

The evolution of monetary policy implementation

In the years since New Zealand's financial markets were liberalised in 1984/5, and indirect methods replaced direct controls, the Reserve Bank's approach to monetary policy implementation has evolved considerably.¹ The changes have largely reflected shifts in our understanding of how monetary policy and financial markets work. From an early emphasis on monetary quantities, we shifted relatively quickly to a hybrid system that recognised that financial prices – interest and exchange rates – were at the heart of the way monetary policy affects inflation. Because of our instinctive reluctance to control directly any financial market price, for more than a decade we used instead a succession of statements and signals (backed by the ever-present threat to use the quantity levers) to manage day-to-day monetary conditions. Throughout the period, the Reserve Bank was able to secure effective influence over monetary conditions, but not without some awkwardness. Recent changes have brought our approach more fully into the international mainstream. The paper outlines the way our practice and thinking have evolved, to put in context our 1999 decision to introduce the Official Cash Rate (OCR).

Background

1. Until 1984, monetary policy in New Zealand was characterised by a high and only gradually decreasing degree of regulation, including a number of direct controls on the operations of financial institutions. In the eight dramatic months following the 1984 general election, things changed markedly. Within days, interest rate controls had largely gone, and by March 1985 the remaining exchange controls and all reserve ratios had been abolished, and the exchange rate had been floated. These measures left the Bank in a good position to use market-oriented indirect tools to manage the inflation rate. The choice of tools, and the way they were used, evolved with our understanding of how liberalised financial markets work in New Zealand.

An early emphasis on quantities

2. In the early post-liberalisation period, our thinking was heavily influenced by the monetarist approach that had played such an important role in international thinking about monetary policy in the late 1970s and early 1980s. This approach highlighted the control of monetary quantities as the essence of achieving control of inflation. Against this background, and without in practice much else to guide us amid the dramatic changes taking place throughout the economy, we adopted the “full funding” rule. Sufficient government bonds were issued to the private sector to offset fully other liquidity injections (largely stemming from the fiscal deficit). In effect, the “full funding” rule was a public commitment to manage growth in the quantity of Primary Liquidity (PL) – the “settlement cash” banks held in their deposit accounts at the Reserve Bank and holdings of those public sector securities that could be sold back to the Reserve Bank on demand.

3. In 1986, the Reserve Bank complemented full funding by beginning daily open market operations (OMOs). These were (and still are) geared towards offsetting projected daily liquidity influences. Daily OMOs formed the basis for the quantity-based operating architecture that remained in place until March 1999. From this point on, the key quantity in the system was the target level of settlement cash.² Because the banking system could not effectively substitute alternative assets for settlement cash, the Reserve Bank could achieve all the leverage it needed over financial markets (and thus, in principle, manage monetary policy) simply by altering the quantity of settlement cash.³
4. Although the Bank did not know with any precision how the demand for PL would behave, it had originally been hoped – though probably not with enormous conviction – that a stable relationship might develop between PL and such broader economic aggregates as nominal GDP. And whatever the precise relationship, maintaining control of banking system liquidity would, it was believed, over time enable us to broadly bring inflation under control. No formal goal had yet been enunciated, but it was universally agreed that the high and volatile inflation rate had to be markedly reduced. In some quarters, it was also hoped that publicly targeting a stable level of PL would help shape the behaviour of wage bargainers and price setters, directly assisting in lowering inflation.
5. During this period, neither the level of interest rates nor the exchange rate were treated as key indicators of monetary conditions. This was, in part, because it was difficult to interpret movements in market interest rates and exchange rates when inflation was high and volatile (what was real and what was nominal?). Moreover, the radical structural changes occurring throughout the economy were making it very difficult to estimate sensibly the equilibrium value of real interest and exchange rates. In addition, at least implicitly, there was something of a sense that many or most of the sustained changes in interest and exchange rates were likely to prove well-warranted, justified by real changes in economic fundamentals.
6. In the early years when the Reserve Bank looked to financial market prices at all for a guide on current monetary conditions, it was primarily to the slope of the interest rate yield curve. Interpreting the slope of the yield curve was thought to be less problematic than making sense of the absolute level of interest rates. Using the expectations hypothesis approach, a steeply downward-sloping yield curve (short-term interest rates above long-term interest rates) could be interpreted, broadly speaking, as an indication that monetary policy was tight (investors expected short-term interest rates to fall substantially in the future), and hence consistent with achieving the marked reductions in the inflation rate we were seeking. On the other hand, an upward-sloping yield curve – or even a modestly downward-sloping curve – suggested that monetary policy was unlikely to be sufficiently firm. In time, a loose internal range for this indicator – the gap between 90-day bill rates and 5-year government bond yields – developed to help condition thinking about shorter-term market developments.⁴

Financial prices move centre-stage

7. The Bank was increasingly recognising that, with liberalised financial markets, monetary policy would affect inflation primarily through its ability to influence interest and exchange rates, and the impact those prices, in turn, had on spending and pricing behaviour throughout the economy. The hoped-for relationship between the narrow

quantity measures (PL or settlement cash) and nominal GDP never developed, and the broader quantity measures, such as M3 or Private Sector Credit, came to be seen largely as reflections of the public's response to interest rates, and not as aggregates that could be influenced directly to assist the disinflation process.

8. Partly because stable relationships never developed between the narrow banking system quantities (PL or settlement cash) and relevant measures of spending or economic activity, the newly-liberalised interest and exchange rates proved to be very volatile.⁵ The volatility was initially largely regarded with indifference, for a number of reasons. These included:
 - a sense that the volatility would be short-lived, and reflected an inevitable adjustment as market participants learned how to operate in deregulated markets;
 - a view that even if we had wanted to reduce the volatility in financial prices we could only have done so by increasing the volatility in monetary quantities;
 - the considerable uncertainty in the immediate post-liberalisation period about just what interest and exchange rates were consistent with the desired stance of policy;
 - a reaction to past control-oriented regimes, and the resulting desire to let markets locate the equilibrium; and
 - a sense that, as monetary policy itself worked largely over a medium-term horizon, any short-term volatility in interest and exchange rates was unlikely to matter very much.
9. The volatility showed few signs of diminishing with time, and, increasingly, it came to seem both costly and unnecessary. The considerable short-term volatility was making it difficult for investors, firms, and households to respond sensibly to the financial market prices – the ‘noise’ was often swamping the underlying ‘signal’. Moreover, the extent of the volatility was also seen as risking undermining wider public support for monetary policy's drive to lower the inflation rate. And it was gradually recognised we could take steps to reduce volatility, without altering the volume of settlement cash materially, if at all. As the importance of interest and exchange rate channels was increasingly recognised, quantities (and fluctuations in them) were in any case being recognised as having little intrinsic significance.
10. With hindsight, the Reserve Bank's reaction to the sharp fall in the exchange rate in late-August 1988 proved to be something of a watershed. A public statement in response noted that, if the exchange rate were to fall much further, there was a risk that the downward trend in the medium-term inflation outlook might be jeopardised, even after abstracting from the inevitable and fairly immediate direct effects of the lower exchange rate on import prices. The gradual shift in the focus of monetary management meant that the extraordinary short-term volatility of 1985 to 1988 was not repeated.
11. The absolute level of the settlement cash target was by now recognised as having little or no intrinsic macroeconomic significance. The ability to change the cash target as required gave us all the leverage we needed to influence financial markets. But although we had a powerful lever, and a gradually-emerging specific inflation target, there was no direct or reliable connection between the two, without additional guidance to condition financial market responses.⁶ This additional guidance – “signalling” as it came to be known – turned out to be very powerful. Relying ultimately on the threat (implicit or explicit) to adjust the cash target if necessary, signalling became the centrepiece of monetary policy implementation for the next 10 years until the

introduction of the Official Cash Rate in 1999.⁷ Largely as a result, the cash target itself was adjusted only rarely – typically only when all else had been tried.⁸

12. In a system that relied on periodic ‘signals’ from the Bank to keep monetary conditions on track, the challenge became how to incorporate the day-to-day information from the various financial prices, without directly controlling any of them. Over the years that followed, we used various approaches, with the emphasis shifting pragmatically with our changing sense of how the economy worked, and of where, at any point in time, the most pressing risks to the inflation target were perceived to be.
13. From the start, we could have used statements and signals – threats to adjust the cash target – to manage the level of overnight interest rates, incorporating the information from the other indicators at periodic reviews (that is, in essence, how the OCR system works today). Throughout the 1980s, other comparable countries – such as the United Kingdom, the United States, and Australia – had also come to place an increasing emphasis on financial market prices. For them, this evolution accompanied a gradual shift in emphasis in their control systems towards the direct and, by the mid-1990s, increasingly transparent, management of a short-term (often overnight) interest rate. In this area, New Zealand was to lag behind.
14. We remained wary of taking direct responsibility for the level of interest rates. There was concern that if we were directly managing an interest rate we might be reluctant to adjust interest rates as far or as quickly as was needed to keep inflation in check. With inflation still relatively high and variable, interpreting nominal interest rates still seemed to be problematic at best. And although a strong connection between real interest rates and spending and inflation pressures seemed both plausible and well-supported in economic theory, that relationship was proving hard to pin down empirically in New Zealand. That, in turn, partly reflected the long history of regulated interest rates in New Zealand – there simply wasn’t much experience to help us understand how interest rate changes would affect the New Zealand economy.
15. The Bank was, in effect, monitoring monetary conditions using a ‘checklist’ of indicators, attempting to capture loosely the many and diverse channels through which monetary policy operates, with the primary focus on the ‘real-time’ data on interest and exchange rates. In early 1989, the Bank introduced a system of regularly reviewed indicator ranges. There were to be two principal ranges, one for the trade-weighted index of the exchange rate (the TWI), and one for the 90-day/5-year yield gap, reflecting the understanding that interest rates and exchange rates were the main channels through which monetary policy actions began to affect the rest of the financial system and economy. Although these ranges were never published, the market was often able to estimate them (reasonably) accurately by watching the timing and content of Bank statements and signals.
16. It was envisaged that, in normal circumstances, the Bank would respond to breaches of either of the principal ranges unless the opposite end of the other range was clearly threatened. This caveat recognised that if, for example, the market had responded to a fall in the exchange rate with a more steeply downward-sloping yield curve, then the Reserve Bank would not need to signal discomfort at the fall in the exchange rate. It also recognised, more generally, that we should not attempt to interpret any of the indicators in isolation. A subsidiary indicator range, for the cash/90 day yield gap, was also monitored, in view of the very loose connection between the level of cash in the system and the sorts of financial market prices we were primarily interested in. If the

lower end of either of the two main ranges was reached, the case for a policy response would be stronger if the overnight cash rate was also well below the 90-day rate.

17. Note that, throughout this period, the indicator ranges were never, in any sense, independent medium-term “intermediate” targets. They were regularly reviewed and reset, every quarter or so, in the light of a reassessment of the inflation outlook, and the information contained in other indicators. So the indicator ranges, and statements in support of them, were about managing market conditions to be consistent with the intended stance of monetary policy (just how tight or loose we thought policy needed to be). Even by 1989, that stance was not itself articulated particularly clearly externally or, at times, even internally. But as the inflation targets began to crystallise at the end of the 1980s, and as the new Reserve Bank of New Zealand Act 1989 came into effect, the stance of policy was increasingly developed in the context of comprehensive internal reviews of the inflation outlook.
18. From the early 1990s, changes in the intended stance were increasingly articulated in the context of *Monetary Policy Statements* and/or *Economic Projections*.⁹ Another form of signalling used the key published financial assumptions underpinning the projections. These assumptions did not represent policy targets in themselves, but they provided reference points by indicating, by virtue of the inflation track projected, whether the appropriate set of monetary conditions was likely to be tighter, looser or about the same as those assumed. Thus, for convenience, policy signals or policy comments were sometimes made by reference to the assumed levels.
19. In essence, the indicator ranges system was about trying to avoid having market prices move “too far” without having a chance to comprehensively review the inflation outlook every few months. “Too far” was inevitably somewhat arbitrary, especially for the yield gap. For the exchange rate, a combination of art and science contributed. We recognised that, in addition to the medium-term effects of the exchange rate on inflation through the competitiveness of the tradables sector, there were powerful direct exchange rate effects over the twelve months or so following the exchange rate change. The typical range was around 3 TWI points wide, consistent with a sense of “reasonable” intra-quarter fluctuation, but also with keeping down the risk that unwanted direct exchange rate effects on prices would materially jeopardise short-term progress towards price stability.
20. Both main ranges were intended to be important, and there was intended to be some scope for a trade-off between them. In practice, the actual emphasis placed on the various indicator ranges fluctuated through time. This partly reflected changes in our own preferences or understandings, but was more often a pragmatic response: the indicator range that was most at risk of being breached, or that at the time seemed most likely to threaten the inflation target range, tended to have the most prominence.
21. In the first eighteen months or so of the system, the exchange rate range was most often in focus, as interest rates had been relatively stable. But by the end of 1990 interest rates had begun to fall very rapidly and with that move the yield curve had flattened quite markedly. Partly because of this, and partly because of the Bank’s sense that a large fall in the exchange rate would be appropriate to facilitate economic adjustment, for much of 1991 the yield gap range resumed a prominent public place as a key indicator of monetary conditions, and a series of “signals” were issued in reaction to movements in the yield gap.

22. The yield gap gradually declined in significance again. It had been easier to make sense of in a highly disinflationary environment, but the growing integration of New Zealand and world capital markets also meant that movements in bond yields now usually had more to do with changes in foreign bond yields than with any change in domestic inflation expectations. And with most New Zealand borrowing undertaken at variable rates or for short fixed terms, movements in longer-term bond yields also had little autonomous impact on domestic demand or inflation prospects.
23. With hindsight, a range for the level of short-term rates should have replaced the yield gap. That didn't happen. For much of the period after price stability was first achieved in 1991, interest rates still seemed surprisingly high, especially in light of the unexpectedly rapid fall in inflation, and it remained difficult to identify formal empirical interest rate effects. Moreover, the cyclically low exchange rate appeared to be the financial price that posed the greatest risk of triggering a resurgence of inflation. All this, and the apparent ease of identifying direct exchange rate effects, meant that, largely by default, there was only one indicator range left for a couple of years (1992-94). That range became set in a much more mechanical way, tightly linked to the central inflation projections.¹⁰
24. In 1995, circumstances again prompted a change of emphasis. For the first time the Bank gave an explicit role to the **level** of nominal interest rates in intra-quarter policy implementation. Interest rates had risen very rapidly in 1994, here and abroad. Against the background of a very buoyant housing market, and generally strong domestic economy, the Bank believed the high level of interest rates that had been achieved during 1994 had to be maintained to keep inflation within the target range. In other words, a fall in interest rates now seemed to pose the greatest risk of a breach in the inflation target range. With hindsight, we had recognised that interest rates had been allowed to get too low in 1993, and that that had contributed materially to the inflation pressures we were experiencing. Despite our historical reluctance to take direct "ownership" of interest rates, policy comment and "signals" were designed to prevent the 90 day rate falling below the "9 per cent floor", with a view also to avoiding falls in variable mortgage rates.
25. This floor was never envisaged as something permanent, but was a good illustration of the pragmatic way in which emphasis on the various indicator ranges fluctuated with the perceived risks to the inflation target range. As the exchange rate had continued to appreciate significantly in mid-1995, the "9 per cent floor" was removed, but we continued to be faced with the challenge of balancing both interest and exchange rate indicators whenever they tended to move in opposite directions. It was against this background – trying to interpret and manage the "mix" of monetary conditions – that we began to explore the possibilities of summary aggregate measures of monetary conditions, such as a Monetary Conditions Index.
26. By the start of 1996, in an attempt to try and incorporate both the exchange rate and 90 day interest rate influences on monetary conditions, the Bank had more or less adopted indicator ranges around both these indicators, with only some loose sense of a trade-off. We indicated that conditions should be consistent with the starting assumptions in each *Monetary Policy Statement* or *Economic Projections*. However, in October 1996 monetary conditions arrived at a 'corner solution' with respect to interest rates and exchange rates. This led to a tightening statement and then a loosening statement from the Bank within 10 days of each other. Both were simply about managing day-to-day conditions in the market, not a reassessment of the inflation outlook, but it was the

trigger that brought to a head the increasing dissatisfaction many had felt about how the operating and signalling system was working.

The Monetary Conditions Index: 1997-1999

27. This dissatisfaction took a number of forms. On the one hand, there was the increasing disconnection between the formal implementation instruments and actual market outcomes. A complex operating infrastructure lay behind the settlement cash system, and yet the link between the settlement cash target and key financial prices was highly unreliable, forcing us to rely largely on public statements of one sort or another.¹¹ That gave monetary policy implementation a considerably higher public profile than was either necessary or desirable, and at times led to implementation statements – designed simply to manage day-to-day market conditions – being confused with matters of medium-term stance. The distinction between the two was clear in our own minds, but understandably much less so to outside observers, especially those offshore.
28. Moreover, although we regularly used statements to manage markets, we had almost always held back from expressing our intentions in numerical terms. The indicator ranges had never been published, and statements generally expressed discontent, noting that conditions were tighter or easier than intended, rather than telling market participants just what we wanted to see. Against this background, it was sometimes hard to predict quite how markets would respond to our statements. That sometimes led to a need for several statements in quick succession.
29. Less importantly, the reliance on signalling statements meant that within the Bank an inordinate amount of time and effort went into crafting statements, determining exactly when to use them, explaining them after the event, and assessing the effects. Meanwhile, market participants and commentators had had to devote resource to trying to guess the exact timing and intervention levels, and to interpreting the nuances of statements that were intended simply to manage day-to-day fluctuations in market prices.
30. By late 1996, the Bank had determined that changes were needed, and in particular recognised the need for a better way of communicating our intentions, and for trying to explain how both interest and exchange rates mattered, both in setting monetary policy and managing short-term monetary conditions. Specifically, we were looking for a numerical way of expressing what we were looking for between formal updates of the inflation outlook.
31. In December 1996, we indicated that over the following few months we would be consulting on a proposal to introduce a cash-rate-based implementation system. In the meantime, we still wanted to be able to be more specific about what the Bank would be reacting to in market prices. Accordingly, the Bank publicly stated that, between projection updates, we would be looking for conditions to be consistent with the interest and exchange rate assumptions underlying the projections. But, in addition, we indicated that in “trading off” the two, a 2:1 ratio would be appropriate (the MCI ratio). That is, a 2 per cent change in the TWI would be considered roughly equivalent to a 1 per cent change in 90-day bill rates. The ratio itself reflected our sense of the medium-term impact of real interest and exchange rate changes on activity and inflation pressures.¹² The ratio chosen was always recognised as a loose approximation – our own research work produced a range of estimates as to what the ratio might be – but

was intended to help keep the interest and exchange rate combination reasonably in line with our medium-term interests until the next opportunity to review the inflation outlook.

32. In the consultative process undertaken in early 1997, we explored the possibility of introducing a cash-rate-based system in New Zealand. The scheme proposed differed in several material respects from the Official Cash Rate system that is now used. The key difference reflected the place that the MCI had assumed in our thinking. Although the formal inflation outlook would have been reviewed only quarterly (as hitherto), the cash rate would have been reviewed weekly (although it was considered most unlikely that it would be changed at anything like such a high frequency). The relatively high frequency of review was prompted by a desire to maintain the ability to adjust official interest rates quickly if the exchange rate altered significantly, without having to rely on an unwieldy operating system and directional statements, and without being tied to a particular MCI ratio. It remained in many respects a high frequency exchange rate reaction system, although reactions would have occurred on a published schedule rather than at any time during the week, and probably less formulaically.
33. After extensive consultations with commentators and market participants, in which opinion was divided, we decided not to proceed to a cash rate system at that stage. Perhaps paradoxically in the light of what was to follow, a number of observers felt that the MCI as it had developed thus far was working well, and that there was no need for change. It was largely concern at the high frequency of the reviews that prompted the Bank not to proceed with the proposal.
34. However, our own sense was that the status quo was not sufficient. Expressing our short-term policy intentions in terms of a desired level of the MCI provided a quantitative guide as to what financial prices we believed were consistent with the intended stance of policy (in combined interest rate and exchange rate terms), something that had been missing previously.¹³ However, this told markets the centre of our desired ranges, but didn't put any constraints on how far market prices could deviate without prompting a reaction. Recall that for most of the previous decade, monetary policy implementation had consisted of reacting at the outer edges of indicator ranges.
35. Accordingly, in releasing the June 1997 *Monetary Policy Statement*, we indicated that, at least in the period immediately following the release of a new set of desired conditions, we would expect the actual MCI to stay within about 50 MCI points of desired conditions. The bands widened as the time increased since the last *Monetary Policy Statement* was released, before narrowing again at the publication of each new set of projections.
36. With hindsight, it is clear that the bands were set too tightly. Such narrow bands did not adequately allow for the short-term "noise" in the exchange rate, and we also greatly underestimated the extent of the quarter-to-quarter shifts in desired monetary conditions that were likely to be required. Use of these tight indicative bands around the MCI intra-quarter greatly increased the day-to-day and week-to-week responsiveness of interest rates to day-to-day exchange rate movements.¹⁴ It also led to interest rates rising quite sharply intra-quarter, as the exchange rate began to trend sharply downwards. At the next update of the inflation outlook these exchange rate moves were, typically, judged to be well-founded in changing fundamentals, rather than being "portfolio shocks" that required an offsetting interest rate move. Intra-quarter

comments on conditions by the Bank were required, or threatened, sometimes on an uncomfortably frequent basis.

37. We gradually moved away from enunciating tight intra-quarter bands around the stated desired level of the MCI, and allowed greater intra-quarter flexibility in monetary conditions. Interest rates remained more volatile than they had been previously and, with such large deviations of actual from desired, it was hard for anyone (and public and political audiences in particular) to draw much meaning from the Bank's statements of desired conditions. Other central banks announced operating targets and achieved them, whereas keeping conditions in line with our intra-quarter operating target was generating uncomfortably high interest rate volatility. In a sense, this contrast helped clarify that our intra-quarter implementation regimes had been unnecessarily ambitious, which in turn had created the frustrations that came to a head in the MCI period. That put a more conventional cash rate scheme back on the agenda.

The change to interest rate targeting: March 1999

38. On 8 February 1999, the Bank announced that as from 17 March 1999, a simple, transparent and internationally conventional Official Cash Rate (OCR) system would be used for implementing monetary policy.¹⁵
39. Under the OCR system, the interest rates on the Bank's standing facilities (set at 25 basis points either side of the OCR and unchanged for the six weeks until the next OCR review) provide a 'channel' within which overnight interest rates on borrowing and lending between the commercial banks will normally range. Because we have undertaken to provide or absorb funds on demand, the Bank is able to control overnight interest rates without having to do material volumes of transactions. Our willingness to transact in large volume effectively eliminates the need to do so. As expected, cash rate volatility has dropped to almost zero. More importantly, the short-term (daily, weekly) volatility of interest rates further along the yield curve has also dropped substantially and now appears to be conventional by international standards.
40. In essence, the standing facilities do what the Bank was trying to achieve under the previous regime with the unwieldy combination of the quantity-based system and statements. However, they do so simply, unobtrusively, and without the same potential for misinterpretation. They achieve a less ambitious operating target considerably more reliably, and leave the focus of monetary policy where it should be: on the medium-term judgements about the inflation outlook and the appropriate stance of policy to adopt in response.
41. The magnitude of OCR moves in New Zealand over the past eighteen months has been unremarkable compared with changes in official interest rates overseas in recent years. The Reserve Bank has moved the OCR in a series of 25 and 50 basis point steps – steps that are conventional in similar overseas operating systems.¹⁶
42. The OCR is reviewed by the Bank eight times a year, approximately every six weeks. This is consistent with the practice in the United States and, more recently, Canada, and is a little less often than in many other countries.¹⁷

Table 1: Frequency of official interest rate reviews

Reserve Bank of New Zealand	Six weekly
Reserve Bank of Australia	Monthly
Bank of Canada	Six weekly
Bank of England	Monthly
European Central Bank	Fortnightly
Bank of Japan	Twice monthly
Federal Reserve Board (United States)	Six weekly

43. Our expressed preference is to use the quarterly *Monetary Policy Statements* as the main opportunities to reassess the inflation outlook and the required stance of policy. Reviewing the OCR every six weeks does not mean, and has not so far meant, adjusting it at each review. However, to review the OCR only every three months, at the time of the *Monetary Policy Statements*, would be too infrequent in a world characterised by very considerable uncertainty. Reviewing rates only every three months might require unusually large interest rate steps on some occasions. It might also risk suggestions that the Bank was ‘behind the game’ in tightening or loosening monetary policy. Moreover, one of the considerations in designing the OCR was the desire to put in place a more internationally comparable system. A quarterly review only, and the large rate changes that that might on occasion require, would look rather unconventional to the international investors who play such a large part in our markets.

Conclusion

44. The operating framework in place for the bulk of the period (the settlement cash target etc) had had its origins in a quantity-oriented understanding of the management of monetary policy. It was also a pragmatic choice in the early, and uncertain, post-liberalisation period. We had gradually realised the limitations of this approach, and that, on its own, it would have left the system exposed to undue variability in financial prices and, perhaps, in economic activity itself. In response, statements and signals assumed a central role, to guide and condition movements in financial market prices. However, because we were not willing to take direct responsibility for setting overnight cash rates, as other countries were increasingly doing, we adopted a framework that, with hindsight, was overly-ambitious. The essence of the operating system involved trying to manage, or respond to, in near real-time, some or all of the much more important, but difficult to manage and interpret, indicators: the yield gap, the exchange rate, or 90-day interest rates.
45. All of these financial indicators were, and are, relevant to the inflation outlook. However, they can be reviewed and incorporated (as we now do) along with all the other economic indicators, periodically rather than in real-time. Between reviews (undertaken in our own time), the overnight cash rate can be efficiently managed,

unambiguously, unobtrusively, and uncontroversially. Doing so still provides a dragging anchor on other interest rates, but leaves markets free to trade to any levels, constrained only by expectations of the stance the Reserve Bank will adopt at the next OCR review.

46. Standing back, there was never any doubt that the quantity-based implementation regime (heavily reliant as it became on statements and signals) was broadly effective in delivering (on average) the level of monetary conditions that the Bank believed consistent with price stability. But it did not do so particularly efficiently, and by the time it was scrapped our implementation system was, at the margin, adversely affecting the reputation and standing of the Reserve Bank. The shift to the OCR has been very successful, and we have no reason to envisage any changes to the operating arrangements in the foreseeable future. With hindsight, we wish that we had made the change sooner.

References

Archer, D, A Brookes, and M Reddell (1999), ["A cash rate system for implementing monetary policy."](#) *Reserve Bank of New Zealand Bulletin*, Vol 62, No 1.

Brookes, A and T Hampton (2000), ["The official cash rate one year on,"](#) *Reserve Bank of New Zealand Bulletin*, Vol 63, No 2.

Huxford, J and M Reddell (1996), "Implementing monetary policy in New Zealand," *Reserve Bank of New Zealand Bulletin*, Vol 59, December.

Endnotes

¹ Monetary policy implementation here refers to the operational procedures used by the Reserve Bank to manage monetary conditions and deliver the intended stance of monetary policy.

² For a full description of how the settlement cash target system was used, see Huxford and Reddell (1996).

³ Throughout the period to 1999, the Bank also announced a series of discount rates each day. These were the interest rates at which the Reserve Bank provided additional settlement cash to the market in the event that a forecasting error left the system short of cash. The discount rates were, however, set simply as a margin over prevailing market interest rates that day, and were not themselves designed to contain any information about the Reserve Bank's monetary policy stance.

⁴ New Zealand discontinued issuing 10 year government bonds in 1986. Issuance resumed in 1991.

⁵ For example, 90-day bill rates fluctuated between 15 and 28 per cent in the space of eight months in 1986/87.

⁶ By mid-1988, the Reserve Bank was aiming to deliver 0 to 2 per cent annual inflation by the early 1990s.

⁷ These signals were not always in the form of written statements. For some years, the lowest level signal involved structuring the daily OMOs in ways that were, by convention, recognised by markets as indicating the Bank's discontent at prevailing monetary conditions. Since 1993, OMOs have been used

-
- solely for liquidity management purposes. So-called “dealers’ notes” were also used on occasion as a low-level signal. These consisted of short comments or phrases regarding the Reserve Bank’s current views or stance. The notes were used by the Bank’s staff in their regular conversations with market participants and were sometimes altered to guide a change in conditions. The system became increasingly formalised and artificial, and was discontinued in 1995.
- 8 The formal policy instruments were not adjusted from August 1995 until the system was replaced in March 1999. However, on several occasions the Bank was close to making changes as a follow-up to various statements. During this period, 90-day bill rates rose to a peak of 10.5 per cent and fell to a low of 4.0 per cent.
- 9 See the paper [“Publication of projections”](#).
- 10 Something of this exclusive focus on direct exchange rate effects may also have affected our quarterly projections for demand and activity. However, those projections were always substantially shaped by the much broader range of information on how economic activity was unfolding. Thus, whatever shaped business confidence – and both interest and exchange rate always have – also shaped the quarterly updates of the inflation outlook and, hence, the stance of policy.
- 11 The system also created some rather strange incentives for market participants. As noted above, the interest rates at which the Bank provided liquidity to the market were themselves market-linked. Consequently, financial market participants at times engaged in transactions designed solely to influence that intervention rate – the so-called ‘cash market games’. This added to the volatility of short-term interest rates, particularly the overnight interest rate, and did little for the reputation of the system.
- 12 Strictly only in the face of a “portfolio shock”, a change in investor tastes for New Zealand assets, independent of any change in the economic fundamentals.
- 13 A formal index was first published with the [June 1997 Monetary Policy Statement](#). In substance, this simply formalised the position that had existed since the December 1996 *Monetary Policy Statement*, with desired conditions specified in interest and exchange rate terms, subject to a trade-off ratio.
- 14 Even before this, New Zealand short-term interest rates had long been much more volatile over short terms than those in other comparable countries.
- 15 See [Archer et al \(1999\)](#) for details of the OCR system, and [Brookes and Hampton \(2000\)](#) for the first year’s experience with the system.
- 16 When the system was introduced, the Bank indicated that the OCR would be moved in multiples of 25 basis points.
- 17 Like other central banks, the Reserve Bank reserves the right to alter the OCR at any time should we judge that to be required. However, this right would only be exercised in clearly exceptional circumstances. In practice, the market has acted as if changes to the OCR will only occur on the scheduled dates.