



Foreign exchange exposure—an introduction

IN THE OCTOBER 1999 issue of *National Accountant*, Ray Gunston identified the key steps to financial risk management. I would like to concentrate on one aspect of that article, foreign exchange (FX) exposure.

A firm has FX exposure if it has assets, liabilities, income or expenses, whose value may vary because of changes in exchange rates. The possibility of such changes creates uncertainty. Uncertain outcomes, to which probabilities can be assigned, are referred to in finance terminology as *risk*. As probabilities can be assigned to different exchange rate outcomes, firms with FX exposure face *FX risk*. FX management is a broad term that refers to how FX exposure is handled within the firm. A firm may choose to manage its exposure by hedging or not hedging. The Accounting Standard AASB 1012 (clause 06) defines FX hedging as, "action taken, whether by entering into a foreign currency contract or otherwise, with the object of avoiding or minimising possible adverse financial effects of movements in exchange rates".

With the volatile nature of exchange rates, particularly at the moment with the uncertainty in much of South East Asia, firms should be concerned with their FX exposures and should give thought to obtaining professional advice with regard to its management, or at least understanding its possible consequences. Hopefully this article is a stepping stone to this end.

Types of FX exposure

The term FX exposure is generic. More specifically, two broad types of exposure exist; *accounting exposure* and *economic exposure*. It is usual for the modern literature, however, to consider three specific forms of FX exposure:

- Translation exposure
- Operating exposure
- Transaction exposure.



Translation exposure is exposure which is recognised through the accounting process as the assets of foreign subsidiaries are translated to the domestic currency prior to the consolidation process. Although the translation exposure may create accounting gains and losses, there may be no direct cash flow implications. Operating and transaction exposure can, however, have direct cash flow implications (thereby creating economic exposure).

Translation exposure

According to Shapiro and Rutenberg (1976), the traditional concept of FX exposure is that of translation exposure. Because it would be inappropriate to simply combine the financial statements of foreign entities whilst they are expressed in different currencies, it is necessary to translate foreign entities' financial statements into the domestic currency prior to the consolidation process. Because exchange rates will fluctuate this will have direct implications for the final figures provided in consolidated financial statements.

Translation exposure arises when the assets, liabilities, revenues and expenses of a foreign affiliate, which are usually recorded in a foreign currency, are re-

expressed in terms of the home currency of its parent company. As noted above, this would occur when the financial statements of a foreign subsidiary need to be combined with those of the parent company to produce consolidated reports. The method to be used for the translation of the foreign subsidiary's statements, and for subsequent consolidation, are dictated by the relevant accounting standards of the parent company's country. In Australia the required treatment for foreign currency translation is dictated by AASB 1012, which is equivalent to the Australian Accounting Standard, AAS 20.

With regard to the balance sheet, the accounting standards within place throughout the world essentially distinguish between two types of assets and liabilities. The first type is assets and liabilities whose value should continue to be recorded in the parent's accounts at their historical exchange rate, and are therefore not exposed to changes in exchange rates. The second type is assets and liabilities that are included in the parent's accounts at the current exchange rate, and are therefore exposed to changes in exchange rates. The difference between the value of the *exposed assets* and the *exposed liabilities* is the translation exposure. (If the balance of the exposed assets and the exposed liabilities happened to be equal to each other, which would indeed be rare, then there would be no translation exposure as gains on one would be offset by losses on the other as exchange rates fluctuated). Thus, the identification of each asset and each liability as either being valued at historical or current exchange rates determines the amount of translation exposure.

In Australia, AASB 1012 distinguishes between self-sustaining and integrated foreign operations. A self-sustaining for-

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eign operations is one "independent, financially and operationally, of the company and whose operations do not normally expose the company or group to foreign exchange gains or losses" (AASB 1012, clause .06). The financial statements of a self-sustaining foreign entity must translated at balance date using the current rate method. As indicated in Deegan (1999, p. 951), under the current rate method, all assets and liabilities of the foreign operation are translated using the exchange rate in place at balance date. Revenues and expenses are translated at the exchange rates in place at the dates of the various transactions. If expense and revenue transactions are considered to occur uniformly throughout the period, then average rates may be used. Any translations gains or losses are taken directly to reserves, rather than the profit and loss account.

By contrast, an integrated foreign operation is one which "is financially and operationally inter-dependent, either directly or indirectly, with the company and whose day-to-day operations normally expose the company or group to foreign exchange gains or losses" (AASB 1012, clause .06). They must use the temporal method which, according to Deegan (1999, p. 953), basically requires that the monetary assets and liabilities be translated at the balance date exchange rates, whereas the non-monetary assets and liabilities are translated at the exchange rates in place when the transactions actually occurred. When the temporal method is to be applied the accounting gains and losses are to be transferred to the profit and loss account. (Monetary items are assets and liabilities which have a value that is fixed in nature, perhaps by some prior contractual arrangements and would include cash, accounts receivable, inter-

est receivable, notes receivable, loans receivable, dividends receivable, bank overdraft, accounts payable, income taxes payable, wages payable, notes payable and/or debentures payable. By contrast, the value of non-monetary assets and liabilities, for example buildings or inventory, are not fixed and will fluctuate over time).

The current rate method is the method most commonly used in the world today and is the simpler of the two (Eiteman, Stonehill and Moffett 1998). For example, AASB 1012 requires that if a subsidiary is self-sustaining then the current rate method shall be used and all assets and liabilities are to be translated at the current exchange rate, while owner's equity is translated at historical rates. The impact of this distinction is

that assets and liabilities are exposed, as changes in the exchange rate between reporting periods will affect their value. By contrast, existing owner's equity is not exposed, as it is always translated at the historical rate, and hence, it will not be directly impacted by changes in the exchange rate. A simple example of calculating translation exposure under this method from the balance sheet of a hypothetical firm follows. It assumes the values are in the subsidiary's currency (called the functional currency) which in these examples is the United States Dollar (USD), and the parent's currency (called the reporting currency) is the Australian Dollar (AUD). The current exchange rate is assumed to be AUD 1 = USD 0.6300.

TABLE 1

<u>Assets</u>		<u>Liabilities</u>	
Cash	4000	Accounts Payable	2500
Accounts Receivable	3000	Short-term Debt	3000
Plant and Equipment	2000	Long-term Debt	1000
Inventory	1000	Owner's Equity	3500
	USD 10,000		USD 10,000

<u>Assets</u>	<u>Exposed/Not Exposed</u>	<u>AUD 1 = USD 0.6300</u>
Cash	Exposed	6350
Accounts Receivable	Exposed	4761
Inventory	Exposed	3175
Plant and Equipment	Exposed	1587
Total Exposed Assets		AUD 15,873

<u>Liabilities</u>	<u>Exposed/Not Exposed</u>	<u>AUD 1 = USD 0.6300</u>
Accounts Payable	Exposed	3968
Short-term Debt	Exposed	4762
Long-term Debt	Exposed	1587
Capital Stock	Not Exposed	0
Total Exposed Liabilities		AUD 10,317

Amount of Exposure = Total Exposed Assets - Total Exposed Liabilities

Translation Exposure = 15,873 - 10,317 = AUD 5556

TABLE 2

<u>Assets</u>	<u>Exposed/Not Exposed</u>	<u>AUD 1 = USD 0.6300</u>
Cash	Exposed	6350
Accounts Receivable	Exposed	4761
Inventory	Not Exposed	0
Plant and Equipment	Not Exposed	0
Total Exposed Assets		11,111
<u>Liabilities</u>	<u>Exposed/Not Exposed</u>	<u>AUD 1 = USD 0.6300</u>
Accounts Payable	Exposed	3968
Short-term Debt	Exposed	4762
Long-term Debt	Exposed	1587
Capital Stock	Not Exposed	0
Total Exposed Liabilities		10,317

Amount of Exposure = Total Exposed Assets - Total Exposed Liabilities

Translation Exposure = 11,111 - 10,317 = AUD 794

Under the temporal method, monetary assets and monetary liabilities are translated at current exchange rates. Non-monetary assets and liabilities, as well as owner's equity, are translated at the rate at which they were acquired, and therefore are not exposed. An example of the temporal method is given above using the same information as in Table 1.

Under the temporal method, if the firm revalues any unexposed assets to market value, they are then translated at the current exchange rate.

Comparing the two, the current rate method will always give a larger translation exposure (and hence translation loss or gain) as inventory and plant and equipment are deemed exposed (however, any gain or loss, pursuant to AASB 1012 will be transferred to a foreign currency translation reserve when the current rate method is used). To illustrate how the exposure can create a translation loss or gain, consider the scenarios where the functional currency (USD) firstly depreciates by 5 per cent, and secondly appreciates by 8 per cent for both the current rate method and the temporal method. See Table 3.

With regard to the translation of income statement items, revenue, expenses and income tax expenses for both the current rate and temporal methods are translated at the average rate for the year. For depreciation, the current rate method dictates use of the average rate for the year while the temporal method requires the historical rate be used. For dividends, both methods require the rate at the date the dividend is paid or proposed, and finally abnormal items are translated at actual rates (Deegan 1999).

What the above illustration demonstrates is that from an accounting perspective, a change in exchange rates, in the presence of an overseas subsidiary, will lead to changes in the assets and liabilities (and hence, owners' equity) that will be recorded in the consolidated financial statements.

Depending upon one's assumption about the efficiency of the capital market, the changes in the reported assets and liabilities could potentially have implications for the market's perceptions about the performance and financial position of the particular group of entities.

Operating exposure

Operating exposure concerns commitments not yet formally made. This type of exposure arises as unexpected currency changes affect the firm's future operating cash flows via competition and prices, and hence *ultimately* affect the firm's value. For example, consider an Australian firm, Koala Pty Ltd. that invoices in USD. If the AUD were to appreciate relative to the USD, cash flows will fall as the USD received for payment will buy less of the stronger AUD, and so Koala's value will fall (holding all else equal).

This is only one example though, as a company faces operating exposure immediately it begins business, irrespective of whether it is involved in foreign currency transactions. If a firm's competitors or suppliers are subject to any type of FX exposure, so too is the firm because any effects of FX changes are likely to be passed on to all involved in the trade of a particular good. For example, take the case of a hypothetical Australian firm, Chase Pty Ltd, which has no FX dealings at all. Assume one of Chase's competitors, which sells a near substitute product, imports from the United Kingdom and pays in Great Britain Pounds (GBP). If the competitor's cost-of-goods-sold reduces because the AUD has strengthened against the GBP, and as a result they can sell their product for a cheaper price, all firms in the industry, including Chase, will also need to cut prices to remain competitive. The reduced cash flows will cause Chase's value to fall (again holding all else equal).

Operating exposure of a firm is therefore very difficult to quantify or to forecast with accuracy. It requires detailed analysis of many factors including elasticities of demand, industry structure and the nature of competition. It also assumes management will know

how the firm's value will respond to exchange rate changes (Buckley 1996).

Transaction exposure

In contrast to operating exposure, transaction exposure concerns pre-existing cash flows. Having transaction exposure means that the final value a firm receives or pays as a result of a contract involving a foreign currency is uncertain, as the exchange rate will most likely change between the time the contract is entered and when payment is finalised. As an example of transaction exposure, consider the case of a hypothetical small Australian exporter, Joey Pty Ltd. Joey exports a consignment of drills to the US and bills the customer. As Joey is trying to establish a presence in the market, it agrees to accept payment in 3 months of USD 1 million. The current spot rate is AUD 1 = USD 0.6300, which would mean that if payment were received today, it would be approximately equivalent to AUD 1,587,301. However, if when payment is made in 3 months the new rate is AUD 1 = USD 0.6500, the entity receives just AUD 1,538,461, which is AUD 48,840

less than what would have been obtained at the earlier spot rate. If the rate was AUD 1 = USD 0.6100, the entity receives approximately AUD 1,639,344, an extra AUD 52,043.

Of the three types of exposure, transaction exposure is probably the simplest to quantify and manage. This is because the amounts and dates are fixed, so the exporter using the normal instruments of international trade such as letters of credit, bills of lading and bills of exchange have a high degree of certainty. Given this, transaction exposure is also relatively simple to manage, and firms have a wide range of instruments available for this purpose. Larger firms most often have specific centres (often profit centres) which are responsible for managing transaction exposure; as would be expected, small and medium firms in the main are not as informed or sophisticated in their approach (McCarthy 1999).

Conclusion

Much academic literature has been directed towards investigating the atti-

tudes of firms towards the recognition and management of FX exposure and has found that the majority of firms do take the issue seriously and often devote considerable resources to its management. Those firms that do not understand the concept or the possible effects changes in exchange rates can have upon the firm should be seeking advice. On the other side, particular firms may not even know that they have a potential exposure and it may be both a responsibility and opportunity for an outside party to educate them. I hope in a future article to introduce some of the hedging alternatives that are available to firms. ■

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TABLE 3

Scenario 1: Functional currency (USD) depreciates by 5 per cent from AUD 1 = USD 0.6300 (equivalent to USD 1 = AUD 1.5873) to AUD 1 = USD 0.6632 (USD 1 = AUD 1.5079).

	Current Rate Method	Temporal Method
Net Exposure	AUD 5556	AUD 794
Times amount of Depreciation	0.05	0.05
Translation Loss	AUD 278	AUD 40

Scenario 2: Functional currency (USD) appreciates by 8 per cent from AUD 1 = USD 0.6300 (equivalent to USD 1 = AUD 1.5873) to AUD 1 = USD 0.5833 (USD 1 = AUD 1.7143).

	Current Rate Method	Temporal Method
Net Exposure	AUD 5556	AUD 794
Times amount of Appreciation	0.08	0.08
Translation Gain	AUD 444	AUD 64

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