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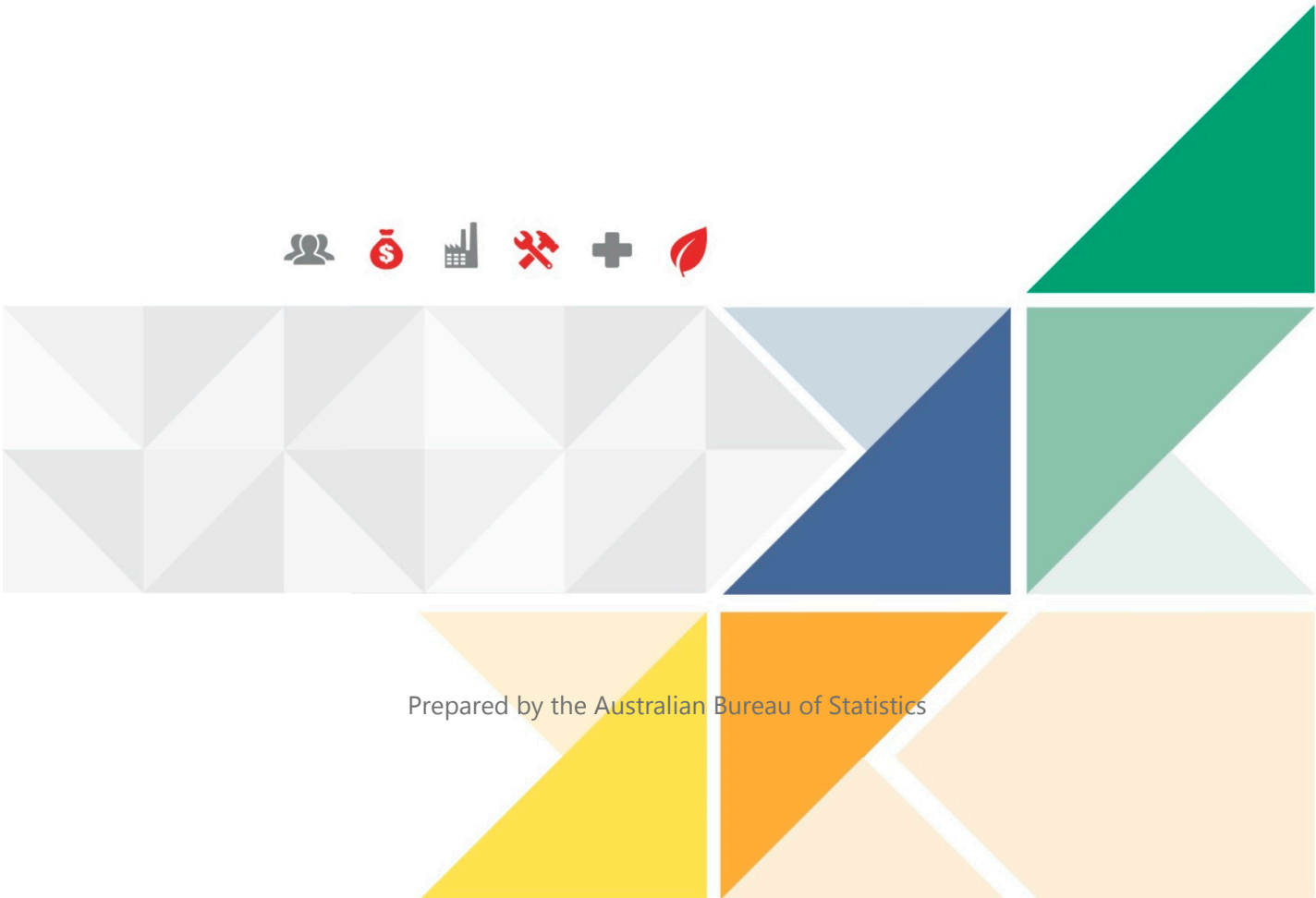
**COMPILING DATA ON NATURAL HEDGING—  
AN AUSTRALIAN PERSPECTIVE**

Prepared by the Australian Bureau of Statistics





# COMPILING NATURAL HEDGING AN AUSTRALIAN PERSPECTIVE



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## Currency Hedging in Australia

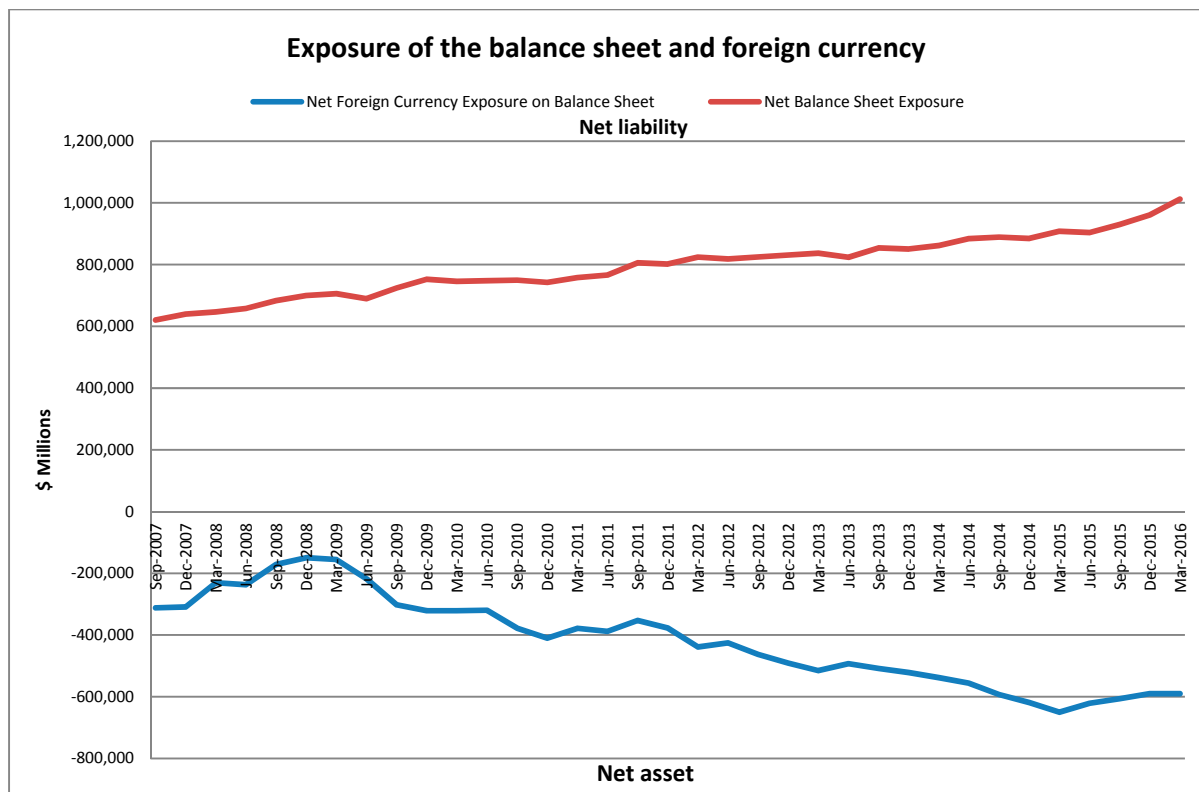
The Australian dollar was floated in 1983 and since then the flexible exchange rate has allowed monetary policy to operate effectively by fostering real economic adjustments, cushioning the economy from external shocks and smoothing fluctuations in business cycles such as through the Asian Financial Crisis and more recently the Global Financial Crisis.

Even with effective monetary policy for macroeconomic stabilisation, for firms with foreign currency assets, liabilities or trade exposures, fluctuations in the exchange rate can lead to changes in the Australian dollar value of their balance sheet positions and cash flows. Depending on the distribution of these foreign currency exposures across the economy, there could be implications for financial stability and the real economy.

It is therefore important to understand the extent to which Australia is open to risks associated with its foreign currency exposures and the extent to which they are hedged.

Australia’s balance sheet exposure is in a net liability position with the rest of the world reflecting ongoing capital inflows, and while the size of this liability might be of concern as it is a significant proportion of GDP, Australia has consistently had a net foreign currency asset position as Australia’s liabilities are denominated mostly in Australian Dollars (AUD).

**Graph 1 – Australia’s foreign currency balance sheet exposure**





A net foreign currency asset position means the depreciation of the AUD reduces the size of Australian entities' overall net foreign liability position by increasing the AUD value of foreign currency assets relative to foreign currency liabilities (the converse is true for an appreciation).

In 2015 80% of Australia's imports of goods and services were invoiced in foreign currency and 70% of Australia's exports of goods and services were invoiced in foreign currency. These highly exposed foreign currency invoices for trade mean movements in exchange rates can affect trade associated cash flow by altering the Australian dollar value of trade payments and receipts. For firms, a depreciation of the AUD will tend to reduce profits for net importers, while supporting the profitability of net exporters and vice versa for an appreciation, unless these exposed foreign currency exposures are hedged.

Firms generally develop their hedging strategy to reduce or eliminate their 'net' foreign currency exposure on their balance sheet, or resulting from trade activity. The use of hedging varies depending on the core business of the firm and the nature of their risk associated with their foreign currency exposures. However, normally it involves a creation of a natural hedge and or the use of some type of formalised hedge, such as a financial derivative, to offset underlying foreign currency exposures.

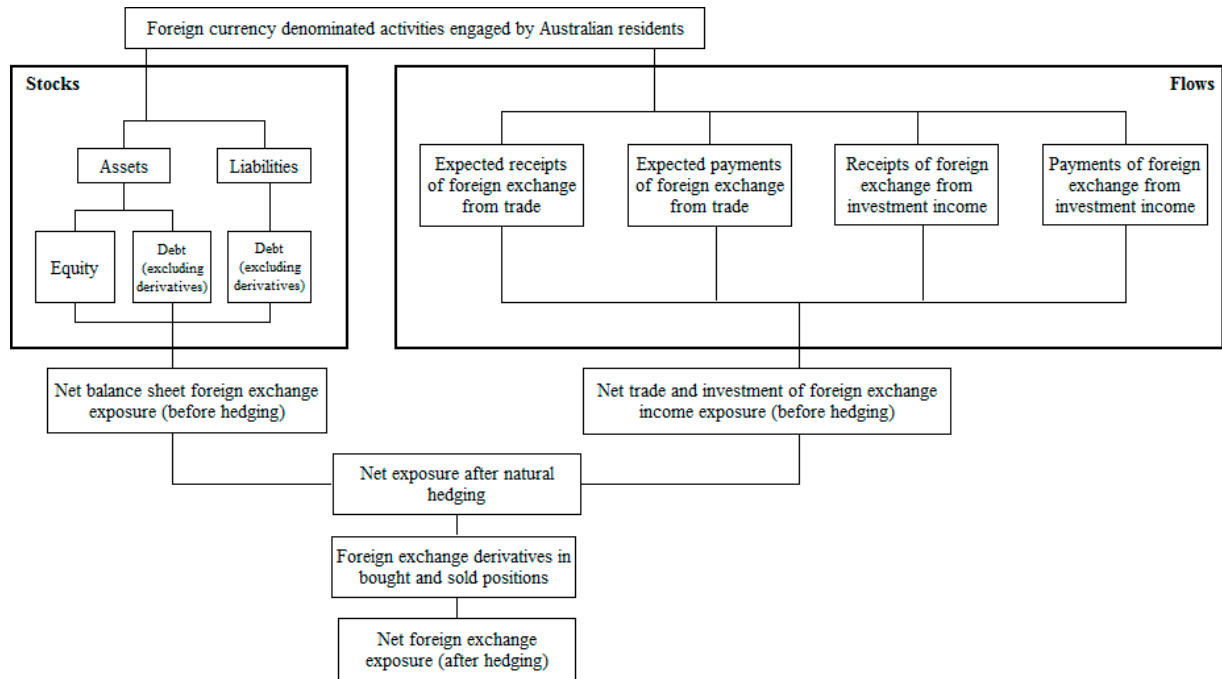
This paper will focus on natural hedging and the measurement of the extent to which a firm's balance sheet positions and trade flows may be exposed to fluctuation in foreign currency, before the use of financial derivatives.

Figure 1 broadly illustrates foreign currency denominated activities that could be undertaken by firms, and the resulting balance sheet foreign exchange exposure and trade foreign exchange exposures giving rise to a net exposure position after natural hedging.





Figure 1



### Natural Hedging

Natural hedging can be characterised as structuring core business activities of firms such that net exposure to fluctuation in exchange rate is eliminated or reduced before entering into explicit derivative contracts to further reduce foreign currency exposure risks. For large complex and diverse firms it is often difficult to quantify their net exposure positions after natural hedging. Natural hedging in a broad economic perspective is the net balance in both the balance sheet and trade foreign exchange exposed positions, reflecting the economies exposures to foreign exchange risk before the use of formalised hedging instruments.

### Matching

Firms involved in international trade often attempt to ‘match’ the currency denomination of their receipts and payments in order to limit foreign exchange exposure by netting out their receipts of foreign exchange from trade with their payments of foreign exchange from trade.

In firms where the balance sheet is highly exposed to foreign currency assets or liabilities a similar match (or ‘money market hedge’) is often attempted. For example, a firm could borrow in domestic currency, exchange this amount in the spot market for foreign currency, and invest in a secure offshore asset with an income stream, offsetting some of its foreign currency liability position. The firm can also use the earnings from the investment to service the debt, limiting the flow exposure.

### Leading and lagging

Large diversified firms often use ‘leading and lagging’ which involves a parent company bringing forward or delaying payments or receipts of foreign currency with its subsidiaries to offset the





currency risks associated with other foreign currency transactions to manage cash flows across the consolidated group.

### **Price correlation**

For some firms a degree of natural hedge can be achieved through the correlation between the price of the goods they produce and the exchange rate. For example, for an Australian gold producer selling bullion into world markets in US dollars, an appreciation of the AUD would lower its receipts. However, as an appreciation of the AUD is often correlated with iron ore prices, it is likely that rising prices would provide some dampening of the impact of this exposure.

### **Pooling**

In managing foreign exchange risks, firms may also be able to avoid engaging in explicit hedges if they have sufficient currency diversification across their costs and revenues, or assets and liabilities. Diversification should act to reduce aggregate currency exposure, at least to a level below the sum of all individual currency exposures. This technique is often referred to as 'pooling' and is adopted by some of the larger Australian resource companies.

### **Measuring Natural Hedging in the Survey of Foreign Currency Exposure**

In light of the significance of foreign currency exposures, the Reserve Bank of Australia has commissioned the Australian Bureau of Statistics to undertake a survey of firms' foreign currency exposures and their use of foreign currency derivatives to hedge these exposures. The survey has been conducted every four years since 2001 with the most recent survey of Foreign Currency Exposure (SFCE) conducted as at the end of March 2013 and the next SFCE to be conducted as at the end of March 2017. Results are published in the *Foreign Currency Exposure, Australia* (cat no 5308.0) publication and by the Reserve Bank of Australia in the Bulletin (most recently, December quarter 2013).

The aim of the SFCE is to capture quantitative and qualitative data about Australian enterprises' foreign currency exposure and the risk management practices associated with that exposure.

The SFCE approaches 1100 resident entities which had significant foreign currency exposure in assets/liabilities and/or exports/imports denominated in foreign currencies. The frame for the survey is constructed from data supplied in the Survey of International Investment, the Survey of International Trade in Services and from Merchandise Trade imports and exports records.

To this end, data is requested about resident-to-resident and non-resident-to-resident transactions in:

- Foreign-currency denominated equity assets;
- Foreign-currency denominated debt assets;
- Foreign-currency denominated debt liabilities; and
- Foreign-currency denominated expected receipts and payments from trade in goods and services.







For the first time, the 2017 iteration of the SFCE supplementary survey will ask respondents to directly disclose their use of natural hedging to eliminate or reduce their foreign currency exposure risks. Data collected from the SFCE will allow for the accurate determination of Australian corporations naturally hedged positions and net foreign currency exposure before the use of formalised hedges.

Figure 2 provides an example of the question to be used to capture the new data on natural hedging.

**Figure 2 – Proposed Question 9 from the 2017 Survey of Foreign Currency Exposure**

**9 Hedging of foreign currency receipts**

**Note**  
*Foreign currency receipts by hedging approach:*  
 • Divide all your expected future foreign currency receipts into one of the following groups, based on those parts of the balance sheet for which a clear approach to hedging can be identified.  
 • If no clear approach to hedging can be identified, it should be included as part of 'All other'. 'All other' also includes expected future foreign currency receipts that will be hedged in a portfolio that includes expected future foreign currency payments along with expected future foreign currency receipts that were not hedged.  
 • Natural hedges are created by payment obligations and/or receipts in the normal course of business that have at least partially offsetting foreign currency risk. See note X.X for examples of natural hedging.  
 • The value hedged by an overseas affiliate includes both formalised hedging and natural hedging performed by an overseas affiliate on behalf of the enterprise group.

(a) What value of your enterprise groups **expected foreign currency receipts** was hedged?  
 (see Notes 3.8 and 3.10)

| \$A'000                                 |            |                          |                         |                        |                          |                           |       |
|---|------------|--------------------------|-------------------------|------------------------|--------------------------|---------------------------|-------|
|   | <= 90 days | > 90 days<br><= 6 months | > 6 months<br><= 1 year | > 1 year<br><= 5 years | > 5 years<br><= 10 years | > 10 years<br><= 20 years | Total |
| Value Fully hedged by derivatives       |            |                          |                         |                        |                          |                           | 0     |
| Value Partially hedged by derivatives   |            |                          |                         |                        |                          |                           | 0     |
| Value hedged by overseas affiliate      |            |                          |                         |                        |                          |                           | 0     |
| Value naturally hedged                  |            |                          |                         |                        |                          |                           | 0     |
| Value of all other (including unhedged) |            |                          |                         |                        |                          |                           | 0     |
| <b>Total</b>                            | 0          | 0                        | 0                       | 0                      | 0                        | 0                         | 0     |

A challenging aspect to direct collection of natural hedging information from firms is that information may not be readily separable or identifiable from normal business operations. The ABS therefore expects to undertake an education process with data providers to mitigate any potential issues arising from the identification of natural hedging practices within firms.

**Measuring Natural Hedging in the International Investment Position and Balance of Payments publication**

As part of the December 2015 issue of the *Balance of Payments and International Investment Position* (cat. no. 5302.0) publication, the ABS produced an article 'A view into United States dollar exposure' attempting to measure foreign currency exposure to the United States dollar (USD) before the use of formalised hedging. The article drew on *Balance of Payments and International Investment Position* data to calculate Australian resident exposures with the USD on the balance sheet (equity investments and net debt obligations), income and trade, and provided a view of its exposure across broad investment and trade activity. The article drew new links between Australia's current account





transactions in and out of the USD to measure Australia’s current account exposure between the USD after natural hedging but before any formalised hedging.

**Table 1 – USD currency exposure**

|  | 2009          | 2010           | 2011           | 2012           | 2013           | 2014           | 2015           |
|--|---------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  | \$m           | \$m            | \$m            | \$m            | \$m            | \$m            | \$m            |
| Foreign equity assets in USA                                 | -209,864      | -211,580       | -211,736       | -239,615       | -301,988       | -347,584       | -342,495       |
| Foreign equity assets in USD dollarised states (b)           | -6,452        | -7,554         | -8,136         | -9,110         | -9,559         | -11,659        | -10,205        |
| USD denominated Debt Assets                                  | -163,908      | -220,450       | -219,338       | -194,618       | -219,675       | -292,974       | -375,427       |
| USD denominated Debt Liabilities                             | 416,709       | 441,158        | 504,205        | 485,649        | 573,135        | 643,681        | 734,095        |
| <b>Net USD balance sheet exposure</b>                        | <b>36,484</b> | <b>1,574</b>   | <b>64,994</b>  | <b>42,307</b>  | <b>41,914</b>  | <b>-8,536</b>  | <b>5,969</b>   |
|  |               |                |                |                |                |                |                |
| Income receipts on Australian Investment in the USA          | 8,230         | 10,279         | 8,734          | 7,434          | 8,050          | 10,674         | 9,539          |
| Income payments on USA investments in Australia              | -15,767       | -21,887        | -19,853        | -22,064        | -22,860        | -22,233        | -22,478        |
| <b>Net USD denominated payments of investment income (c)</b> | <b>-7,537</b> | <b>-11,608</b> | <b>-11,118</b> | <b>-14,630</b> | <b>-14,810</b> | <b>-11,559</b> | <b>-12,939</b> |
|  |               |                |                |                |                |                |                |
| USD invoiced receipts from trade                             | 154,896       | 191,278        | 220,533        | 205,334        | 219,876        | 222,810        | 204,782        |
| USD invoiced payments for trade                              | -103,784      | -111,545       | -128,548       | -135,413       | -134,270       | -144,450       | -151,732       |
| <b>Net USD invoiced receipts from trade</b>                  | <b>51,112</b> | <b>79,734</b>  | <b>91,985</b>  | <b>69,921</b>  | <b>85,606</b>  | <b>78,360</b>  | <b>53,050</b>  |
|  |               |                |                |                |                |                |                |
| <b>Net USD current account foreign currency exposure</b>     | <b>43,575</b> | <b>68,126</b>  | <b>80,867</b>  | <b>55,291</b>  | <b>70,796</b>  | <b>66,801</b>  | <b>40,111</b>  |

a This table assumes that all equity assets are held in the USA and the stated dollarised states, and does not account for United States dollar denominated equity assets in other economies.

b Sovereign states which use the USD as primary currency are the British Virgin Islands, East Timor, Ecuador, El Salvador, Marshall Islands, Federated States of Micronesia, Palau, Panama and Turks and Caicos Islands.

c The ABS does not collect currency information for income on investments. A proxy based on country of counterpart domicile (in this case the USA) has been used as values for interest income.

**Balance sheet exposure**

Australia’s net USD balance sheet exposure was derived using data used to compile Australia’s international investments position and identifying those asset holdings (both equity and debt) in USD and liabilities (debt issuances) in USD from collected data. In economy wide terms the netting of these position inherently accounts for natural hedging and is the net USD balance sheet exposure position. This can be applied to all foreign currency denominated assets and liabilities to get a net balance sheet foreign currency exposure position.

The net balance sheet exposure is the net of all the balance sheet positions and is calculated as:

$$\text{Foreign Equity Assets} \text{ plus } \text{Foreign Debt Assets} \text{ less } \text{Foreign Debt Liabilities} = \text{Net Foreign Currency Balance Sheet Exposure}$$





Australia's net USD balance sheet exposure as at December 2015 was in a liability position of A\$6.0 billion from an asset position of A\$8.5 billion in the prior year.

### Investment income exposure

Similar to receipts and payments from trade, a natural hedge can exist for receipts and payments of investment income. Receipts and payments of investment income were collected on the Survey of International Investment and used to compile the *Balance of Payments and International Investment Position*. The ABS does not collect currency information for income on investments. A proxy based on country of counterpart domicility (in this case the USA) has been used as values for interest income.

The USD net foreign currency exposure on income from investments is calculated as:

$$\text{Primary Income receipts in foreign currency less Primary Income payments in foreign currency} = \text{Net Foreign Currency Income Exposure}$$

As at December 2015 Australia's net USD denominated receipts of investments income was in a net deficit position of \$12.9 billion.

### Merchandise Trade exposure

USD Invoiced receipts and payments from trade were derived from International Merchandise Trade Statistics (IMTS) which was collected from the Australian Customs and used to compile the *Balance of Payments and International Investment Position* publication and the monthly *International Trade in Goods and Services* (cat. no. 5368.0) publication. Netting of the USD invoiced receipts and payments from trade, inherently accounts for natural hedging and is the net USD trade exposure position. This can be applied to all foreign currency denominated trade receipts and payments to get a net trade foreign currency exposure position.

The net trade exposure after natural hedging is calculated as:

$$\text{Trade receipts invoiced in foreign currency less Trade payments invoiced in foreign currency} = \text{Net Foreign Currency Trade Exposure}$$

As at December 2015 Australia's net USD invoiced receipts from trade was in a net surplus position of \$53.1 billion.

Australia's Net Current Account exposure as at December 2015 was a surplus of \$40.1 billion down from a surplus of A\$66.8 billion in the prior year.

### Conclusion

The ABS has undertaken work to improve hedging data with the re-development of the SFCE to explicitly question firms engaging in foreign dealings about their natural hedging activities. For firms, there may be some difficulties in determining their exposure to foreign currency risks outside of the use of formalised hedging instruments. As a result the ABS will be undertaking a respondent education process to assist in identifying true exposures to foreign currency fluctuations after





natural and formalised hedging. This paper also highlights that data used for the compilation of Australian *Balance of Payments and International Investment Position* can also be used to compile a net exposure position before formalised hedging.

*Questions for the Committee:*

1. *Do Committee members have any suggestions for improvements to the framework described for natural hedging (pages 7 – 8)?*
2. *Does Committee have any suggestions for improvements to the compilation and presentation of data on natural hedging (pages 8 – 12)?*





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