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# Measuring Australia's Foreign Currency Exposure

Prepared by the Australian Bureau of Statistics

## MEASURING AUSTRALIA'S FOREIGN CURRENCY EXPOSURE


### SUMMARY

This paper presents information on a recent survey conducted by the ABS to explore the extent to which institutions' currency exposure was hedged. It is presented to BOPCOM as an example of the work that can be done, for countries where it is relevant, leveraging off existing international investment surveys.


### BACKGROUND

There has for some time been interest in the extent to which Australia as a whole, or particular sectors, have significant foreign currency net positions which make them vulnerable to unfavourable movements in the exchange rate.

Although data, such as those published by the ABS in the International Investment Position, appear to show that some sectors of the Australian economy, such as banks, have significant net foreign currency liability exposure, many Australian enterprises engage in hedging activities which are designed to reduce or eliminate the risks associated with such exposures. The mitigating impact of these hedging activities does not show up directly in the statistics on foreign currency assets and liabilities.

In an article "Foreign Exchange Exposure of Australian Banks", which was published in the August 2000 issue of the Reserve Bank of Australia *Bulleti*n, the Reserve Bank of Australia (RBA) provided some data and analysis for Australia's depository corporations. Drawing largely on data collected by the Bank for International Settlements (BIS), which includes international investment data supplied by the ABS, the RBA noted that, as at December 1999, the net foreign currency liabilities of Australia's depository corporations represented around 13% of this sector's total assets. Additional data collected for the four major banks showed they had no net foreign currency exposure, suggesting that they were hedged with other sectors of the economy and/or with non-residents. The lack of data on the net positions of these other sectors, however, made it difficult to draw any general conclusions from this work.

Through the Survey of International Investment (SII), which follows international standards promulgated by the IMF, the ABS collects data on the current market value of all derivative contracts with non-residents, including those entered into for hedging purposes. However, these data, by themselves, do not show the extent to which enterprises have hedged the net positions of their foreign-currency-denominated assets and liabilities. One way to obtain an approximate measure is to collect information on the notional value of derivative contracts. Such notional values currently are not required for any national or international accounting aggregates and, accordingly, are not collected as part of the SII.

To obtain a more complete picture, the ABS, with the assistance of the RBA, has supplemented the Survey of International Investment with additional information on foreign currency hedging from a wide range of enterprises, both financial and non-financial. The aim of the supplement was to capture quantitative and qualitative data about Australian enterprises' foreign currency exposure and the risk management practices associated with that exposure.

To this end, information was requested about:

- foreign equity assets;
- foreign-currency-denominated debt assets and liabilities;
- the notional values of outstanding derivative contracts with a foreign currency component;
- the policies enterprises adopted on hedging foreign currency exposure; and
- foreign-currency-denominated receipts and payments from trade in goods and services expected in the 12 months to 30 June 2002.

The supplement approached 232 resident enterprises (including general government entities) which had significant foreign currency exposure in assets/liabilities and/or exports/imports contracted in foreign currency. Information to construct the frame for the survey came from data supplied in the Survey of International Investment, the Survey of International Trade in Services and from Customs imports and exports records.

The ABS acknowledges the significant time and effort required of all respondents to this difficult supplement.

**SUMMARY RESULTS**

As at 30 June 2001, Australian resident enterprises had a net foreign-currency-denominated asset position of $149.0b, which was made up of:

- an on-balance-sheet foreign-currency-denominated net liability position for debt of $164.5b;
- a net $85b hedged through foreign-currency-denominated net derivative contracts; and
- foreign equity assets of $228.5b, being almost 3 times the residual (unhedged) foreign currency liability exposure on debt of $79.5b.

Table A1 : Summary Foreign Currency Exposure—
30 June 2001 ($ billion)

| | |
|---|---|
| Net foreign-currency-denominated liability position on debt instruments | 164.5 |
| Net principal hedged by foreign currency derivatives | –85.0 |
| Net position on debt unhedged after derivatives | 79.5 |
| Foreign equity assets | –228.5 |
| Foreign currency denominated asset position | –149.0 |

Australian resident enterprises also:

- predominantly employed Forward Foreign Exchange and Cross Currency Interest Rate Swap derivative contracts to hedge their foreign currency exposure; and
- had policies in place that had the intent of hedging 77% of the value of their foreign-currency-denominated debt assets and liabilities and 12% of the value of their foreign equity assets.

**ANALYSIS**

The following presents some of the more detailed findings. Unless otherwise stated, all data referenced below are as at 30 June 2001.

## Foreign Currency Exposure

Table A.2 expands the results presented in table A.1 to provide details by sector. Some results of particular interest are:

- After accounting for hedging through foreign currency derivative contracts, the "Banks" subsector accounted for only $7.2b (9%) of the $79.5b Australian total foreign currency liability exposure on debt. This was despite accounting for 71% of the total $164.5b on-balance-sheet foreign currency liability exposure on debt.
- The "Other Financial Corporations" subsector had substantial foreign equity assets ($84.0b) which more than offset its net debt liabilities.
- After accounting for hedging through foreign currency derivative contracts and foreign equity, the General Government Sector had a foreign currency liability exposure of $7.2b, having started with an on-balance-sheet foreign currency asset exposure on debt. This was the only sector to have a foreign currency liability exposure after all hedging activities and equity positions are taken into account.

Table A2 : Foreign Currency Exposure by Sector—30 June 2001 ($ billion)

| | FINANCIAL SECTOR | | | | | |
|---|---|---|---|---|---|---|
| Instrument | Banks | RBA & CBAs(a) | Other financial corporations | General govern-ment | Other resident sectors | **Total all sectors** |
| FC denominated financial debt assets | –69.8 | –36.9 | –33.6 | –5.5 | –10.6 | **–156.5** |
| FC denominated financial debt liabilities | 186.5 | 8.8 | 61.4 | 4.1 | 60.1 | **321.0** |
| *equals* | | | | | | |
| *Net position on debt* | 116.7 | -28.1 | 27.8 | -1.4 | 49.5 | **164.5** |
| Principal of FC derivative contracts in a bought position | -435.3 | -11.3 | -69.8 | -0.4 | -31.7 | **-548.4** |
| Principal of FC derivative contracts in a sold position | 325.8 | 32.1 | 61.8 | 8.9 | 34.9 | **463.4** |
| *equals* | | | | | | |
| *Net position on debt unhedged after* Derivatives | 7.2 | -7.4 | 19.8 | 7.2 | 52.6 | **79.5** |
| Foreign equity assets | -30.7 | 0.0 | -84.0 | 0.0 | -113.9 | **-228.5** |
| *equals* | | | | | | |
| *Foreign Currency Exposure* | -23.4 | -7.4 | -64.1 | 7.2 | -61.2 | **-149.0** |

(a) CBAs: State and Territory Central Borrowing Authorities

## Derivative Contracts

As can be seen from table A.3, Australian resident enterprises predominantly employed Forward Foreign Exchange derivative contracts in their management of foreign currency exposure. Cross Currency Interest Rate Swaps made up the bulk of the other types of derivative contracts used. These two types accounted for 72% ($731.1b) and 20% ($203.9b) respectively of the sum of the notional value of outstanding bought and sold financial derivative contracts.

The net effect of the bought ($548.4b) and sold ($463.4b) derivative contract principals was that there was hedging against $85.0b of Australian resident enterprises' foreign currency exposure.

Table A3 : Type of Derivative Contracts; Notional Value—30 June 2001 ($ billion)

| Instrument | FINANCIAL SECTOR Banks | RBA & CBAs(a) | Other financial corporations | General govern-ment | Other resident sectors | **Total all sectors** |
|---|---|---|---|---|---|---|
| Foreign Currency bought in exchange for AUD | | | | | | |
| Forward Foreign Exchange | -305.6 | -6.6 | -43.7 | 0.0 | -29.1 | **-385.0** |
| Cross Currency Interest Rate Swaps | -92.4 | -4.7 | -22.7 | -0.4 | -2.1 | **-122.3** |
| Futures | -7.2 | 0.0 | -0.3 | 0.0 | 0.0 | **-7.5** |
| Currency Options | -20.2 | 0.0 | -1.6 | 0.0 | -0.4 | **-22.3** |
| Other | -9.8 | 0.0 | -1.4 | 0.0 | -0.1 | **-11.3** |
| *Total* | -435.3 | -11.3 | -69.8 | -0.4 | -31.7 | **-548.4** |
| Foreign Currency sold in exchange for AUD | | | | | | |
| Forward Foreign Exchange | 233.0 | 31.1 | 51.7 | 0.9 | 29.4 | **346.1** |
| Cross Currency Interest Rate Swaps | 63.2 | 1.0 | 7.8 | 8.0 | 1.6 | **81.6** |
| Futures | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | **0.1** |
| Currency Options | 21.9 | 0.0 | 1.4 | 0.0 | 3.7 | **27.1** |
| Other | 7.7 | 0.0 | 0.8 | 0.0 | 0.1 | **8.6** |
| *Total* | 325.8 | 32.1 | 61.8 | 8.9 | 34.9 | **463.4** |

## Hedging Policy and Practice

As part of the survey, respondents were asked to identify the type of hedging policies they had in place for their equity, debt and expected foreign currency receipts and payments. These hedging policies were with regard to hedging using foreign currency derivatives only and did not refer to any natural hedging or strategies which involved structuring the balance sheet in order to reduce foreign currency exposure.

Respondents were also asked to nominate the percentage of their asset and / or liability positions they were aiming to cover with each of the different policy types.

The information presented below in table A.4 is in two parts, looking at equity and debt separately. Within each part information is presented that shows:

- hedging policy type; and
- the sum of the net values of each of the respondents, weighted by the percentage aimed to be hedged, within each policy type.

This latter element shows the extent, in aggregate, to which respondents intended covering their foreign currency exposure.

From this it is possible to see that Australian resident enterprises intended to hedge:

- 12% of the value of their foreign equity assets (within this, however, the financial sector hedged 21%, while other resident sectors hedged only 4%); and
- 76% of their debt assets and liabilities (within this the financial sector hedged 93% of the value of debt assets and liabilities, compared with other resident sectors' 38%).

Table A.4 is also useful when used in conjunction with the data presented in table A.2 above. Using the two tables together allows an analysis of how successfully the policies were implemented.

For example, the "Other Financial Corporations" subsector had policies in place which intended to hedge $27.4b of their $27.8b foreign currency liability exposure on debt, and $19.0b of their $84.0b foreign equity assets. Together these two policies' intent was to hedge foreign currency liability exposure of $8.4b (i.e. $27.4b less $19.0b), which would have left a net position on debt, after derivatives, of $19.4b (i.e.$27.8b less $8.4b). Comparing this with the results presented in table A.2, we can see that their achieved net liability position on debt, unhedged after derivatives, was $19.8b.

Table A4 : Hedging Policy and Practice — 30 June 2001 ($ billion)

| | FINANCIAL SECTOR | | | | | |
|---|---|---|---|---|---|---|
| | Banks | RBA & CBAs(a) | Other financial corporations | General govern-ment | Other resident sectors | **Total all sectors** |
| | | | EQUITY | | | |
| Net Value of instrument by type of hedging policy | | | | | | |
| Constant percent | -6.5 | 0.0 | -33.5 | 0.0 | -8.5 | **-48.5** |
| Variable | 0.0 | 0.0 | -21.2 | 0.0 | 0.0 | **-21.2** |
| Zero hedged | -4.5 | 0.0 | -26.2 | 0.0 | -105.3 | **-135.9** |
| Other policy | -19.7 | 0.0 | -2.6 | 0.0 | -0.1 | **-22.3** |
| No policy | 0.0 | 0.0 | -0.5 | 0.0 | 0.0 | **-0.5** |
| *Total* | -30.7 | 0.0 | -84.0 | 0.0 | -113.9 | **-228.5** |
| Value intended to be hedged (Value weighted by percentages aimed to be hedged) | | | | | | |
| Constant percent | -3.9 | 0.0 | -15.8 | 0.0 | -4.0 | **-23.8** |
| Variable | 0.0 | 0.0 | -2.7 | 0.0 | 0.0 | **-2.7** |
| Zero hedged | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** |
| Other policy | -0.8 | 0.0 | -0.1 | 0.0 | -0.1 | **-1.0** |
| No policy | 0.0 | 0.0 | -0.3 | 0.0 | 0.0 | **-0.3** |
| *Total* | -4.7 | 0.0 | -19.0 | 0.0 | -4.0 | **-27.8** |
| Residual Value intended to be unhedged | | | | | | |
| *Total* | -26.0 | 0.0 | -65.0 | 0.0 | -109.8 | **-200.7** |
| | | | FOREIGN CURRENCY DENOMINATED DEBT | | | |
| Net Value of instrument by type of hedging policy | | | | | | |
| Constant percent | 113.5 | 7.7 | 27.1 | -1.4 | 23.5 | **170.5** |
| Variable | 0.0 | 0.0 | -1.8 | 0.0 | 2.4 | **0.5** |
| Zero hedged | 1.2 | 0.0 | 2.1 | 0.0 | 19.6 | **23.0** |
| Other policy | 2.0 | -35.8 | 0.4 | 0.0 | 4.0 | **-29.4** |
| No policy | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** |
| *Total* | 116.7 | -28.1 | 27.8 | -1.4 | 49.5 | **164.5** |
| Value intended to be hedged (Value weighted by percentages aimed to be hedged) | | | | | | |
| Constant percent | 100.0 | 7.7 | 27.2 | -1.4 | 16.3 | **149.8** |
| Variable | 0.0 | 0.0 | -0.2 | 0.0 | 0.4 | **0.2** |
| Zero hedged | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** |
| Other policy | 2.0 | -28.7 | 0.4 | 0.0 | 2.0 | **-24.2** |
| No policy | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** |
| *Total* | 102.0 | -20.9 | 27.4 | -1.4 | 18.7 | **125.8** |
| Residual Value intended to be unhedged | | | | | | |
| Total | 14.7 | -7.2 | 0.4 | 0.0 | 30.8 | **38.8** |

**DATA COLLECTION**

The sample was designed to include those enterprises which would cover approximately 90% of foreign currency exposure for either assets or liabilities, and was supplemented with a selection of significant importers and exporters with foreign-currency-denominated trade in goods and/or services. For more information on the design aspects, please refer to the Statistical Clearing House website <www.sch.abs.gov.au>, click on the Commonwealth Business Surveys Register button, then on "International Investment, Survey of: Supp. on Foreign Currency Hedging".

The supplement response rate was 77% which was lower than the normal response rates for the quarterly Survey of International Investment. In terms of values, however, the supplementary survey covered:

- $120.3b (96%) of the $124.7b foreign currency denominated debt assets with non-residents estimated for 30 June 2001 (as published in *Balance of Payments and International Investment Position, September quarter 2001* (Cat. no. 5302.0) ); and
- $282.6b (89%) of the $317.5b foreign currency denominated financial debt liabilities with non-residents estimated for 30 June 2001 (as published in *Balance of Payments and International Investment Position, September quarter 2001* (Cat. no. 5302.0)).

Respondent burden, as measured by the median completion time of 2.5 hours, understates the amount of time and effort required to complete this supplement. In some cases a number of follow-up questions were raised with respondents and their resolution time was both significant and not recorded (and therefore is not reflected in the median completion time).

Feedback from many respondents was that, while the information was available within their systems, sourcing the data and providing the breakdowns into sector-of-counterparty was often difficult and convoluted. This was especially so for derivatives data. Even the "Banks" sub sector does not necessarily disaggregate their derivatives data into counterparty groupings (to monitor credit risk for example). This meant that for some, even the split between residents and non-residents was problematic, let alone the disaggregation of residents into sectors.

Data collected regarding foreign-currency-denominated receipts and payments from international trade in goods and services expected in the 12 months to 30 June 2002 were not considered sufficiently robust to include in this analysis and this is recommended as an area for future study. A related area that might also form a part of any future hedging-related work is foreign-currency-denominated receipts and payments of interest.

**FURTHER INFORMATION**

A wide range of analyses are possible with the data collected. The full set of output tables is available on AusStats.

Further information can also be obtained by contacting Mike McGrath on Canberra +61 2 6252 6688 or email <mike.mcgrath@abs.gov.au>.

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