

---

# The exchange rate and inflation targeting

Adrian Orr, Alasdair Scott and Bruce White, Economics Department

During the last few years the New Zealand dollar has appreciated substantially and depreciated steeply. In these circumstances it is not surprising that the exchange rate has been the focus of much attention in debates about monetary policy.

Questions which have arisen include:

- why do exchange rates move?
- how and why do exchange rate movements affect inflation?
- when should monetary policy react to exchange rate movements and when should it not?

This article sets out a framework for approaching these questions. The authors also describe how the Reserve Bank's approach to the exchange rate has evolved as it has gained experience with inflation targeting in a small open economy.

## 1 Introduction

During the 1990s, several countries have adopted some form of inflation targeting regime.<sup>1</sup> Most of these countries are small open economies, which means that exchange rate changes can have an important influence on prices. Monetary policy, in turn, has an important influence on the exchange rate, although it is only one of many influences. Thus, the relationships between the exchange rate, inflation and monetary policy are multifaceted.

This article discusses aspects of the role of the exchange rate in the case of New Zealand's inflation targeting regime. Section 2 begins with a brief discussion of alternative exchange rate regimes. Section 3 reviews how monetary policy influences the exchange rate and how monetary policy is transmitted via the exchange rate. Section 4 considers how and why other things, too, influence the exchange rate - and how monetary policy should take them into account. In section 5 we review how the Reserve Bank has, in practice, factored the exchange rate into the formulation of monetary policy, and how that practice has evolved since the inflation targeting regime was adopted. Section 6 concludes.

## 2 Exchange rate regimes

In deciding on an exchange rate regime, the basic choice is between a fixed or floating exchange rate.

Under a fixed exchange rate, the central bank effectively imports the monetary policy of the country to whose currency it has fixed its own currency. Indeed, where the exchange rate is irrevocably fixed, and widely believed to be so, the central bank effectively no longer has its own monetary policy. Interest rates will be very similar for both currencies: if not, there would be opportunities to borrow in the lower interest rate currency and invest in the higher rate currency and make riskless profits. In a competitive open market, such a situation would be very quickly traded away.

The countries that will make up the European Monetary Union (EMU) are an example of countries irrevocably fixing their exchange rates. From 1 January 1999, the 11 initial members of the EMU will permanently fix their exchange rates against each others' currencies and against the new 'Euroland' currency, the Euro.<sup>2</sup> After an initial two and a half year period, they will go a step further and withdraw their own national currencies, leaving the Euro as the single currency for all the EMU member countries. The corollary is that each will assume the monetary policy of the issuer of the Euro, the new European Central Bank (ECB).

---

<sup>1</sup> In chronological order, the list includes New Zealand (April 1988), Canada (February 1991), Israel (December 1991), the United Kingdom (October 1992), Sweden (January 1993), Finland (February 1993), Australia (1993), Spain (1995), the Czech Republic (1998), Thailand (1998).

---

<sup>2</sup> The initial members of the EMU will be Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain.

---

Other central banks have adopted fixed exchange rates, but with varying degrees of commitment to maintain the peg. Close to the “monetary union” end of the spectrum are currency boards. In these cases, the central bank continues to issue its own currency, but commits itself to maintaining a fixed exchange rate, and additionally not to “sterilise” capital flows should they occur. Not sterilising means that when local currency is sold for foreign exchange, domestic liquidity tightens and interest rates rise automatically - to whatever level is required to support the local currency at its pegged level. Conversely, if there are capital inflows domestic liquidity conditions ease, and interest rates fall.

An example of a country that maintains a currency board is Hong Kong SAR, which pegs the Hong Kong dollar (HKD) to the US dollar (USD). Generally HKD interest rates are close to USD interest rates, although in recent months, with the Asian crisis having created doubts in some minds about whether the Hong Kong authorities will be able to maintain the peg, there have been episodes of capital outflow from Hong Kong. Consequently HKD interest rates have, on occasion, risen significantly above USD interest rates. The rate rise can be thought of as the compensation that HKD holders have required to offset the perceived risk that the peg might not hold and that the value of the HKD will fall. This means that during periods of fluctuating confidence in Hong Kong's economy there will be capital flows, swings in interest rates, and potentially strong inflation or deflation pressures. But, assuming a credible peg, Hong Kong's inflation rate, over time, will average out to that for the United States - albeit with “over time” potentially extending to quite a long time, and with episodes of inflation and deflation in the interim.<sup>3</sup>

At the other end of the spectrum of exchange rate regimes is a free float.<sup>4</sup> In this case, the central bank, rather than fixing a rate at which it will buy and sell domestic currency

for foreign exchange, leaves it entirely to market participants to determine the price at which they trade the currency. In this situation, the central bank does not buy or sell its own currency for foreign exchange in order to influence the exchange rate. Rather, the price of the domestic currency (ie the exchange rate) is determined entirely in the market place.

Allowing the exchange rate to float implies that the monetary base is insulated from the foreign exchange market, enabling monetary policy to be focused on a domestically-determined objective. The New Zealand dollar has been freely floating since March 1985, and since then the Reserve Bank has operated monetary policy aimed at achieving low and stable inflation. After having reduced inflation from double digit levels, New Zealand's inflation rate since 1991 has been broadly consistent with price stability.

However, operating an independent - that is, domestically-determined - monetary policy under a floating exchange rate regime does not mean that monetary policy is disconnected from the exchange rate. On the contrary, monetary policy targeted at an inflation objective is, in important respects, transmitted via exchange rate movements. Moreover, external economic developments remain important for the domestic economy, and affect the exchange rate. In short, while floating the exchange rate gives monetary policy independence, it does not convert an open economy into a closed economy.

### 3 Exchange rate transmission<sup>5</sup>

In a **closed economy**, monetary policy affects inflation mainly via interest rates. A rise in interest rates creates incentives for households and firms to defer consumption and investment. Rising interest rates also result in banks tightening their lending criteria, or at least cause existing criteria to become more binding, which also constrains spending by households and firms. And slower spending growth means less pressure on the productive capacity of the economy and, hence, less pressure on prices. However, the transmission of policy via interest rates to reduced price pressures involves

---

<sup>3</sup> Also, if trend productivity growth in one country is faster than in the other, then its real exchange rate will tend to appreciate. Given a fixed nominal exchange rate, any long run real exchange rate adjustment will come through differences in price level trends.

<sup>4</sup> There are other regimes which fall between a pure float and a strictly fixed exchange rate. There are regimes under which exchange rates fluctuate within bands around some central parity and others under which the exchange rate floats but the central bank intervenes to influence the exchange rate temporarily.

<sup>5</sup> For a more complete review of the monetary transmission mechanism, see Mishkin (1995).

## Box: The effect of interest rates on the exchange rate

In open, competitive capital markets, interest rate changes interact closely with the exchange rate. Following a tightening of monetary policy which raises interest rates relative to foreign interest rates, demand for local currency investments is likely to increase. With a floating exchange rate, this increased demand for the local currency puts upward pressure on the exchange rate. Other things being equal, the exchange rate will continue to rise until the higher local interest rate is offset by an expected future fall in the exchange rate. At this point the overall expected returns on investments in different currencies - which comprise not only an interest rate component, but also a component to compensate for currency changes - are equalised.

This relationship between interest rates and the exchange rate, which is known as “uncovered interest parity”, can be written as follows:

$$r_t - r_t^f = e_t - E_t(e_{t+1}) \quad (1)$$

$$\text{or } r_t = r_t^f + [e_t - E_t(e_{t+1})] \quad (2)$$

where

$r_t$  = current local interest rate

$r_t^f$  = current foreign interest rate

$e_t$  = current period exchange rate expressed as foreign currency units per local currency unit (log form)

$E_t(e_{t+1})$  = current period expectation of exchange rate in period  $t + 1$  (log form)

Consider for example what happens if  $r_t$  and  $r_t^f$  are initially equal, say at 5 percent per annum, and the local central bank tightens monetary policy so that the one year interest rate increases to 7 percent. In this case for expected returns to be equalised, an expectation of a future 2 percent fall over that year in the value of the local currency would need to be established - which, all other things being equal, requires the exchange rate initially to appreciate by 2 percent.

considerable lags (although policy actions that alter people's expectations about future inflation can shorten those lags).

In an **open economy**, the exchange rate is an additional channel through which monetary policy can influence inflation and inflation expectations. All other things being equal, a tightening of monetary policy (ie an increase in interest rates) will result in an appreciation of the exchange rate. The rise in the currency occurs because the higher interest rates attract investment capital from other markets. To invest in the higher yielding local currency, investors have to buy it. This investor demand pushes up the price of the local currency.

The exchange rate change alters prices in an open economy by the effect it has on the prices of imports, import-competing goods, and local goods which are also tradeable internationally. When the exchange rate depreciates, the local currency prices of these goods and services (generally referred to as “tradeables”) tend to rise quite quickly and by a similar amount as the depreciation of the exchange rate.

This is the direct effect of the exchange rate on prices, and it will generally contribute to an overall price level change in proportion to the share of tradeable goods and services in GDP.

By altering the price of tradeable goods and services relative to domestic goods and services, an exchange rate change also affects the level of activity in the economy. This results in indirect pressures on prices. In the case of an exchange rate depreciation, tradeable goods and services become relatively more expensive in the local economy, and relatively cheaper to the rest of the world. This turns local and international demand toward the now relatively less expensive domestically produced goods and services. In the absence of offsetting factors, a lower currency results in more pressure on local production capacity, a bidding up of prices for labour and capital, and more pressure and scope for domestic firms to increase their output prices.

Thus, an exchange rate change can have both a direct and an indirect effect on prices.

---

## 4 But there is more to it...

A general principle is that the effect of an exchange rate change on inflation depends on what caused it. We have seen how movements in interest rates, other things being equal, will cause the exchange rate to adjust. But exchange rates adjust for many other reasons too.

A general expression that enables us to capture the full range of factors that affect the exchange rate is:

$$e = q - p^d + p^f$$

where:

$e$  = the exchange rate, expressed as foreign currency units per local currency unit (log form)

$p^d$  and  $p^f$  = the domestic price level, and the foreign price level, respectively (log form)

$q$  = the real, or relative-price-level-adjusted, exchange rate (log form)

However, this expression does not tell us anything about how to conduct policy. For one thing, we know that monetary policy affects domestic prices only with a lag, so that the initial effect of a change in the stance of monetary policy will be seen more in the real exchange rate (the  $q$  term) than in the price level. Indeed, as discussed in the preceding section, in an open economy, a change in the real exchange rate is part of the transmission channel from monetary policy to demand, and thus to prices.

We also know that the real exchange rate is affected by changes in the economy's "fundamentals", for example, changes in the terms of trade and in productivity trends. So the real, or price level adjusted, exchange rates that we actually observe may or may not be telling us something about the stance of monetary policy and future inflation developments.

Consider, for example the substantial fall in the New Zealand dollar exchange rate, in both actual and relative price level adjusted terms, that has occurred since early 1997. This depreciation of the exchange rate has occurred against the background of the Asian crisis, which has resulted in New Zealand losing export markets (a change in the fundamentals). In this situation the depreciation of the exchange rate

has been interpreted as offsetting the loss of Asian demand, and as having been required to help maintain economic activity and avoid downward pressure on the domestic price level.

But it is never possible to know for sure - at least not at the time - exactly how much of a movement in the exchange rate is due to changes to the fundamentals, and how much may be inflationary (or deflationary).<sup>6</sup> Clearly, the conventional interest parity condition described in the box, which underpins the exchange rate channel of monetary policy, describes only one of the many influences on the exchange rate.

The challenge for central banks is to be able to separate the "monetary" factors - that is, those relevant to inflation - from all of the other things that shift the real equilibrium value for the exchange rate. Sometimes it may be obvious that something fundamental lies behind an exchange rate adjustment, and hence is of less concern for monetary policy setting. But usually this is not the case.

In the absence of certainty about the source of exchange rate changes, a prudent central bank will attempt to identify the consistent policy response that achieves the inflation target, and also results in as stable a path for the real economy as possible. The consistent policy response will depend on the typical pattern of shocks to which the economy is exposed, and the economy's inherent reactions to those shocks.<sup>7</sup>

Thus, in an economy where exchange rate developments more often reflect inflation shocks than real shocks, and/or where inflation expectations are not well anchored, it would be prudent for policy to offset the first round direct effects on tradeable prices of an exchange rate change. That is, the prudent monetary policy response would be to lean against the exchange rate change, at least until there are grounds for being more confident that it was the fundamentals that had changed.

---

<sup>6</sup> For example, Sachs (1985) and Frankel (1985) argue that very little of the appreciation of the US dollar during the first half of the 1980's was due to the long-run equilibrium exchange rate. Campbell and Clarida (1987) in turn argue that *ex ante* real interest differentials do not explain the appreciation. See also Baxter (1994) and McCallum (1994) for commentary on the viability of the UIP proposition.

<sup>7</sup> See Svensson (1997) for a discussion on the implications of uncertainty for inflation targeting.

On the other hand, in an economy where the exchange rate movements typically reflect fundamental factors, and/or where inflation expectations are better anchored, then movement in tradeables prices relative to domestic economy prices caused by exchange rate changes should typically be accommodated. In this situation, if monetary policy leans against exchange rate changes until strong evidence emerges of a real shock, then more of the real adjustment has to come through the domestic prices moving in the opposite (offsetting) direction (deflation of domestic prices in the case of a negative shock like the Asian crisis). The alternative, of allowing the exchange rate and thus the tradeables components of prices to adjust, means that there will be less offset and more movement in the overall level of prices in the economy.

Monetary policy in New Zealand falls in a middle ground, between reacting to exchange rate changes as if they were always inflationary (or deflationary), and assuming that exchange rate movements reflect changed fundamentals. Our positioning in the middle ground has shifted over time, towards - but by no means all the way to - the latter position. This transition is discussed in the next section.

## 5 From direct to indirect exchange rate effects

This section reviews how the Reserve Bank has approached the exchange rate when forming monetary policy since the adoption of inflation targeting. As experience has been gained with the inflation targeting regime, the inflation target horizon has shifted out. The Bank now targets inflation about 18 to 24 months ahead, compared with 6 to 18 months ahead in the early stages of inflation targeting. Coupled with this shift in the target horizon, the way in which the Bank has viewed the exchange rate has evolved.

In the initial period of inflation targeting, the Bank placed most reliance on transmission mechanisms it could identify with some confidence. One such mechanism was the direct price effect of an exchange rate change. There was less confidence about the longer-lagged indirect effects of interest rates and the exchange rate on inflation. But as low inflation has been sustained, and the transmission mechanisms have become better identified, the Bank has

increasingly relied less on the direct, and more on the indirect, channels of the exchange rate (and interest rates). In this respect, the inflation target horizon has become more forward-looking.

### Early experience with inflation targeting

In the early period of inflation targeting, the exchange rate was seen as a key variable in the formulation of monetary policy because of its rapid and reasonably well understood direct influence on future prices. As observed by the Governor, Don Brash, "in the early years of the disinflation process we tended to give predominant attention to what the exchange rate was doing. Indeed for some years we gave the impression that adjusting monetary policy to ensure that the trade-weighted measure of the New Zealand dollar moved within our perceived exchange rate "comfort zone" was our only concern" (Brash, (1996)).

Essentially for credibility reasons, the Bank was very concerned to ensure that inflation remained within its target band. The direct "pass-through" from exchange rate movements to the CPI was a means by which to achieve this with a reasonable probability of success. A "comfort zone" for the exchange rate, applying between formal quarterly reassessments of inflation prospects, was established. The width of the zone was based on an estimate of the extent of the "pass-through" within 12 months from changes in the exchange rate to consumer prices.<sup>8</sup>

The comfort zone was not enforced by any kind of exchange rate peg, but rather by the Bank standing ready to adjust monetary policy, that is interest rates, if required. It served as a mechanism to limit the extent to which the exchange rate could move between comprehensive quarterly re-assessments of inflation prospects. In effect the comfort zone reflected a cautious stance by the Bank with respect to exchange rate movements, and stemmed primarily from concern about their direct effect on prices.

<sup>8</sup> This co-efficient was estimated as the co-efficient on the foreign price term in the mark-up equation:

$$p = \alpha WP + \beta e + \gamma W$$

where WP = world price of tradeables, e = exchange rate, and W = wages (and other domestic cost terms).

Note that the equation is actually a long-run relationship and that the co-efficient corresponds more closely with the share of tradeables in the overall price index, but it tended to be interpreted as a 12 month pass-through.

## Towards real economy channels

More recently, there has been an evolution in our emphasis, with the indirect effects receiving more attention.<sup>9</sup>

This change of emphasis reflects at least three considerations:

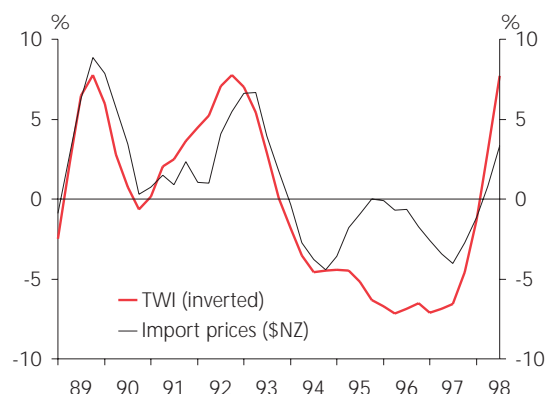
First, consider an exchange rate adjustment that stems from a change in the fundamentals. There will be a direct effect on tradeables prices, with this effect generally thought to be reasonably fully reflected in these prices within a year or so of the exchange rate adjustment occurring. If policy is to offset this effect on the price level - from the changed price of tradeable goods and services in the economy - it will need to be mainly through higher interest rates. But the effect of interest rates on aggregate demand, and thus on inflation, is slower. Hence, unless monetary policy is adjusted aggressively, there is not much it can do to prevent the direct effect of the exchange rate change on prices. Aggressive policy reactions are generally not preferred because, given the lags, they may generate unwarranted volatility in output, as well as in prices in the medium term. (More on this below.)

Secondly, the inflation target range for New Zealand was in December 1996 widened by 50%, from 0 to 2 percent per annum to 0 to 3 percent per annum. This implies there is now more scope to accommodate the direct effect of exchange rate movements on tradeables prices before breaching the band than previously.

Thirdly, recent evidence suggests that the direct effect of exchange rate changes on tradeables prices in New Zealand has become more muted than in the early years of inflation targeting. (Refer to figure 1.) It is apparent that import prices in local currency terms have, since about 1993, tracked movements in the exchange rate less closely than in earlier years. Thus, for the present at least, there is probably less cause for concern about the potential for a direct effect on the CPI from exchange-rate-induced shifts in relative prices.

The reasons for the pass-through having become more muted

**Figure 1**  
Import price index and the TWI  
(annual average percentage change)



are not clear. One possibility is that traders have adapted to the large swings that have occurred in the value of the NZD (and other currencies) by looking through the exchange rate cycle. Another is that, as trade has become more globalised, firms may have become more willing to operate on the basis of "swings and roundabouts" across different markets. Alternatively, the more muted response of (tradeables) prices to exchange rate changes may reflect that domestic demand was strong when the exchange rate was rising, and thus that firms were under little pressure to pass on the benefit by way of lower prices, and vice versa more recently when the exchange rate has been weak. In this sense, the phenomenon may be specific to the most recent business cycle, and not indicative of a permanent change.

## Inflation output variability tradeoffs

A more general motivation for the shift of emphasis towards a primary focus on the indirect effect of the exchange rate has been a growing body of research that suggests that central banks face a trade-off between variability in inflation and variability in output in the short term. This is not the same as saying that there exists a sustainable, or even an exploitable, trade-off between inflation and output **growth**; rather, that there is a trade-off between the degree of **variability** in one vis-a-vis the other.<sup>10</sup>

Indeed, this trade-off has always been recognised in the New Zealand inflation targeting framework. The Policy Targets Agreement includes so-called "caveats", that recognise that

<sup>9</sup> This is reflected in the Monetary Conditions Index (MCI) framework that the Bank has been using for the past year and a half. In this framework, as a rule of thumb, a two percent movement in the real exchange rate is considered to have about the same effect on aggregate demand, and hence indirectly on inflation in the medium term, as a one percentage point movement in the short term market benchmark (90 day) real interest rate.

<sup>10</sup> See Taylor (1993).

---

price level movements caused by major **relative** price shocks should be accommodated, at least to the extent that generalised inflation (or deflation) does not result. This is because, if policy were to attempt to offset the effect of such relative price shocks on the general, that is average, level of prices, there would be an unwarranted impact on real economic activity. Recent research<sup>11</sup> has tended to confirm that policies directed at achieving very strict price stability in the short run, in a world where the economy is being buffeted by external and real shocks, can result in unnecessary medium-term volatility in both output and inflation. In other words, by adopting a medium-term horizon for the inflation target, and hence being concerned primarily with the indirect exchange rate impact, monetary policy can achieve the desired medium-term inflation results with less output variability.

Why is this so? If the exchange rate depreciates because of, say, an adverse external shock, and monetary policy attempts to prevent any impact on the overall level of prices, including from the direct effect of the exchange rate, then monetary policy would have to be tightened aggressively. This would prevent the exchange rate from falling as much, and force some of the adjustment required to improve external competitiveness to come through lower domestic costs and prices.

Such a policy route would involve a greater short-term loss of output, or in other words, more variability in output, than if the exchange rate were allowed to carry more of the adjustment. And it may end up causing more instability in the price level as well. This could well be the case if the downward pressure on domestic costs and prices occurred with a longer lag than did the direct effect of the exchange rate on tradeable prices: thus a short policy horizon focused on offsetting the effect on tradeable prices might result in more instability in the price level overall. By contrast, if the Bank focused only on the indirect impact of the exchange rate on prices, then the policy response would be less active, but with more stable long-term inflation outcomes.

It follows that an inflation target can be achieved in many different ways, and that monetary policy choices may have different implications for the variability of output, monetary conditions, and inflation. Much of the Bank's current research effort is being directed at establishing a framework

for monetary policy that results in the most "efficient" outcomes. By this, we mean that research is focused on what policy response and target horizon minimises the overall volatility in output and in the policy instruments, while maintaining price stability.<sup>12</sup>

Much of this research remains "work in progress". However, some tentative conclusions are that:

- A "medium-term" horizon appears to be consistent with minimising volatility. Beyond a certain point, shortening the policy horizon results in little, if any, reduction in inflation volatility, but an increase in real output and instrument (ie interest rate) volatility. By contrast, a policy horizon that is too long results in more inflation variability. The research undertaken within the Bank suggests that a policy horizon of about 18 to 24 months ahead - broadly the Bank's policy horizon at present - strikes the right balance.
- When operating with a 18 to 24 months ahead inflation target, it is the indirect impact of the exchange rate which is most important. The short-term direct effect on the price level of exchange rate changes that stem solely from real or external economy shocks are probably best "looked through" by policy.
- A measure of "domestic" inflation may have some advantages as a guide to policy as compared to a broader expenditure-based measure of prices that includes imported goods and services. A measure of domestic inflation would cover only goods and services both produced and consumed in New Zealand (imports would be excluded). Such a measure would automatically exclude the **direct** effect of shocks to the prices of New Zealand imports arising either in world markets, or from the exchange rate. But to the extent that these sorts of shocks were to spill over, indirectly, to "domestic prices" - or in other words, change from a relative price shock to generalised inflation - they would be reflected in the measure of "domestic inflation".<sup>13</sup>

---

<sup>11</sup> See, for example Svensson (1997).

<sup>12</sup> See Drew, Hunt and Scott (1998)

<sup>13</sup> See Conway, Drew, Hunt and Scott(1998) for further discussion on this subject.

---

However, it remains uncertain whether a domestic inflation measure would necessarily be preferable. One downside of such a target measure would be a greater risk of misinterpreting exchange rate movements as “fundamental” shocks when, in reality, generalised inflation pressures may be emerging. Also, the Consumers’ Price Index carries the considerable benefit of being the measure of inflation that the public is most familiar with. Hence, any consideration of adopting a different measure would need to give careful attention to the implications such a change would have for the overall credibility of the inflation targeting regime. Also the simple adoption of a medium-term inflation target horizon, as the Bank has already done, should deliver similar outcomes.

## 6 Conclusion

For a small open economy, the exchange rate plays a central role in relation to monetary policy. It has an important influence on the overall level of prices, and is also influenced by monetary policy. But the relationships are not straightforward or mechanical.

A key point is that the implication of a move in the exchange rate for inflation depends critically on **why** the movement has occurred. And exchange rates can move for a range of reasons. But basically, those reasons can be simplified into two categories: “real” factors, or in other words, changes in relative fundamentals; and “monetary” factors. The latter relate to situations where monetary policy results in a level of aggregate demand that is not matched to the economy’s capacity to supply, or shifts in inflation expectations that spill over into wage and price-setting behaviour more directly.

In practice, policy-makers cannot know for sure, at the time, what mix of factors is influencing the exchange rate. It only becomes clear with the benefit of hindsight how much of an exchange rate change reflects changing fundamentals, and hence a necessary adjustment to relative prices, and how much reflects excess demand, and hence inflation pressures. However, because of lags in the impact of monetary policy, central banks have to implement policy not with hindsight, but with foresight.

Best assessments therefore have to be made. In the early stages of inflation targeting, when the credibility of the in-

flation target was not so well established, the inflation target was narrower than it is currently, and the monetary transmission channels were not so well understood, the Bank tended to rely more on the direct effect of the exchange rate on prices. This was reflected in the adoption of an exchange rate “comfort zone”, which bounded the extent to which the Bank was prepared to see the exchange rate move in the short run (without a monetary policy response). But as the Bank has established a track record of maintaining price stability, and experience has been gained, more scope has been allowed for the exchange rate to move in the short run. A corollary is that the Bank now takes a more medium-term view of the role of the exchange rate in monetary policy. There is less concern about the short-run, direct, effect on the prices of tradeable goods and services, and correspondingly more about whether exchange rate changes have the potential to spill over into domestic costs and prices, or in other words into generalised inflation.

## References

- Baxter, M (1994), ‘Real exchange rates and real interest differentials: Have we missed the business cycle relationship?’ *Journal of Monetary Economics* 33, 5-37.
- Brash, D T (1996), ‘Reducing inflation in New Zealand: some practical issues,’ in *Achieving Price Stability*, Federal Reserve Board of Kansas City Symposium Series.
- Campbell, J Y and R H Clarida (1987), ‘The dollar and real interest rates’, *Carnegie-Rochester Series on Public Policy* 27, 103-40.
- Conway, P, A Drew, B Hunt and A Scott (1998), ‘Exchange rate effects and inflation targeting in a small open economy: a stochastic analysis using FPS’ in *Topics in Monetary Policy Modelling*, Bank for International Settlements Conference Papers, Vol 6 Basle.
- Drew, A, B Hunt and A Scott (1998), ‘Efficient simple policy rules and the implications of uncertainty about potential output,’ paper prepared for the Reserve Bank of New Zealand Conference on Monetary Policy Under Uncertainty, June 29-30, 1998.
- Frankel, J (1985), ‘The dazzling dollar’, *Brookings Papers on Economic Activity* 1, 199-217.



- 
- McCallum, B T (1994), 'A reconsideration of the uncovered interest parity relationship' *Journal of Monetary Economics* 33, 105-32.
- Mishkin, F (1995), 'Symposium on the monetary transmission mechanism' *Journal of Economic Perspectives* 9(4), 3-10.
- Sachs, J (1985), 'The dollar and the policy mix: 1985', *Brookings Papers on Economic Activity* 1, 117-197.
- Svensson, L E O (1997), 'Inflation targeting in an open economy: strict vs. flexible inflation targeting?' Reserve Bank of New Zealand *Discussion Paper* G97/8.
- Taylor, J B (1993), 'Discretion versus policy rules in practice,' *Carnegie-Rochester Conference Series on Public Policy* 39, 195-214.