

# Currency hedging by exporters and importers

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This article summarises recent work undertaken at the Reserve Bank on currency hedging by exporters and importers. The work involved interviewing bank staff and business executives, reviewing data sources and previous studies, and undertaking simulations to estimate firms' gains or losses from hedging. It seems that in recent years, hedging activity has had a significant positive impact on exporters' incomes. While the level of hedging activity has apparently changed over time, there are still some issues as to how such changes could be accurately measured and monitored.

## 1 Introduction

In early 2004, our discussions with businesses were indicating that exporters were coping reasonably well with a high exchange rate. They appeared to be coping much better than they had back in 1997 when the exchange rate was last at a high point. Furthermore, in early 2004 economic growth was continuing to surprise on the upside, with few signs of a long-anticipated slowdown being evident. Could it be that currency hedging by trading firms, especially by exporters, had played a part in keeping firms' incomes relatively high, and that this in turn had influenced economic growth? This article summarises some recent work investigating this issue.

Figure 1 and Figure 2 show how the value of the New Zealand dollar has moved against the currencies of our major trading partners. Over the past two years our currency has appreciated significantly, especially against the US dollar, and this has driven the Trade Weighted Index (TWI) to a level that is similar to the levels of the mid 1990s.

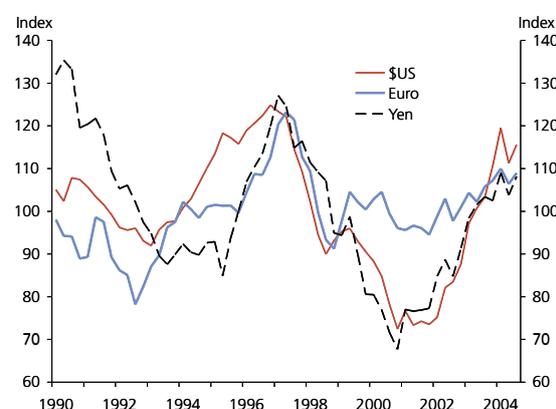
### What is currency hedging?

Suppose a firm receives an export order with the delivery date being in 3 months time. The contract is worth, say, \$US100,000. At the time the contract is placed, the New Zealand dollar is worth say \$US 0.650. Hence the value of the order, when placed, is \$NZ 153,850 (100,000 divided by 0.650). But suppose that the exchange rate changes significantly between the date when the order is received and the date the order is paid for (which we will assume is one month after the delivery date). The value of the New Zealand dollar on payment date is \$US 0.680, which means that the

Figure 1

Value of the New Zealand dollar relative to trading partners' currencies

Index, base: average for 1990–2004 = 100

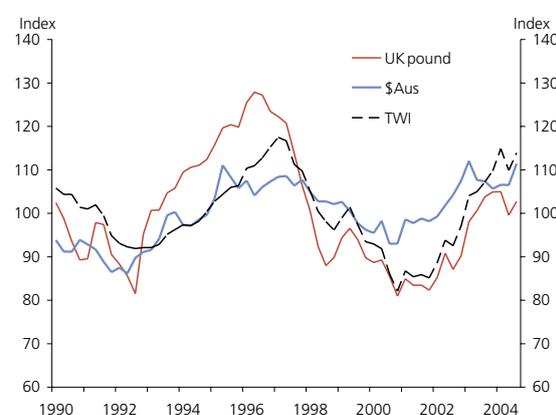


Sources: Reserve Bank of New Zealand; data for the euro prior to 1999 is a synthetic series from Bank of England (2002).

Figure 2

Value of the New Zealand dollar relative to trading partners' currencies

Index, base: average for 1990–2004 = 100



Source: Reserve Bank of New Zealand.

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firm receives only \$NZ147,060 rather than \$NZ153,850. To insure against this happening, the firm can, at the time it receives the order, take out a forward exchange contract.

A forward exchange rate contract involves contracting to buy or sell a foreign currency at a future date at an agreed exchange rate. Generally this exchange rate will not be the same as the spot rate at the time the contract is signed, although the difference is unlikely to be large. The difference reflects the differential between New Zealand interest rates and foreign interest rates, which in our example above, would be US interest rates. (For a fuller explanation of this see Brookes et al, 2000).

A forward contract enables an exporter to “lock in” an exchange rate that will apply to its future export earnings, with this locked-in rate being similar to the spot rate at the time the contract is taken out. An importer can also use a forward contract; in this case the firm will agree to buy foreign currency at a future date in order to pay for the products that it intends to import.

A forward contract is a form of financial derivative. A derivative is a contract whose value depends on the value of some “underlying” asset. In this case, the underlying asset is foreign currency.<sup>1</sup> An exporter or importer in New Zealand would usually take out a forward contract with a domestically based bank, although other agencies offer similar products. However, forward contracts are not the only type of derivative used for currency hedging. A firm may choose instead to take out an option. An option gives a firm the right to buy or sell currency at a particular price on a particular day. However, the firm is not obliged to buy or sell the currency at that price; it can choose not to. With forward contracts, firms are generally obliged to go through with the contract. However, there is a catch to using options: the cost to a firm of taking out an option will generally be higher than the cost of taking out a forward contract (Brookes et al, 2000).

## Gains and losses from hedging

In the short term, firms can make gains or losses from hedging. We can define a gain, or loss, as the difference between the income obtained using a hedged exchange rate and the income that would have been earned from the transaction if the spot rate had been used. In the example above, the gain from hedging to the firm would be \$6,790 (\$153,850 minus \$147,060). If, however, the value of the New Zealand dollar had actually fallen over the term of the forward contract, rather than risen, the contract would have produced a loss. Even so, the firm would have still received the amount that it had expected to get when taking out the contract (ie: \$153,850). The firm would have had the benefit of knowing exactly how much it was going to get from its export deal and would have avoided the uncertainty associated with future exchange rate movements.

Any gains or losses from hedging transactions are recorded in firms’ accounts. Under current accounting practices, some firms incorporate these gains or losses in final sales, while other firms identify them as foreign exchange gains or losses.

Over the long term, a firm might expect to lose as much as it gains from hedging. For example, suppose an exporting firm is hedging all of its forward orders. While the firm would make gains from hedging while the New Zealand currency was appreciating it would make losses while the New Zealand currency was depreciating. In this case, the main advantage to the firm in taking forward cover is that it knows what its final return from an export order will be. However, a firm might decide to “take a position” regarding the exchange rate. In this case, an exporting firm would increase the amount of forward cover that it takes when it expects the currency to appreciate, and lower the amount of cover when it expects the currency to depreciate.

One reason why economic analysts and forecasters are interested in the gains or losses from hedging is that they are not included in the values for exports or imports published as parts of the expenditure measure of GDP (see box). Hence, these published values do not reflect either the full returns to firms from exports or the full costs of imports. To get a better look at the impact of overseas trade on firms’

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<sup>1</sup> See Hawkesby (1999) for more information on derivatives markets.

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## Box

### Hedging and GDP

Values for exports and imports in the expenditure measure of nominal GDP do not include gains or losses from hedging. This is because GDP measures the value of production at market prices. Hence for merchandise trade, Statistics New Zealand aims to value imports and exports using the exchange rate on the date that goods enter or leave the country. This date is taken to be a good proxy for when the goods actually change ownership. In effect then, Statistics New Zealand is valuing goods on basis of the original (unhedged) transaction. (There are, however, some practical difficulties in doing this, and it seems likely that some hedging is included in the merchandise export figures.)

While the gains or losses from hedging are not in theory included in the values for exports and imports, they do nevertheless have an impact on firms' earnings and balance sheets. Within a full system of national accounts, which is the accounting framework used for economic aggregates, the gains or losses from hedging would appear in the reconciliation or revaluation account. As the name implies, this account covers revaluations of assets and liabilities. Unfortunately, reconciliation accounts, and balance sheets, are not available for some sectors of the New Zealand economy, or for the country as a whole.

While hedging gains or losses are not directly included in GDP, they can affect the level of economic activity, and can therefore have an indirect impact on GDP. If, for example, there was any substantial net gain from hedging, with the overall gains from hedging outweighing the losses, the likely effect would be to lift activity and GDP. However, this effect would be indirect, and probably lagged. The lift in GDP would occur via higher investment activity (because firms experience stronger cash flows) or higher private consumption (because firms are paying out higher dividends or higher wages, both of which affect household spending).

There may also be some direct effects from hedging on GDP. For example, hedging may allow a firm to keep exporting when it would have otherwise withdrawn from the export market. In such a case, export volumes would be higher than they would have otherwise been. In this project, we have made no attempt to estimate these direct effects.

incomes, we need to have estimates of the gains and losses from hedging.

There is a possibility that any net gains from hedging for non-financial sector firms are offset by corresponding net losses for financial sector firms, which are generally the other parties involved in hedging contracts. The final impact of hedging contracts on GDP is therefore likely to depend on whether financial sector firms have adequate forward cover for the contracts that they have with New Zealand firms. This is unlikely to be a problem. First, foreign exchange transactions related to trade flows are only a small proportion of all such transactions (less than 2 per cent according to figures in Munro, 2004). Most transactions

relate to flows of capital items. Hence it seems likely that most financial institutions, in the context of these larger flows, are able to arrange their assets and liabilities so that their own exposure to exchange rate fluctuations is relatively small. Second, financial sector firms will arrange financial derivatives with foreign counterparties as they seek to cover their own exposure to exchange rate movements.

In this project we focus on the gains and losses from hedging made by non-financial sector exporters and importers on trade. In doing this, we look at only a small part of the foreign exchange market. Nevertheless, it is an important part, given its possible impact on GDP.

## Research questions and method

Our major research questions were:

- Has currency hedging significantly altered the incomes of exporting firms over recent years, thereby playing a part in keeping economic growth high?
- Has firms' hedging behaviour changed over time?
- How can hedging activity be measured and monitored in future?

Our approach to answering these questions involved:

- discussions with banks;
- reviewing existing data and previous studies on hedging in New Zealand;
- discussions with business: we used the results of these discussions to make initial estimates of the gains and losses from hedging over recent years.

The remainder of this article looks at this work and draws some conclusions.

## 2 Discussions with banks

We held discussions with bank staff who provide hedging products for exporters and importers. We spoke with people at three major banks: ANZ National, Westpac, and BNZ. Our discussions were informal, our aim being to get a better understanding of what was going on with respect to hedging activity, rather than to collect data.

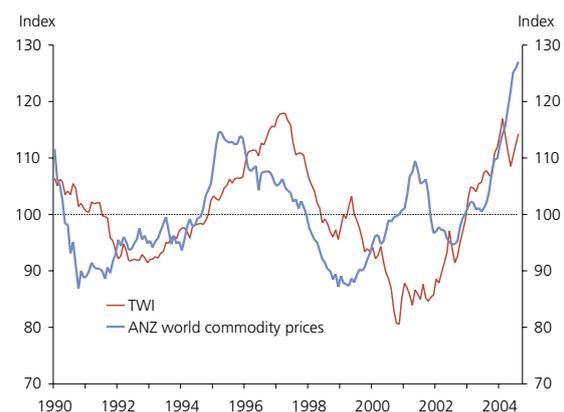
Firms had so far been coping well with the high exchange rate. Bank staff confirmed that so far the high exchange rate seemed to have caused distinctly less discomfort from their exporting clients than in the earlier cycle. Four factors were seen as having contributed to this greater resilience:

- A favourable starting point. The unusual combination of high commodity prices and low exchange rate through 2001 meant that exporters had got a double boost to their earnings and this had resulted in an improvement in their balance sheets ahead of the appreciation phase (see Figure 3).
- Exporters had hedged heavily while the exchange rate was low. Banks reported that many of their exporting

clients had taken out unusually large amounts of forward exchange cover in 2001 when the exchange rate had been low. Some firms had sought approval from their boards of directors to hedge more of their sales or to hedge for longer time periods than their hedging policies would usually allow. Although this long-term hedging had now largely expired, it had delayed the effect of the appreciating exchange rate on export earnings.

- Commodity prices had offset the TWI's recent rise. The re-establishment of the usual positive correlation between commodity prices and the exchange rate had helped offset the impact of a higher NZD on exporter revenues. During the mid-1990s, exporters had run into difficulties when the commodity prices had begun to decline while the TWI was continuing to rise (Figure 3).
- Firms increasingly believe that the exchange rate moves in cycles. There seemed to be a greater acceptance by firms of the cyclical behaviour of the exchange rate – bank staff reported that there was a growing sense in the export sector that “what goes up will come down”. This meant that exporters had been less willing to hedge when they saw the exchange rate reach high levels (US65c+). Those firms that were still hedging were tending to take shorter-term cover or to make greater use of options. Options provided them with some insurance if the exchange rate continued to appreciate but would not result in them being locked in at high levels if the exchange rate did start to depreciate. Consistent with this behaviour, bank staff had a strong sense that their

**Figure 3**  
**Commodity prices and the TWI**  
Index, base: average for 1990–2004 = 100



exporting clients currently had less exchange rate cover than in recent years.

But there were some risks regarding future exchange rate movements. The tendency to shorten hedge duration and make greater use of options meant that exporters' hedging would not provide such a large negative offset to export earnings when the exchange rate did depreciate.

However, the recent reduction in hedging activity meant that exporters were very exposed if the New Zealand dollar continued to appreciate. Continued appreciation would be particularly problematic if it was accompanied by a fall in commodity prices.

Also, while the export sector had so far been better placed to deal with the appreciation in the exchange rate than it had been in the mid-1990s, this did not imply that they were necessarily in a position to withstand a prolonged period where the exchange rate stayed high.

### Hedging behaviour by industry

Following our discussions with bank staff, we attempted to summarise what the usual period of forward cover is for each sector (see the table below). Generally, the period mentioned in the table is the maximum length of time for which firms in that sector would arrange forward cover. However, as noted above, bank clients appeared to be currently covering for shorter-than-usual periods of time.

A general rule of thumb, according to some bank staff, is that firms which "own" the goods they are selling, such as forestry firms, tend to hedge for relatively long periods, while

**Table 1**  
**Forward cover by industry**

Industry	Maximum period for which forward cover is usually arranged
Forestry	18 months
Dairy	15 months
Wool	6 months
Fishing	Variable
Manufacturers	Tend to always hedge confirmed export orders; purchases of imported capital equipment often hedged when confirmed
Meat	Generally very short term (even weekly)

"margin firms", such as meat producers, tend to hedge for shorter periods. Margin firms want to keep open the option of increasing the prices that they pay to their suppliers if the exchange rate were to fall. If they can't do this, because of their hedging, then their suppliers may move to dealing with competing firms who aren't hedged.

## 3 Review of existing data sources and recent studies

### Existing data

One place to start looking for data on hedging is in the data releases on the balance of payments and the International Investment Position (IIP) which are produced each quarter by Statistics New Zealand. The IIP data shows the stock of the economy's international financial assets and liabilities. New Zealand's assets include equity assets and financial assets, while the country's liabilities include equity liabilities and financial liabilities. Financial assets include financial derivatives; the totals for these assets refer to the "in the money" positions of derivatives to which enterprises resident in New Zealand are a party. A derivative is said to be "in the money" when its current value, calculated using current market rates for the underlying asset (eg: using the current exchange rate), is such that it would produce a gain.<sup>2</sup> Similarly, financial liabilities also include financial derivatives; the totals for these refer to the "out of the money" positions of derivatives to which enterprises resident in New Zealand are a party.

Can this data be used to calculate, or to even get a rough idea of, how much hedging is being done by New Zealand firms? The major problem is that the financial derivatives referred to in the IIP cover arrangements between New Zealand firms and foreign firms. That is, for each of these derivatives there is a New Zealand party and a foreign counterparty. However, a large proportion of the derivatives that New Zealand non-financial sector firms take out to cover exports and imports are with banks resident in New Zealand. Hence these derivatives are not included, at least directly, in the IIP.

<sup>2</sup> This is an unrealised gain. The actual gain, or loss, resulting from the derivative will depend on the value of the underlying asset at the time the contract matures.

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It can be argued though that they are included indirectly since banks handle their own foreign currency exposures by arranging derivatives with foreign counterparties. Some of these derivatives will cover the exposures resulting from derivatives between banks and resident firms.

There is another reason why the IIP data are not useful in estimating the level of hedging related to exporting and importing. Many of the financial derivatives referred to in the IIP are likely to cover capital transactions – such as debt servicing costs and the repayment of debt – rather than just transactions related to trade.

An annual supplement to the IIP survey collects some data on hedging. However, while this survey gives information on the levels of foreign currency denominated debt covered by financial derivatives, it does not give any information on the hedging of trade flows.

Looking across the Tasman, the Australian Bureau of Statistics (ABS), with support from the Reserve Bank of Australia (RBA), supplemented its quarterly survey of international investment in June 2001 with an additional questionnaire on foreign currency hedging. However, the ABS not only asked questions about the hedging of debt, as our IIP supplementary survey does. The ABS also attempted to collect data on foreign currency denominated receipts and payment from trade in goods and services expected in the 12 months to June 2002, and the hedging of these expected transactions. However, the data on trade flows was not considered to be sufficiently robust to publish. Clearly, there are difficulties involved in trying to get accurate estimates of the hedging of trade flows via mail surveys of firms.

We also looked at data from the triennial survey on foreign exchange and derivatives activity undertaken by the Bank of International Settlements (BIS), and also at the data from the RBNZ's daily foreign exchange turnover survey. The BIS survey collects data on forward transactions. However, it is not possible to accurately estimate what proportion of these transactions relates to trade flows and what proportion relates to capital transactions, such as the purchasing of financial assets. There are similar difficulties with the data from the RBNZ survey.

## Studies on hedging

Over the last decade a number of studies have been undertaken in New Zealand on the use of derivatives by local firms. The studies are generally of two types:

- those which analyse firms' annual reports and relate the level of derivative use to other characteristics of the firm (Berkman and Bradbury, 1996, is an example of this type of study); and
- those which survey firms directly, asking them about derivative use (Prevost, Rose and Miller, 2000, is an example).

Most of these studies have had a management or accounting focus. It is probably fair to say the motivation behind some of the studies was to see how firms were handling derivative use in the wake of the derivative-related problems which beset some overseas firms in the 1990s.

Generally, the studies show that the use of derivatives by New Zealand firms has increased over time, but that derivatives are now being used more conservatively. For example, the use of exchange-traded instruments has fallen and most firms use over the counter products, supplied by a domestic bank. Big firms tend to use derivatives more than small firms. The use of derivatives by firms in New Zealand is higher than in the US, but is at a similar level to that of firms in the UK and Germany.

None of the studies we reviewed attempted to estimate the financial gains or losses from hedging.

## 4 Visits to businesses

As part of our business visits undertaken during 2004, we asked firms a number of questions regarding their hedging practices. The questionnaire was generally meant to initiate informal discussions with firms about their hedging, but as we will see below, it was possible to use the results to make tentative estimates of the level of hedging, and its effects on the returns from trade.

Only a few of the firms which we interviewed were in the service sector. We therefore decided to exclude them from our analysis and focus on firms that were producing and

selling goods. Our suspicion is that only a relatively small proportion of service sector exports are hedged. A large proportion of services exports are related to tourism, and such services tend to be priced in New Zealand dollars.

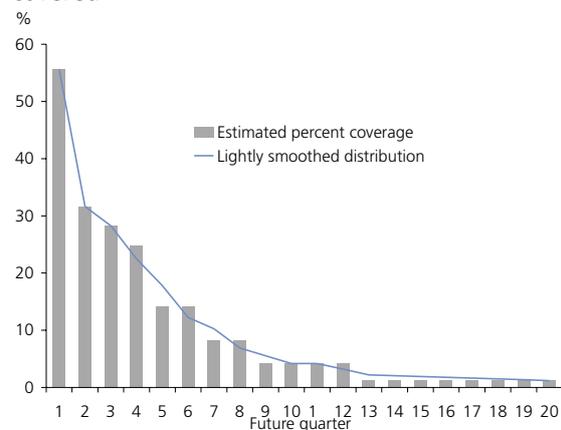
We ended up with 42 documented interviews with goods-producing firms. Of these 42 firms, 25 were exporting, and of these 20 were hedging. Only 16 of the 42 firms were importing directly, and of these, 12 were hedging their imports.

Some of our general findings were as follows:

- Many, but not all, companies take forward cover for firm orders. Hence the majority of cover taken is for around 3 months.
- Forward contracts are used for most short-term cover. There is an increasing use of options for longer term cover.
- Some firms cover all of their expected exports, particularly for the coming quarter, but other firms cover only a proportion of their exports.
- In line with what the banks had told us, we found that some exporters tend to increase their cover, and to take it for longer, when the exchange rate is low. They also tend to reduce cover, or use options instead of contracts, when the exchange rate is high. Other firms take no view on the currency, using their hedging rules to smooth income, and allowing the firm to focus on growing its business over the long term.
- One exporter noted that hedging buys time when the exchange rate appreciates, allowing the company to focus on improving productivity.
- The major currencies for which exporters are hedging are USD, AUD, the euro, the pound, and the yen. The USD probably wasn't as dominant as we had expected. (This tallies with what one bank told us: that the USD accounts for around 40–50 per cent of the total.)
- Importers also hedge. An accounting company that we visited reported that its importing clients have now locked in "a lot of cover". Some exporters also take forward cover for imported capital equipment.

Of the 20 exporters who were hedging, all of them gave us an indication of the maximum time horizon over which they were hedging. Most firms also gave us an indication of the proportion of future exports that they were covering. From this we were able to derive a distribution, across future quarters, of the proportion of expected exports that were covered (see Figure 4).

**Figure 4**  
Distribution of export cover (sampled firms)  
Percent of expected goods exports that are covered



The bars in the chart are our estimates of the percentage of expected exports that are covered into the future. The line is a lightly smoothed version of the distribution. In this version, the coverage rate declines steadily over time.

In deriving this distribution, we have assumed that all surveyed firms have equal weight. In reality, our surveyed firms will be of different sizes, and will export markedly different amounts of product. Even so, it is tempting to think that our distribution might broadly describe the hedging behaviour of New Zealand goods exporters. There is at least one glaring omission from our sample though – it does not include New Zealand's biggest exporter, Fonterra. From public statements made by Fonterra, it appears that the firm covers all of its expected exports, and is continually taking on cover for 15 months ahead. Assuming that this is correct, we have derived a distribution for Fonterra and combined it with our smoothed distribution from Figure 4.

The result is shown in Figure 5. Note the big step down in the distribution between quarters 5 and 6. This is the result of Fonterra's hedging for 5 quarters out, but no further.

We now use this distribution to estimate the effects of hedging on export returns. We assume that this distribution is the “desired” distribution of New Zealand firms for each quarter. This isn't realistic – we know that the desired distribution is likely to change over time, especially as the exchange rate changes. Also, Fonterra's hedging strategy has changed over time. Hence, in using this distribution to estimate past gains or losses from hedging, we are simply aiming for ball-park figures, which, as our literature review showed, do not seem to currently exist.

**Figure 5**  
**Assumed distribution of export cover (all firms)**  
**Percent of expected quarterly goods exports that are covered**

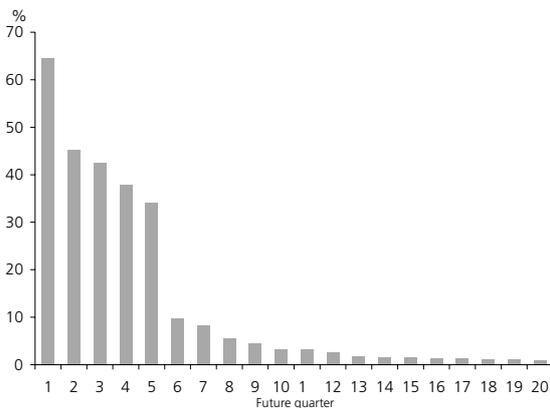
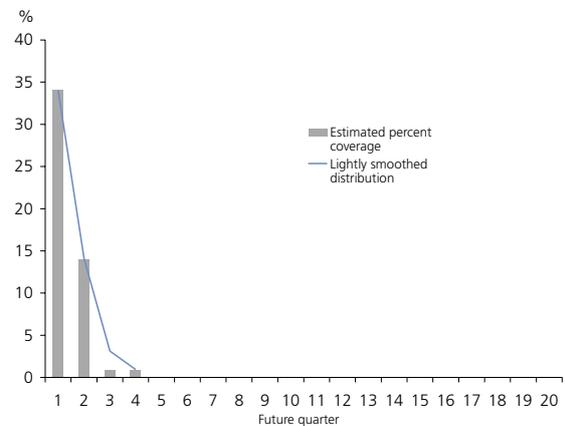


Figure 6 shows the distribution for imports as derived from our sample of firms. The smoothed distribution is assumed to apply to all firms. Like our earlier distribution for exports, this distribution is indicative only. However, it appears that forward cover for imports is for a much shorter duration than for exports, and that the proportion of transactions covered is also lower.

**Figure 6**  
**Distribution of import cover (sampled firms)**  
**Percent of expected goods imports that are covered**



Returning to exporters, we use a truncated version of the distribution in Figure 5 – a version going out only 12 quarters – to estimate the gains or losses to exporters from currency hedging. This estimation involves a number of steps:

- We use the distribution to estimate the new cover that is taken on each quarter, This is fairly straightforward. Let's assume that the distribution in Figure 5 applies in all quarters. Suppose we now move one quarter into the future. The 65 per cent cover that we had for one quarter out now matures, and the cover that we had for quarter 2, which was 45 per cent, now becomes cover for one quarter out. But if we want to keep the distribution the same as before, we now have to top up this cover from 45 per cent to 65 per cent. That is, we have to take on 20 per cent more cover. It's a similar situation across the distribution – we have to top up the cover in each category so that it matches the previous level for that category. Hence, the new cover taken on for each category is the difference between adjacent bars in Figure 5. Now that we have the distribution of new cover taken on each quarter, we can easily derive a distribution that shows the age (in quarters) of the cover that is maturing in a particular quarter. This is the distribution that we use in our simulations.
- We assume that exporters can accurately predict their future export sales. That is, we assume that expected sales will equal actual sales, as finally measured via trade data. This means that we can apply our age distribution

of maturing cover, which is expressed in percentage terms, to actual sales, in dollars, and obtain values, in dollars, for the exports that are covered.

- We make some further simplifying assumptions. We assume that all the cover is in the form of forward contracts, and we ignore the fees involved in setting up these contracts. More importantly, we assume that the exchange rate that is set in the forward contract is equal to the spot rate for the quarter in which the contract is taken out. In reality, it will differ from the spot price owing to the difference between local and overseas interest rates. Finally, in using GDP values for goods exports and goods imports, we are assuming that they exclude all hedging.
- The final calculations are relatively straightforward. For each quarter, we calculate export earnings using the hedged rates (ie: using the exchange rates from earlier quarters, when the hedging was taken out). The difference between this total and actual export earnings, as measured in the GDP accounts, is the gain or loss from hedging.

Using the distribution in Figure 6, and taking a similar approach, we also estimate the gains or losses from the hedging of imports.

As Figure 7 shows, the estimated gains from hedging were positive in the mid-1990s as the exchange rate rose, but turned negative in late 1997 as the exchange rate fell. The gains became positive again in 2002 and were particularly high over the year to March 2004, when they averaged nearly 6 per cent of total exports. (Note that we are using total exports in the denominator; as a proportion of goods exports, the gains averaged nearly 8 per cent).

These gains seem high. It could be argued that they are maximum values, given that our hedging distribution was derived from a sample of large- and medium-sized firms. We know from our review of hedging studies in New Zealand that small firms generally hedge less than large firms. Hence, in reality the level of hedging may not be as high as we have assumed in our simulation, and hence recent gains may be lower.

The forecast values in Figure 7 were produced using the output from the Reserve Bank's macroeconomic forecasts for the September 2004 *Monetary Policy Statement*. On the basis of these forecasts, the gains from hedging are now declining, and can be expected to turn negative in 2005, provided that the exchange rate declines as assumed in the September MPS.

**Figure 7**  
**Estimated gains from hedging on exports**  
**\$million, and percent of total exports**

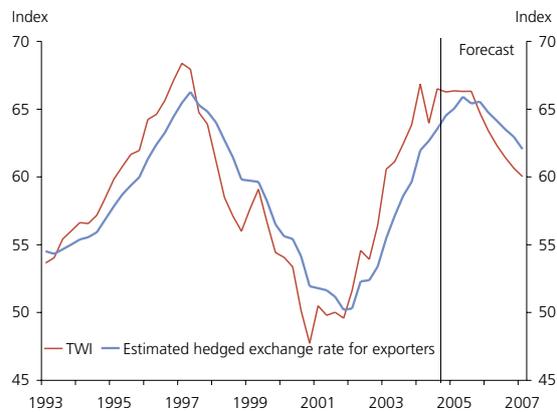


Figure 8 shows the "hedged exchange rate" that exporters face, and the spot rate. The hedged rate is smoother than the spot rate, indicating that hedging does decrease the short-term variation in export returns. Also, the hedged rate doesn't quite reach the peaks or the trough that the spot rate does. This is because the hedged rate is made up of hedged transactions and some unhedged transactions. Only the unhedged transactions are undertaken using the highest (or lowest spot) rate; the hedged transactions are undertaken using earlier values of the exchange rate. For the same reason, the hedged rate lags the spot rate. The average lag length was estimated to be around 2.4 quarters.

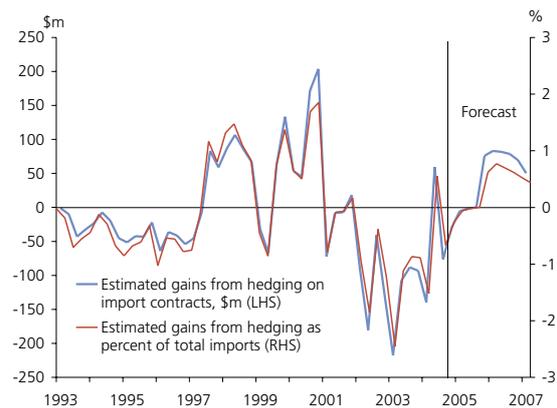
This simulation suggests that the peak in the hedged rate will not occur until the June 2005 quarter. Despite this, the recent gains from hedging have been only a partial offset to the effects of a higher exchange rate. Figure 6 illustrates this; the hedged rate, as well as the spot rate, has risen sharply since 2002 and this has lowered export returns. If we were getting a full offset from hedging, the hedged rate would be flat (ie: constant).<sup>3</sup>

Figure 9 shows the gains from hedging for importers. As we would expect, they move in the opposite direction to gains from export hedging. The gains have largely been negative recently, indicating that as the exchange rate has risen, importers who had been hedging have in fact paid more for their imports than importers who hadn't hedged.

**Figure 8**  
**TWI and "hedged exchange rate" faced by exporters**  
**(Quarterly average value)**



**Figure 9**  
**Estimated gains from hedging on imports**  
**\$million, and percent of total imports**



<sup>3</sup> The argument here is not that a flat hedged rate is, in itself, a desirable thing. A flat hedged rate would result in big variations in total export earnings owing to cyclical changes in commodity prices.

Note that the absolute size of the gains or losses from imports are estimated to be much lower in magnitude than those from exports. This finding reflects the lower amount of cover put on. The average lag length between the spot exchange rate and the hedged rate was estimated to be 0.5 quarters, much shorter than the estimated 2.4 quarters for exporters.

## 5 Conclusions

Our simulations – despite all their assumptions and approximations – back up the view that exporters' gains from hedging have been relatively large over recent years. These gains have helped to offset the effects of the sudden exchange rate appreciation on export returns. While importing firms have suffered losses from hedging over recent times, it seems that these losses were lower than exporters' gains. It seems reasonable to conclude that over the last two years, hedging has significantly altered the incomes of firms, and indirectly affected consumption and investment, thereby helping to keep economic growth high.

However, as noted earlier, over the longer term, many firms would expect to lose as much as they gain from hedging. Most of the gains from hedging should not be seen as being windfalls, but rather as offsets to the losses arising from exchange rate movements. Our interest in estimating hedging gains or losses has been largely due to the fact that these gains and losses – these offsets to exchange rate movements – are not accounted for in the GDP figures for exports and imports.

Our simulations were undertaken assuming that firms didn't change the distribution the forward cover they were putting on. In effect, we were assuming that firms were not "taking a view" on where the exchange rate would go. Even so, our simulations indicated that there are benefits from hedging. While many of these seem obvious, they are probably worth listing:

- The hedged exchange rate is smoother than the spot rate in the short term, reducing the variability in export earnings that arise from sudden exchange rate movements.

- The hedged rate reaches neither the peaks nor the troughs of the spot rate. Hedging has probably enabled some firms to keep exporting during the last year, rather than withdrawing from foreign markets as exporting became unprofitable.
- There can be a significant lag between changes in the spot rate and the hedged rate. When the exchange rate is appreciating, this lag “buys time” for exporters, giving them the opportunity to implement productivity improvements or to change exporting strategies. On the other hand, when the exchange rate is falling, hedging delays the benefit of higher export returns, which may be much needed.
- Hedging can have some impact on export earnings even over the medium term (2–3 years), providing some offset – albeit a limited offset – to the impact of exchange rate movements on earnings.

Overall the benefits from hedging for a firm are largely in terms of smoothing income, rather than producing net increases in income.

Some issues still remain regarding the measurement and monitoring of hedging. We know from our discussions with banks that many firms do take a view on where the exchange will go and adjust their forward cover in the light of this. However, there are currently no suitable data sources that would allow us to accurately measure these changes. Furthermore it seems unlikely that a direct survey of firms, as attempted by the ABS in Australia, would give us anything more than rough estimates of the level of hedging. The best approach to getting accurate measures of hedging cover, and of changes in hedging behaviour, may be via banks’ administrative records of the forward cover that they provide for clients. We are currently talking to banks about whether it would be feasible to analyse this information. Clearly there would be a need to ensure that information relating to individual bank clients remains confidential, and that only aggregate data is used.

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