Foreign exchange risk management: a case in the mining industry

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Abstract

Using a case study approach, this paper reviews the corporate exchange risk management practices of a single large UK multinational company. The research results shed new light on the management of economic exchange rate risk and also have implications for the effects of movements in exchange rates in the context of the translation process. More generally, these results indicate that, instances in which corporate practices deviate from normative prescriptions do not necessarily imply sub-optimal behaviour, although some companies may benefit from the re-consideration of their exchange risk management policies. Finally, they highlight new areas of research and also emphasise the role of qualitative research in accounting and finance.

Keywords: Exchange risk management; Translation exchange risk; Transaction risk; Economic exchange risk

1. Introduction

Exchange rate risk constitutes one of the most common forms of risk that firms in the international arena encounter and, in recent years, the management of this risk has become one of the key factors in overall financial management (Werner et al., 1996; Lee et al., 2001).1 To the credit of the academic community, researchers have kept pace with the increasing importance of exchange rate risk management, as reflected in the intense theoretical and empirical research. For example, several theoretical studies have examined

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1 While introduction of the Euro has mitigated some level of exchange rate risk for firms operating within the Euro-zone, other firms not in this context (such as British firms) are further disadvantaged. Exchange rate risk to other currencies such as the US dollar and the Japanese Yen remains the same for all firms.

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the different types of corporate exchange risk and the relevance of these risks to corporate market value (Dufey, 1972; Adler and Dumas, 1984). Moreover, various capital market studies have sought to determine the extent to which multinational companies (MNCs) experience exchange rate risk (Jorion, 1990; Amihud, 1994). Finally, a number of survey—and interview—based studies have sought to inquire into the corporate management of this risk (Davis et al., 1991; Belk and Edelshain, 1997; Lee et al., 2001).

However, two issues appear to have received limited consideration in the literature: firstly, to explain the how, in terms of the processes involved in the management of exchange rate risk\(^2\), and secondly, why, firms manage their risk in the ways they do (Brown, 2001, is a notable exception). This shortfall represents a significant gap in the literature, since results from prior studies indicate that corporate practices may be less than optimal because: (i) there are large discrepancies between the theory and practice of various aspects of the risk management process; and (ii) practices between firms are, on occasions, critically diverse (Davis et al., 1991; Belk and Edelshain, 1997). Like Brown (2001), the purpose of this paper is to address the gap in the current literature by conducting a detailed investigation of the exchange risk management process at a single multinational company. ABC plc\(^3\), the case company is a large British multinational, operating in the mining industry.

To address the issues of the ‘how’s and ‘why’s, this paper focuses on the management of the three common forms of exchange rate risk: translation, transaction and economic exchange risk. The types of exchange rate risk that ABC plc has chosen to manage as part of its risk management programme conform closely to prescriptions from the theoretical literature. Aspects of the risk management process, particularly with regard to the economic exchange risk, are, however, different from prescriptions in theory. The nature of the industry that the firm operates in is seen to shape the management process. Practices at ABC plc have implications for other firms who operate in primary industries and also for firms who are concerned with aspects of the translation process amid movements in exchange rates. Moreover, this study draws on the research results to highlight new areas for future research and also to emphasise the role of the qualitative research methodology in research in accounting and finance.

The rest of the paper is organised as follows. Section two reviews the prior literature and summarises results of prior studies. Section three makes a case for and describes the research methodology. Section four focuses on the case itself, ABC plc. Finally Section five, a discussion section, examines the implications of the results for future corporate practice and new research areas.

2. Prior literature

This section covers the theoretical aspects of, and prior research on, the three forms of exchange rate risk: translation, transaction and economic risk. Consistent with Lessard

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\(^2\) This is so particularly with regard to the economic form of exchange risk, for which the process of risk management is critical, given the complex nature of the risk.

\(^3\) This is a fictitious name to protect the identity of the company.
(1989) and Dhanani and Groves (2001), the term exchange risk here refers to situations in which movements in exchange rates alter the financial performance of firms as measured by conventional financial statements and/or corporate cash flows. This terminology differs from that of Adler and Dumas (1984), who distinguished between currency risk and currency exposure. The authors used the term risk to refer to the volatility of exchange rates without any specific implications for firms, while exposure referred to the actual change in a firm’s financial performance as a result of a movement in a rate of exchange. The Adler and Dumas (1984) classification system is less commonly used in the exchange risk management literature and, more importantly, the distinction adds little value to this paper, since the case firm itself does not differentiate between risk and exposure.

Translation exchange risk is a result of the restatement of financial statements of foreign subsidiaries into parent currency terms for the purposes of consolidation. The process of translation, together with movements in exchange rates, may give rise to translation gains or losses in the annual accounts as firms seek to arrive at a ‘balanced’ balance sheet; these gains and losses have conventionally been termed translation risk.

Statement of Standard Accounting Practice (SSAP) 20, ‘Foreign Currency Translation’ (Accounting Standards Board, 1983), currently operational in the UK, requires firms to use the closing (or current) rate method of translation. Here foreign currency denominated assets and liabilities are translated at the rate of exchange ruling at the balance sheet date (i.e. the ‘closing’ rate), while the profit and loss account is translated either at the average rate of exchange for the financial year or at the closing rate. Share capital is translated at the rate of exchange ruling at the date when it was first issued (historic rate). The resulting translation gains and losses are reported as a separate component of shareholders’ equity and bypass the income statement.

SSAP 20 mirrors Statement of Financial Accounting Standards (SFAS) 52 (Financial Accounting Standards Board, 1981) of the US, although the American standard prefers use of the closing rate of exchange for the translation of the profit and loss account. SFAS 52 replaced SFAS 8 (Financial Accounting Standards Board, 1975), which was based on the temporal method of translation. This method sought to preserve the accounting principles used to value assets and liabilities in the original financial statements and, accordingly, used historic rates to translate items stated at historic cost and the closing rate for items stated at replacement cost, market value or expected future value. The resulting translation gains and losses were taken immediately to the income statement, to reflect the changes in the values of the assets and liabilities, as quoted in parent currency terms.

The general consensus amongst academics in finance is that corporate managers should not manage their translation exchange risk since it is concerned with the external reporting of past events and does not have any meaningful implications for the future cash flows and, in turn, for the market values of firms (Dufey, 1972; Srinivasulu, 1983). Moreover, use of strategies such as the currency denomination of debt and currency derivatives to manage the risk may create an adverse effect on corporate market value (Asiamoney, 2001). For example, derivative usage to create balance sheet certainty simply transfers volatility from the balance sheet to the firm’s cash flows since the hedge creates a cash asset (or liability) for which there is no opposing cash based match.

In contrast to the theoretical prescription, however, earlier US based empirical research into the management of exchange risk, reported that translation risk formed
the centrepiece of most firms’ risk management policy (Rodriguez, 1980). Translation gains and losses often had very pronounced effects on the overall reported profitability of firms; effects which, in some instances, were even more significant than those caused by the operational activities of firms (such as the level of sales and profit margins) (Eitemann et al., 2000). Research into the capital market impact of FASB 8 indicated that investors, too, were responsive to translation risk as reflected in annual income statements (Ziebart and Kim, 1987; Satlaka, 1989).

Following the replacement of FASB 8 with SFAS 52, translation risk became less relevant to American firms since it no longer affected corporate income levels (Choi et al., 1978). Moreover, capital market investors also became less concerned with the risk (Ziebart and Kim, 1987; Satlaka, 1989) and firms in turn shifted their attention to the management of transaction risk (Khoury and Chan, 1988). Following the introduction of SSAP 20 in 1983, UK firms also mirrored the pattern of American firms and emphasised the role of transaction risk in their overall risk management programmes (Belk and Glaum, 1990; Davis et al., 1991).

While MNCs, in general, pay little attention to conventional translation risk, prior interview research suggests that movements in exchange rates in the context of the translation process, nonetheless, have important corporate implications on two, separate accounts. First, they may adversely alter firms’ gearing ratios as quoted in parent currency terms since the rates of exchange used to translate the individual elements of the ratios may differ, year on year (Walsh, 1986; Davis et al., 1991). This is of particular concern to firms who use their gearing ratios for funding arrangements since they fear breach of loan covenants because of movements in exchange rates. The primary manner in which firms seek to manage this risk is by matching the currency of their debt portfolios with those of their foreign assets with a view to attaining the target gearing ratio in each of the currencies that concern them.

Second, movements in exchange rates may give rise to what Davis et al. (1991) identified and termed ‘translation profit and loss exchange risk’. Here the ‘risk’ does not materialise as a specific gain or loss in the financial statements; rather it represents a change in the actual level of earnings reported in parent currency terms to that reported in the previous period or from that budgeted (expected) by the company (investors), as a result of movements in the rates of translation. Here corporate concerns, as Brown (2001) examined, stem from concerns over investor perceptions and agency issues.

Reviewing the risk management practices of an American manufacturer, HDG plc, Brown (2001) noted that senior managers at the firm acknowledged and managed their translation profit and loss risk since they believed that the volatility in ‘reported accounting numbers’ resulting from movements in exchange rates, would have an adverse effect on share price since the market penalises lower than expected earnings more than it rewards higher than expected earnings. More generally, the firm also believed that analysts expected the company to manage the impact of foreign exchange on earnings and, consequently, sought to do so. Indeed, analysts following the firm confirmed these views, by acknowledging the importance of smooth earnings through the management of currency effects. Aabo (2001), in his research into exchange risk management at Danish firms, reported that the most important way in which firms expected hedging to add value was through reducing corporate stakeholders’ perceived risks of movements in exchange rates.
The risk management policy at HDG plc also had implications for ‘efficiency gains through improved internal…evaluation [of corporate managers]’ (p. 402). The basic notion here was that if the firm were not to hedge its translation risk, well performing managers would be penalised in parent currency terms by adverse changes in exchange rates over which they had no control. The performance of a foreign subsidiary manager, for example, would be undermined in the event that the local currency depreciated against the parent currency. Indeed senior managers at HDG plc were under pressure to attain hedge rates as constant as possible and as favourable as possible to stabilise and even better the performance of overseas subsidiaries. Overall the risk approach adopted here was considered to manage potential motivational issues, which were, in turn, considered to have positive implications for the firm as a whole.

Transaction exchange risk, the second form of exchange risk, is a cash flow risk that materialises when companies seek to convert their committed foreign currency cash flows into home currency terms, and the rates of exchange at the date of conversion are not known with certainty. For most MNCs, this is the most obvious and easily identifiable form of exchange rate risk. Finance literature encourages the management of this risk, since it has direct cash flow and in turn market value implications for firms (Srinivasulu, 1983). Firms may use financial instruments or other strategies that mirror these instruments, such as money market hedges, to manage their transaction risk. Here, the tools fix the rates of exchange for the dates that companies are concerned with. Alternatively, firms may employ internal measures such as leading or lagging payments and receipts, which serve to reduce their overall exposure levels.

The organisational structure of transaction risk management has also been a primary consideration in the literature. A centralised treasury function is deemed to be the most effective means of controlling, co-ordinating and managing currency exposures (Ankrom, 1974; Collier and Davis, 1985), although some researchers have argued that it may result in a loss of initiative and motivation for managers operating in otherwise autonomous subsidiaries (Lee et al., 2001). Obvious advantages of a centralised function include the opportunities to net subsidiary exposures, attain economies of scale in large transactions, and also pool and share the inevitably limited resources of expertise and experience in risk management. Centralisation may also encourage treasury personnel to develop specialised risk management skills.

Prior research into the management of transaction risk, in the UK and elsewhere, indicates that this risk forms the centre-piece of most firms’ risk management programmes, with firms pursuing formalised policies with documented objectives, operating and reporting procedures. Treasury managers are, in general, asymmetrically risk averse, although some firms seek to profit from their foreign exchange transactions. Such firms have specialist personnel to trade in the foreign exchange markets (Belk and Glaum, 1990).

With regards to risk management strategies employed, although firms use some internal measures, financial instruments are a more popular choice. Amongst these, forward contracts dominate due to their relatively low costs, inherent flexibility and ease of organisation (Duangploy et al., 1997). Innovative instruments such as option contracts, although used, are less common since senior management are hesitant with such instruments in the light of their speculative nature, high up-front premiums and resource intensity (Belk and Glaum, 1992).
Prior research also indicates that MNCs, in the UK and elsewhere, exhibit a strong tendency towards centralisation (Lee et al., 2001), although there are some important inter-firm differences in the location of policy formulation and implementation (Belk and Glaum, 1990; Collier and Davis, 1985). In the case of policy formulation, at one extreme, a small proportion of UK firms fully centralise their formulation processes, and at the other, subsidiary managers are wholly responsible for their risk management decisions. In between, the central treasury provide subsidiaries with firm guidelines within which to operate. Where subsidiaries are involved with some aspect of policy formulation, and policy implementation is centralised, central treasury departments operate as ‘in-house’ banks, with whom subsidiaries hedge their exposures. This system allows firms to reap the benefits of netting opportunities, scale economies etc. while maintaining subsidiary autonomy, where warranted, to prevent adverse motivational effects. To add to the complexity of organisational structure, the level of centralisation appears to vary significantly between domestic and foreign subsidiaries, with the latter group experiencing more latitude than their sister subsidiaries in the home country (Collier and Davis, 1985; Belk and Glaum, 1990; Lee et al., 2001).

Economic exchange rate risk is concerned with the effect of long-term movements in exchange rates on firms’ expected future cash flows and, in turn, their overall market values. Unsurprisingly, it has been termed the most important form of exchange risk (Belk and Glaum, 1990; Miller and Reuer, 1998). While economic risk is sometimes considered to be an extension of transaction exchange risk, in that it extends to cash flows that have yet to materialise, it differs from transaction risk in one fundamental manner. Long term movements in exchange rates may have a more profound effect on the future cash flows since they can actually alter the firms’ abilities to generate those cash flows by influencing their level of sales, prices and input costs. Firms’ overall values are threatened to the extent that the exchange rate related changes to cash flows are not offset by corresponding changes to the prices of goods (inflation). In other words, economic exchange risk is a function of movements in real rates of exchange.4

A multitude of factors, including the international locations of a firm’s plants, competitors, key buyers and suppliers, are considered to be important when assessing a firm’s economic exchange rate risk (Lessard, 1989; Miller and Reuer, 1998). A firm that operates in a different currency zone to that of a competitor, for example, may have to compromise on the level of sales and/or product prices in the event that favourable movements in exchange rates materialise for the competitor who may respond by offering customers discounted prices, something the firm itself is not in a position to do (Lessard, 1989). At the same time, a firm that relies on foreign suppliers may have the effects of adverse currency movements passed through, if the suppliers are in a position to do so without losing out to competition (Miller and Reuer, 1998).

Economic exchange risk is difficult to measure and manage since it is a function of a multitude of factors. Notwithstanding the innovative and sophisticated nature of currency derivatives available today, conventional financial hedging, in which firms forecast future foreign currency cash flows to hedge them in the foreign exchange markets, serves little purpose to protect firms from economic risk. The approach is intrinsically flawed since it

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4 Real rates of exchange are defined as nominal rates of exchange adjusted for the general level of inflation.
does not seek to manage changes in actual cash flows as caused by movements in exchange rates; rather it focuses only on the conversion/nominal aspects of exchange risk. Moreover, it may actually be counterproductive in that it may initiate economic risk where none existed (Belk and Glaum, 1990). Financial hedges may lock firms into particular rates of exchange and if actual spot rates happen to be more favourable, these firms may be at a disadvantage as compared to their unhedged competitors, who are in a position to reduce their product prices in an attempt to increase their market share.

Since its inception, two theoretical frameworks, a qualitative and a quantitative framework, have been developed to measure and manage economic exchange risk. The qualitative approach views economic risk as a business risk, rather than a financial one, since it affects the strategic (competitive) profile of firms (Lessard, 1989; Dhanani and Groves, 2001). The approach here contends the use of operational adjustments such as procurement and marketing mix changes to manage the risk. Such adjustments alter the currency mix of firms’ revenues and costs and, as a result, accommodate the effects of movements in exchange rates. An exporting firm may, for example, source some of its input materials from the foreign markets in which it sells. Thus, the reduction in the level of revenues from these markets as a result of a home currency revaluation, will be offset by a corresponding reduction in the level of operating costs. Alternatively, the firm may alter the nature of its product or selling strategy or even target new, less competitive markets to influence its overall level of sales. Other operational strategies include: establishing new production sites, or relocating production within existing sites to avoid the adverse effects of less favourable rates, and production rationalisation strategies which absorb the adverse currency effects. Overall the qualitative framework categorises the management of economic exchange risk as a general management issue, one that involves various organisational factors and not merely a technical issue to be left to foreign exchange specialists.

In contrast, the quantitative framework measures economic risk with statistical regression techniques and emphasises the role of financial instruments to manage the risk (Adler and Dumas, 1984; Kanas, 1996). Both the measurement and the management processes here are confined to treasury departments and require little involvement from other corporate departments. The basic tenet of the measurement process is to determine the sensitivity of a company’s market value to movements in exchange rates using regression techniques: while exchange rates here comprise the independent variables, corporate market value, measured by proxies such as stock market prices (Aabo, 2001), is the dependent variable. The resulting coefficients that reflect the firm’s sensitivity to exchange rate movements can then be used to determine the exposure levels in monetary terms based on specific, forecasted exchange rates and predicted future cash flows. For example, a firm with a future annual cash flow of £100,000 and an exposure level of 0.6 to a particular currency will experience a cash reduction of 6%, i.e. £6000, when the currency depreciates by 10%. The basis of the risk management strategy here is to use financial instruments to generate sufficient gains at maturity to compensate for the predicted reduction in the firm’s cash levels (£6000) at the forecast rate of exchange (10% depreciation).

Results from earlier studies on economic exchange risk indicated that many firms, in the UK and elsewhere, either did little to manage their economic risk or used strategies that
deviated significantly from those prescribed in the theoretical literature (Belk and Glaum, 1990; Belk and Edelshain, 1997). Articles by corporate practitioners, (Lewent and Kearney, 1990; Maloney, 1990) and more recent research, however, show some support for the management of economic risk (Dhanani and Groves, 2001; Kim and McElreath, 2001). While results of academic research support the qualitative framework, practitioners, (Lewent and Kearney, 1990; Maloney, 1990) discussed the role of option contracts and a statistical model at their pharmaceutical and mining companies, respectively. Practices at neither firm, however, complied with the quantitative framework developed in the academic literature.

The purpose of this research is to examine the risk management practices of a large UK MNC, ABC plc, with emphasis on how and why it pursues its practices in the way it does. Of particular importance are issues relating to translation and economic exchange risk, since these are the two areas where there appear to be significant discrepancies between theory and practice and/or between practices at individual firms. Aspects of transaction risk, where appropriate, are also considered. The case firm in Maloney’s (1990) paper, WHCH plc, like ABC plc, operated in the mining industry like ABC plc, and although there are some aspects of the processes that are similar, there are other issues that are not covered by Maloney (1990) or are actually dissimilar. Moreover, a review of the practices in an academic context, which the Maloney paper lacks, adds further rigour to the current study and serves to inform future practice, research and theoretical development.

3. Research methodology

The primary purpose of this research was to examine and explain the risk management processes in a multinational company. The case study approach was considered appropriate since it lends itself to reviewing processes and seeking new insights and explanations for particular phenomena (Eisenhardt, 1989; Yin, 1994). This was especially important, because of the focus on economic exchange risk, the more subtle form of risk, which may have entailed complex processes. For example, the management process may have involved various operational departments (Lessard, 1989), for which the case approach was able to capture the views and practices of the different departments. Further, the qualitative approach permits the understanding of management decisions and actions in their own organisational settings (Tomkins and Groves, 1983; Dhanani and Groves, 2001), which proved invaluable here since the nature of the industry in which the firm operated helped explain various aspects of the firm’s risk management practice.

ABC plc was selected as a suitable case based on ‘opportunity and convenience’ (Jorgenson, 1989); the researcher had access to senior management within it and, more importantly, the firm encountered extensive exchange rate risk. In light of the nature of its global operations and overall industrial structure, ABC plc was exposed to all three commonly identified forms of exchange rate risk. At the selection stage, the researcher used annual reports and specialist trade press to determine the extent to which ABC plc was likely to suffer from exchange rate risk and later verified this with the management at the firm.
The field research consisted primarily of semi-structured interviews with corporate personnel and documentary analysis, both internal company documents and publicly available information. Interviews were conducted with the treasurer, assistant treasurer, risk management manager and the senior economist. Respondents were asked to describe their risk management approach at the start of their interview and the researcher sought further elaboration and/or clarification as and when necessary. A framework developed from previous theoretical and empirical literature was used as a guide for the interview process to ensure coverage of all relevant issues. The data collected was analysed largely using procedures set out by Yin (1994) and Miles and Huberman (1994). These included the transcription of tape-recorded interviews, familiarisation with the case and reflection and analysis, including linking, of the content.

The method of inquiry adopted in this study is not without its limitations. First, the reliability of case research has been questioned since researchers have considerable latitude to introduce bias in the data collection process and the issue of reflexivity is also enhanced as a result of personal contact between the researcher and interviewee. A key note with regard to the former issue is that some subjectivity on the part of the researcher was actually warranted to clarify issues such as inconsistencies observed between practices at ABC plc and normative theory. With regards to reflexivity, the description of the risk management process provided by the interviewees at the start of the meetings bound them to specific themes and values, which they were unlikely to alter on further questioning. Further, triangulation between the different sources of data collection also served to reduce respondent bias.

Second, case research has often been criticised as having limited scope for generalisation of results. A critical point to note here, however, is that the richness and depth attained in case study research compensate for the lack of generalisability. This is so especially, if the case validates the results of prior research, or identifies areas for future development of theory and/or practice. Further, as this study shows, there may be limited scope for generalisation, since the organisational context of firms, in particular, the nature of the industries that they operate in, appears to shape their exchange risk management practices.

4. The case: ABC plc

4.1. Company background

ABC plc is one of the world’s leading international mining businesses with a market capitalisation of over $16b towards the end of the 1990s. The firm operates on a global scale with extensive mining interests in both the developed and less developed nations. Its structure includes a number of wholly owned subsidiaries, together with joint arrangements in the form of partly owned subsidiaries, joint ventures and associated companies.
ABC plc extracts a large variety of metals and minerals, which are sold to customers world-wide, particularly to customers in North America, Western Europe and the East Asia. The firm operates in a highly competitive market with numerous competitors, who are both small and large. Competition comes primarily from foreign (non-UK) firms, who operate in countries rich in minerals and ores.

ABC plc sells its products using two primary pricing mechanisms; while prices for a small proportion of its products are negotiated directly between the producer and consumer, most are determined by reference to prevailing market prices on terminal markets such as the London Metal Exchange (LME) and the New York Mercantile Exchange (NYMEX). This is the norm even if products are sold under contracts for medium to long term periods. In general, the pricing situation at ABC plc, as summarised by the group treasurer is

…one where the firm, like its competitors, is a **price taker** for a major proportion of its products…

    group treasurer

Moreover, the prices of many of these goods are quoted in US dollars, since this is the currency in which the commodity exchanges, the LME and the NYMEX, operate.

In general, owing to the nature of its business, ABC plc is exposed to two primary sources of financial risk: commodity price risk and exchange rate risk. The firm refrains from managing its commodity price risk. Here it believes that this risk reflects the core business activities of the firm, and is consequently a business risk that investors expect the firm to bear. This view appears to be consistent with that of other firms in primary industries. **Millman (1990)**, for example, reporting the risk management practices of an oil company, noted similar views and **Lavers (2002)** noted that the majority of potato dealers in her study refrained from managing their potato risk.

With regard to exchange rate risk, ABC plc is exposed to and acknowledges all three forms of risk identified in the literature. The next three sub-sections describe the different effects of movements in exchange rates on the firm’s financial performance and its approach to the management of these effects. The fundamental objective upon which ABC plc’s risk management programme is based, is to create long term value for shareholders, by optimising the value of the individual businesses and the group as a whole on a long term basis.

4.2. **Translation exchange risk**

ABC plc encounters all three effects of the translation process as previously identified. Operating in a capital intensive industry with extensive extraction interests world-wide, most of the firm’s sterling financial statement comprises of assets held in foreign countries. Consequently the firm encounters extensive translation gains and losses in its annual accounts. Moreover, the firm’s balance sheet ratios, including the gearing ratio, can alter significantly from one year to the next, as quoted in parent currency terms. Finally, the company is also exposed to translation profit and loss exchange risk in that its net income figures as reported in parent currency (sterling)
terms, may appear less healthy when the sterling rate of translation is high especially as compared to the US dollar in which the subsidiaries receive their revenues, than when sterling is low.

ABC plc does not manage any of the three translation effects of movements in exchange rates. In this respect, while the firm conforms to the prescriptions of the theoretical literature, it differs significantly from other firms examined in prior research, particularly with regard to issues about gearing ratios and profit and loss translation risk (Walsh, 1986; Davis et al., 1991; Brown, 2001). In the former case, the finance facilities at ABC plc are not bound by any specific loan covenants and consequently the firm is not concerned with the effects of exchange rate movements on any loan binding ratios, including gearing ratios:6

...we don’t have covenants, because of the cyclical nature of the industry that we operate in and our extensive acquisition and divestment activities...we need to have a varying capital structure...

group treasurer

ABC plc also refrains from managing its sterling profits from movements in exchange rates, i.e. its translation profit and loss exchange risk. Consistent with theory (Dufey, 1972; Asiamoney, 2001), the senior management view here is that this ‘risk’ does not have any cash flow implications, but management measures may entail large transaction costs, and may also increase the firm’s cash flow volatility. Moreover, at the time of this research, ABC plc was considering a merger with a foreign (non-British) MNC. Management of sterling profits, the treasurer explained, would not be a suitable objective in this instance, and at the same time it would not be possible to manage successfully translated profits in two different parent currencies (the UK sterling and the new country’s currency).

In any event, the treasurer pointed out that the group did not believe that it could successfully manage the negative effects translation profit and loss exchange risk on a long term basis:

if the £ strengthens over the years, the profit figures this year-will be lower than those of last year...we cannot avoid such effects of exchange rate movements even through paying premiums...[at best] only delay them...

group treasurer

Consistent with the view held in the academic literature (Giddy, 1983)7, the treasurer explained that, fixing rates of exchange in the external markets through forward trading, would only delay the effects of sterling appreciation on annual profits, since, once the effects of sterling appreciation were reflected in the forward markets, the company would

6 Frost and Bernard (1989), looking into aspects of the use of loan covenants in the oil and gas industry in the US, reported that a third of the publicly quoted firms did not use accounting based covenants. While these results are specific to the US and the oil and gas industry, they suggest that there are situations in which firms are not bound by specific accounting ratios.

7 While Giddy presented this view in the context of the management of transaction risk, the same principles apply to the translation situation here.
be unable to avoid their corresponding effects on corporate profits. Indeed, senior managers at HDG plc in Brown’s (2001) study, who hedged this risk for motivational reasons, commented that the risk management programme often ended up producing undesirable effects with regional managers lobbying the central treasury for better rates. At times, the problem appeared to be quite severe with one manager commenting that he ‘…spent more time managing managers than managing currencies…’ (p. 425).

In principle, the concerns of agency issues and investor perceptions as raised in Brown’s (2001) study were also issues for ABC plc. A different performance evaluation system, however, circumvented the problems of agency issues, and in the latter case, the firm made a conscious attempt to manage investor perceptions.

ABC plc does not evaluate foreign subsidiaries in parent currency terms. This strategy removes the negative effects on profit levels that may otherwise arise through the translation process if exchange rates are unfavourable. Thus, there is little need to manage translation profit and loss exchange risk. The firm has taken the view that sterling profits (profits quoted in parent currency terms) may actually fail to reflect the economic reality facing the firm and its subsidiaries. Consequently, using it as a basis for performance evaluation is inappropriate. For example, improvements in US dollar revenues and profits, for which subsidiary managers should be rewarded, may appear less attractive in sterling terms when the latter is high against the US dollar. At the same time, even if subsidiary performance is weak, sterling profits can appear healthy when sterling is low. To prevent such a distorted view of corporate performance, ABC plc has conventionally conducted all internal reporting in US dollars, the predominant currency of the firm’s earnings and subsidiaries are also evaluated in this currency:

it is important that all business units are marked against this (US currency), thereby giving them a more accurate measure of business performance…

group treasurer

With the subsidiaries receiving their revenues in US dollars, evaluating them in this currency is more accurate and consistent with the company’s objective to create and enhance the value of the firm to its shareholders. The local currencies in which the subsidiaries encounter operating costs are also used as part of the overall performance evaluation system. Here managers are assessed against their target costs set in local currencies.

With regards to investor issues, ABC plc explained that while effects of the translation process may be a cause for concern to investors, this attitude does not justify expending large cash resources to manage the paper based effects of the translation process. Instead the firm has sought to explain its translation risk management strategy (or lack thereof) to its shareholders, through meetings with analysts and other shareholders and annual financial reports. Indeed, in an attempt to help this process, the group decided to extend the notion of US dollar reporting, previously used for internal reporting, to external reporting, in the mid-1990s. This practice, management believe, will remove the need to manage and smooth its sterling earnings for movements in exchange rates, while allowing

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8 Here, for example, the corporate report explicitly states that the firm’s financial performance has been affected by movements in the sterling rate of exchange (vis a vis other currencies) and that the real financial position is…
reviewers of financial reports to identify more closely with the underlying business performance of the firm.

4.3. Transaction exchange risk

ABC plc encounters extensive transaction risk since its subsidiaries receive revenues in US dollars but generate costs primarily in local currencies. Moreover, repatriation of profits from subsidiaries to the UK, the parent country, also entails transaction risk.

The management of transaction risk at ABC plc does not take the central role in the firm’s risk management programme seen in other firms (Belk and Glaum, 1990; Davis et al., 1991). Rather, following a radical review of its risk management approach in the 1980s, the firm believes that its economic risk is more important. Indeed when the firm developed its dynamic, long-term approach to the management of economic risk, the then treasurer had raised the option to abandon the management of transaction risk, since it only has short-term implications. However, senior management had then decided that short-term hedges were also beneficial since they manage the cash flow and profitability implications for the immediate financial year. This, in turn, has internal (subsidiary evaluation) as well as external benefits, because annual profit levels, in terms of operational transactions, are managed for currency effects.

Consistent with practices in prior research (Belk and Glaum, 1990), the firm generally exhibits risk averse behaviour and seeks to remove ‘effects of currency volatility from the company’s cash flows’ (assistant treasurer). Management strongly believe that the firm cannot add value to shareholder wealth by trading in the foreign exchange markets and consequently disallows any trading activities that seek to profit from foreign exchange transactions:

…we as a treasury unit are unlikely to be able to outguess the market over the long term…[so] we believe that we cannot add value to shareholder wealth here…

group treasurer

With regard to organisational structure, policy formulation at ABC plc is semi-centralised. Subsidiaries make their own hedging decisions, but the central treasury provides them with firm guidelines within which to operate and also monitors them to ensure compliance. Policy implementation at ABC plc, on the other hand, is decentralised and subsidiaries are responsible for hedging their own exposures. The formulation-implementation combination at ABC plc differs from prescriptions in the theoretical literature and approaches reported in prior empirical research (Ankrom, 1974; Belk and Glaum, 1990; Davis et al., 1991). While a decentralised implementation policy takes away opportunities for central management to net subsidiary exposures, and benefit from scale economies in large transactions (Ankrom, 1974), the treasurer at ABC plc explained that the company has little scope for these, in the first place. Most of the subsidiaries’ exposures are long in US dollars, and short in their local currencies and, hence, there is little scope to net exposures between units or even aggregate them for hedges in the external markets. Moreover, for exposures in some uncommon currencies, the central treasury is unlikely to find cover in the UK, but the subsidiaries will be able to
do so in the countries in which they operate. Overall, while the approach at ABC plc differs from those reported in past research, it reflects the individual circumstances of the firm.

Transaction hedges extend to a period of 12 months ahead, since subsidiaries have detailed and relatively accurate financial information over this time-frame. Further, in the light of the new hedge accounting standard, Financial Reporting Standard (FRS) 13\(^9\) (Accounting Standards Board, 1998) which requires firms to report financial derivatives at fair value in annual reports, management feel that the 12 month hedge period will not have a material effect on its annual corporate report.

Forward contracts, for reasons described in prior research (Belk and Glaum, 1992; Duangploy et al., 1997), are the preferred choice of instruments. Moreover, in many instances there is little scope to use other instruments: option contracts are not available in many countries and swap transactions manage risk on a long term basis rather than the 12 month periods that concern the firm. The currency denomination of debt, which would allow the firm to match its cash inflows with cash outflows is also not an option, since this tool is used to manage the firm’s economic exchange risk.

### 4.4. Economic exchange rate risk

Owing to the international location of its plants, buyers and competitors, ABC plc suffers from extensive economic exchange risk. In particular, it is concerned with the buyer and competitor based effects of this risk. In the former case, ABC plc suffers from noticeable changes in sales volumes when its buyers are themselves exposed to adverse movements in exchange rates. For example, manufacturing firms in Germany represent a large market for aluminium, one of the key products of ABC plc. With the depreciation of the Euro (against the US dollar), the level of trade by the German consumers decreases to reflect the increase in price of the commodity in Euro terms. Consequently, for ABC plc, depreciation of the Euro\(^10\) reflects itself as a reduction in corporate sales revenue.

With regard to the competitive effects of economic exchange risk, the situation at ABC plc is not typical of the theoretical and empirical notion reported in the existing literature (Belk and Edelshain, 1997; Bradley and Moles, 2001), whereby firms appear to be at risk when their foreign competitors respond to exchange rate movements with product price reductions. As mentioned earlier, ABC plc, together with its counterparts in the industry are primarily price takers, operating largely through reference to the commodity exchanges. Consequently, competitors are unable to respond to movements in exchange rates with direct reductions in product prices. Instead, ABC plc experiences competitive exchange risk when a competitor responds to a favourable movement in exchange rate with an increase in product supply to influence his/her overall profit levels. This change in supply pattern will, in turn, stimulate a product price reduction, creating an unfavourable outcome for firms who have not benefited from the exchange rate movement.

While prior research suggests that there is some support for operational measures for the management of economic risk (Dhanani and Groves, 2001), the situation at ABC plc is

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9 FRS 13 was not in force at the time of the interviews.

10 Several other EU countries are consumers of ABC plc’s products, but Germany is the most significant.
unique in that operational measures such as those described in this research are not accessible to the firm owing to the nature of the industry in which it operates. For example, the firm has little potential to alter its pricing strategies since it is, essentially, a price taker. Similarly, given the nature of commodity products, the firm is unable to differentiate its products from those of its competitors. At the same time, as the group treasurer explained:

[on the operational cost side]…we have little scope to choose the location of our mining activities or to make sourcing adjustments since many of these costs are local by their very nature…or other input materials, like fuel are universally priced and universally sold so there is again no real scope to change suppliers for currency reasons…

risk management manager

Consequently from an operational perspective, ABC plc relies on low cost production, seeks to improve its economic activity, chooses new sites with low costs of production etc. all of which allow it to absorb adverse effects of movements in exchange rates.11

With little scope for pursuing a qualitative strategy, management at ABC plc has sought to measure its exposures with a quantitative, mathematical approach. While the description and analysis of this quantitative model are not within the scope of this paper, the model relies on the basic theory of economics; that of (elasticity of) demand and supply. The underlying thesis here is that the price of a commodity is set by the demand for and supply of that commodity. Various factors such as the cost of extracting minerals, the level of global economic activity, technological changes etc. influence the level of demand and supply of the commodity and in turn its market price; movements in exchange rates are also one such factor. When favourable movements in exchange rates materialise for competitors and customers, they will react by increasing their level of supply and demand, respectively. In the former instance, the change in supply will stimulate a reduction in price, while in the latter the change in demand will encourage a price rise.

The economics department within the firm is responsible for the quantitative model, which was originally developed in conjunction with the then chairman of the LME. The model determines the level of influence of the various countries (and consequently currencies) in the demand and supply patterns for each of the commodities that the firm is involved with. The analysis, based on information about the consumer and producing countries, uses historic information over a three year period, which is updated on an ad hoc basis when it is believed that material changes have taken place or will take place in the industry that warrant an adjustment. When statistical data are unavailable for any new developments the company uses projected data. While new mining sites are not chosen with the intention of managing the firm’s economic risk as suggested in theory,

11 These actions are not only in place to manage effects of movements in exchange rates; on the contrary, these factors are more relevant to manage the firm’s core business risk which is more significant than its exchange rate risk. The general economic conditions of the countries in which its competitors and customers operate (such as the financial crisis in Asia in 1997 and the current economic down turn in the US), for example, have a more profound impact than that of movements in exchange rates.
when new sites are under consideration, the currency risk profile is reconsidered to
determine the effect of the new (potential) investment, which in turn has managerial
implications.

The department also adjusts the quantitative model to factor in numerous other
exchange-related elements that may influence demand and supply patterns of
the participating countries. For example, the department makes a distinction between
the types of activities, such as exports and re-exports, amongst the consuming countries;
fi rms in some countries such as those in the Far East tend to operate with the intention of
re-exporting semi-manufactured goods to other countries such as the OECD countries:

…Here it is the demand in the OECD countries that determines the effects of currency
movements, not the demand in the Far East and the department factors this in…

The analysis of individual commodities has also been modified to represent
their individual characteristics; that of gold, for example, takes consideration of its
 quasi-monetary status.

Once the firm has determined the currency weightings for each of its products, it applies
them to the revenues (of a base year) generated by these products. These results are
aggregated using a weighted average approach to generate a single currency profile for the
group’s revenues. A similar currency weighting is also drawn up for the group’s costs,
although this exercise is a little more subjective. Individual subsidiaries determine the
currency weights for their cost levels using their accounting data. The central economics
department follows a similar policy to that of its sales products, for products such as fuel,
which are priced in US$ on the basis of traded exchanges. The currency cost profiles for
the individual subsidiaries are aggregated using the weighted average approach and the
final result is netted off against the revenue profile to determine the net exposure levels.
These exposures are then multiplied by the group’s price to earnings ratio, averaged over a
certain time span, to break down the overall corporate market value in terms of currencies
that affect its trade.

ABC plc’s results suggest that the group experiences economic exposure in a variety of
currencies; the Euro represents the most significant weighting for a positive exposure,
followed by the US dollar, and the Japanese Yen. The Australian dollar, on the other
hand, represents the largest currency for negative exposure, owing to its large production
(competitor) base.

The analysis described above serves two purposes for ABC plc. First, it illustrates the
level of currency diversification within the group and second, management uses it as a
basis for designing the currency portfolio of its debt. In the former instance, the large

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12 Information for such issues is generally gathered from trade journals.
13 The US dollar was the most significant currency, but with the introduction of the Euro, which represents
several EU countries, the Euro has superseded the US dollar. The introduction of the Euro has indeed simplified
the process at ABC plc, since the firm now deals with a single currency in place of twelve.
14 The firm has termed positive exposure as the one in which it encounters a currency advantage when the
currency strengthens and a negative exposure is one in which it suffers a currency disadvantage when the currency
strengthens.
geographical and product base within which the firm operates, mitigates a share of the firm’s economic risk: the negative exposures of some commodities are offset partially by positive exposures of other commodities. Moreover, the firm is also highly diversified in terms of the currencies in which it experiences its exposures. Consequently, the significance of a large movement in any one currency is reduced for the group as a whole:

…the effect is just a drop in the ocean…

risk manager

Owing to the capital intensive nature of the industry, ABC plc and other firms in the industry often operate with large levels of long term debt. To determine the currency denomination of debt, management’s approach at ABC plc is to borrow in the currencies in which the firm has positive exposures. Consequently, when it experiences negative effects of currency movements in its overall revenues, it can be compensated by a corresponding reduction in the level of debt repayments. Alternatively, when the level of the debt costs rise as a result of exchange rate movements, the company can benefit from an increase in overall revenues. This principle at ABC plc is similar to that of the qualitative framework: the firm matches the currencies influencing its inflows with those of its outflows to reduce its overall exposure to movements in exchange rates.

An important issue to note here is that because ABC plc does not use financial ratios as a basis of funding arrangements, management is unconcerned with the balance sheet implications that may result from its debt-based risk management strategy. Moreover, non-use of financial ratios also means that the firm does not seek to use the currency denomination of debt to manage its translation effects and consequently the tool is available to manage its real cash flow risk. This is especially critical for ABC plc since it does not have access to many of the other economic risk management strategies.

As with the quantitative model, the firm makes various adjustments to its basic risk management strategy, as and when necessary. For example, on occasions when the firm is working with other parties on individual projects, management is not always able to choose the optimal currency for the debt portfolio from the group’s perspective. Here the currency mix is often determined on the basis of the exposures of the project itself to comply with the circumstances of the joint party. Further, when the firm can acquire cheaper loans in currencies other than those determined by the risk management model, the treasury uses swap contracts to take advantage of these while continuing to manage the firm’s exchange rate risk. The assistant treasurer, however, pointed out that the firm would need to assess the implications of this strategy on its annual report in the light of the new hedge accounting standard, FRS 13, which will require firms to mark to market their financial derivatives.

Management at ABC plc acknowledges the weaknesses of its quantitative model as reflected in the analysis used, historic data, etc. but explains that its role is not to identify precisely the level of the firm’s risk in individual currencies. Rather it is to point the firm in the right direction to determine the appropriate currencies for its debt portfolio:

…but we do not follow the numbers generated rigidly to actively manage our exposures [since] they are just indications of what exposures they really are…they point us in the right direction…What we would not say is: I need a 1% exposure
to the New Zealand Dollar…we simply don’t know the numbers well enough to be so sure about such small values…

group treasurer

Further, the firm does not consider its model as an appropriate base to use financial instruments to manage the risk as prescribed in the literature (Adler and Dumas, 1984; Kanas, 1996). First, as mentioned above, it is not confident enough in the precision of the numbers it generates. Second, the treasurer emphasised that the theoretical model relies on the prediction of precise exchange rates, which the group does not believe is possible and certainly does not seek to pursue (see transaction risk). Finally, the assistant treasurer commented that the financial instrument led management strategy would have a significant effect on its annual report in the light of the new hedge accounting standard.

Overall the quantitative model at ABC plc differs from that prescribed in theory. First, the firm uses the model to measure the sensitivity of its product prices and input costs (such as fuel) to movements in exchange rates, rather than the sensitivity of the company as a whole. The approach here appears appropriate since the firm’s economic exposures are reflected in the product prices through customer demand and competitor supply changes, which are, in turn, modelled into the statistical approach. Moreover, the firm does not have to concern itself with any direct changes in product prices by industry participants since this is generally not a possible option for the participants. Further, the manner in which the firm uses its model differs significantly to that prescribed in theory. As seen above, the firm is sceptical of its use of financial instruments to manage economic risk and instead relies on the model as a guide for the currency denomination of its debt portfolio.

While the basic principles of the model at WHCH plc, reported in Maloney (1990), accord closely with those at ABC plc, the statistical analyses and data input appear to differ. WHCH does not, for example, appear to adjust its data to reflect re-export levels or individual product characteristics as pursued at ABC plc. Moreover, and perhaps more importantly, the model developed at WHCH does not appear to be integrated into the overall corporate structure. For example, exposure levels relating to the firm’s cost structure are not included in the model when determining the currency denomination of debt. Further, WHCH does not appear to take consideration of the effects of geographical and product diversification, as at ABC plc, or the additional complications that events such as joint ventures bring into the overall management model.

The risk management approach described above was developed at ABC plc in the 1980s. Prior to this, in the 1970s, like WHCH, the company had followed a simple and conventional approach, which focused on the firm’s transaction risk. Here the company had sought to match the subsidiaries’ US dollar revenues with US dollar denominated debt and then hedge the net revenues in the financial markets with forward contracts, on a rolling basis.

In the early 1980s, the US dollar had risen sharply and, as a result, the costs of servicing the dollar denominated debt had increased in the subsidiaries’ local currencies. On the revenue side, however, positive effects of the US dollar strengthening had not fully materialised as an increase in value for the respective subsidiaries. The expected increase in revenue was partly offset by the reduction in the sales volume, reflecting a reduction in the global consumption (with the US an exception) of commodities in response to the high
US dollar. The firm’s short-term financial hedges with forward contracts had done little to address the reduction in the subsidiaries’ sales volume arising from the reduction in consumption patterns.

Following this episode, the company decided to reconsider its risk management approach, and

analyse foreign exchange exposure, not so much by considering the trading aspect of the commodities, [i.e.] the US dollar sales, but the production and consumption of them…[since] the prices are determined by these patterns…

senior economist

When questioned about whether the firm operated an evaluation system to assess the performance of its economic risk management strategy, the treasurer explained that the department was interested to develop such as system, but had none in place. At the time of the interviews, management instead relied on the notion that

…we feel that we have the concept right. It is theoretically justifiable and practically viable…And the long run successful performance of our firm measured as outperforming the market also indicates that our approach must be appropriate…

group treasurer

5. Discussion and implications

This study used a detailed, single case study of a large mining corporation to examine the management of corporate exchange rate risk. While the methodology here differs from that in prior research (Brown, 2001 is an exception), its advantage has been to address, in detail, the explanations for how and why the firm manages its risks in the way it does. The primary findings, together with the implications for future practice and research are discussed below.

Table 1 provides a summary of the major themes on exchange rate risk in the theoretical literature and the results of prior research. Further, it summarises the situation at ABC plc, and in turn contextualises its practices with past research.

The types of exchange rate risk that ABC plc has chosen to manage as part of its risk management programme conform closely to the theoretical prescriptions developed in the literature in this area. First, the company refrains from managing the translation based effects of movements in exchange rate on financial performance, because they do not have implications for the market value of the firm. Second, its primary objective is to manage the long-term effects of exchange rates, i.e. economic risk, which has been identified as the most important form of risk in the literature. Finally, the firm manages its transaction risk, which is also a cash flow risk with implications for the overall corporate value.

Aspects of the risk management processes at ABC plc are, however, not always compliant with prescriptions from the theoretical literature or with practices reported in prior research. The firm, for example, pursues a decentralised approach to manage its transaction risk, without compromising on benefits of centralised processes. Moreover,
<table>
<thead>
<tr>
<th></th>
<th>Academic theory</th>
<th>Prior research</th>
<th>Experienced by ABC plc?</th>
<th>Managed by ABC plc?</th>
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</thead>
<tbody>
<tr>
<td><strong>Translation risk</strong></td>
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</tr>
<tr>
<td>Definition</td>
<td>Translation gains and losses as reported in corporate financial statements</td>
<td>Conventional translation risk, translation gains and losses in annual reports, appears to be of little concern to firms. The translation process and movements in exchange rates are nonetheless important, because of their implications on:</td>
<td>Yes, on converting foreign subsidiary financial statements into parent currency terms; Exposed to UK£: LCₚₚₚₚ;</td>
<td>No—ABC plc is not concerned with translation gains and losses, as at other firms</td>
</tr>
<tr>
<td>Management of?</td>
<td>No—no cash flow implications; result of the translation process</td>
<td></td>
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<tr>
<td>Gearing implications</td>
<td></td>
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<tr>
<td>Translation profit and loss risk</td>
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<tr>
<td>Transaction risk</td>
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<tr>
<td>Definition</td>
<td>Uncertainty in committed foreign cash flows resulting from movements in exchange rates</td>
<td></td>
<td>Yes, a result of operating activities and repatriation of profits to parent company. Exposed to US$: LCₚₚₚ; and US$: UK£</td>
<td></td>
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</table>

*LCₚₚₚₚ: Local currency of parent company; UK£: British pound; US$: US dollar; LCₚₚ: Local currency of foreign subsidiary*
<table>
<thead>
<tr>
<th>Management of?</th>
<th>Yes—a cash flow risk with direct implications for corporate market value</th>
<th>Yes—forms the centrepiece of most firms’ overall risk management programmes</th>
<th>Yes—the short-term hedging strategy is considered to smooth annual profit levels, which have external, as well as internal, performance evaluation based, implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk management objectives</td>
<td>Most companies are generally risk averse, although few seek to make profits from foreign transactions</td>
<td>ABC plc is risk averse; does not hedge to profit</td>
<td></td>
</tr>
<tr>
<td>Financial instruments</td>
<td>Forward contracts are the simplest of financial derivatives; though tools such options, may be more suitable in particular circumstances</td>
<td>Forward contracts dominate; senior managers are hesitant with more innovative tools due to their speculative nature, high premiums and resource intensity</td>
<td></td>
</tr>
<tr>
<td>Organisational structure</td>
<td>Centralised—raises opportunities for netting, scale economies etc. though, encounters motivational problems with autonomous subsidiaries</td>
<td>Tendency towards centralisation, with the establishment of ‘in-house’ banks. Some differences in practices between home subsidiaries and foreign subsidiaries</td>
<td></td>
</tr>
<tr>
<td>Economic risk</td>
<td>Effect of long term movements in exchange rates on future expected cash flows of a firm</td>
<td>Yes—movements in exchange rates alter the supply and demand pattern, and in turn the prices of the commodities at ABC plc. Exposed to the Euro, US$ and JY (+ve exposure), and the Aus$ (-ve exposure), among other currencies</td>
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Table 1 (continued)

<table>
<thead>
<tr>
<th>Academic theory</th>
<th>Prior research</th>
<th>Experienced by ABC plc?</th>
<th>Managed by ABC plc?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Management of?</strong></td>
<td>Yes, considered to be the most important form of exchange risk, with critical implications for the future cash flows of a firm</td>
<td>Earlier research indicated that firms either failed to manage their economic risk, or used strategies that were inconsistent with prescriptions in the literature</td>
<td>Yes—forms the centre-piece of the firm’s overall exchange risk management programme</td>
</tr>
<tr>
<td><strong>Qualitative model</strong></td>
<td>The model advocates use of operational measures to manage the risk, which in turn has implications for various departments of firms</td>
<td>More recent research shows some support for the qualitative framework</td>
<td>The traditional qualitative approach is not conducive to the nature of the industry in which the firm operates. The basic principle of the qualitative model is, however, acknowledged through the use of the currency denomination of debt. Strategy is based on results of the quantitative model</td>
</tr>
<tr>
<td><strong>Quantitative model</strong></td>
<td>The model uses statistical analysis to determine the sensitivity of firms’ values to movements in exchange rates, and financial instruments to manage the resulting risk</td>
<td>While some firms use financial models and/or financial instruments to manage their economic risk, practices do not appear to comply with the theoretical models</td>
<td>Lack of total support for the theoretical model. Model here generates information for use in the qualitative method, rather than for the use of financial instruments. Further, statistical analysis here measures sensitivity of product prices and input costs to movements in exchange rates</td>
</tr>
</tbody>
</table>

* LCₖₖ refers to local currency of the foreign subsidiaries.
and perhaps more critically, the process of economic risk management at ABC plc, differs from that recommended in the literature. First, the scope of the qualitative framework is limited to the extent that the firm has little opportunity to use operational measures to manage its economic risk. Second, the firm does not believe that it can successfully use financial instruments, as prescribed by the quantitative framework, to manage this risk. Instead, management has taken elements from both. The qualitative model forms the basis of the way in which the firms uses its currency denomination of debt to manage the negative exposures, and the quantitative model, based on product price information, determines the relevant exposure information. Overall, the economic risk measurement and management process at ABC plc is closely shaped by the industry that the firm operates in: the product price based quantitative model is conducive to the nature of the industry that the firm operates in. This is unsurprising given that the type of, and the way in which the firm experiences its economic risk is, in the first place, a function of the nature of its industry and the types of goods it sells.

The case at ABC plc has implications for future corporate practice and future research on two primary accounts: lack of management of translation exchange risk and management of economic risk. In the former case, companies who use their gearing ratios as a basis for loan covenants in their funding arrangements may wish to consider moving away from this ratio. Such a strategy will ‘free’ the currency denomination of their debt and consequently allow them to use it to manage their real cash flow risk, as at ABC plc.

Keloharju and Niskanen’s (2001) investigation into the use of foreign currency denominated debt in Finnish firms indicated that the sample firms used their debt structures to manage their transaction risk rather than their translation risk. While these findings are not in direct accordance with practices at ABC plc (which manages its economic risk), they are reassuring to the extent that the sample firms used their debt portfolios to manage their real cash flow risk. Such practices may be possible if firms replace their traditional gearing ratios with interest coverage ratios, as bases for funding arrangements. Here firms would design their debt portfolios to maintain, broadly, their interest coverage ratios in each of the currencies in which they generate revenues. Together with managing firms’ transaction exposures by matching the currency of interest and capital repayments to those of revenues, the strategy would indicate firms’ abilities to make their interest and capital repayments. Moreover, the strategy would avoid the effects of the translation process vis a vis gearing ratios, because both elements of the interest coverage ratio would be translated into parent currency terms at the same rate of exchange.

Further, there are issues with translation profit and loss exchange risk. The management of this ‘risk’ can entail heavy management costs and the hedges may still not prevent the undesirable consequences, as seen at HDG plc (Brown, 2001). Further, the new hedge accounting standard, FRS 13, which requires firms to value their financial derivatives at fair value, may limit the extent to which firms can use these instruments to manage their translation profit and loss risk.

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15 The authors of the paper did not make the distinction between translation and transaction risk, but because the measure of the level of export sales was significantly related to the level of foreign currency debt, the chances that the firms were managing the latter was higher.
To manage investor perceptions in this area, ABC plc has sought to educate its analysts to the irrelevance of this risk. Further, it uses a US dollar based reporting system to support this view. The latter approach is clearly made easier for ABC plc, since it generates most (if not all) of its revenues in US dollars. Further research inquiring into whether, and why, investors are concerned with translation profit and loss risk will serve to inform future practice. Investor concern here essentially indicates inefficient market behaviour in which investors are unable to recognise the paper effects of the translation process. Analysts at HDG plc appeared to be concerned with the risk (Brown, 2001), and Solomon’s (1999) study, inquiring into UK investors’ views on the management of corporate exchange risk, had similar implications since investors were concerned primarily with the effects of currency movements on profitability, together with earnings per share and share price. The relevance of translation profit and loss risk, per se, was not, however, apparent.

ABC plc avoids the influences of translation profit and loss exchange risk on foreign subsidiary performance evaluation, by using performance measures in currencies other than sterling, the parent country currency. In contrast, prior research into the evaluation of foreign subsidiary performance in UK and US firms indicates that more than 75% of these firms use budgets quoted in parent currency terms for foreign subsidiary evaluation (Kirsch and Johnson, 1991; Demirag and De Fuentes, 1999). Reasons for translating the financial information into parent currency terms are that it enables senior management to understand the information more easily than if it were in a foreign currency and also allows them to compare results of various foreign subsidiaries in a common numeraire (Demirag, 1992). Moreover, if MNCs see their subsidiaries as investments, then they would wish to see the recovery of these investments in parent currency terms (Ijiri, 1983).

Recognising the benefits and pitfalls of using parent currency information, Lessard and Lorange (1977) had proposed the use of internally set ‘forward rates’ of exchange for use for the translation of budgeted and actual results. The approach, the authors explained would remove the translation effects on corporate profitability over which managers have little control, while preserving the benefits of using parent currency information. Unfortunately, only a small percentage of UK firms adopt this theoretical recommendation (31.3%) and over 40% of firms are clearly seen to include the translationary effects, by comparing budgeted results with actual results, translated at the actual rates (Demirag and De Fuentes, 1999).

With regard to the management of economic exchange risk, firms that operate in a primary industry and particularly in the mining industry, may benefit from the approach used at ABC plc, since the industry participants here essentially have the same characteristics as ABC plc; all firms are, for example, price takers. Bruinstroop and Godfrey (1992), reported that many Australian firms pursue the historic approach at ABC plc, whereby managers use the currency denomination of debt (supplemented with financial instruments) to manage their US dollar denominated revenues, i.e. their transaction risk. However, the possibility that some of these firms experience more intense economic risk than that at ABC plc is high, since many of these firms are smaller and local, with little opportunity to benefit from product and geographical diversification.

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16 The quantitative model as at ABC plc, is inappropriate for goods such as cars, for which firms can determine their own pricing strategies and also differentiate their products from those of competitors to justify these pricing strategies.
In terms of future research implications, a theoretical development of the quantitative model pursued at ABC plc and an empirical analysis of the firm’s model, would be useful. Moreover, while the economic risk management approach at ABC plc appears to be theoretically sound, the company does not have in place a system to assess its value. Development of an appropriate evaluation system here would be useful. One possible strategy is to compare the outcome of the current strategy with that of its historic strategy, where the firm denominated its debt in US dollars. Moreover, the hedge accounting standard FRS 13, may have implications for the extent to which ABC plc can use currency swaps, as part of its risk management strategy. The way(s) in which this standard will influence corporate risk management programmes, in general, will be insightful.

Further case research looking into the management of economic risk would beneficially inform future practice as well as theoretical development. Belk and Glaum (1990), for example, had mentioned in their study that one company had developed an approach to manage its economic risk with financial instruments. A detailed examination here would be useful since the theoretical model based on financial instruments is seen to have various problems with practical application as seen in this study of ABC plc and in Aabo (2001).

In addition, the nature and structure of the industry appear to be instrumental in the type and extent of economic risk experienced by companies and in turn in the way in which the risk is managed. Thus, new research into firms in other industries may reveal different approaches to manage economic risk. Moffett and Karlsten (1994) and Lewent and Kearney (1990), when reporting practices at Merck plc, a pharmaceutical MNC, had explained that the competitive effects of economic exchange risk were of negligible concern to industry participants since the industry was heavily regulated and corporate products were sufficiently differentiated. The hedging policy at the firm, based on financial instruments, differed from that developed in theory but mirrored the risk characteristics of the firm. Further analysis of the process in an academic context may serve to develop further the theory on risk management. Sundaram and Mishra (1991), had hypothesised that a firm’s ability to pass through the effect of movements in exchange rates depends on the elasticity of demand, which in turn depends on the degree of product differentiation; management strategies for firms with differentiated products may, therefore, differ from those who seek to compete on cost leadership.

Overall, while it is unrealistic to draw generalisable conclusions from one case, the results of the research at ABC plc suggest that even if corporate practices differ from prescriptions in the literature, they may not be sub-optimal; companies may have a rationale for operating in certain ways. At the same time, however, on comparing these results with those of prior research, there are areas where some firms may benefit from reconsidering their policies.

Finally, this study has some implications for the methodologies used for empirical research in corporate finance and accounting. The use of the qualitative research methodology, based on interviews, case studies and participant observation, has been relatively uncommon in this area and this represents a gap. Research into the  

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17 Khoo (1995) has conducted some statistical analysis as part of a theoretical paper. The context of his model, however, differed to that at ABC plc and, therefore, needs reconsideration.

18 Management accounting research is an exception to this statement.
management of foreign exchange risk is an exception in that a proportion of the work is interview and case based (Walsh, 1986; Belk and Glaum, 1990; Davis et al., 1991; Brown, 2001); we attempt to use this to demonstrate the overall usefulness of qualitative research by considering how these studies have added value to our understanding of the management of foreign exchange risk.

When investigating how firms manage their exchange risk, qualitative researchers have, as a minimum, generated results that can be compared to normative prescriptions to assess corporate practice. More importantly, however, such studies have been in a position to be able to identify and report innovations in corporate practice. Walsh (1986), for example, reported on the use of in-house banks in the management of transaction risk, while Belk and Glaum (1990) identified problems that conventional financial hedging can cause in the management of economic risk. Further, the case of ABC plc in this study, revealed that the management of economic risk is strongly influenced by the nature of the industry in which the firm operates. Moreover, Lewent and Kearney (1990), highlighted a potentially different model at Merck plc than those prescribed in theory. Dhanani and Groves (2001) and Kim and McElreath (2001) in their studies also found several variations of operational measures (based on the qualitative framework) to manage firms’ economic exchange risks; these included joint ventures, mergers and acquisitions, risk sharing agreements and strategies that entailed ‘dual currency’ payment systems.

When we turn to the ‘whys’, it is the qualitative studies that have helped explain differences between theoretical prescriptions and corporate practice (and between corporate practices) in the context of translation risk and economic risk. In the former case, for example, Walsh (1986); Davis et al. (1991) and Brown (2001) revealed concerns about the effects of the translation process on corporate gearing ratios and the notion of translation profit and loss risk and agency and investor issues. To add to this, the ‘hows’ at ABC plc showed how it was able to circumvent some of these issues. In the context of economic exchange risk, it is again the qualitative methodology that has identified operational constraints such as long-term buyer–supplier relationships, organisational politics (Dhanani and Groves, 2001), and the nature of the industry that the firm operates in, as seen at ABC plc, to explain why firms fail to use the strategies recommended in the theoretical literature.

Overall, as evident from the above, qualitative research into the management of exchange rate risk has helped improve our understanding of the area substantially; the methodology has revealed various aspects of corporate exchange risk management that may otherwise have gone unobserved. Moreover, the methodology has the potential to inform new areas of research and theoretical development as seen in the current case. This is, however, not an indication that extant studies in this area that have used other methods are weak in any way: the recent survey based study by Lee et al. (2001), for example, highlighted important differences in the risk management practices of firms from different countries. What is proposed here is that different methodologies do different things, they either answer the same questions in different ways, which serves as a basis for triangulation or they answer different questions. An important implication of this is that academics should advocate the use of multiple research methods, including qualitative methodologies, in research into accounting and finance, in general. While this is in no way
a new notion, rather one that has received consensus from writers on research methods (Yin, 1994), it is one that has received limited support in our discipline.

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