



Hedging overseas foreign currency liabilities: The New Zealand experience

Paper presented at New Zealand Association of Economists conference
at Wellington, New Zealand,
1–3 July 2009

Wayne Dahlberg

Statistical Analyst, Statistics New Zealand
P O Box 2922
Wellington, New Zealand
info@stats.govt.nz

www.stats.govt.nz

Liability statement: Statistics New Zealand gives no warranty that the information or data supplied in this paper is error free. All care and diligence has been used, however, in processing, analysing and extracting information. Statistics New Zealand will not be liable for any loss or damage suffered by customers consequent upon the use directly, or indirectly, of the information in this paper.

Reproduction of material: Any table or other material published in this paper may be reproduced and published without further licence, provided that it does not purport to be published under government authority and that acknowledgement is made of this source.

Abstract

Statistics New Zealand publishes an annual data series estimating the aggregate value of foreign currency debt to overseas entities and the level to which businesses have mitigated their foreign exchange exposure through hedging. The data used to produce these statistics relates the hedging behaviour of New Zealand enterprises to their foreign currency liabilities to overseas entities.

This paper uses the original returns from the annual Hedging of Overseas Foreign Currency Liabilities Survey for the past six years (2003-08) to create disaggregated data on overseas foreign currency liabilities of individual firms by currency, according to the institutional sector of the firm, the size of the debt and nature of the debt, and the relationship between the firm and its overseas creditors.

It identifies the extent to which there are significant differences in the hedging behaviour of firms in New Zealand, and whether their hedging behaviour has changed over the past six years (2003-08). The results indicate the extent to which New Zealand resident firms are exposed to foreign currency risk through their liability structure of their balance sheets.

Caveat: No individual enterprise data is divulged.

Acknowledgements and disclaimers

Foremost, I would like to thank Statistics New Zealand for allowing me access to the Hedging Survey information in order to prepare this paper. Most importantly, thank you for your help and cooperation.

Statistics New Zealand assures the providers of the information in the Hedging Survey that no information is published that could be used to identify an individual firm. No information in this discussion will be attributed to an individual firm and no information will be provided that could be attributed to an individual firm.

The opinions put forward in this paper are the opinions of the author and not those of Statistics New Zealand.

Finally, I would like to acknowledge the help of the friends and colleagues who have provided advice and feedback during the preparation of this paper. Any mistakes that may be found in the paper are the honest mistakes of the author.

Introduction

This paper reports on a study that used the original returns from the annual Hedging of Overseas Foreign Currency Liabilities Survey (the Hedging Survey) for the past six years (2003–08) to create disaggregated data on individual firm's overseas foreign currency liabilities by currency.

This study undertook empirical analysis of the data according to the institutional sector of the firm, the size of the debt, the nature of the debt, and the relationship between the counterparties, that is, the firm and the overseas creditors.

The objective was to identify the extent to which there are significant differences in hedging behaviour of firms in New Zealand, and to establish whether their hedging behaviour has changed over the past six years (2003–08).

Results

The results indicate the extent to which New Zealand resident firms are exposed to foreign currency risk through their liability structure of their balance sheet.

- The hedging behaviour of enterprise groups is dependent on the activity or business of the enterprise and its size.

These factors influence the enterprise groups' decisions regarding financing and transactions with the rest of the world, and therefore affect the level of its foreign currency debt balances.

- The level of the foreign currency denominated overseas debt, its purpose, and maturity affect the type of instrument that is used.

These factors and especially the value of the debt affect who the enterprise group decides to raise the debt with, either related or unrelated counterparties.

- The size of the debt and the enterprise group's relationship with the counterparty has huge influence on the type of hedging behaviour exhibited.

The Hedging Survey shows that a very large proportion of foreign currency denominated overseas is hedged using financial derivatives and natural hedging.

- The ownership of the enterprise groups effects the type of hedging behaviour exhibited.

When enterprise groups that are overseas-owned and belong to multinational enterprise groups undertake financial arrangements denominated in a foreign currency with their overseas related group, the effect of any foreign currency movements on the value of the group will be zero.

Background to exchange rate movements and hedging

New Zealand firms' involvement in financial arrangements or trade involving cross-border dealings with overseas counterparties can result in either benefits or costs due to exchange rate movements.

Businesses may benefit from windfall additional income due to exchange rate movements. Conversely, the costs of windfall losses can be greater than just the value of the loss of income if they affect the relationship between the business and its counterparties. The stability of a business is often judged by the way in which it has managed, or is seen to manage, its exposure to adverse economic events including the impact of exchange rate movements.

The stability of an individual economy may be judged by the extent to which the collective behaviour of the entities within it are able to use hedging behaviour to mitigate the risk and costs associated with adverse exchange rate movements.

For these reasons, the foreign currency exposure of New Zealand firms has an important influence on the resilience of the New Zealand economy to exchange rate movements.

Hedging is the primary mechanism recognised as mitigating the affect of exchange rate movements on an individual business or an economy (see Becker & Fabbro, 2006, for a discussion on limiting foreign exchange exposure through hedging).

Hedging behaviour to insulate against exchange rate movements can be summarised into three categories:

- Hedging using financial derivatives
Firms may use financial derivative contracts to insure against exchange rate movements. These may take many forms, such as foreign exchange forward contracts, currency futures, cross-currency interest swaps, and the more flexible foreign exchange options.

While the first three derivatives lock the holder into a contract at a predetermined price, foreign exchange options provide the holder with the right but not the obligation to purchase ('call') or sell ('put') at a contracted exchange rate. This allows the holder greater flexibility and does not deny the holder ability to take advantage of favourable exchange rate movements.

There are two basic forms of foreign exchange options: the European-style option which can only be exercised at the expiry date set in the contract, and the American-style option which can be exercised at any time from the date the contract has been taken out up to the expiry date of the contract.

- Hedging using balance sheet assets
Firms may choose to invest in or use foreign currency assets/liabilities to hedge foreign currency liabilities/assets.
- Hedging using expected future receipts/expenses
Firms may use a stream of future receipts or expenses in foreign currency to hedge the cost of foreign currency expenses or income from foreign currency receipts.

Aggregate data in published statistics

The empirical analysis reported in this paper looks at disaggregated data available from the annual survey of Hedging of Overseas Foreign Currency Liabilities (Hedging Survey) to see what could be added to the topic in the context of the New Zealand economy.

Statistics New Zealand has run the Hedging Survey, benchmarked at March 31, annually since 2000. It collects information from enterprises on the risk management of their overseas foreign currency liabilities. The existence of the survey recognises the importance of the impact of foreign currency movements on New Zealand firms and the economy, and hedging by New Zealand firms as a mechanism to mitigate their exposure to these movements.

Aggregated data from the Hedging Survey is published with data from the Quarterly International Investment Survey and other surveys in the *Balance of Payments and International Investment Position – Information releases* (Statistics NZ). See the appendix in this paper for examples of the most recent tables from this release, showing the data from the Hedging Survey.

The survey asks firms to report on the level of their overseas debt denominated in foreign currency by each foreign currency denomination and to give both the foreign currency value and the converted New Zealand dollar value. The firms are asked to report in percent terms how much of their debt value by currency is covered by each of the four hedge behaviours:

- hedged by use of financial derivatives
- naturally hedged using balance sheet assets
- naturally hedged using expected receipts
- not hedged.

The 'not hedged' option is included in the survey as a behaviour in order to collect values that account for the whole debt and for validation purposes.

Methodology for this research

Time period

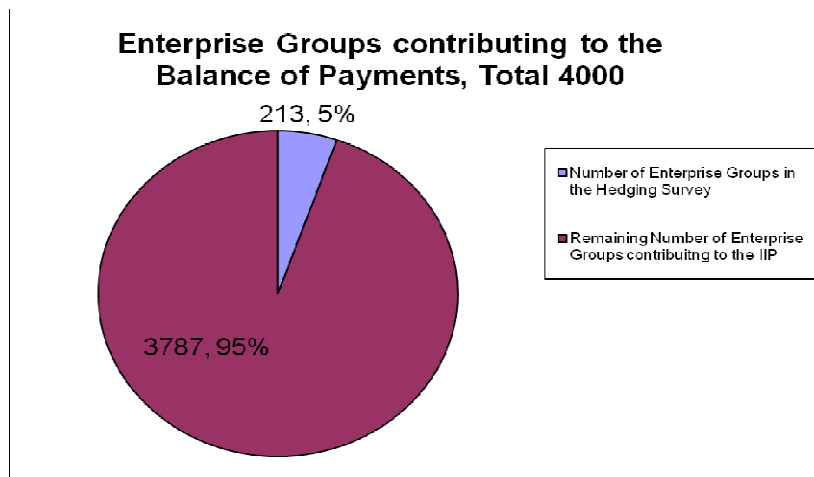
The empirical analysis of the Hedging Survey data used the period 2003–08 as it contains the most recent and consistent statistics and data. It is the most recent, as the 2009 data will not be published or accessible until September of this year. It is the most consistent, as the methodology used by Statistics NZ since 2003 differs from that used in 2002 and previous surveys, so the statistics for those earlier years are not directly comparable.

Over the period 2003–06, the Hedging Survey contained what appeared to be a small sample in each year. But over the period examined, 213 enterprise groups were surveyed and responded on their hedging behaviour for their foreign currency denominated overseas debt.

This may seem a very small number of enterprises, however an enterprise group in this context is not necessarily just an individual enterprise. An enterprise group in the Hedging Survey is the collective group of enterprises operating within New Zealand that trace their ownership to a single New Zealand parent enterprise that is at the apex of the group structure. Ownership of this 'group top enterprise' may rest in the hands of a population of shareholders or it may be held by a non-resident entity.

Therefore these 213 enterprise groups represent more than just 213 individual enterprises in the New Zealand economy. It is estimated that a total of 4000 enterprise groups in the New Zealand economy have dealings or transactions with non-residents or the rest of the world.

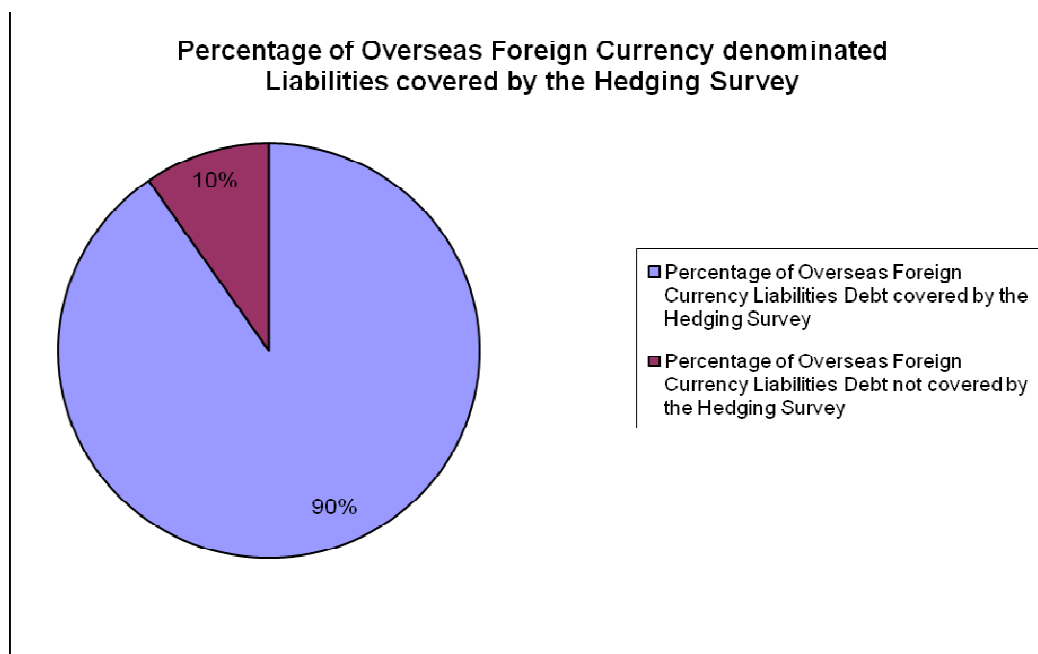
Figure 1



It is estimated that during the period 2003–08, these 213 enterprise groups accounted for between 81 and 92 percent of the total value of foreign currency denominated overseas debt. From 2004 onwards, the percentage that these survey enterprises accounted for rose to between 88 and 92 percent.

Therefore approximately 5 percent of the enterprise groups within the New Zealand economy accounted for an estimated 90 percent of the total foreign currency denominated overseas debt.

Figure 2



Cross-sectional analysis

The empirical analysis began with a cross-sectional analysis of the disaggregated Hedging Survey data and was undertaken using the institutional sector of the enterprise.

First, a broad based analysis was undertaken breaking the data into two groups: those enterprises classified as banks, and those enterprises classified as non-bank or being in ‘all other sectors’.

Second, an analysis of the aggregate group, ‘all other sectors’, was undertaken by breaking it into three constituent groups: those enterprises categorised as being in either the monetary authority, other financial intermediaries, or other sector.

Thirdly, the disaggregated groups were broken down into sub-groups or strata based on the size of the foreign currency denominated overseas debt of the enterprise group.

In order to analyse the data in aggregated and later disaggregated form, the hedging behaviour reported by the enterprise group as a percentage value for that currency was re-expressed as a value for that behaviour. These values were then aggregated by behaviour. The aggregated values were then re-expressed as a percentage of the total.

Results of cross-sectional analysis

From the empirical analysis of the banks versus non-bank data, it was observed that in aggregate there were distinct and significant differences in the hedging behaviour of these two groups. This was demonstrated within each year’s data and was repeated consistently across all years of the study.

The results show that:

- the hedging behaviour of the banks data is more asymmetric than that of non-bank data
- the banks as a sector have a far greater amount by the value of their foreign currency overseas debt hedged using financial derivatives and hedged using balance sheet assets.

Figure 3 shows the hedging behaviour of banks plotted as a time series

Figure 3

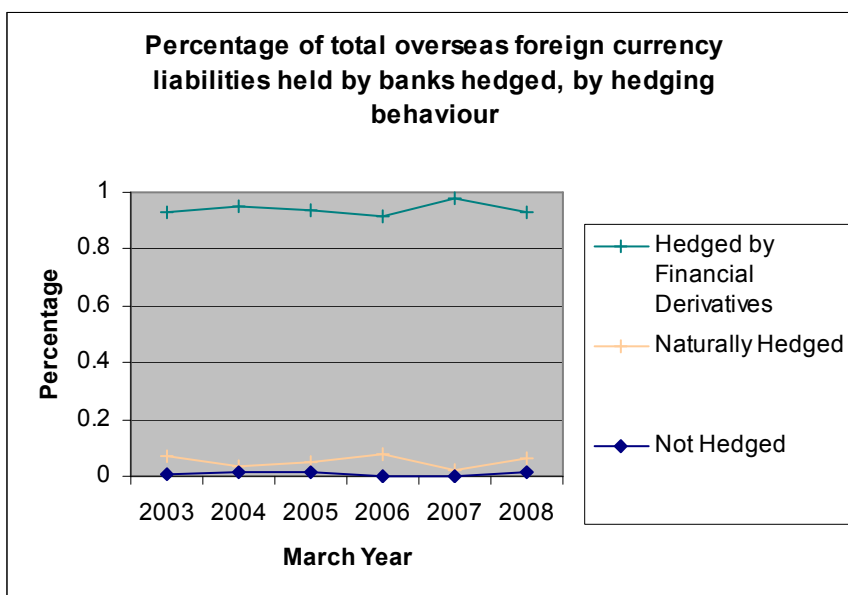
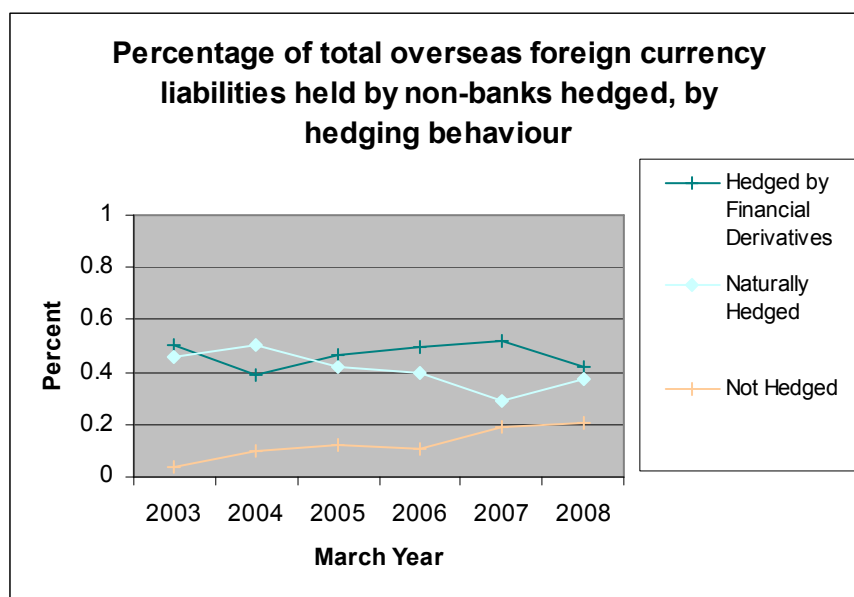


Figure 4 shows the hedging behaviour of non-banking sector plotted as a time series

Figure 4



Evaluation in percentage terms

However, when the same data is evaluated in percentage terms it becomes apparent that the bank sector data, as estimated, is more skewed toward the use of hedging by financial derivatives than the use of hedging by balance sheet assets. For the non-bank sector, while the distribution in percentage terms is higher for hedging by financial derivatives than for hedging by use of balance sheet assets, the distribution between these two behaviours was more balanced for non-bank in aggregate than the bank sector.

The analysis of the disaggregated data on the enterprise groups in the bank sector showed that banks preferred to hedge their foreign currency denominated overseas debt by the use of financial derivatives and the employment of balance sheet assets.

The 'all other' sector enterprise groups demonstrated in aggregate a more balanced distribution of their hedging of foreign currency denominated overseas debt across the four types of hedging behaviour. As demonstrated in the statistics for 2004 (Statistics NZ, 2009, table 15, see appendix) other sector enterprises make more use of natural hedging by balance sheet or expected future receipts than banks.

Sector driven behaviour

Further disaggregation of the data for 'all other' sectors into its three subgroups (official, other financial intermediaries, and other) highlighted distinct differences in behaviour which appeared to be sector driven.

The monetary authority can be taken out of the analysis because it is a single enterprise that is distinctly different in the function and behaviour in comparison to the other two groups.

The analysis of the two subgroups, other financial intermediaries and other, showed that in aggregate there was a distinct difference in the hedging behaviour of enterprises classed as other financial intermediaries from those classed as other sector.

It became apparent that the hedging behaving of other financial intermediaries was more similar to banks than to other sector enterprises.

Size of foreign currency denominated overseas debt

The enterprise groups were broken down into strata by the size of their foreign currency denominated overseas debt. When aggregated according to these strata, the strata showed distinct differences in the distribution of debt over the types of hedging behaviour.

However, when the Hedging Survey data was disaggregated entirely and re-analysed the differences in behaviour became less distinct except for the enterprise groups in the strata that had the highest value of overseas debt.

Also, the disaggregated data displayed a range of different hedging behaviour distributed across the strata, especially for enterprises classified to the other sector.

These last results strongly suggested that neither the level of foreign currency overseas debt or the sector of the enterprise alone, were the factors that determined the hedging behaviour of the enterprise.

Correlation with Quarterly International Investment Survey data

Since the first cross-section analysis of the disaggregated data of the Hedging Survey produced mixed results, it was decided to introduce related variables and data from the Quarterly International Investment Survey (QIIS), especially since the Hedging Survey is designed to be a supplementary survey to the QIIS.

The QIIS is designed to collect additional information about overseas debt values, including:

- the type of instruments that the debt is made up of (i.e. fixed interest securities, money market instruments, trade credits, loans, deposits, and other financial liabilities),
- the residual maturity of the debt instrument (i.e. the amount of time till the debt must be repaid)
- the relationship between the counterparty holding the debt and the NZ enterprise group (i.e. related as: an overseas parent/investor, an overseas subsidiary, or a completely unrelated overseas enterprise)

Three additional variables were added to the data identifying:

- the industry to which the enterprise group or a majority of the group belonged
- the country of the ultimate parent enterprise
- an indicator identifying if the New Zealand enterprise group was part of a larger multinational enterprise group.

Because the Hedging Survey and QIIS both collect data on the denomination of the overseas debt, it was possible with a very high degree of certainty to determine for Hedging Survey currency values:

- the type of instrument the debt was being held in
- the relationship of the creditor or counterparty to the New Zealand enterprise
- the residual maturity of the instrument.

Additional variables: ownership and activity

The variables 'ownership' and 'activity' of the enterprise group were added to see if a correlation between the enterprises behaviour and these additional variables appeared.

With these additional variables appended to the disaggregated Hedging Survey data a new cross-section analysis was carried out.

The analysis began with a simple ordering of the new dataset by the size of the foreign currency denominated overseas debt, since the first analysis had produced mixed results based on the size of the debt.

With the additional variables factored in, the analysis produced some very interesting observations.

The first, rather trivial, observation was that for New Zealand enterprise groups with foreign currency denominated overseas debt totalling over NZ\$50 million, the debt is more often structured as either fixed interest securities, money market instruments, deposits, other financial instrument, or some combination of the above.

It is rare to see trade credits in excess of this sum as foreign currency denominated debt.

Additionally, the data showed that as the value of the foreign currency denominated overseas debt increased above NZ\$50 million (a value picked rather arbitrarily), it was more likely that the debt was no longer classed as a loan or an other financial instrument or deposit but was more likely classed as a money market instrument or fixed interest security. Also, very high debt levels were observed to be structured as a portfolio of various types of debt instruments.

Size of overseas debt

The data now suggested that in relation to the size of the overseas debt, the following observations can be made:

- The higher the foreign currency overseas debt value, the more likely that the debt was hedged and was hedged by either balance sheet assets or financial derivatives.
- As the value of the debt increased it was more likely that the debt would be with an unrelated counterparty.
- At the highest levels, hedges with financial derivatives heavily outweighed natural hedging by balance sheet, unrelated counterparties outweighed related parties, and the instruments used became fixed interest securities and money market instruments with medium to long-term or structured maturity profiles.
- At the other end of the scale the data suggested that if the risk associated with the foreign currency denominated overseas debt was small enough in value, New Zealand enterprise groups chose to not hedge.

The not hedged behaviour appeared more frequently in the data once the foreign currency overseas debt value of the New Zealand enterprise group was observed to be in the mid-range to lower level of debt values (around NZ\$20 million) reported in the Hedge Survey.

Relationship with counterparty

Importantly, the disaggregated data now showed that for mid-range debt values the New Zealand enterprise group only chose to not hedge its debt when the counterparty was a related party; either an overseas parent enterprise or an overseas subsidiary.

For the mid-range of debt values, the types of debt instruments employed were observed to be either loans, fixed interest securities, deposits, or other financial instruments.

At this stage, trade credit balances, due to outstanding balances owed on the import of goods and services, also started to feature in the data.

The analysis showed that the small strata foreign currency overseas debt was more likely to be due to small loans and trade credit balances from imports. Overseas subsidiaries or overseas parent investors became the dominant counterparty to the New Zealand enterprise group.

In fact, for all enterprise groups it was observed that the variable identifying the relationship with the counterparty became very important as a predictor of the hedging behaviour.

The relationship variable strongly correlates in the following ways:

- If the enterprise group had a high value of foreign currency overseas debt then the counterparty was observed to predominantly be an unrelated party and the debt was hedged using financial derivatives and some natural hedging using balance sheet assets.
- If the enterprise group had a small value of foreign currency overseas debt then the counterparty was either a related or unrelated party. If the counterparty was unrelated then predominantly the debt was hedged either by natural hedging using balance sheet assets or by expected future receipts or by financial derivatives. If the foreign currency overseas debt was not hedged then predominantly the counterparty was a related overseas enterprise.
- For the enterprise groups that would be classed as belonging to the small strata, the analysis showed that 39 percent of the value for their total foreign currency denominated overseas debt is not hedged. However, the analysis showed that only 0.2 percent of the not hedged debt value for that strata was held with counter-parties unrelated to the New Zealand enterprise group. Over 99 percent of the not hedged debt by value in the small strata was observed to be held with a counterparty related to the New Zealand enterprise group.
- The remaining 61 percent of the foreign currency overseas debt for the small strata was either naturally hedged by balance sheet assets or by expected future receipts, or by the use of financial derivatives. This debt was predominately with unrelated overseas enterprises although a small amount was observed to be loans from overseas investors.

The addition of the QIIS variables and other variables helped in understanding the Hedging Survey data, especially aiding in the interpretation of the disaggregated data.

There are other variables which have not yet been fully explored in the dataset and require continued work.

Time series analysis of the hedging data

For the period 2003–08, a time series of the disaggregated data was prepared for the individual enterprise groups.

The analysis of the disaggregated data by enterprise groups showed that only a few enterprise groups out of the total population made significant changes to their actual hedging behaviour. However 37 percent of the enterprise groups were observed to change their total foreign currency overseas debt significantly during the period, but did not change the structure of their hedging behaviour

Therefore the time series analysis of the disaggregated data over the period from 2003–08 has not shown any significant change in individual hedging behaviour.

The observed changes in the aggregated values and hedging behaviour have been due to the changes in the level of debt held at a disaggregated level which have given the impression that hedging behaviour rather than hedge values have changed.

Conclusions

Comparing results from aggregated and disaggregated data

When looking at the Hedge Survey aggregated data, available as published statistics, the values tend to suggest that:

- There are clear differences in the hedging behaviour of New Zealand enterprises due to the institutional sector to which they belong.
- There are clear differences in the hedging behaviour of enterprises and the types of hedging behaviour used by enterprises in different strata according to the level of their foreign currency denominated overseas debt values.
- Over time the hedging behaviour of the enterprises may change.

In contrast to those results, the research reported in this paper was based on the analysis of disaggregated Hedging Survey data, which research shows:

- The institutional sector of the enterprise group was not the dominant factor in the hedging behaviour of the enterprise group or the key driver of the hedging behaviour exhibited by that grouping.

The aggregate data appeared to support the idea that the sector of the enterprise group was a distinguishing factor in the hedging behaviour exhibited by that class of enterprises. However, this relationship was not displayed at the disaggregated level.

- When enterprises of a similar size were disaggregated and compared to each other they did not appear to all exhibit the same hedging behaviour. Therefore, the hedging behaviour of enterprises of the same size could be different, so size alone was not the sole determinant of the Hedging behaviour.

Conclusions about hedging behaviour of enterprises

Given the results so far observed from linking the Hedging Survey with data from the Quarterly International Investment Survey, this study suggests the following about the hedging behaviour of enterprises in the New Zealand economy.

Business activity and size

The business activity and size of the New Zealand enterprise group influenced the size and type of instrument it used to acquire foreign currency denominated debt.

Size of foreign currency denominated debt

The size of the foreign currency denominated debt had a strong influence on the type of debt instrument used and to a certain extent dictated who the enterprise borrowed from or transacted with. Large firms requiring very large amounts of funds were observed to utilise loans, money market instrument or fixed interest securities to obtain the required funds.

Size of the debt and the enterprise group's relationship with the counterparty

When a large amount of funding was required, the funds tended to have predominantly come from unrelated parties or a mix of unrelated and related parties, and involved a mix of instrument types.

In this situation, where the New Zealand enterprise group borrowed a large amount of funds denominated in a foreign currency from an unrelated party it hedged the debt. Also, where the debt was with a related party and the maturity date was quite short the enterprise group

chose to hedge the debt to avoid foreign currency movements and the additional costs on repayment of the debt.

Ownership of the enterprise groups

Observation showed that the majority of New Zealand enterprise groups in the Hedging Survey were overseas-owned and belonged to multinational enterprise groups.

Therefore when these New Zealand enterprise groups undertook financial arrangements denominated in a foreign currency with their overseas related group the effect of any foreign currency movements on the value of the group was zero. Although there was a transfer of wealth across the border between the two related enterprises.

Along as the wealth transfer was not significant enough to destabilise the financial position of the enterprise in the losing economy, the international group as a whole benefited from the savings it made from not expending resources on the exercise of creating or purchasing hedges.

How the mechanisms were observed to interact

When large amounts of debt were involved, the most likely behaviour of a New Zealand enterprise group was to use a combination of hedging by financial derivatives and natural hedging using balance sheet assets.

Firstly, the New Zealand enterprise would use naturally hedge by balance sheet assets, but for very large debt levels these rarely cover the entire value of the debt and the enterprise group will hedge the remaining debt using financial derivatives. The latter hedge behaviour is also better in that it does not require the enterprise to lock away large amounts of funds in another economy.

As the purpose for which the debt was required changed from purely financing, and the level of the foreign currency overseas debt fell, the distribution of the instrument type used changed significantly. Also, the counterparty to the debt changed, with significantly more deals with overseas related parties becoming evident.

Mid range debt values with unrelated parties were still observed to be hedged.

At this point in the distribution there was an increase in the frequency of foreign currency overseas debt balances held with related parties. As the value of the debt balances continued to fall there was an increase in the frequency of balances that were Not Hedged.

Also at this level trade credits started to become the dominant instrument type. This debt instrument was primary associated with the use of natural hedging by expected future receipts or hedging by financial derivatives when trade balances were with unrelated parties, and not hedged when the counterparty was an overseas related enterprise.

Observation showed us that the majority of New Zealand enterprise groups in the Hedging Survey were overseas-owned and belonged to multinational enterprise groups.

Therefore when these New Zealand enterprise groups undertook financial arrangements denominated in a foreign currency with their overseas related group the effect of any foreign currency movements on the value of the group was zero. Although there was a transfer of wealth across the border between the two related enterprises.

Along as the wealth transfer was not significant enough to destabilise the financial position of the enterprise in the losing economy, the international group as a whole benefited from the savings it made from not expending resources on the exercise of creating or purchasing hedges.

References

Becker, C, & Fabbro, D (2006). *Limiting foreign exchange exposure through hedging: The Australian experience* (Research Discussion Paper 2006–09). Sydney: Reserve Bank of Australia.

Statistics NZ (nd) *Balance of payments and international investment position – Information releases* Retrieved from www.stats.govt.nz/products-and-services/info-releases/bop-iip-info-releases.htm.

Statistics NZ (2009). *Balance of payments and international investment position: Year ended 31 March 2008* (Revised 23 January 2009). Available from www.stats.govt.nz.

Further reading

Becker, C, DeBelle, G, & Fabbro, D (2005, December). Australia's foreign currency exposure and hedging practices. *Reserve Bank Bulletin*.

Briggs, P (2004). Currency hedging by exporters and importers. Reserve Bank of New Zealand: *Bulletin* 67 (4), pp 17–27.

Appendix: Tables from *Balance of Payments and International Investment Position: Year ended 31 March 2008*

Table 14, Hedging: Scope of the Supplement, at 31 March

This table provides a summary of the total foreign currency denominated overseas debt value for the New Zealand economy and the amount encompassed by the survey, i.e. the amount of foreign currency denominated overseas debt the enterprise included in the Hedging Survey had reported.

Over the past six years, 2003–08, this supplementary survey has encompassed firms holding 81 and 92 percent of the total foreign currency denominated overseas debt. In the last four years this proportion has been between 88 and 92 percent of total foreign currency denominated overseas debt.

Table 14

Hedging: Scope of the Supplement

At 31 March

NZ\$(million)

	Series ref: IIPA	At 31 March						
		2003	2004	2005	2006	2007	2008	
Total foreign currency denominated overseas debt ⁽¹⁾	S5HLZZ	62,814	R 70,228	R 80,128	R 84,147	R 87,989	R 109,919	
Encompassed by the supplement ⁽²⁾	S5HLAA	51,027	R 57,446	R 70,679	R 77,497	R 77,740	R 99,306	
Supplement as a percent of total		81	82	88	92	88	90	

(1) Total foreign denominated external debt is total debt less New Zealand dollar debt less financial derivatives in a net liability position denominated in foreign currencies.

(2) Encompassed by the supplement is data captured by the hedging survey. Refer to the technical notes for more information.

Symbol:

R revised

Table 15, Hedging of New Zealand's Foreign Currency Denominated External Debt, at 31 March, by types of hedging behaviour

This table provides a breakdown of the total foreign currency denominated debt, by each type of hedge behaviour. The hedge value is then broken down to the total amount attributable to Banks and Other.

For example, the statistics show that for 2008 the total foreign currency denominated overseas debt for New Zealand was NZ\$109.9 billion, of which NZ\$89.2 billion was hedged using financial derivatives. Of the NZ\$89.2 billion hedged using financial derivatives, the Bank Sector accounted for NZ\$76.7 billion and Other Sector enterprises held the remaining NZ\$12.5 billion.

Table 15

Hedging of New Zealand's Foreign Currency Denominated External Debt⁽¹⁾
At 31 March
 NZ\$(million)

	Series ref: IIPA	At 31 March							
		2003	2004	2005	2006	2007	2008		
Foreign currency denominated overseas debt	<i>S5HLAZ</i>	62,814	R 70,228	R 80,128	R 84,147	R 87,989	R 109,919		
Banks	<i>S5HLA1</i>	35,144	R 44,353	R 53,294	R 59,307	R 62,813	R 82,818		
Other sectors	<i>S5HLA2</i>	27,670	R 25,875	R 26,834	R 24,839	R 25,176	R 27,101		
Hedged using financial derivatives	<i>S5HL2A</i>	46,791	R 51,631	R 62,459	R 67,168	R 75,258	R 89,210		
Banks	<i>S5HL21</i>	32,504	R 41,827	R 49,993	R 54,481	R 61,350	R 76,734		
Other sectors	<i>S5HL22</i>	14,287	R 9,804	R 12,466	R 12,687	R 13,908	R 12,476		
Naturally hedged against assets or other receipts	<i>S5HL3A</i>	13,067	R 10,512	R 10,574	R 12,195	R 6,390	R 12,155		
Banks	<i>S5HL31</i>	..	C 1,764	R ..	C ..	C ..	C ..	C ..	C
Other sectors	<i>S5HL32</i>	..	C 8,749	R ..	C ..	C ..	C ..	C ..	C
Not hedged	<i>S5HL4A</i>	2,956	R 8,085	R 7,095	R 4,784	R 6,341	R 8,554		
Banks	<i>S5HL41</i>	..	C 762	R ..	C ..	C ..	C ..	C ..	C
Other sectors	<i>S5HL42</i>	..	C 7,323	R ..	C ..	C ..	C ..	C ..	C

(1) Data may not sum to stated totals due to rounding.

Symbols:

C confidential
 R revised

Table 16, Hedging by Currency of Denomination<1>, at 31 March

This table presents the foreign currency denominated overseas debt and types of hedging behaviour, broken down by currency in which the overseas debt is denominated. The breakdown by currency is limited to the top four currencies by value (United States Dollar, Australian dollar, European Union euro and Japanese yen) in which the overseas debt is held in New Zealand. Therefore the total of these values by currency does not reconcile to the total reported for the hedging behaviour.

Table 16 shows that over the past six years the value of USD denominated overseas debt has been far higher than the overseas debt held in any other currency, e.g. in 2008 the value for USD was NZ\$59 billion compared with the next highest value being Australian denominated overseas debt of NZ\$16.3 billion.

Table 16

Hedging by Currency of Denomination⁽¹⁾

At 31 March

NZ\$(million)

	Series ref: IIPA	At 31 March					
		2003	2004	2005	2006	2007	2008
Foreign currency denominated overseas debt	<i>S5HLAZ</i>	62,814	R 70,228	R 80,128	R 84,147	R 87,989	R 109,919
United States dollar	<i>S5HLAAUSD</i>	43,337	R 47,833	R 46,986	R 53,505	R 48,760	R 59,055
Australian dollar	<i>S5HLAAAUD</i>	6,808	R 9,171	R 11,120	R 11,185	R 14,272	R 16,295
European Union euro	<i>S5HLAAEUR</i>	2,662	R 3,931	R 11,794	R 7,571	9,433	14,139
Japanese yen	<i>S5HLAAJPY</i>	4,652	R 2,682	R 2,310	R 2,315	R 2,505	R 3,819
Hedging using financial derivatives	<i>S5HL2A</i>	46,791	R 51,631	R 62,459	R 67,168	R 75,258	R 89,210
United States dollar	<i>S5HL2AUSD</i>	32,043	R 36,945	R 37,715	R 46,285	R 42,676	R 48,699
Australian dollar	<i>S5HL2AAUD</i>	4,104	R 4,478	R 5,822	R 5,351	R 10,393	R 10,722
European Union euro	<i>S5HL2AEUR</i>	2,321	R 3,485	R 11,166	R 6,407	R 8,861	R 13,658
Japanese yen	<i>S5HL2AJPY</i>	3,873	R 1,741	R 1,757	R 1,675	R 2,192	R 3,357
Naturally hedged against assets or other receipts	<i>S5HL3A</i>	13,067	R 10,512	R 10,574	R 12,195	R 6,390	R 12,155
United States dollar	<i>S5HL3AUSD</i>	9,261	R 6,856	R 6,628	R 5,321	R 2,195	R 6,196
Australian dollar	<i>S5HL3AAUD</i>	2,041	R 1,649	R 2,005	R 3,842	R 2,009	R 2,872
European Union euro	<i>S5HL3AEUR</i>	264	R 128	R 221	R 1,084	R 412	R 247
Japanese yen	<i>S5HL3AJPY</i>	680	R 783	R ..	C 462	R 304	R .. C
Not hedged	<i>S5HL4A</i>	2,956	R 8,085	R 7,095	R 4,784	R 6,341	R 8,554
United States dollar	<i>S5HL4AUSD</i>	2,034	R 4,032	R 2,644	R 1,898	R 3,889	R 4,160
Australian dollar	<i>S5HL4AAUD</i>	663	R 3,043	R 3,293	R 1,992	R 1,871	R 2,701
European Union euro	<i>S5HL4AEUR</i>	76	R 318	R 408	R 80	R 160	R 234
Japanese yen	<i>S5HL4AJPY</i>	98	R 158	R ..	C 179	R 9	R .. C

(1) Only a limited currency profile is shown in this table, therefore data does not sum to stated totals.

Symbols:

C confidential
R revised
.. data not available