FRBSF WEEKLY LETTER

Number 95-09, March 3, 1995

Rules vs. Discretion in New Zealand Monetary Policy

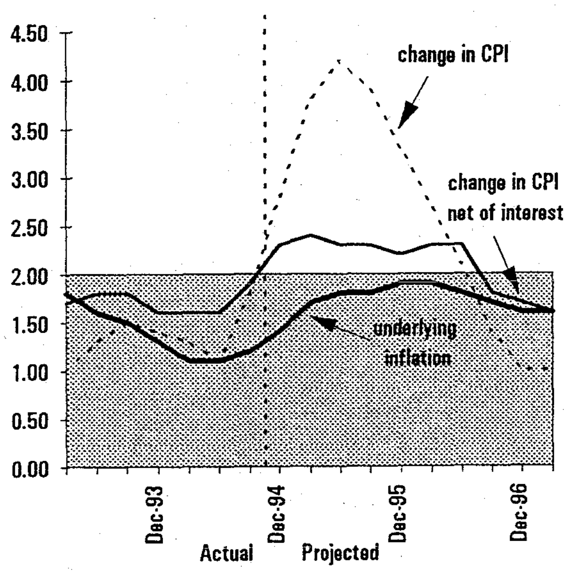
Since the passage of the Reserve Bank of New Zealand Act of 1989, the singular mandate of the Reserve Bank of New Zealand (RBNZ) has been the maintenance of price stability. Price stability is defined as maintaining increases in the consumer price index (CPI) within the range agreed upon with the finance ministry in the Policy Target Agreement (PTA). Such a rigid target for the rate of growth in the CPI provides a strong degree of accountability by making it easy to assess whether the central bank has achieved its objective. Indeed, the RBNZ's relative success in maintaining low inflation after an initial adjustment period has been well-documented (see Walsh 1994 and Hutchison 1995).

The Reserve Bank Act also recognizes that increases in the CPI may not always provide a good measure of monetary policy. For example, if price shocks occur that are outside the influence of monetary policy, some measure of "underlying inflation" may be a better guide to compliance, although, at the same time, it may *not* be verifiable by outsiders. In that case, a tradeoff arises between the accuracy of policy targets and the accountability of the monetary authority.

As long as the verifiable rule was satisfied, this tradeoff was not confronted. However, for the first time since the initial adjustment period, New Zealand's CPI has moved outside its mandated 0–2 percent range (see Figure 1). In 1994 the growth rate of New Zealand's CPI was outside its target range at 2.8 percent, and the forecast for 1995 is 3.3 percent.

In this *Weekly*, we examine the RBNZ's response to this movement outside the target range and its implications for New Zealand's monetary regime. We first examine the Bank's methodology for determining compliance with the PTA, and compare its measure of inflation to some alternatives. In the end, it appears that a genuine tradeoff between accuracy and verifiability does exist. We argue that the current monetary regime, recognizing this tradeoff, is effectively a "two-tiered" policy: As long as the growth rate of the CPI lies within its target range, that is, as long as the central bank strictly follows the policy "rule," then it enjoys full independence; however, the central bank also has the discretion to deviate upwards from the target when it sees fit, which brings with it the burden of explaining itself to the finance ministry to reconcile its policy with the PTA. In the conclusion, we comment briefly on the merits of this two-tiered monetary regime.

Figure 1
New Zealand Inflation 1993–1997



PACIFIC BASIN NOTES *Pacific Basin Notes* appears on an occasional basis. It is prepared under the auspices of the Center for Pacific Basin Monetary and Economic Studies (CPBMES) within the FRBSF's Economic Research Department.

"Underlying" vs. "headline" inflation

The PTA recognizes that a number of possible price shocks are outside the direct influence of monetary policy and that in certain circumstances it will be appropriate for the Reserve Bank to allow the rate of growth in the CPI to exceed its 0–2 percent range. It also recognizes a distinction between the components of inflation that reflect ongoing increases in price levels and those that reflect one-time shocks. These may include one-time price level shocks, such as changes in the government Goods and Services Tax, or commodity price shocks, such as an increase in world oil prices. In response, it requires that in the event of such a shock, the Reserve Bank will be fully accountable for its handling of the price effects, and, in particular, for any movement outside the 0–2 percent band. The Reserve Bank is expected to give full details of its estimate of the direct price impact of the shock and its impact on the achievement of the target range.

The central bank complies with this mandate by estimating what it terms "underlying inflation." This series is estimated by taking the official CPI, which it terms "headline inflation," and making a number of adjustments (Roger 1994a). First, the underlying inflation series explicitly excludes interest rate charges. These pose a particularly perverse problem in using New Zealand's CPI as a measure of monetary policy. Since the RBNZ conducts monetary policy through the manipulation of interest rates, tight monetary policy raises interest rates. This increases the CPI and erroneously indicates "easy" monetary policy. Consequently, the PTA singles out increases in interest rate charges as an "excusable" cause of deviating from the 0–2 percent range.

Second, specific adjustments are used to remove the one-time effects of a variety of shocks, such as changes in indirect taxes, government-controlled prices, and important commodity prices. This second adjustment requires that the RBNZ estimate the magnitude and speed of the impact of these one-time effects on the CPI. The estimate of underlying inflation generated by the RBNZ thus is dependent on the model used in generating these estimates.

Because the Reserve Bank's estimate of underlying inflation relies on judgment in its construction, its validity cannot be directly verified. In addition, there is room for disagreement concerning the proper model to be used in estimating the impact of one-time shocks. For some shocks, such as changes in the prices of intermediate inputs, the timing and magnitude of the pass-through of these price changes to the CPI is uncertain. For both of these reasons, the use of the Reserve Bank's measure of underlying inflation may undermine its credibility (Roger 1994b).

The current situation provides a good example of this credibility problem. As we can see in Figure 1, while the growth rate in the CPI is projected to move well above 2 percent over the next two years, the Bank's projection of "underlying inflation" falls conveniently inside the 0–2 percent range, although it comes perilously close to its boundary at an estimated 1.9 percent rate by December of 1995. In its Monetary Policy Statement (RBNZ 1994), the Bank stresses interest rate charges as the source of divergence between "headline" and "underlying" inflation. However, even excluding interest rate charges, Figure 1 shows that the Bank appears to be failing to meet its target. The RBNZ explains this remaining differential as the result of the lagged effect of oil price increases and expected increases in the price of government services such as ". . . rates, tertiary fees and Housing New Zealand rentals over the next year" (p. 28).

Alternative measures of underlying inflation

The Monetary Policy Statement concludes that this movement above the 0–2 percent target range is consistent with the PTA. However, it acknowledges the difficulty of verifying the series externally. In an effort to facilitate policy accountability, the Reserve Bank has considered more mechanical measures of underlying inflation. As noted by Roger (1994b), all of these measures share three characteristics: They can be calculated from the CPI, they exclude the direct effects of interest rate movements, and they involve judgmental methods for purging the impact of supply shocks from the series. The alternative inflation measures use different criteria for downweighting or excluding price shocks from their inflation estimates.

Some measures involve removing a number of price shocks from the "headline inflation" series, either by excluding price shocks when their cumulative impact on the 12-month change in the CPI exceeds 0.25 percent, or by excluding certain commodities, such as food and energy components. A concern about these measures is that they require "pre-specification" of the types of price shocks which are suitable for exclusion.

Alternative measures use a variety of methods to remove outliers in price changes. These include the "trimmed-mean" CPI which excludes the top and bottom outliers, and the "weighted-median" CPI, which is a weighted average of observed inflation rates calculated as the 50th percentile (weighted) price change. Both of these methods downweight (some to zero through exclusion) extreme price movements regardless of their cause. Consequently, some of these adjustment may be undesirable. In addition, some price movements that may warrant adjustment may not receive it.

The Reserve Bank has determined that the measures of inflation that require "pre-specification" of excluded series fail to provide an adequate replacement for their current more "discretionary" measure, since their potential to fail to account for important supply shocks may prevent them from being consistent with the PTA. Among the trimmed mean and median inflation series, the Reserve Bank has noted that the median inflation series has the advantage of being derived from the entire distribution of prices. The central bank recently announced that it will be publishing the weighted median measure of inflation as a ". . . supplement to, as well as a check on, our current measure of underlying inflation" (RBNZ 1994).

Conclusion

In its implementation, New Zealand's monetary regime confronts us with the familiar tradeoff between rules and discretion. While a mechanical and easily verified 0–2 percent target provides a well-defined rule, it may not be desirable because of the inability of a fixed rule to account for all contingencies. On the other hand, allowing the RBNZ to form its own de facto rule by allowing it to construct its own unverifiable series in measuring compliance with its target appears to be tantamount to a policy of discretion.

The RBNZ's current regime may be understood as a "two-tiered" policy. The regime has a fixed rule—maintenance of the rate of growth of the CPI within the 0–2 percent range—but it also offers an "escape option" with a penalty. As long as the central bank meets its rigid and verifiable target, it has full independence and need not explain itself.

However, if the Reserve Bank lets this verifiable measure deviate from this target, it is required to explain this deviation to the finance ministry in a process in which some degree of independence is presumably lost. In a sense, the Reserve Bank has the discretion to deviate from the verifiable target at the cost of some independence. If the RBNZ values this independence, it will violate the verifiable target only when it deems it necessary.

This two-tiered regime may be a desirable one for generating credible monetary policy without unduly constraining the monetary authority in the presence of supply shocks. However, to the extent that the central bank can manipulate its estimate of underlying inflation, it retains some amount of discretion. Achieving flexibility therefore implies forgoing a pure monetary rule regime to some extent.

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References

Hutchison, Michael. 1995. "Central Bank Credibility and Disinflation in New Zealand." *FRBSF Weekly Letter* 95-06 (February 10).

Reserve Bank of New Zealand. 1994. "Monetary Policy Statement" (December).

Roger, Scott. 1994a. "Alternative Measures of Underlying Inflation." *Reserve Bank of New Zealand Bulletin* 57, 2, pp. 109–129.

__________. 1994b. "Alternative Measures of Underlying Inflation: Further Results." *Reserve Bank of New Zealand Bulletin* 57, 4, pp. 330–340.

Walsh, Carl. 1994. "Is New Zealand's Reserve Bank Act of 1989 an Optimal Central Bank Contract?" Center for Pacific Basin Monetary and Economic Studies Working Paper #PB94-01. Forthcoming *Journal of Money, Credit and Banking.*

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P.O. Box 7702
San Francisco, CA 94120

Printed on recycled paper
with soybean inks.

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