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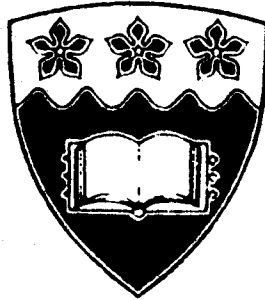
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UNIVERSITY OF WOLLONGONG

DEPARTMENT OF ACCOUNTANCY
and LEGAL STUDIES



IMPACT OF FLOATING EXCHANGE RATES ON
COMPANY RISK MANAGEMENT PRACTICES:
THE AUSTRALIAN EXPERIENCE

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and
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WORKING PAPER NO. 1

**IMPACT OF FLOATING EXCHANGE RATES ON COMPANY RISK MANAGEMENT PRACTICES:
THE AUSTRALIAN EXPERIENCE**

ABSTRACT

This study addressed two research questions: first, the effect of floating the Australian dollar on individual company's exchange risk exposure and, secondly, the extent of company response in managing foreign exchange risk. The findings indicated that floating of the dollar resulted in increased risk exposures though the impacts were not uniform across all companies. Likewise, the impact on foreign exchange risk management practices was not necessarily to the same extent for all companies. Overall, there is evidence that since floating the dollar an increasing number of companies is giving more serious attention to the exchange risk management function.

IMPACT OF FLOATING EXCHANGE RATES ON COMPANY RISK MANAGEMENT PRACTICES: THE AUSTRALIAN EXPERIENCE

Compared to many other countries which have already moved to a freely floating exchange rate system, Australia abandoned its managed foreign exchange rate system only in December 1983. As a late floater Australia is beginning to feel the impact of a fluctuating Australian dollar particularly on corporate reporting. Almost half a billion dollars in foreign exchange losses were written off by Australian companies in the first half of 1985 and further write-offs of \$1.7 billion have been forecast (Fin. Review, Oct. 8, 1985, p. 8). The declining dollar and its impact on corporate reporting has therefore generated considerable interest in foreign exchange risk management and foreign exchange accounting in Australia.

Under the previously managed exchange rate system in which exchange rates were allowed to fluctuate within acceptable limits, Australian companies' concern over exchange risks naturally has been minor. But, faced with the prospect of substantial exchange losses under a freely floating exchange rate system, Australian companies should be developing appropriate policies and strategies for minimizing or eliminating their exposure to such risk. Managing foreign exchange risk exposure thus should be incorporated in the decision-making process, not as an element that is given but as a variable that must be controlled (Teoh and Er, 1986).

STATEMENT OF PURPOSE

The purpose of this study was to examine the impact of changing exchange rates on Australian companies engaged in international business activities. More specifically, this study investigated the effect of floating the dollar on foreign exchange risk management practices in terms of four major company variables based on a review of the literature:

company activity, sales turnover, extent of international business involvement and ultimate ownership.

BACKGROUND

Fluctuations in exchange rates expose a company engaged in international operations to the potential risk of losses, as well as subject the company to considerable earnings variability. As protection against these possibilities, management should be concerned with the measurement and evaluation of foreign exchange risk exposures. Normative decision models on foreign exchange risk management however suggest that this is completely unwarranted. Dufey and Srinivasulu (p. 54), in arguing the case for corporate management of foreign exchange risk, summed up the reasoning underpinning these models as follows:

Foreign exchange risk does not exist; even if it exists, it need not be hedged; even if it is to be hedged, corporations need not hedge it.

The results of various empirical studies however were inconsistent with this hypothesis (Evans et. al., 1978; Mathur, 1982; Drury and Errunza, 1985) because the validity of these models rests on certain restrictive assumptions.

The purchasing power parity (PPP) theory states that "under a freely floating exchange rate regime, a relative change in purchasing power parity for any pair of currencies, calculated as a price ratio of trade and goods, would tend to be approximated by a change in the equilibrium rate of exchange between these two currencies"(Shapiro and Rutenberg, 1978, p. 49). This offsetting tendency between changes in price levels and exchange rates indicates that exchange risk exposure does not exist. Empirical evidence however has shown that deviations from PPP can be

substantial the shorter is the time period, suggesting that adjustments between changes in prices and exchange rates are not instantaneous (Dufey and Srinivasulu, 1983, p. 55).

The CAPM model, when applied to a multicurrency environment, recognises that exchange risk exists but then it presumes that there is "no difference to the valuation of either the total market portfolio or the individual firm whether exchange risks are passed through to the capital market as part of the risk of the firm's shares, or transferred directly to the market through forward exchange or foreign currency debt contracts" (Aggarwal 1978, p. 203). In practice, however, comparing the firm and individual investor, the firm is more advantageously placed to manage exchange risks especially when transaction costs and taxation exist, resulting in lower exchange risk management costs for the firm (Aliber, 1979, p. 135; Jacque, 1979, p. 83).

The Modigliani-Miller (MM) theory has also been used to justify that exchange risk management at the corporate level is irrelevant (Feiger and Jacquillat, 1981). But, as argued by Dufey and Srinivasulu (p. 57), in the presence of market imperfections the situation is one in which what an investor can do, the firm can do better. Dufey and Srinivasulu (pp. 57-58) thus cited entry barriers and information gaps as examples of obstacles to hedging at the individual investor level.

Logue and Oldfield (1977) used the market efficiency hypothesis argument to support the case that corporate management of exchange risk is superfluous. If foreign exchange markets are efficient, all relevant

information would be impounded in the share prices and variability of earnings introduced by rate changes should not affect share prices. However, as Jacque (p. 94) pointed out,

Such clear-sightedness on the part of the market would require extensive and systematic disclosure by multi-national corporations of their foreign subsidiaries' transaction, translation and economic exposures. This practice is clearly not yet accepted because multi-national corporations generally disclose only consolidated financial statements.

Based on these reviews there seems to be little doubt that managing foreign exchange risk should be an appropriate concern of corporate management. Dufey and Srinivasulu (1983) made out the case succinctly as follows:

In an idealized world, without information and transaction costs, explicit or implicit contract periods, and other obstacles to instantaneous price adjustments, deviations from various equilibrium conditions such as purchasing power parity, the law of one price, and both the domestic and international Fisher effect would not occur; neither would firms be exposed to exchange risk. However, because real-world imperfections in markets for real goods and services as well as financial assets do exist, firms can be subject to exchange risk.

CORPORATE MANAGEMENT OF FOREIGN EXCHANGE RISKS

Corporate attention devoted to foreign exchange risk management depends on the extent of individual company exposures to exchange risks. Traditionally three types of exposure risks can be identified:

(a) Translation (accounting) exposure

This is concerned with risk of translation losses arising from a fall in value of the foreign currency in the situation where exposed assets exceed exposed liabilities. The reasons for corporate concern about this risk are based on a desire to show a steady earnings per share figure and the fear that wild fluctuations in earnings per share introduced by translation losses can adversely affect share prices (Srinivasulu, 1983, p. 37).

(b) Transaction exposure

This is concerned with risk of exchange losses associated with changes in future cash flows arising from contractual receipts or obligations which are denominated in the foreign currency. Transaction exposure risk involves actual or potential cash flow changes unlike translation exposure risks which do not involve any cash flows.

(c) Economic exposure

This is concerned with risk of exchange losses associated with changes in future cash flows arising from exchange rate changes which can affect future sales, prices or costs.

The process of managing foreign exchange risk involves developing a well defined objective and policy, as well as designing and implementing an appropriate hedging strategy. In previous studies (for example, Abdul Malek, 1976, pp. 411-452) several dimensions of risk management essential for implementing hedging strategy have been identified: organizational structure of risk management, objectives of risk management, exchange rate

forecasting, selection and implementation of hedging strategies.

In examining the organizational structure of risk management, Evans et.al. (1978) and Mathur (1982) noted that the trend had been toward the centralization of exchange risk management decisions.

In the case of risk management objectives Evans et.al. (1978) found a shift in emphasis, from the reported earnings figure to protection of cash flows and asset values. Drury and Errunza (1985) reported, based on a Canadian study, that the primary objectives of foreign exchange risk management were protection against various impacts of translation, transaction and economic exposures.

Exchange rate forecasting presents the most difficult aspect of exchange risk management especially under a floating exchange rate system for two reasons: first, volatile fluctuations in the exchange rates are extremely likely under such a system and, secondly, exchange rate variations may occur without the existence of fundamental disequilibrium in the balance of payments (Fletcher, p. 451).

In the Evans et.al. study (p. 17) it was reported that U.S. companies were moderately involved in forecasting of exchange rates and, very frequently, these companies based their forecasts on point estimates of the spot rate. Thus a rather sophisticated forecasting technique was used.

Following this diagnosis of the exchange risk environment discussed above, corporate management would then identify and select appropriate defensive hedging strategies. In making a hedging decision corporate management would be considering the trade-off between the degree of risk they are prepared to accept and the cost of protecting against exposure to such a risk. The findings in previous studies revealed that forward contracts was the most frequently used hedging technique (see, for example, Shapiro, 1976, pp. 48-58).

The foregoing discussion provides the framework within which this study was undertaken. Specifically, the study was designed to investigate the impact of floating exchange rates on company risk management practices among Australian companies.

RESEARCH HYPOTHESES

In order to study the impact of floating the Australian dollar on foreign exchange risk and the response by Australian companies in managing such risk exposure, a number of hypotheses was developed and tested. Based on prior studies several company variables were selected because of their possible effects on risk exposure and, consequently, on a company's risk management objective and policy. These company variables were identified as follows:

- (1) Ultimate ownership;
- (2) Principal activity;
- (3) Sales turnover;
- (4) Extent of international business involvement.

The effect of floating the Australian dollar on exchange risk exposure was first investigated. Accordingly, the following null hypotheses were formulated to test whether floating the Australian dollar would have the same risk impacts across all affected companies. Stated formally, for main effects (H_{01} to H_{04}):

There are no significant differences in main effects of the extent of exchange risk exposure experienced across companies after floating the Australian dollar.

For interaction effects (H_{05} to H_{10}):

There are no significant differences in interaction effects of the extent of exchange risk exposure experienced across companies after floating the Australian dollar.

The extent of company response in managing risk exposure was investigated next. The following aspects of foreign exchange risk management were examined:

- (a) Extent of resources channelled to management of foreign exchange risks.
- (b) Organizational structure of foreign exchange risk management.
- (c) Company's objectives of exchange risk management.
- (d) Exchange rate forecasting.
- (e) Hedging policy and strategy.

In this case, a broad category of null hypotheses was formulated to test whether floating the Australian dollar would have the same impact on foreign exchange risk management practices across companies. Stated formally,

There are no significant differences in main effects on foreign exchange risk management practices across companies following floating of the Australian dollar.

In this way 20 (4 x 5) null hypotheses of no significant main effects were tested ($H_{11a} - 11e$ to $H_{14a} - 14e$).

In addition this study also investigated the interaction effects of floating the dollar on foreign exchange risk management practices. Accordingly, the following broad category of null hypotheses was formally stated:

There are no significant differences in interaction effects on foreign exchange risk management practices across companies following floating of the Australian dollar.

In this way 30 (5 x 6) null hypotheses of no significant interaction effects were tested ($H_{15a} - 15e$ to $H_{20a} - 20e$).

METHOD

Mail questionnaires were sent to 460 Australian companies involved in international business activities (imports, exports, and foreign operations). The use of a survey methodology permits the collection of data from a large number of firms within the allotted time and resource of this study. This is consistent with previous studies in this area (Evans et. al, 1978; Jilling, 1978, 1978; Mathur, 1982). The questionnaires were pilot-tested before mailing and were addressed to foreign exchange risk managers or persons responsible for making hedging decisions. Each respondent was also promised a copy of the summarised results.

The survey instrument was developed using a five-point Likert-type scale to record the responses of companies concerning the effect of a floating Australian dollar on foreign exchange risk management practices. Altogether 132 useable replies from two mailings were received, thus providing a response rate of 31%. This was within the typical response rate 20%-40% for mail surveys (see, for example Nachmias, D. and C. Nachmias (1976). In order to test for non-response bias, response scores from the two mailings were tested for any differences that might be generalised to nonrespondents. No discernible bias could be detected.

The responding companies were classified and analysed in terms of the four company variables: ultimate ownership, principal activity, turnover and international involvement. Ultimate ownership refers to whether companies were Australian-owned or foreign-owned. Principal activity is indicated by the line of business with greatest turnover. This resulted in four categories of activities: primary, manufacturing, trading (mainly imports/exports) and "others". Turnover consisted of three categories: (>\$100m, \$10m-\$100m, <\$10m). This classification of turnover is to ensure a reasonable number of companies fall within the specified categories.

International involvement is expressed either, as a percentage of imports or exports over sales, or in terms of exports and sales from subsidiary operations as a percentage of group sales.

Descriptive statistics relating to these classifications were presented in Tables 1a to 1d in the Appendix.

The hypotheses were tested using analysis of variance and chi-square tests.

RESULTS AND DISCUSSION

Impact of Floating the Australian Dollar on Exposure Risk

Response scores on the degree of exposure risk were compared before and after implementation of the floating exchange rate system. Post-implementation mean scores generally were found to be higher. Table 2 in the Appendix presents the analysis. Significant main effects were found for turnover and international involvement. The results showed that large companies (turnover > \$100m) and companies with substantial international involvement (>50%) experienced the greatest increase in risk exposure. There were also significant interaction effects indicating that risk exposure has greatly increased for foreign-owned companies engaged in primary activity (mainly mining), foreign-owned companies with turnover of more than \$100m, and all large companies (turnover > \$100m) with substantial involvement (>50%). A plausible explanation for this might be the erratic fluctuations in the prices of natural resources over the last six months of 1985. As would be expected, large companies with substantial international involvement were more exposed to exchange risks and hence were most affected by floating of the dollar.

Overall the evidence provided partial rejection of the null hypotheses ($H_{01} - 04$ and $H_{05} - 10$) that there were no significant differences in main and interaction effects in the extent of risk exposure experienced across companies since the dollar was floated.

Extent of Resources Channelled into Risk Management

This aspect of exchange risk management was investigated to test whether there has been an increase in resources channelled into risk management. Table 3a presents the results. Increased resources devoted to risk management were found among larger companies and those with significant involvement. This was also evident from the interaction effect of turnover x involvement. The main activity effect showed that the result approached significance, with mining and manufacturing companies channelling relatively more resources into the management of exchange risks. However, no significant difference was found between Australian and foreign-owned companies in terms of resources allocated to risk management.

Considering that it was the larger companies with substantial involvement that were most exposed to exchange risks, it was not surprising that these companies should also be more concerned about exchange losses, hence the channelling by these companies of additional resources into risk management. Although foreign-owned companies generally experienced an increase in risk exposure more than Australian companies, both have indicated that more resources were being channelled into the management of foreign exchange risk.

Table 3b presents an analysis of the amount of time these companies had been devoting to risk management. As shown, there was a significant main effect for ownership with Australian companies tending to spend more time than foreign-owned companies in managing risk exposure. Possibly, because Australia is a late floater, more time would be required for managing exchange risk to compensate for the lack of experience. Foreign-owned companies especially subsidiaries of U.S. parent companies were able to draw upon the expertise and experience of their parent companies in dealing with risk management problems. Investigation of the

significant interaction effect, ownership x involvement further indicated that this increased allocation of time to foreign exchange risk management came from Australian companies with substantial involvement.

On the basis of this evidence, the main effects hypotheses (H_{11a} - H_{14a}) and interaction hypotheses (H_{15a} - H_{20a}) were partially rejected.

Organizational Structure of Foreign Exchange Risk Management

Chi-square tests were used to determine the type of companies that have an individual or committee responsible for managing exchange risk. The results in Table 4 showed that there was a significant difference between companies with varying involvement in international activities (> 50% and 50% and less). Companies with substantial involvement were more likely to have an organizational set up for dealing with risk management.

In regard to the organizational level at which risk management decisions were made, analysis of variance did not reveal any significant differences in foreign exchange risk management practices across companies based on the four classification criteria. Generally, companies have indicated that exchange risk management decisions were made either at headquarters for companies with subsidiary operations or by top-level management for single companies. This result suggests a greater degree of centralization of risk management decision-making than have been reported in prior studies (see, for example, Shapiro and Rutenberg, 1976, p. 38). Maybe this is partly because of lack of experience by personnel at the decentralized level in view of the recency of floating the Australian dollar. This may also be partly because of the severity of fluctuations in exchange rates demanding as a result senior management attention.

Since not all the main and interaction effects were found to be significant the null hypotheses H_{11b} to H_{14b} for main effects and H_{15b} to H_{20b} for interaction effects could not be rejected.

Objectives of Exchange Risk Management

Since there were no significant interaction effects, Table 5 summarises only the results of main effects of ANOVA for perceived importance of risk management objectives. Significant ownership main effects were found for two objectives: complete elimination of exposure to foreign exchange risk and elimination of all accounting foreign exchange losses. Foreign-owned companies generally placed greater importance on these objectives than Australian companies. There were significant involvement main effects for the objectives: protecting the dollar value of foreign assets and protecting the economic value of future foreign currency cash flows. Companies with substantial involvement tended to consider these objectives as most important. Trading companies accounted for the significant activity main effect for the objective: elimination of all foreign exchange accounting losses. The significant turnover main effect was attributed to large companies in respect to the objective: protecting the dollar value of foreign assets. More foreign companies perceived the importance of eliminating exchange risk because of their greater general exposure. High involvement companies similarly were concerned with the long term effects of risk exposure, hence their emphasis on elimination or minimization of economic exposure. Trading companies, as importers or exporters, were more concerned with eliminating exchange accounting losses.

No significant effects were found for the objective: acceptance of foreign exchange risk in the short term if foreign exchange gains are anticipated, suggesting that companies generally were not engaged in foreign exchange speculation. The result also indicated that companies were more concerned with potential exchange losses than exchange gains.

The findings on company risk management objectives showed that companies were concerned with both accounting and economic exposures.

Since only main effects were significant the hypotheses of no significant differences in main effects were rejected ($H_{11c} - 14c$), whereas all hypotheses of no significant interaction effects ($H_{15c} - 20c$) could not be rejected.

Methods of Foreign Exchange Forecasting

Table 6 summarises the main and interaction effects of ANOVA on the importance of sources of forecasting information used by companies. These results revealed that foreign-owned companies considered reports from subsidiaries and branches as the most important source whereas Australian companies were more likely to rely on banks as their source of forecasting information. Moreover, banks were also favoured by the larger companies. Smaller companies tended to rely on the intuitive approach as was also the case of import/export companies.

Significant interaction effects were found on the use of bank sources for exchange rate forecasting information. Banks were considered a most important source by large Australian companies and by Australian companies with substantial international business involvement. Other ownership x involvement interaction effects were concerned with financial publications and using outside foreign exchange advisers. In both cases it was the foreign-owned companies with substantial involvement that have largely relied on these sources for forecasting information. The activity x turnover interaction effect for the intuitive approach indicated that import/export companies with smaller turnovers tended to use this approach. These results again allowed partial rejection of the main effects hypotheses H_{11d} to H_{14d} , and interaction hypotheses H_{15d} to H_{20d} .

Hedging Policy and Strategy

Table 7a presents the results of χ^2 tests for differences among companies concerning whether they have established plans or guidelines for implementing hedging policies before and after floating the dollar. As shown, there was a significant difference between company ownership and the establishment of formal plans or guidelines before floating the dollar but no such difference existed after floating the dollar. Australian-owned companies before the dollar was floated tended not to establish any hedging guidelines vis-a-vis foreign-owned companies. But after floating the dollar more Australian companies recognised the importance of developing appropriate hedging policies, hence no significant difference was noted.

There was also a significant difference between company size and the existence of hedging policies. Larger companies (turnover > \$100m) were more likely to establish such policies than smaller companies (turnover < \$10m) both before and after floating the dollar. Maybe this is because the larger companies would have the resources and expertise to implement hedging policies. This should provide further evidence that company size is an important determinant in foreign exchange risk management.

The types of hedging techniques employed by companies were analysed next. Table 7b presents the results of analyses of the main effects of ANOVA on the extent of use of different hedging techniques.

Significant main activity effects were found for the hedging techniques: lead-lag local currency receivables, working capital adjustment and transfer price adjustment. In all cases companies engaged in primary activity relied to a great extent on these hedging techniques. Considering the large size and the nature of operation of these companies, this result is not at all surprising.

There were also significant turnover main effects on the hedging techniques: swaps and borrowing/lending abroad. Many of the larger companies were found to use these techniques probably because of the size of their operations.

A significant involvement main effect was attributed to the working capital adjustment hedging technique. Companies with more than 50% international business involvement mostly employed this technique.

No significant main effects were found for the hedging techniques: forward exchange contracts and specifying currency of export and import transactions since these techniques were widely used by all companies. The popularity of forward contracts is not surprising because it is a technique for hedging not only foreign currency transactions but also balance sheet exposure (Tran, 1980).

Overall the results showed that the hypotheses of no main effects were partially rejected (Hypotheses $H_{11e} - 14e$). On the other hand, interaction hypotheses ($H_{15e} - 20e$) could not be rejected.

SUMMARY AND CONCLUSION

Several observations can be made based on the empirical findings of this study. First, floating of the Australian dollar has increased an individual company's foreign exchange risk exposure and this has led to more resources being channelled into the exchange risk management function, for example, increased amount of time committed to risk management activity and increasing evidence of hedging guidelines being established only after floating the dollar. Companies affected were generally large companies with substantial involvement in international activities. Australian-owned companies however felt the exposure to exchange risks more, hence directed more resources to the risk management function compared to foreign-owned companies since the latter can draw upon the experience and expertise of parent companies in dealing with risk management problems.

Secondly, there was a tendency for affected companies to centralize the exchange risk function, so that exchange risk management decisions were made either at parent-company level or at top-management level for single entities. It appeared that exchange risk decision-making should be an appropriate concern of higher management. This is particularly relevant in the present Australian situation where exchange rates are extremely volatile and experienced staff are in short supply.

Thirdly, all companies exposed to exchange risks generally agreed that the risk management objectives should be the elimination of exchange losses arising from transaction, translation and economic exposures.

Fourthly, large Australian companies were more likely to rely on bank sources for foreign exchange forecasting information. Smaller companies tended to use the intuitive approach because of the high cost of buying outside services such as from banks and foreign exchange advisory

services. Foreign-owned companies on the other hand were able to use reports from subsidiaries, foreign exchange advisory services and financial publications. Very few companies, mainly foreign-owned, made use of mathematical forecasting models, suggesting a rather low degree of forecasting sophistication among Australian companies at the present time.

Finally, forward exchange contracts were by far the most widely used hedging technique across all companies. Larger companies, because of their size of operations, were also able to use such techniques as transfer pricing adjustment, swaps and borrowing/lending abroad.

This study therefore provided some evidence that floating of the dollar resulted in increased risk exposures though the impacts were not uniform across all companies. Likewise, the impact on foreign exchange risk management practices was not necessarily to the same extent for all companies. Overall, there is evidence that since floating the dollar an increasing number of companies is giving more serious attention to the exchange risk management function.

APPENDIX

Table 1aClassification by Ultimate Ownership

	<u>No. of Companies</u>
Australian-owned	73 (55%)
Foreign-owned	<u>59</u> (45%)
	<u>132</u> (100%)

Table 1bClassification by Principal Activity

	<u>No. of Companies</u>
Primary	9 (7%)
Manufacturing	49 (37%)
Trading	56 (42%)
Others	<u>18</u> (14%)
	<u>132</u> (100%)

Table 1cClassification by Turnover

	<u>No. of Companies</u>
< \$10 m	37 (28%)
\$10m - \$100m	54 (41%)
> \$100m	<u>41</u> (31%)
	<u>132</u> (100%)

Table 1dClassification by International Involvement

	<u>No. of Companies</u>
> 50%	56 (42%)
50% or less	<u>76</u> (58%)
	<u>132</u> (100%)

Table 2

Results of main and two-way interaction effects of ANOVA of the impact of floating the Australian dollar on risk exposure

	<u>DF</u>	<u>MS</u>	<u>F</u>
Ownership (O)	1	.33	.34
Activity (A)	3	1.19	1.22
Turnover (T)	2	4.29	4.81***
International business Involvement (I)	1	3.63	3.93**
O x A	3	2.12	2.14*
O x T	2	4.65	4.78***
O x I	1	.89	.91
A x T	6	2.01	2.06*
A x I	3	.29	.29
T x I	2	2.28	2.36*
Error	108	.98	

* $p < .10$ ** $p < .05$ *** $p < .01$

Note: None of the second or higher order interactions were significant at the .10 level.

Table 3a

Results of main and two-way interaction effects of ANOVA of the extent of resources channelled into risk management

	<u>DF</u>	<u>MS</u>	<u>F</u>
Ownership (O)	1	1.23	1.17
Activity (A)	3	2.09	1.99
Turnover (T)	2	2.47	2.35*
International business Involvement (I)	1	4.14	3.94**
O x A	3	1.14	1.09
O x T	2	1.77	1.69
O x I	1	2.13	2.03
A x T	6	1.55	1.48
A x I	3	1.22	1.16
T x I	2	3.20	3.05**
Error	108	1.05	

* $p < .10$ ** $p < .05$

Note: None of the second or higher order interactions were significant at the .10 level.

Table 3b

Results of main and two-way interaction effects of ANOVA of the time devoted to foreign exchange risk management

	<u>DF</u>	<u>MS</u>	<u>F</u>
Ownership (O)	1	3.03	3.94**
Activity (A)	3	.89	1.16
Turnover (T)	2	1.38	1.79
International business Involvement (I)	1	1.65	2.15
O x A	3	.84	1.09
O x T	2	1.09	1.42
O x I	1	2.12	2.75*
A x T	6	.46	.60
A x I	3	.43	.57
T x I	2	.93	1.21
Error	98	.77	

* $p < .10$ ** $p < .05$

Note: None of the second or higher order interactions were significant at the .10 level.

Table 4

χ^2 tests whether companies have an individual or committee responsible for risk management

	<u>Ownership</u>	<u>Activity</u>	<u>Involvement</u>	<u>Turnover</u>
χ^2 value	less than 1	2.80	2.71	1.82
Degree of freedom	1	3	1	2
Level of significance	n.s.	n.s.	$p < .10$	n.s.

Table 5Summarised results of ANOVA main effects of perceived importance of different risk management objectives

	<u>Classification Criteria</u>				
	<u>Ownership</u>	<u>Activity</u>	<u>Turnover</u>	<u>Involvement</u>	<u>Within</u>
<u>Risk management objectives:</u>					
Complete elimination of exposure to foreign exchange risk					
df	1	3	2	1	
MS	6.75	3.35	.60	.18	97
F	3.91**	1.94	.35	.10	1.73
Elimination of all accounting foreign exchange losses					
df	1	3	2	1	95
MS	8.03	5.40	2.35	1.28	1.84
F	4.35**	2.93*	1.28	.70	
Acceptance of foreign exchange risk in the short term if foreign exchange gains are anticipated					
df	1	3	2	1	93
MS	.14	1.57	.77	.05	1.78
F	.08	.89	.43	.03	
Protection of the dollar value of foreign assets					
df	1	3	2	1	89
MS	1.55	2.63	9.01	15.23	2.37
F	.65	1.11	3.79**	6.41***	
Protection of the economic value of future currency cash flows					
df	1	3	2	1	92
MS	.74	4.09	1.93	13.86	2.12
F	.35	1.93	.91	6.54***	

* p < .10

** p < .05

*** p < .01

Table 6

Analysis of Variance Summary: Ownership, Activity, Turnover and Involvement by Sources of Foreign Exchange Forecasting Information

	Ownership (O)	Activity (A)	Turnover (T)	Involvement (I)	(OxA)	(OxT)	(OxI)	(AxT)	(AxI)	(TxI)	Within
Financial Publications											
df	1	3	2	1	3	2	1	6	3	2	84
MS	1.89	1.06	.64	.39	.69	.74	3.29	.91	.20	.99	1.20
F	1.57	.88	.53	.33	.58	.62	2.74*	.76	.16	.83	
Intuitive Approach											
df	1	3	2	1	3	2	1	6	3	2	75
MS	.35	4.49	7.39	.74	.67	1.28	.01	5.99	.51	1.54	1.48
F	.23	3.04**	4.99***	.50	.45	.86	.01	4.05***	.34	1.04	
Using Outside Foreign Exchange Advisers											
df	1	3	2	1	3	2	1	6	3	2	75
MS	3.31	.11	2.06	2.13	2.87	.47	6.06	1.36	2.12	1.82	1.86
F	1.79	.06	1.11	1.15	1.55	.25	3.26**	.73	1.14	.98	
Banks											
df	1	3	2	1	3	2	1	6	3	2	83
MS	3.62	.72	2.45	.29	1.38	2.94	13.37	1.23	1.56	3.97	.99
F	3.65**	.73	2.48*	.30	1.39	2.97**	13.49***	1.24	1.57	4.10**	
Formal Mathematical Models											
df	1	3	2	1	3	2	1	6	3	2	65
MS	1.07	.56	.29	.36	.45	.41	.68	.19	.76	.03	.55
F	1.94	.38	.53	.65	.82	.74	1.24	.35	1.39	.06	
Based on Reports from Subsidiaries or Branches											
df	1	3	2	1	3	2	1	6	3	2	67
MS	5.22	.82	.14	1.17	.78	1.31	.02	1.09	1.17	.19	.81
F	6.46***	1.02	.17	1.44	.96	1.62	.03	1.34	1.45	.23	

* p < .10 ** p < .05 *** p < .01

Note: None of the second or higher order interactions were significant at the .10 level.

Table 7a

X² tests whether companies have established plans or guidelines for implementing hedging policies before and after floating the dollar

	<u>Classification Criteria</u>			
	<u>Ownership</u>	<u>Activity</u>	<u>Involvement</u>	<u>Turnover</u>
Before floating of	5.26**	2.88	.66	13.02***
Australian dollar	1df	3df	1df	2df
After floating of	1.49	1.30	1.19	6.51**
Australian dollar	1df	3df	1df	2df

** p < .05 *** p < .01

Table 7b

Summarised results of ANOVA main effects of the extent
of use of various hedging techniques

Classification Criteria

<u>Hedging techniques:</u>	<u>Ownership</u>	<u>Activity</u>	<u>Turnover</u>	<u>Involvement</u>	<u>Within</u>
Borrowing/Lending abroad					
df	1	3	2	1	45
MS	3.01	1.18	10.14	.25	1.93
F	1.56	.61	5.24***	.13	
Lead/lag local currency receivables					
df	1	3	2	1	31
MS	1.72	5.71	.34	.01	1.19
F	1.44	4.79***	.28	.01	
Working capital adjustment					
df	1	3	2	1	32
MS	2.47	3.41	2.00	5.45	1.19
F	2.07	2.86**	1.68	4.57**	
Swaps					
df	1	3	2	1	34
MS	1.13	1.05	7.42	.11	1.38
F	.82	.76	5.38***	.08	
Transfer price adjustment					
df	1	3	2	1	26
MS	.29	1.84	.43	.44	.62
F	.47	2.98**	.70	.71	
Forward exchange contracts					
df	1	3	2	1	85
MS	1.63	2.19	2.66	.13	1.79
F	.91	1.22	1.49	.07	
Specifying currency of export and import transactions					
df	1	3	2	1	50
MS	.29	3.64	.70	1.24	2.15
F	.14	1.69	.33	.58	

* p < .10

** p < .05

*** p < .01

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