange rate, which are rapidly passed through to consumer prices. In response to a deviation of inflation from target, interest rates could be adjusted by an amount large enough to engender a sufficient movement in the exchange rate to return inflation to its target rate almost immediately. Although this might be feasible, it may not be desirable, if (as is the case in many countries) the required movements in interest rates and the exchange rate are destabilizing for the real economy.

In conclusion, output stabilization clearly has a role to play in inflation targeting. The critical question is how large a role should it have. This is essentially an empirical issue.

Evidence on the Trade-off

A growing body of empirical work examines the trade-off between output variability and inflation variability.[3] For example, Stevens and Debelle (1995) estimate a simple model of the Australian economy and, by varying the weight that the central bank attaches to output stabilization, obtain the trade-off curve between output variability and inflation variability depicted in Figure 1.

As Figure 1 shows, the trade-off between inflation variability and output variability is convex. Increasing the weight that the central bank places on out-

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[3]An early paper examining the trade-off was Taylor (1979). The volume edited by Bryant, Hooper, and Mann (1993) examines the issue extensively.

Figure 1
Inflation Variability and Output Variability

Output variability
(in percentage points)
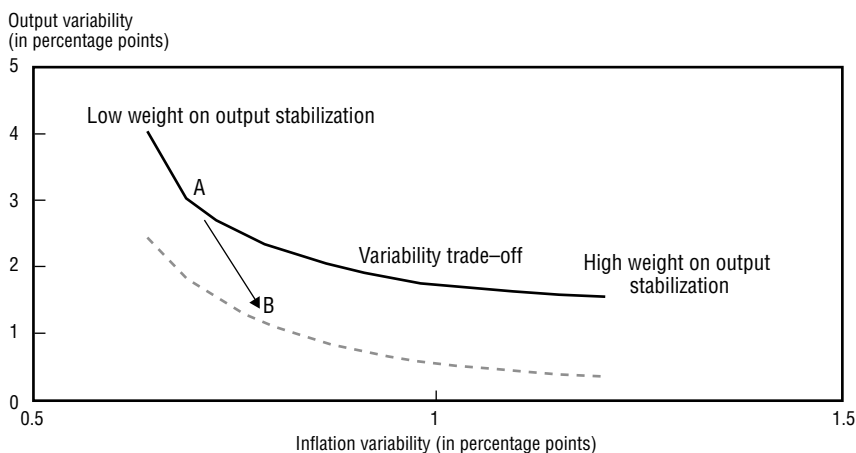
Source: Stevens and Debelle (1995).

put stabilization (moving southeast on the curve) increases the variability of inflation all along the curve while reducing the variability of output. But because the curve is convex, when a low weight is placed on output stabilization initially, small increases in that weight significantly decrease the variability of output at little cost in terms of increased variability of inflation. Also, a large range of weights on output stabilization deliver very similar outcomes for inflation variability and output variability. These are clustered around the part of the trade-off curve closest to the origin. Major differences occur only when very large weights are put on either inflation stabilization or output stabilization. These conclusions have been found for a range of countries.

In deciding on the appropriate weight to put on output stabilization, the following consideration should also be borne in mind. The initial choice on the variability frontier may influence the speed with which the central bank acquires credibility, and hence the choices available to it in the longer term (that is, the long-run position of the trade-off curve). A point such as A in Figure 1, which aims for lower inflation variability, may enable a central bank to establish its inflation-fighting credentials earlier than one that aims for lower output variability. As its credibility becomes established, the central bank might then be able to follow a more flexible approach (point B), potentially on a variability frontier closer to the origin.

The empirical literature has generally supported these theoretical conclusions: sizable gains can be achieved in terms of output stability at the cost of only a small increase in inflation variability when a more flexible approach to

inflation targeting is pursued. In addition, because output is a major determinant of future inflation, placing a positive weight on output stabilization in the central bank's reaction function will always improve inflation outcomes over a reaction function that responds only to inflation. This is true regardless of whether a strict or a flexible inflation targeting regime is being pursued.

Inflation Targeting as Practiced in Australia

The formal statement of the Reserve Bank of Australia's inflation target is contained in the Statement on the Conduct of Monetary Policy,[4] signed jointly by the governor of the Reserve Bank and the treasurer of the Australian government. It defines the target as "keeping underlying inflation between 2 and 3 percent, on average, over the [business] cycle," and goes on to note that "this formulation allows for the natural short run variation in underlying inflation over the cycle while preserving a clearly identifiable benchmark performance over time."[5]

This statement highlights three aspects of an inflation targeting framework that have an impact on the degree of output stabilization: the choice of a range or a point target for inflation, the focus on the medium term, and the specification of an underlying measure of inflation. The first aspect of an inflation targeting framework that permits some degree of output stabilization is the choice between a point target and a targeting band and, if a band is chosen, its width. Specifying a target band allows for the imperfect control of monetary policy over the inflation rate. Given the long and variable lags of monetary policy, and given the impossibility of perfectly forecasting future inflation, it is not possible to restrict the variability of inflation below some minimum level. In addition to allowing for this irreducible variability in inflation, the specification of a wider band allows directly for increased scope for output stabilization.

However, the worldwide experience with inflation targeting to date suggests that inflation variability may be lower now than in the past. Thus the amount of variability in inflation that is truly irreducible may be lower than these estimates suggest, allowing the possibility that a target band could be specified

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[4]The statement can be viewed on the Reserve Bank of Australia's World Wide Web site: www.rba.gov.au.

[5]The target has recently been changed to focus on the headline inflation rate, reflecting the recent redefinition of the consumer price index (CPI) to exclude mortgage interest charges. Nevertheless, the short-run effect on the CPI of events such as indirect tax changes are "looked through" for policy purposes.

that is both believable and attainable, without compromising the objective of output stabilization.

The choice of band width involves a trade-off between credibility and flexibility. A narrow band can be announced with hard edges that are breached occasionally, or a wide band can be specified, guaranteeing that the target will not be breached but possibly undermining the overall credibility of the framework. A narrower band (or, at the extreme, a point target) may be regarded as a stronger commitment to the inflation target.

In Australia's case, the specification of the target allows for increased flexibility. Effectively, the target specifies a "thick point" for inflation. Initially this decision was perceived as indicating weakness on the Reserve Bank's part, particularly in comparison with other inflation targeting countries. However, the experience of the past six years suggests that such concerns were misplaced.

A second aspect of the framework that can allow scope for output stabilization is the policy horizon. The longer the time frame allowed to the central bank to return inflation to the target, the greater weight it can give to output stabilization. Again, this raises the issue of the trade-off between credibility and flexibility. If the policy horizon is too long, the central bank may have trouble convincing the public that it is committed to returning inflation to its targeted rate eventually in the event of a deviation. In Australia's case, the medium-term nature of the inflation target has allowed consideration to be given to output stabilization. A notable example of this is the response of monetary policy in Australia to the Asian crisis (Stevens, 1999). The depreciation that occurred at that time was expected to lead to some increase in inflation, but not much over 3 percent. The expected decline in output growth argued against a tightening in policy. Consequently, interest rates remained unchanged until late 1998, when they were lowered by 25 basis points. The Reserve Bank's press release at the time of this easing stated that "the continuing good inflation performance, and the economy's capacity to grow without generating additional inflationary pressure, mean that it is appropriate to offer some additional support to growth through the adoption of a more accommodative monetary policy stance."

Third, the definition of the price index to be used as the target can increase the scope for output stabilization. Most inflation targeting countries focus on an underlying, or core, inflation measure as the operational target. This serves to exclude nonmonetary determinants of inflation. In New Zealand this exclusion has taken the form of prespecified "caveats," which define certain events, such as natural disasters and indirect tax changes, whose effects are excluded from the calculation of the target inflation rate.

Failure to exclude such occurrences would increase the variability of output. For example, consider an increase in indirect taxes on goods and services, which leads to an increase in their prices, raising inflation above the target range. By focusing on the underlying inflation rate, the central bank would not try to offset the first-round effect of the price rise by causing a contraction in activity. Rather, it would tolerate the increase but seek to ensure that inflation expectations do not rise as a result.

Finally, the experience of all the inflation targeting countries has demonstrated that the central bank needs to communicate clearly to the public the reasons for its policy actions. Greater public understanding about what the central bank is doing, and why, will help to increase policy credibility, particularly in the event of a deviation from the target. Increased credibility can improve the variability trade-off by ensuring that inflation expectations do not adjust rapidly to inflation shocks. The advantage of a clearly articulated inflation target is that it provides a framework within which the central bank can explain its actions.

Conclusion

Inflation targeting has sometimes been criticized for being "inflation only" targeting and ignoring output considerations. This chapter has argued that such criticism is misplaced. From a theoretical perspective, even if a strict inflation target is adopted, output considerations are still important because of the critical role that output plays in determining future inflation. The central bank will still have output in its reaction function. The argument is better framed in terms of the weight that should be placed on output stabilization in the central bank's objectives, that is, how flexible the inflation targeting regime should be.

The countries that have pursued inflation targets have adopted flexible regimes. The decision to pursue a more flexible approach reflects the shape of the inflation variability–output variability trade-off in most countries. Generally, starting from a position of strict inflation targeting, one can adopt a more flexible approach without dramatically increasing inflation variability, while simultaneously benefiting from large reductions in output variability.

The design of the inflation targeting framework also affects the degree of output stabilization that can be achieved. The use of an underlying or core measure of the inflation rate, the adoption of measures to enhance credibility (including frequent and transparent communication with the public), and the choice of policy horizon all affect the trade-off available to policymakers. Such issues, however, introduce a trade-off between flexibility and credibility. Too flexible a regime may undermine the public's confidence in the regime as a

whole. Too rigid a regime may result in unnecessary output variability. However, in deciding on the appropriate degree of flexibility to adopt, consideration must be given to establishing credibility as early as possible, to allow greater flexibility in the longer run.

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