An Investigation of Foreign Exchange Risk Management by New Zealand and Vietnamese Exporting Small and Medium Sized Enterprises

Vu Hung Dang and Valerie Lindsay

***Abstract*—Our exploratory qualitative study investigates forex risk management in New Zealand and Vietnamese exporting SMEs by examining the determinants, as well as the firms' hedging decisions. The findings shed new light on SMEs' forex risk management practices, and how these differ in institutionally different country contexts. Both Vietnamese and New Zealand firms increased the use and formality of hedging techniques in accordance with increases in forex exposure. Although, not surprisingly, SMEs in both countries gained more experience to deal with forex risk as their level of internationalization increased, they drew on different perceptions about forex risk management. New Zealand SMEs were prepared to allocate resource towards forex risk management and sought a dynamic strategy to manage this risk – suggesting an economic-oriented approach. On the other hand, Vietnamese SMEs were passive when dealing with forex risks and hesitated over resource allocation towards its management - suggesting a transaction-oriented approach.**

***Index Terms*—Forex risk management, hedging techniques, internationalization, resources allocation.**

I. Introduction

There is only a limited literature on forex management by SMEs, despite calls for such research, as in [1]-[3]. Previous empirical studies on forex risk management have generally focused on multinational enterprises (MNEs) or large firms [4], [5]. Much of this literature has considered derivatives as the major hedging instrument, as these are a commonly used by large firms, see [6]-[9]. Further, studies on the determinants of forex risk management have generally used objective firm-level measures, and not considered the perceptions of risk by key decision-makers. However, SMEs seldom have objective measures available, and rely more on perceptual inputs into decision-making; researchers, therefore, argue for forex risk management in SMEs to be examined from a different stand-point, e.g. [3]. The small number of studies in the SME context highlights the specific characteristics of SMEs that are likely to influence their forex management behaviour, and require further examination. These include their limited resources, capabilities, experience and knowledge relating to forex risk management as in [1], [10], [11], degree of international involvement [12], as well as the attitudes, perceptions and key decision-making role of the owner/manager [3].

A number of researchers argue for an appropriate theoretical framework for explaining SME forex management behaviour that takes these characteristics into account [3], [12], [13]. Resources have been highlighted as a critical element of forex management for SMEs [12], and so the RBV can offer a suitable theoretical lens for examining resource allocation for forex risk management. Further, since forex risk for exporting SMEs arises from exposure to foreign currencies [14], the level of an SME's international exposure influences foreign exchange risk [2], [15]. The internationalization literature, therefore, also offers a useful theoretical backdrop for exploring an SME's management of forex risk when it is involved in increasing internationalization. The application of the RBV and internationalization theories to an investigation of forex risk management by SMEs can contribute to a much-needed theoretical base for better understanding this issue.

Contextual factors, such as an SME's home country institutional environment may directly impact its approach to managing forex risk [16]. Although studies have explored forex management by SMEs in developing or emerging countries, e.g. [12], [16], few, if any, have looked at emerging and developed in the same study. As noted by Kula in [12], "Comparative analysis of (forex) exposure perception and management of SMEs in emerging economies would yield invaluable findings given the scarcity of studies on the subject in these countries". Differences might include the provision of more support for growth and more incentives to internationalize in developing and emerging countries, because of increasing liberalization [17]. Even between developing countries, there is considerable variation in the institutional environments, reflecting different levels of development [18], [19]. Only a few studies have examined forex risk management in the context of countries' stages of economic and financial development, e.g. [8], suggesting the need for more research relating to country context.

The aim of the study is to, first identify from the literature the determinants impacting the choice of hedging alternatives (hedging strategy) for managing forex risk and the hedging techniques that SMEs might use. Given the arguments outlined above, we draw on the resource-based view (RBV) [20], internationalization theory [21], and institutional theory [22] in our study, as well as the literature on SMEs. From our review, the following key determinants of forex management (hedging strategy and technique) emerged: perceived forex exposure, perceived forex risk, firms' resources, their degree of internationalization, and perceptions of country-specific factors (institutional environment) on a SMEs' forex

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management decisions. Second, in an exploratory qualitative study of SME from New Zealand (NZ) (as a developed country), and Vietnam (as an emerging economy), we explore how these determinants impact the firms' choices of hedging strategies and techniques in practice, and conclude with a conceptual framework. Our study contributes to the currently small literature on forex management by SMEs, by comprehensively examining the determinants and their interactions. This extends the present focus in the literature on the hedging strategies and techniques chosen by SMEs as in [2], [3], [16].

The paper is organized as follows. The next section presents a review of the key determinants derived from the SME and forex literatures. This is followed by a description of the methodology used for the study. The findings are then presented and discussed in the context of the existing research, and our novel results are also highlighted. This is followed by the presentation of a conceptual framework derived from an integration of our findings with the extant literature. The last section of the paper presents conclusions regarding our contributions, and a discussion of future research opportunities, managerial implications, and limitations of the study.

II. Review of the Literature

Previous studies have shown that perceived risk could predict behaviors associated with actual the dimensions of risk. For example, perceived risk is found to be predictive in the consumer behaviour domain [23], [24]. It follows that perceived forex risk is likely to impact a firm's choice of responses to forex exposures; however, surprisingly, this appears not to have been studied. It is also likely that managers of SMEs and those of large firms will perceive risk associated with foreign exchange differently [3], since, as the key decision-makers in the firm, the former are likely to have higher personal stakes in the decision [25], [26].

A firm's *extent of internationalization* is also likely to impact the hedging decision of the SME manager, since higher levels of international exposure (exporting in this case) are usually associated with higher levels of risk [21], including forex exposure [14], [15]. In contrast, however, reference [27] found that the lower the exposure, the more likely that SMEs were to hedge, although this appeared to be related to the highly import-dependent nature of their SME research sample, and high exposure to forex risk associated with import costs. Thus, it is important to consider not only the degree of outward internationalization (exporting), but also the forex risk associated with importing (expenses) [2]. Limited knowledge and experience are key issues for SME managers confronting forex risks [27], but these are also key dimensions that accumulate as internationalization increases [21]. Thus, it would be expected that the more an SME is internationalized, the abler it is to manage its increased forex exposure.

Resources and capabilities of a firm include human resources, knowledge, experience, economies of scale, financial resources, top management team, learning, information acquisition, negotiation and pricing. The RBV primarily holds that resources and capabilities enable firms to generate profits and a sustainable competitive advantage [28], [20], [29]-[32]. Literature on firms' resources extensively examines business/marketing strategy [33]-[35], but lacks investigation of hedging strategy [36]. For SMEs, which are generally resource-poor, access to resources is critical to their forex management decision [2], [11].

Regarding *country-level influences*, reference [37] argue that strategic choices are driven by the formal and informal constraints of a specified institutional framework (formal and informal institutions), along with industry conditions and capabilities. This suggests that country-specific factors could influence firms' choices of strategies in general, and, by extension, might impact the choice of hedging strategies in the context of forex risk management, specifically as in [16], [38]. For example, access to forex management skills and advice may depend on the banking infrastructure in a country. Also, banking regulations and practices may directly impact a firm's ability to access financial resources necessary for forex risk management. As reference [16] points out, "smaller enterprises pay higher premiums for bank finance where collateral is lacking and information to evaluate risks is imperfect." In addition, references [37], [39]-[43] suggest that a focus on emerging markets is likely to bring more benefits for future research drawing on an institutional-based view of international business strategy. This is particularly important, since the institutions of developing and emerging economies differ significantly from those of developed countries [37] and may, therefore, impact on the SMEs' forex management behaviour differently. Hence, an emerging country and a developed country setting is helpful for examining the proposition that the country differences would influence how SMEs manage forex risk [8].

In the light of existing research, it is evident that firms might apply various hedging strategies and techniques to manage forex risk. They could use currency derivatives, foreign debt, and other external methods, as well as natural or internal methods, such as leading and lagging, or balancing import and export exposures, to manage forex risk. Reference [27] found that SMEs tend to use hedging strategies for forex exposure associated with costs, rather than revenues. He further found that, apart from natural hedging, forward and swap agreements were the most common hedging technique used by SMEs, and this choice was related to their limited level of knowledge about more sophisticated hedging instruments. In the case of SMEs in Turkey, reference [12] found little, if any, practical knowledge by managers of even these basic hedging instruments. The few studies that have investigated hedging behaviour of SMEs concur on the widespread use of natural hedging methods, such as balancing import and export exposure relating to a particular currency [11].

An important aspect of research relating to hedging by SMEs is measurement of the factors (determinants) involved, and their applicability to SMEs [3]. In the broader literature, hedging determinants are generally examined as objective factors that have hard measures. However, many of these are not relevant for smaller firms, since their volume of business is small, and they are difficult to apply. For example, leverage [7], liquidity [7], [9], [44], tax charge on profit [44], and foreign debt [7], [45] are determinants that usually provide objective measures, but are not generally applicable to SMEs.

Following concerns about this raised in reference [3], managerial perceptions of factors influencing managers' choices regarding forex risk management may be a more relevant measurement approach for SMEs. Perceptual measures are frequently used in research on SMEs and in situations where objective data are either not appropriate, or difficult to obtain [3], [46]. Further, since the owner/manager of an SME is usually the key decision-maker, his/her perceptions (e.g. risk attitude and risk perception) are critical to the choice of hedging strategy and instrument/s to be used.

In summary, we have outlined our rationale for exploring determinants of forex management that are more applicable to SMEs, than those used for larger firms. Drawing on the general SME literature, and the relatively small base of literature on forex management in SMEs, as well as the RBV, internationalization and institutional theoretical lenses, we have identified the most relevant determinants of the hedging strategy and choice of hedging instrument/technique applicable to SMEs. The following section explores these factors in a practical setting, utilizing a qualitative exploratory methodology with twelve exporting SMEs: six from New Zealand and six from Vietnam.

III. Methodology

The study adopts an exploratory qualitative approach using in-depth face-to-face interviews with owners/managers of twelve SMEs. We follow an inductive approach [47], whereby we draw on an initial conceptualization [48] derived from the literature to inform the interviews with participating managers. We then integrate our findings with the extant literature to develop a tentative conceptual framework for SME forex management. Our approach differs from most of the extant research on foreign exchange risk management, particularly in large firms, where quantitative approaches are well established and generally draw on objective data. We have argued that the models, types of determinants and the measures adopted in large-firm studies on forex management are inappropriate for studies of SMEs. Since we have also argued that managerial perceptions and attitudes concerning risk and resource utilization, are especially important for SMEs, an exploratory qualitative study that allows us to explore these psychological perspectives is desirable. Further, given that this is a nascent area of research, an exploratory qualitative approach to our study is justified [49].

The study draws on twelve exporting SMEs, six from New Zealand, as a developed country, and six from Vietnam, as an emerging country, following a purposive selection approach [48]. The firms represented a range of industries and associated products and services. These were software, services, garment, digital solutions, toys, uniforms and logistical products, food and foodstuff, fish, rice and bakery. It is a key informant study, with the interviewed participants being senior managers (CEOs, Managing Directors or International Managers) or owners of exporting SMEs. All participants had a key high-level decision-making role in their respective firms. The number of firms in the study conformed to recommendations in the literature for such a study [50]-[53].

IV. Findings and Discussion

This section presents the findings, interpretation and discussion from data analysis. These follow the key themes identified in the pre-conceptualization from the literature review relating to SME forex risk management. We conclude this section with a tentative conceptual framework depicting the key determinants of SME forex management, focusing on hedging strategy and choice of hedging technique as key outcomes.

A. Extent of Internationalization

The data indicate that both New Zealand and Vietnamese firms perceived more forex risk when they demonstrated increasing levels of internationalization, reflected by a high level of export intensity (export ratio), and number of export markets. Consequently, they used hedging more extensively when they exported more. These findings accord with the literature confirming an increased degree of risk (including forex risk) the more the SME is internationalized [14], [15], [27].

Managers also noted their lack of knowledge about forex risk and hedging techniques, which contributed to their reluctance to hedge when internationalization levels were low. This is a common issue for SMEs, and includes a lack of knowledge about hedging instruments [27], derivatives and their use [54], [55], and types of forex exposure [12]. It is also in accordance with the view the stages approaches to internationalization that is experiential [21]. In the early stages of internationalization, the firms tended to prioritize the generation of sales and profit, rather than hedging to protect profits.

When firms were exposed to a range of different currency risks they applied a diversity of natural hedging techniques, including having payment terms in USD. Reference [27] noted that gains and losses can be offset if currencies are correlated, as in the case of some of our study's participants. However, if several currencies are involved, forex exposure becomes difficult to predict.

B. Perceived Forex Risk

Fluctuation of exchange rates is one of the major factors that financial managers are concerned about while managing forex risk and deciding on hedging strategies [11]. The uncertainty or volatility of exchange rates may be a cause of loss if forex rate changes are against the value of currency denominated for payables and/or receivables. Our findings show that firms were quite worried about exchange rate uncertainty, and, therefore, exposure, supporting the findings of other SME studies, e.g. [2], [11]. Although actual exchange rate levels were not a big problem for the firms, managers perceived that exchange rate changes could have negative impacts on their firms' profits.

Most firms indicated that they kept an eye on the fluctuation of forex rates around the time when foreign revenues were converted into local currency, and especially when the fluctuation trends seemed to be negative. In the case of Digiso, a New Zealand firm, NZD payments for exports primarily caused forex exposure, because inputs were paid by the firm in USD.

Perceived forex risk has several dimensions and that firms may perceive risk differently, as also noted in [13]. For example, Ship, a New Zealand firm, perceived forex risk in terms of its impact on profit, while Digiso was concerned about impact on costs, in line with the findings in [27]. Perceived forex risk is, therefore, likely to influence the firm's choice of denominated currency for export pricing as well as input costs, since both affect profits and profitability. Similar perceptual variations were found among the Vietnamese exporting firms. For some New Zealand firms, focusing on the core business (product, services, and markets), rather than forex, was their major concern.

Overall, our findings show that firms perceived forex risk differently, and that such risk has several dimensions. Particularly, managerial risk perceptions were not only about exchange rate levels, but also about effects of exchange rate volatility on the firms' business more generally; for example, exporting, pricing, cost versus revenue, and profit, as also identified by others [1], [56]. New Zealand exporting SMEs reported that they frequently suffered from significant fluctuations of the NZD, while regular devaluations of Vietnam Dong tended to work in favor of Vietnamese exporting SMEs. Thus, as noted earlier, New Zealand exporting SMEs were more inclined toward to long-term forex risk management strategies, while Vietnamese exporting SMEs looked at forex fluctuations in the short term. These findings are supported by the observations that risk perception is likely to influence risk attitude [57], and thus decision making about forex management [3]. In fact, reference [10] found that exchange rate volatility may influence the likelihood of SMEs to export at all.

C. Perceived Forex Exposure

Overarching forex exposure was the issue most frequently mentioned by the managers in our study. Perceived forex exposure is the most essential reason for firms to hedge, since a firm does not need to hedge if it is not exposed to forex risk. Thus, perceptions of forex exposure and of forex risk are closely intertwined. The data indicate that firms tended not to be too concerned about hedging until forex exposure was thought to be large enough, in accordance with the findings of [27]. Increasing exposure tends to be correlated with firm size [10], [12].

A small Vietnamese firm, was concerned about the forex exposure of a US$50,000-dollar contract, while a larger New Zealand firm was only interested in hedging exposure of US$ 1 million, or above.

Thus, when making hedging decisions, firms considered the amount of risk or exposure involved, e.g. contract values, foreign currency denominated revenue and cost, and this was different for different firms. These findings are consistent with [3], observation of heterogeneity among SMEs in terms of managerial perception and attitude towards forex management. As illustrated in the Digiso example above, the SMEs in the study tended to use internal/natural hedging as their first option, and only when exposure was large enough, did they start to use external hedging, confirming the findings of [58]. How much forex exposure was necessary to trigger formal hedging varied across firms in the study, and appeared to be subject to firm size and managerial perception of forex risk. Evaluation of the size of exposure depends on financial capability, competence and expertise to understand how forex exposure and volatility affects firms' overall business risk, as well as exporting, pricing, and thus profit [12]. Both Vietnamese and New Zealand firms understood their vulnerability to large amounts of forex exposure, and increased the use of hedging techniques in accordance with the growth of their exposure.

D. Resources for Forex Risk Management

Managerial experience, competence, expertise in forex risk management, are among the important resources within a firm when it is subject to forex risk [1], [2], [12]. Relevant resources may be categorized into physical, human, financial and knowledge resources. Firms in this study were particularly concerned about physical resources (e.g., inputs and sources of supply), as these influenced their ability to deal with forex fluctuations, and their choice of hedging strategies. For instance, firms tried to find stable and competitive sources of supply to strengthen their financial capacity and give them more confidence to cope with forex fluctuations. This is a similar finding of [2] that SME suppliers seek lower input prices to compete effectively in their supply chains. Our results also showed that lower input prices were sometimes able to compensate for losses caused by forex changes impacting export prices. Using such a natural hedging opportunity, firms generally tried to find benefits from physical resources to make up for possible forex loss.

As outlined in the literature review, SMEs generally lack resources for managing overall business, as well as forex risk. Not surprisingly, firms in our study tended to give priority in the use of their resources to their core business. This applied particularly to the use of financial and human resources. Firms were unlikely to allocate much human resource to hedging activities until forex exposure was large enough.

To overcome internal resource limitations, some SMEs in the study used external resources, for example, traders and brokers. A key issue was the lack of knowledge about the types of resources and hedging options that would be most useful, as also found in other studies, e.g. [1], [27]. Due to resource deficiencies, especially in human resources, and the need to manage the whole business effectively, many SMEs lacked sufficient capacity or knowledge to undertake formal hedging. Unlike larger firms, these firms did not have financial controllers available to manage forex risk. As our findings show, limited financial resources tended to drive managers (consciously or otherwise) towards natural hedging, rather than formal hedging techniques.

Lack of financial resources also impacted Vietnamese firms, where they chose to adopt a short-term hedging strategy based on their perceived short-term transaction exposure, as already discussed. The Vietnamese firms hesitated in allocating resources to forex risk management, because they preferred to respond to short-term changes, undertaking forex transactions only when the rates were in their favor. On the other hand, New Zealand firms tended to pursue a long-term strategy for forex management, and thus they were prepared to invest in resources for forex risk management. As noted in [27], the period of a particular project incurring the forex exposure may also be a factor, with longer transactions often incurring higher cost. This could explain why the New Zealand exporters perceived the cost of forex to be high, since many of them were involved in long-term project-based B2B exporting relationships.

E. Country-Specific Factors

Governmental regulations may influence SMEs' perceptions of forex risk: either preventing or encouraging the firms to allocate resources for hedging [12], [16]. Firms' choices of hedging instruments may also be restricted by governmental regulations - for example, rules on the use of currency derivative products, as in the case of Vietnam in the late 1990s.

While regulations provide a legal framework for the development of products for forex risk management, they also cause changes in forex rates via currency policies, having an indirect impact on firms' forex risk management. Vietnamese firms presented a common concern about their sensitivity to currency policies, as highlighted by a 'herd behaviour' [59] comment from a Vietnamese manager. In contrast, New Zealand has a very different regulatory and policy environment, and the New Zealand SMEs, while voicing concern about exchange rate volatility, tended not to consider currency policy a significant problem. This highlights the potentially differing impacts of institutions on forex management by SMEs across developed and emerging economies, as suggested by other scholars, e.g. [12], [16].

In terms of banking policy, unlike the Reserve Bank of New Zealand, which pursued a floating exchange policy regime, The State Bank of Vietnam tended to maintain a managed exchange policy regime, with official commitments being made to hold fluctuations of exchange rates within a certain range. As such commitments were widely announced on public media, Vietnamese exporting firms were less concerned about forex risk in comparison with New Zealand firms. Since their government undertook to stabilize their currency, Vietnamese firms were relatively passive when dealing with forex risks. On the other hand, New Zealand firms sought a dynamic strategy to manage forex risk, to protect their profits against forex loss due to free fluctuations of NZD. However, as similarly noted in another study, e.g. [27], the SME managers' understanding was limited and they often relied on information and advice solely from banks, which could be imperfect or biased.

F. Hedging Strategy

Our findings show that, overall, the SMEs from both countries preferred natural hedging techniques over formal techniques, such as derivatives, at least until their forex exposure was sufficiently high to justify the use of the latter. This is consistent with much of the literature on forex management by SMEs, e.g. [2], [12]. For example, Ship, a New Zealand firm, costs were in the same foreign currency, USD, as that in which its revenues were denominated.

Additionally, when firms had an overall low perception of forex risk, they were seldom interested in developing regular/formal strategies for its management. Not until they were in danger of suffering loss due to exchange rate fluctuations, or higher forex exposure, did they protect themselves from the forex risk. This was particularly evident among the Vietnamese firms.

Thus, decision-making on hedging by exporting SMEs tended to be quite straight forward and pragmatic. Many managers felt that they lacked a reason to hedge, and did not spend much time and effort to think about a hedging strategy. Instead, in a more ad hoc manner, they observed the exchange rate fluctuations and made hedging decisions per their perception of the forex risk and their judgement of the impact on their business at the time.

Because foreign exchange advice and services are available in most New Zealand banks, exporting SMEs in New Zealand generally have good access to external hedging techniques and services, as well as advice and information. On the contrary, hedging products provided by Vietnamese banks were reported to be less extensively developed, due to both a lack of supply and demand. The Vietnamese SMEs in our study, were, in general, little concerned about forex exposure, knew little about hedging techniques, and had relatively few choices of hedging techniques or services. As a result, the Vietnamese firms preferred quite simple ways to manage forex risk, such as selecting the best times to sell USD, based on the price being favorable to the firm. While firms from both countries tended to invest more in resources for forex risk management when they perceived forex risk to be higher, the Vietnamese firms had less access to hedging techniques, and thus had a less deliberate strategy for forex risk management, in comparison with New Zealand firms.

G. Conceptual Framework

Our findings have verified, and elaborated on, the main determinants of SME forex management identified in the literature, and provided tentative indications as to their interactions and relationships. The framework is premised on the role of managerial perceptions, which are an essential aspect when considering forex management in SMEs [3]. We argue that managerial perceptions of forex exposure are (i) influenced by the degree of internationalization of the firm and (ii) translated into perceived forex risk by SME managers. Forex risk perceptions then influence the level of resources that are made available in the SME to deal with risk, and this then influences the firm's hedging strategy (to hedge or not), and the technique used (formal or informal/natural) to hedge. Our findings on the differences between the New Zealand and Vietnamese firms suggest that country-specific factors may moderate the influence of forex exposure and forex risk on the allocation of resources by the SME.

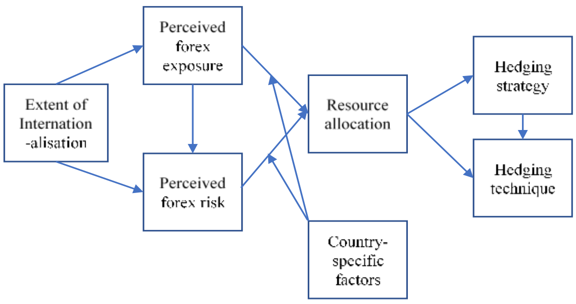

Fig. 1. Forex risk management framework.

V. Conclusions, Implications and Limitations

This paper reports the findings of our exploratory study on forex risk management by SMEs in New Zealand and Vietnam. While there is a well-developed literature on determinants of forex management in large firms, little has been published in the SME context, particularly in relation to managerial behaviour and decision-making regarding forex management. Our findings show the key determinants influencing the hedging strategies and hedging techniques used by New Zealand and Vietnamese SME managers. To our knowledge, the literature has not considered how these determinants work together in influencing forex management decisions in SME exporting firms. We suggest that our study makes the following specific contributions to this emerging research area.

First, we have developed a conceptual framework on forex management by SMEs. This depicts the determinants derived from both the existing literature and an exploratory qualitative study, and a conceptualization of their relationships. Our study has provided detailed findings on how these determinants interact and impact the SME's approaches to forex management. Our conceptual framework incorporates many new determinants of hedging strategy, when compared to large firm studies, which, we argue, better reflect the context of SMEs. Second, we have highlighted some key differences between SMEs from New Zealand and Vietnam that appear to largely reflect country-specific institutional factors, which also underpin different managerial perceptions about forex management. County-specific factors may exacerbate the heterogeneity of SMEs, noted in [3], and influence how the determinants play out in practice. Third, since we were interested in managerial decision-making behaviors in SMEs, we deliberately chose to explore managers' perceptions of the determinants, rather than use objective measures commonly utilized in forex risk management studies of large firms. Because of their small size and limited degree of formalized organizational structure, SMEs' behaviors are strongly influenced by the perceptions of the key decision-makers (e.g. owner-manager, CEO) of the firm [25], [26]. Thus, it can be argued that managerial perceptions of forex risk and forex exposure will directly influence the behaviour of the firm, and allocation of resources, towards hedging. We argue that these perceptions provide more realistic measures than the objective indicators commonly used in large-firm studies of forex management. Our study, therefore, contributes to the literature by highlighting the important role that managerial perceptions plays in determining hedging strategy decisions in SMEs. This adds to earlier assertions of [3], and directly addresses their call for research incorporating managerial-level perceptual and attitudinal data in research on forex management on SMEs.

Since this is an exploratory study, several areas for further research arise. Most important is the need to validate the conceptual framework using larger, quantitatively based studies. Such studies would also add insights into the proposed relationships between the determinants. In addition, the potential role of country-specific factors is worthy of further exploration. An institution-based approach, drawing on both subjective and objective data would provide some interesting perspectives on the impact of different institutional environments on the hedging decisions of SMEs. Finally, given that other SME research has revealed an impact of firm heterogeneity on forex management, and attributed this largely to differences in the characteristics of the firms and their environments, it is important to establish which endogenous and exogenous factors may play differentiating roles in forex management in SMEs.

There is currently relatively little known about the influences on forex risk management and hedging decisions in SMEs. It is clear from the findings of this study that SME managers approach this important issue from a poorly informed perspective. By understanding the determinants involved, managers of SMEs could make more informed decisions, with better knowledge of the implications and the outcomes for their firms. Further, since national policies on foreign exchange and related regulations can play a large part in the options available for SME managers, it is important for policy-makers to appreciate the impacts on firms of the relevant policies and regulatory frameworks in place.

Finally, we acknowledge several limitations of the study. First, while we have presented some novel findings and offered a tentative conceptual framework on the determinants of hedging strategy in the context of SMEs, this is an exploratory study based on a relatively small number of firms. While the framework is useful in providing some initial insights, further confirmatory research is necessary. Second, while we have outlined some interesting differences between New Zealand and Vietnamese SMEs, it is not appropriate to generalize these findings to country categories, such as developed and emerging, without further research. Third, and as noted above, we have utilized perceptual measures, but believe that these are justified for the reasons given; further, they allow us to provide some initial exploratory insights into managerial behaviour relating to forex risk management in SMEs not otherwise obtainable using objective measures.

Given the limitations of this study, there are areas for future research. It would be worth investigating the interactions of hedging determinants, by developing and testing the theoretical framework of forex risk management by SMEs shown in Fig. 1. A quantitative research would allow generalization and confirmation of a theoretical model. An increasing sample size and valid measurement scales could improve the validity of the conceptual framework.

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