



Subsidiary size, internationalization, product diversification, and performance in an emerging market

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Abstract

Purpose – This study aims to explore subsidiaries' diversification strategies, both internationally and with regard to their product offerings. The study seeks to examine, at the subsidiary level, the relationships between subsidiary size, internationalization, production diversification, and performance.

Design/methodology/approach – Based on the archival data of an officially conducted survey, the study used ordered logit regression analysis to test its hypotheses using data from 920 Taiwanese subsidiaries in China.

Findings – The study's results revealed: larger subsidiaries tend to engage in internationalization and product diversification activities to a greater degree, and, as a result, tend to exhibit superior performance; and subsidiaries that pursue outward internationalization and that reinvest in related businesses enjoy enhanced performance.

Research limitations/implications – This study examines Taiwanese firms that have one foreign subsidiary in China. Future research should examine larger firms with numerous foreign subsidiaries in developed countries, and should employ more fine-grained measurements of subsidiary size to provide a clearer picture of subsidiary-specific advantages.

Originality/value – Unlike the existing literature, which has tended to take the perspective of the multinational corporation, this study examines internationalization and product diversification at the subsidiary level. By extending the resource-based view to the subsidiary level, larger subsidiaries might be able to exploit their advantages so as to more successfully implement international and product diversification strategies and improve their performance in a host country.

Keywords China, Taiwan, International business, Diversification, Multinational companies, Subsidiaries

Paper type Research paper



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Introduction

Because subsidiaries have recently been recognized as valuable strategic vehicles for multinational corporations (MNCs), their specific roles within MNCs have increasingly attracted the attention of researchers. Subsidiaries may be established to explore new markets, identify opportunities, or garner commitments for the resources necessary to tap into new local markets (Birkinshaw *et al.*, 2005). As they mature, subsidiaries may eventually develop their own capabilities, allowing them to make even more meaningful contributions to MNCs. Ultimately, MNCs' capabilities may come to be regarded as an amalgamation of their foreign subsidiaries' capabilities (Birkinshaw and Hood, 1998).

Subsidiaries have been the subject of significant examination in the literature (Paterson and Brock, 2002). Researchers have examined such topics as the strategic links between a headquarters and its subsidiaries (Martinez and Jarillo, 1989), effective management and control mechanisms (Bartlett and Ghoshal, 1986; O'Donnell, 2000), subsidiary-specific advantages (SSAs) (Moore, 2001; Moore and Heeler, 1998; Rugman and Verbeke, 2001), and subsidiaries' entrepreneurial characteristics and initiatives (Birkinshaw, 1997). Most of these studies have focused on the typologies of subsidiary strategies, or on the subsidiary characteristics associated with different subsidiary strategies/roles. Researchers have found that the assignment of subsidiaries' strategic roles tends to be determined according to certain dimensions, and that these assignments underlie subsidiaries' basic orientations when it comes to pursuing firm and location-specific advantages. These basic dimensions include the flow of knowledge (Gupta and Govindarajan, 1991), capabilities and resources to the subsidiary and between the subsidiary and the rest of the MNC (D'Cruz, 1986; White and Poynter, 1984), the degree of decision-making authority granted to the subsidiary, the extent of host market involvement (D'Cruz, 1986), and procedural justice and subsidiary autonomy (Taggart, 1997).

These studies, however, have typically regarded subsidiaries as simply the agent of the MNC, viewing them from the parent's perspective and discussing how their developments in R&D (Davis and Meyer, 2004), new products, or organizational capabilities would eventually enhance the parent's firm-specific advantages (FSAs) (Birkinshaw, 1997). To our knowledge, only a limited number of studies have taken subsidiaries themselves as the unit of analysis, examining how subsidiaries engage in product or geographic diversification strategies, and considering how these strategies affect subsidiary performance (Zhao and Luo, 2002; White and Poynter, 1984).

During the past three decades, a number of studies (Hitt *et al.*, 1997; Lu and Beamish, 2001) have examined issues related to internationalization and product diversification at the corporate level, and have argued that firms can engage in such activities because they possess a particular set of advantages (Delios and Beamish, 1999). Similarly, subsidiaries – as semi-autonomous entities – can also expand abroad and diversify locally once they have developed certain capabilities and advantages in host countries. For example, large subsidiaries are better able to engage in geographic and product diversification activities than small ones; more autonomous subsidiaries, reflecting their strategic importance to parent firms or their ability to influence parent firms' decisions (Forsgren *et al.*, 1992), tend to diversify more actively. This is especially the case for those subsidiaries operating in emerging markets. From a subsidiary's perspective, pursuing geographic or product diversification activities may enable it to exploit market opportunities and enjoy the benefits of economies of scale or scope. Because subsidiaries are playing an increasingly important role in the global economy, this study aims to shed

some light on their strategic behaviors in terms of internationalization and product diversification. Moreover, existing research on subsidiary management typically focuses on the strategies of subsidiaries in developed countries (Bartlett and Ghoshal, 1986; Taggart, 1997); few studies have examined the strategic behaviors of subsidiaries in developing countries. Subsidiaries operating in developing countries that also have parent firms from developing countries may behave differently from those with parent firms from developed countries. This study, therefore, chose to examine a sample group of firms for which Taiwan – a newly industrialized economy – was the home country, and China – a developing economy – was the host country.

Unlike subsidiaries with parent firms from developed countries, which tend to act according to their parents' global strategies, Taiwanese firms usually grant a higher level of autonomy to their Chinese subsidiaries so that the subsidiaries can respond to local needs quickly and establish stronger strategic positions in the early years of their foreign market entry. These subsidiaries, therefore, will aggressively seek complementary resources and market opportunities in order to prove their own strategic legitimacy in the host country. In addition to carrying out directives from parent firms, these subsidiaries will also take the initiative to implement strategies they have devised by themselves, such as introducing locally developed new products. Consequently, these subsidiaries provide an excellent setting for examining the relationships between subsidiary internationalization, product diversification, and performance. Taking the subsidiary's point of view (Birkinshaw and Hood, 1998), this study specifically addresses the following two research questions:

- (1) What is the impact of a subsidiary size (i.e. as a reflection of SSAs) on the formation of internationalization and product diversification strategies?
- (2) How do internationalization and product diversification affect performance at the subsidiary level?

Following its introductory section, the paper goes on to provide the rationale for its research hypotheses. The third section describes the sample profile and methodology. The fourth and the following sections present and discuss the research findings. Finally, the last section contains the paper's concluding thoughts, managerial implications, research limitations, and suggestions for future research.

Literature review and hypotheses

Subsidiary size and internationalization

Previous studies have largely focused on the importance of FSAs to MNCs' success (Hymer, 1976). Once firms leverage these advantages into foreign markets to achieve economies of scale or scope, they will become more profitable. However, similar concepts of SSAs, as pointed out by Rugman and Verbeke (2001), can also be important in helping MNCs develop and maintain certain advantages. In this study, we used a subsidiary's size to reflect its SSAs. Larger subsidiaries usually have more resources and are less dependent on parent firms because they are able to develop relationships with a greater number of external organizations, affording them access to a variety of resources (Pfeffer and Salancik, 1978). Therefore, a subsidiary having greater resources and capabilities, both of which are usually associated with greater autonomy (Johnston and Menguc, 2007; Prahalad and Doz, 1981), will have more say when it comes to expansion decisions – whether they have to do with product scope or market scope (Taggart, 1997; White and Poynter, 1984).

Traditionally, subsidiaries have carried out parent firms' strategies by exploiting advantages transferred from the parent firm (Birkinshaw and Morrison, 1995). These days, though, subsidiaries themselves often determine their roles and create their own strategies. These relatively autonomous subsidiaries may depend more on their own resources and capabilities, as well as on their relationships with local suppliers, customers, competitors and government agencies in host countries (Hedlund, 1986). Also, a larger subsidiary typically has more SSAs, enabling it to gain superior competitive positions in local markets, particularly when parent firms are committed to developing strong positions in host countries (Isobe *et al.*, 2000). These advantages, in turn, allow these subsidiaries to seek out and exploit opportunities in foreign markets (Tallman, 1992). Accordingly, subsidiaries possessing a unique set of advantages can be expected to venture abroad more aggressively, as unique capabilities and assets are often sustainable and can be exploited in different host countries. Thus, we derive our first hypothesis, as follows:

H1-1. The larger a subsidiary is, (i.e. the more SSAs it has), the greater its degree of outward internationalization.

We further argue that a similar rationale can be applied to a subsidiary's degree of inward internationalization –, i.e. large subsidiaries also tend to engage in inward internationalization activities. Subsidiaries sometimes need to source lower-cost raw materials and components in order to respond to the needs of rapidly changing local markets (Quinn and Hilmer, 1994). Or they may at times be unable to identify qualified local suppliers for some components. Thus, they need to be able to engage in overseas purchasing, including the evaluation of potential sources, negotiating with suppliers, checking quality and managing contract enforcement. This “inward internationalization” sourcing is typically characterized by a higher level of risk than is sourcing within the host country. Compared with smaller subsidiaries, larger subsidiaries are more capable of sourcing internationally (i.e. inward internationalization) to enhance their competitiveness. Therefore, we propose the following hypothesis:

H1-2. The larger a subsidiary is (i.e. the more SSAs it has) the greater its degree of inward internationalization.

The resource-based view suggests that a firm's competitive advantages come from its internal capabilities. Firms' resources serve as driving forces for product diversification, thereby generating economies of scope, and in turn, greater profits (Barney, 1991; Montgomery and Hariharan, 1991). Moreover, firm size, because it is strongly correlated with resources, is a reflection of firm power. A larger subsidiary can leverage existing resources and competencies, and its greater degree of autonomy allows it to disperse risk through broader product diversification (Hedlund, 1981; Pfeffer and Salancik, 1978; Prahalad and Doz, 1981). Larger subsidiaries are also more capable of leveraging and deploying their resources to seek out and capitalize on new opportunities in host countries; this is especially true when subsidiaries operate in highly uncertain, sophisticated, or keenly competitive environments. In such situations, firms, both local and foreign, may make the strategic decision to engage in a broader range of activities in order to diversify risk and gain the bargaining power necessary to successfully negotiate with host governments (Luo and Peng, 1999).

Large subsidiaries are able to successfully engage in product diversification activities, make decisions with speed and precision, and, in general, cultivate a host of

non-substitutable competitive advantages. In this vein, subsidiaries that are well-capitalized, well managed, and that possess distinctive competencies and technological capabilities, will be less dependent on their parent firms for strategic resources (Ghoshal and Nohira, 1989). These subsidiaries will also be able to exploit their resources in existing markets (i.e. related-product diversification) as well as in new markets (i.e. unrelated-product diversification). We hypothesize that, as a result of linkages with parent firms, and owing to the likely compatibility with parents' strategies, subsidiaries are more likely to undertake related-product diversification activities:

H2. The larger a subsidiary is, (i.e. the more SSAs it has), the more likely it is to engage in related-product diversification than in unrelated-product diversification.

The resource-based view holds that sustainable competitive advantages are rooted in the possession of a unique set of resources that allow the creation of value in marketplaces and determine firms' competitive advantages (Barney, 1991). The contributory role of resources and capabilities is determined by the sustainability and uniqueness of those resources and capabilities (Grant, 1991). Consistent with the resource-based view, a subsidiary may be conceptualized as a heterogeneous bundle of resources (Birkinshaw *et al.*, 1998). These heterogeneous resources, which in fact comprise MNCs' core competencies, are particularly focused on those organizational capabilities (Teece *et al.*, 1997) or tacit knowledge-based procedures (Nelson and Winter, 1982) that can be shared among the MNCs' various units (Prahalad and Hamel, 1990).

MNCs depend heavily on individual subsidiaries' market performance; this performance is an indicator of the subsidiary's ability to obtain financial resources from the outside environment. One of the most important subsidiary characteristics, size, represents the subsidiary's resources and capabilities within the local market, as well as the strength of its presence in the market and its commitment to a host country (Johnston and Menguc, 2007). In this study, we argue that a larger subsidiary usually possesses a greater number of SSAs and has advantageous specialized competencies and capabilities. The level and type of SSAs is unique to each subsidiary, leading to the enhanced performance of the firm as a whole. By deploying such firm-specific resources, economies of scope (Teece, 1982) and economic quasi-rents resulting from shared strategic capabilities (Teece *et al.*, 1997) will likely emerge, thus generating sustained competitive advantages and improved performance (Barney, 1991).

In order to achieve such competitive advantages, the presence of both tangible and intangible resources is typically required; this is especially true of subsidiaries in emerging markets such as China (Meyer, 2004). If subsidiaries are able to free themselves from dependency on their parents, and are also able to successfully cultivate their own advantages by tapping into local resources and adapting to local needs, they may be able to improve their performance enough to overcome the inherent challenges of the local market. Thus, larger subsidiaries will tend to have a greater number of specific advantages, and will perform better than those (smaller subsidiaries) with relatively fewer such advantages:

H3. The larger a subsidiary is, (i.e. the more SSAs it has), the better its performance will be.

In the existing internationalization literature, it has been shown that sustaining successful international business relationships is highly advantageous to both

exporters (outward internationalization) and importers (inward internationalization) (Welch and Luostarinen, 1993). This is because international trade and collaboration is an exchange process that begins with the exchange of information having to do with the matching of a product or foreign technology with a perceived market need at home or abroad (Liang and Parkhe, 1997). An outward-looking perspective on internationalization incorporates an awareness of the nature of competition in foreign markets; exporting is the most common manifestation of such a perspective (Beamish *et al.*, 2003). Compared with European, American, and Japanese MNCs, firms from newly industrialized economies (NIEs) tend to be less internationally active, and those firms engaging in international activity are typically involved in exporting (that is, they are in the initial stages of internationalization). Exporting allows firms to enjoy the benefits of economies of scale and scope, and serving a variety of markets helps to reduce firms' foreign exchange exposure (Kogut, 1985). This advantage is of particular importance to Taiwanese firms, whose niche-market products often target similar customer segments in different countries.

Outward internationalization can increase a firm's sales volume by expanding sales into new foreign markets, and can reduce risks by setting up operations in diversified geographic markets. International expansion also serves as a learning opportunity for firms. According to internationalization theory (Johanson and Vahlne, 1977), firms accumulate foreign marketing experience by entering one market after another, and by gradually increasing their commitments to those foreign markets. As subsidiaries expand into more countries, they generally become more adept at leveraging their skills and product offerings throughout a broad array of markets (Kim *et al.*, 1993), resulting in higher growth rates and profitability. Moreover, outward internationalization also helps firms develop alliances with foreign businesses (Zhou *et al.*, 2007). Through such alliances, firms can gain access to new technologies, complementary resources, and various forms of institutional support (Wan and Hoskisson, 2003). Thus, outward internationalization can increase firm profitability by creating economies of scale and scope, allowing firms access to new technologies used by foreign partners, and giving firms the chance to assess potential market opportunities (Zahra *et al.*, 2000; Zhou *et al.*, 2007). We hypothesize that outward internationalization is positively associated with subsidiary performance:

H4-1. The greater the degree to which a subsidiary is outwardly internationalized, the better the subsidiary's performance will be.

In contrast to outward internationalization, inward internationalization can enhance a firm's performance by allowing the firm to learn from the advice and experience of foreign partners, or by allowing firms to utilize foreign technologies, management skills, sources of capital, or knowledge about foreign-sourced products or technologies (Zhou *et al.*, 2007). It may be from these particular informational benefits that the performance impacts of inward internationalization are derived. Monczka and Trent (1991) also mentioned that a parent firm with increasing experience in internationalization and international purchasing will begin to turn to new sources of information and expertise – such as subsidiaries – when they commence engagement in international sourcing. Subsidiaries engaging in inward internationalization not only increase available supply sources, acquire raw materials, and gain information which will help them respond to local competition (Monczka and Trent, 1991; Liang and Parkhe, 1997), but also gain beneficial strategic advantages such as quality improvement, delivery improvement,

and flexibility (Swamidass, 1993). Thus, we make the following hypothesis about the effect of inward internationalization on subsidiary performance:

H4-2. The greater the degree to which a subsidiary is inwardly internationalized, the better the subsidiary's performance will be.

Many studies have focused on analyzing firms' performance in terms of related- and unrelated-product diversification (Bettis, 1981; Wernerfelt and Montgomery, 1988). Some such studies have suggested that related-product diversification results in better performance than unrelated-product diversification, as the former allows firms to enjoy economies of scope and scale, capitalize on market power effects, leverage and exploit strategic resources and firm-specific capabilities, and make the most of learning effects across product lines (Rumelt, 1974). Recently, some studies have analyzed the international setting by looking at the similarities between products manufactured by headquarters and subsidiaries (Zhao and Luo, 2002). Product relatedness is the extent to which a firm's different industries or lines of business are linked; such linkage can have important performance implications (Bettis, 1981; Rumelt, 1974; Wernerfelt and Montgomery, 1988). The associated stream of research argued that subsidiaries marketing product lines similar to those of their headquarters will reap advantages and resources from their parents, which will in turn lead to superior performance (Zhao and Luo, 2002). While product diversification has been rigorously examined in both domestic and international settings over the past decade or so, product diversification at the subsidiary level is surprisingly under-researched. In order to shed some light on this issue, we examine the contention that related-product diversification in subsidiaries brings about better performance than does unrelated-product diversification.

Most Taiwanese firms are still young, and, as such, are smaller and possess fewer resources than do their counterparts from developed countries. Moreover, due to the small size of their domestic market, Taiwanese firms often expand internationally early on in their life-cycles, setting up foreign subsidiaries or making foreign direct investments despite having only limited international experience. Subsidiaries, in turn, have tended to more aggressively engage in product diversification. Besides, extending parent firms' product lines, subsidiaries also introduce new (related or unrelated) products in host countries to fully utilize local resources, distribution networks, or production capabilities (White and Poynter, 1984). Moreover, leveraging internal resources and capabilities will likely solidify – and may even escalate – a firm's bargaining power in negotiations with a host government. Because of Taiwanese parent firms' limited resources, and the necessity of possessing advantages when competing with local firms, we feel that, in keeping with the findings of previous studies, subsidiaries engaging in related-product diversifications tend to perform better in host countries. Therefore, this study proposes the following hypothesis (Figure 1 for the research framework and hypothesis):

H5. Subsidiaries engaging in related-product diversification perform better than those engaging in unrelated-product diversification.

Methodology

Data and sample

This study used data abstracted from *The Survey of Foreign Direct Investment by Taiwanese Manufacturing Firms*, an annual survey conducted in 2000 by the Statistics

Bureau of the Ministry of Economic Affairs (MOEA, 2000), Taiwan, ROC. The original survey list included 3,210 firms; however, 835 firms were excluded due to suspension of operations, change of address, closure, bankruptcy or divestment from abroad, leaving 2,375 firms as target survey firms. Target respondents were reached through mailed questionnaires, telephone interviews, or both. In total, 1,933 firms completed the survey, representing a response rate of 81.4 percent. In this database, 949 firms (66 percent) had manufacturing subsidiaries in China. A total of 29 firms were removed from the analysis due to lack of clarity with respect to the nature of their ownership, reducing our sample to 920 companies. As shown in Table I, among the sample firms, 59.5 percent of the sample firms were small- and medium-sized firms; 29.1 percent were firms in the information and electronics industry, about 25.4 percent were in the metal and machinery industry, 22.5 percent were in the chemicals and plastics industry and 22.9 percent were in the food, textile and other (FTO) industry.

We selected Taiwan as the home country and China as the host country for two reasons. First, China has become the world's largest recipient of foreign direct investment (UNCTAD, 2006). Despite its short history of economic liberalization, China has hosted many MNCs, which enter hoping either to acquire resources or to serve the local markets (Kaufmann and Reossing, 2005). Taiwanese firms actively not only engage in international expansion because of their own limited resources and market size, but also aggressively invest abroad, especially in China, because of the Chinese government's recent relaxation of restrictions on foreign investments. Because of increasing labour costs in Taiwan, Taiwanese firms have shifted their production activities to neighbouring (lower-cost) countries in effort to maintain their competitive advantage.

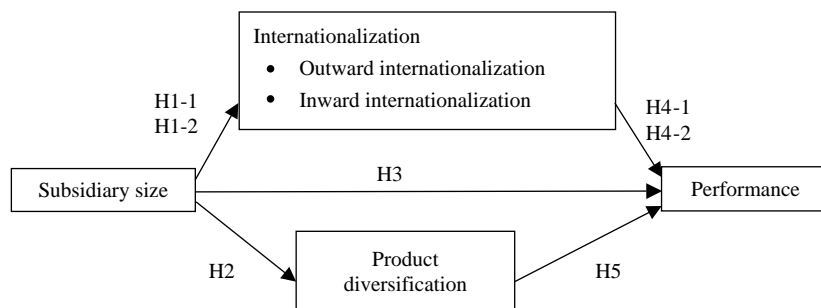


Figure 1.
The hypothesized model of the framework

| | Mental and machinery | Information and electronics | Chemicals and plastics | FTO ^a | Total | Percentage |
|-------------------------------------|----------------------|-----------------------------|------------------------|------------------|-------|------------|
| Small and medium-sized subsidiaries | 169 | 134 | 129 | 115 | 547 | 59.5 |
| Large sized subsidiaries | 65 | 134 | 78 | 96 | 373 | 40.5 |
| Total | 234 | 268 | 207 | 211 | 920 | 100 |
| Percentage | 25.4 | 29.1 | 22.5 | 22.9 | 100 | |

Note: ^aThe statistics published by the Ministry of Economic Affairs, Taiwan, generally classify manufacturing industries into four major industries, namely FTO industry, chemicals and plastics industry, metal and machinery industry, and information and electronics industry

Table I.
The distribution of sample firms by industry and subsidiary size

However, operating in emerging economies is typically characterized by substantial risks. These risks are often associated with inefficient information and dramatically shifting market demands, and therefore pose a variety of challenges for foreign firms. Thus, examining how Taiwanese subsidiaries grow in such an environment, in terms of internationalization and product diversification, is of particular importance. Second, Taiwanese firms have been noted for their active engagement in foreign direct investment activities (Chen and Chen, 1998; Makino *et al.*, 2002). In fact, Taiwan recently ranked as the fourth largest foreign investor in China (UNCTAD, 2006). From a theoretical perspective, taking samples from an NIE (e.g. Taiwan, in this study) helps to examine the application of theories developed in the context of developed countries. From a practical viewpoint, observing an Asian model of international business strategy might provide some insight for Western firms as they seek to determinate the appropriate levels of autonomy for their subsidiaries in Asia. While Taiwan and China share a similar culture and language, political friction between the two provides an additional dimension of risk for Taiwanese firms engaging in FDI in China (Filatotchev *et al.*, 2007). The strategies that Taiwanese subsidiaries implement in effort to overcome possible economic and political risks may have implications for other foreign firms with international operations in China. For these reasons, we felt that the use of Taiwanese data was both pragmatic and appropriate.

Variables and measurements

Performance. A variety of measurements have been used in the past to gauge performance. Ratios of profits to sales or profits to assets are often considered key indicators of performance. Additionally, a subsidiary's general manager (or equivalent leadership) is typically able to provide a subjective assessment of a subsidiary's performance. In the MOEA survey, respondents were asked to indicate subsidiaries' profitability in 1999, an approach similar to the one used by Delios and Beamish (2001). Subsidiaries' profitability was categorized according to one of the following three characterizations: "incurred losses," "broke even," or "earned profits" (1 = incurred losses; 2 = broke even; 3 = earned profits). This approach was used to ease respondents' concerns with regards to confidentiality. Due to the nature of this variable, we applied an ordered logit regression to the analysis.

Subsidiary size. A firm's size is often associated with its power within a given market, as well as with its ability to achieve economies of scale (Caves and Mehra, 1986). Firm size is also often seen as an indicator of the possession of advantageous resources that may positively influence subsidiary performance. Size may also be taken as an indication of firms' superiority over other competitors in the host country, as well as of the resources firms' have available for exploiting market opportunities (Luo and Peng, 1999). Zhao and Luo (2002) also found the size of a parent firm to be correlated with subsidiaries' performance, with larger parent firms associated with better firm performance. Taggart (1997) pointed out that a subsidiary's age and size will have an impact on the sorts of strategic roles it chooses to adopt. Size is also often a reflection of firms' organizational characteristics (Roth and Morrison, 1992), and affects firms' abilities to make innovative changes to existing product lines, as well as to successfully expand internationally and compete in international markets (Li, 1995). In this study, subsidiary size is measured by how many workers it has in its employ. In accordance with the government of Taiwan's established definition of small and medium-sized enterprises (SMEs), we have classified firms with fewer than 200 employees as SMEs.

Internationalization. Previous studies have measured internationalization as the ratio of foreign sales to total sales, by assessing firms' foreign assets, or by tallying the number of countries in which firms have established foreign operations (i.e. Tallman and Li, 1996). To measure internationalization, we examined both inward and outward internationalization at the subsidiary level, regarding it as reflective of the early stages of Taiwanese subsidiaries' international activities in China (Beamish *et al.*, 2003; Zhou *et al.*, 2007). In this study, we focused on the relationship between SSAs and their import activities (excluding imports from the parent company). Inward internationalization was measured as the ratio of the value of imported raw materials, components, and semi-manufactured goods coming from areas other than Taiwan to the total production costs of the Taiwanese subsidiary in China. Outward internationalization was measured as the ratio of foreign sales obtained from areas other than Taiwan to a subsidiary's total sales in China. Since these two variables may both be classified as continuous variables, we used ordinary least squares (OLSs) to analyze them.

Product diversification. Unlike the empirical samples studied in the existing research on related- or unrelated-product diversification at the corporate level, most Chinese subsidiaries of Taiwanese firms are still in the early stages of product development; thus, it is inappropriate to examine unrelated-product diversification as a means of measuring product diversification activities. For this reason, we chose to use the fact of a subsidiary's reinvestment of (parts of) its earnings into related businesses in China as a measure of product diversification (i.e. 1 = yes; 0 = others) and applied logistic regression to our analysis.

Control variables. In investigating the relationships among internationalization, product diversification, and performance, it is important to control for the other variables likely to have an impact on subsidiary performance. Previous research has demonstrated that the industry to which a firm belongs is one of the most important factors in explaining cross-sectional variability in firm performance (i.e. the industry effect) (Schmalensee, 1985). Accordingly, this study classified all manufacturing firms into four major industries according to the distinctions made by the Ministry of Economic Affairs. These four industries are FTO; chemicals and plastics; metal and machinery; and information and electronics, based on the two-digit standard industrial classification. These four industrial categories included metals and machinery, information and electronics, chemical and related products, and FTO industries. FTO was used as the control group. Ownership structure is another factor which may influence firms' performance. A high degree of parental ownership generally signals a greater commitment of resources by parent firms, which may in turn affect subsidiaries' performance (Beamish and Banks, 1987; Makino and Beamish, 1998). We classified subsidiaries into two categories based on their level of parental ownership (1 = full ownership and 0 = otherwise). Table II shows descriptive statistics of the sample ($n = 920$) and a correlation matrix for all relevant variables.

Statistical method

The hypotheses having to do with the relationships between a subsidiary's size and its strategies (i.e. internationalization and product diversification) are illustrated in the first model, while the hypotheses having to do with the relationships between strategies and performance are shown in the second model. Since the two models represent an interdependent set of decisions (i.e. they have to be measured together), the use of single equation models yields biased results. This means that using OLSs regression for a case

Table II.
Means, standard
deviations, and
correlations ($n = 920$)

| Variables | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------------------------------|---------|---------|----------|----------|---------|----------|---------|---------|---------|---------|
| 1. Metals and machinery industries | 0.2543 | 0.4357 | | | | | | | | |
| 2. Information electronics industries | 0.2913 | 0.4546 | -0.37*** | | | | | | | |
| 3. Chemical and related industries | 0.2250 | 0.4178 | -0.31*** | -0.35*** | | | | | | |
| 4. Ownership structure | 0.3870 | 0.4873 | 0.07** | -0.07** | 0.02 | | | | | |
| 5. Subsidiary specific advantages | 0.4054 | 0.4912 | -0.15*** | 0.12** | -0.03 | -0.11*** | | | | |
| 6. Inward internationalization | 14.0728 | 33.1151 | -0.04 | -0.05 | 0.10*** | 0.03 | 0.09*** | | | |
| 7. Outward internationalization | 39.4022 | 41.6035 | -0.13*** | 0.04 | 0.00 | -0.07** | 0.35*** | 0.09*** | | |
| 8. Produce diversification | 0.0707 | 0.2564 | 0.01 | 0.03 | 0.01 | 0.06* | 0.07** | -0.04 | 0.02 | |
| 9. Subsidiaries performance | 1.9598 | 0.9031 | -0.11*** | 0.04 | 0.06* | -0.04 | 0.24*** | 0.05 | 0.21*** | 0.15*** |

Notes: * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$

in which the dependent variable (performance, in our model) is assumed to correlate with the causes of the independent variables (internationalization and product diversification, in the second model) violates the assumption of recursivity in OLS regression. Further, given that the models are interdependent, it is also possible that the joint optimization of all involved decisions might become sub-optimized. Hence, the correct way to test these models is to use a two stage least square regression (2SLS), which would allow the circumvention of the problem of interdependence by using instrumental variables to obtain the predicted values of the endogenous variables (i.e. internationalization, product diversification, and performance). However, because the dependent variable is housed within an ordinal scale, the basic assumption necessary for the application of 2SLS is violated. Therefore, we have used a path model to explore the casual links between the characteristics of subsidiaries and their chosen strategies (internationalization, product diversification), and between strategies and performance. The overall goodness-of-fit statistics indicated a reasonable model fit ($\chi^2_{(3)} = 4.97$, GFI = 1.00, NFI = 0.98, CFI = 0.99, IFI = 0.99, and RMSEA = 0.027). Thus, this model was accepted for further hypotheses testing, and yielded the same results as the regression analysis. Therefore, the results among the key variables (i.e. subsidiary size, outward internationalization, inward internationalization, product diversification, and performance) are consistent within both regression analysis and path analysis. We also added three industry variables and one ownership structure variable as controls into the path model. However, the overall goodness-of-fit statistics did not meet the criterion for reasonable model fit ($\chi^2_{(7)} = 529.91$, GFI = 0.93, NFI = 0.38, CFI = 0.36, IFI = 0.38, and RMSEA = 0.22) meaning that the model was not appropriate for the testing of our hypotheses. Because the control variables also play important roles in our empirical analysis (Model 1 to Model 8 in Tables III and IV), we decided to test our hypotheses based on the results of the regression analysis. Since the control variables also play important roles in our empirical analysis, we finally employed the regression analysis, which used ordered logit regression when the dependent variable is performance, OLS regression when the dependent variable is inward or outward internationalization, and logistic regression when the dependent variable is product diversification.

Results

Table II presents the means, standard deviations, and correlations that emerged from our analysis. High correlations between the independent variables are not apparent. All variance inflation factor (VIF) values are less than 10, suggesting that multicollinearity is not a serious problem (Hair *et al.*, 1998).

The equation for the relationship between subsidiary size and internationalization in Table III reveals that Models 2 and 4 are statistically significant (F -values with 3.91 and 27.48; $\Delta R^2 = 0.94$ percent and 10.72 percent for Models 2 and 4, respectively). These results indicate that a subsidiary's size has a significant impact on its level of both inward ($t = 3.1125$, $p < 0.01$) and outward ($t = 10.6424$, $p < 0.01$) internationalization. The strong positive coefficient associated with subsidiary size also suggests that larger subsidiaries are more inclined toward international expansion than (relatively) smaller subsidiaries. Indeed, our analysis shows larger Taiwanese subsidiaries to be more internationalized with respect to China, as measured by both inward and outward internationalization. This result supports *H1-1* and *H1-2*.

Table III.
Subsidiary size and
internationalization
regression analysis
($N = 920$)

| Dependent variables | Inward internationalization Model 1 | | | Outward internationalization Model 2 | | | Outward internationalization Model 3 | | | Outward internationalization Model 4 | | |
|---------------------------------------|--|-----------------|--------------|---|-----------------|--------------|---|-----------------|--------------|---|-----------------|--------------|
| | Coefficient | <i>t</i> -value | VIF value | Coefficient | <i>t</i> -value | VIF value | Coefficient | <i>t</i> -value | VIF value | Coefficient | <i>t</i> -value | VIF value |
| <i>Control variables</i> | | | | | | | | | | | | |
| Constant | 13.0944 | 5.4207*** | | 9.6589 | 3.6511*** | | 48.3104 | 16.0195*** | | 34.4045 | 10.9856*** | |
| Metals and machinery industries | -1.9294 | -0.6145 | 1.6017 | -0.7439 | -0.2363 | 1.6017 | -15.8075 | -4.0329*** | 1.6017 | -11.0091 | -2.9542* | 1.6017 |
| Information electronics industries | -2.1276 | -0.7001 | 1.6112 | -2.4235 | -0.8009 | 1.6112 | -5.0017 | -1.3184 | 1.6112 | -6.1996 | -1.7306* | 1.6112 |
| Chemical and related industries | 6.1331 | 1.8983* | 1.5407 | 6.6534 | 2.0663** | 1.5407 | -6.8827 | -1.7064* | 1.5407 | -4.7767 | -1.2532 | 1.5407 |
| Ownership structure | 1.8323 | 0.8166 | 1.0177 | 2.5074 | 1.1176 | 1.0177 | -4.8635 | -1.7363* | 1.0177 | -2.1306 | -0.8021 | 1.0177 |
| <i>Independent variables</i> | | | | | | | | | | | | |
| Subsidiary size | | | 1.0418 | | | 1.0418 | | | 1.0418 | | | 1.0418 |
| <i>F</i> -value | 2.4383** | | | 3.9067*** | | | 5.3786*** | | | 27.4830*** | | |
| Adjusted R^2 | 0.0062 | | | 0.0156 | | | 0.0187 | | | 0.1259 | | |
| Δ Adjusted R^2 | | | | 0.0094 | | | | | | 0.1072*** | | |

Notes: * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$

Table V shows the results of the logistic regression between subsidiary size and product diversification, as indicated by reinvestment in related businesses. Model 6 is statistically significant and demonstrates a high percentage of correct model predication ($\chi^2 = 13.39$ and the percent of correct classification = 92.93 percent), indicating that subsidiary size has a significant influence on reinvestment in related businesses (Wald = 6.5282, $p < 0.05$). This result suggests that size has a positive effect on subsidiaries' product diversification in China, thus supporting our *H2*.

According to Table V, Model 8 in the ordered logit regression is statistically significant, indicating not only a high level of explanatory power ($\chi^2 = 94.604$), but also that subsidiary size does indeed have a significant effect on subsidiary performance (Wald = 22.737, $p < 0.01$). Thus, larger subsidiaries will perform better than smaller ones. This finding supports *H3*.

When it came to internationalization, we found that only outward internationalization appears to have a positive influence on subsidiary performance (Wald = 14.190, $p < 0.01$). The relationship between inward internationalization and subsidiary performance is not demonstrated to be significant. This finding suggests that outward internationalization in fact benefits subsidiary performance, which means that *H4-1* was supported. Inward internationalization, however, does not affect subsidiary performance. Thus, *H4-2* was not supported.

Model 8 in Table V shows that reinvestment in related businesses has a significant influence on subsidiary performance (Wald = 15.668, $p < 0.01$). This finding suggests that subsidiaries that choose to invest their profits in related or auxiliary businesses perform better than those that choose not to do so. This finding supports *H5*. Our regression analysis also presents the results of control variables, demonstrating that the "chemical and related" industry demonstrates superior performance to that of its non-industry peers, and that ownership structure is not related to subsidiary performance. We summarize all of our results in Table IV.

Discussion

This study examines the relationship between subsidiaries' size and their internationalization strategies and product diversification strategies. It also looks at the impact of size on overall subsidiary performance. Previous studies, examining German and Japanese subsidiaries in the USA found that subsidiary size played an important role in headquarters' control and coordination activities (Welge, 1981). Some studies have also examined the effect of subsidiary size on the autonomy of Swedish companies (Hedlund, 1981) and Australian firms (Johnston and Menguc, 2007). In the context of Asian emerging markets, our empirical findings show that larger subsidiaries tend to engage in

| Hypotheses | Relations | Expected sign | Result |
|-------------|---|---------------|---------------|
| <i>H1-1</i> | Subsidiary size → outward internationalization | + | Supported |
| <i>H1-2</i> | Subsidiary size → inward internationalization | + | Supported |
| <i>H2</i> | Subsidiary size → related-product diversification | + | Supported |
| <i>H3</i> | Subsidiary size → performance | + | Supported |
| <i>H4-1</i> | Outward internationalization → performance | + | Supported |
| <i>H4-2</i> | Inward internationalization → performance | + | Not-supported |
| <i>H5</i> | Product diversification → performance | + | Supported |

Table IV.
Summary of hypotheses
and results

Table V.
Subsidiary size and
product diversification
regression analysis
(*n* = 920)

| Independent variables | Product diversification | | | Performance | | |
|--|-------------------------|------------|-------------|-------------|-------------|-----------|
| | Model 5 | Model 6 | Model 7 | Model 8 | Model 7 | Model 8 |
| | Coefficient | Wald | Coefficient | Wald | Coefficient | Wald |
| <i>Control variables</i> | | | | | | |
| Constant | - 3.3033 | 83.2881*** | - 3.6985 | 83.7451*** | - 0.331 | 3.629* |
| Metals and machinery industries | 0.5882 | 1.9526 | 0.7150 | 2.8228* | 0.123 | 0.536 |
| Information electronics industries | 0.7130 | 3.0599* | 0.7002 | 2.9302* | 0.110 | 0.416 |
| Chemical and related industries | 0.6136 | 2.0420 | 0.6738 | 2.4377 | 0.301 | 2.702* |
| Ownership structure | 0.4629 | 3.1785* | 0.5401 | 4.2183** | - 0.081 | 0.411 |
| <i>Independent variables</i> | | | | | | |
| Subsidiary size | | | 0.6803 | 6.5282** | 0.652 | 22.737*** |
| Outward internationalization | | | | | 0.006 | 14.190*** |
| Inward internationalization | | | | | 0.002 | 0.681 |
| Product diversification | | | | | 1.021 | 15.668*** |
| Cox and Snell <i>R</i> ² | 0.0074 | | 0.0144 | | 0.015 | 0.098 |
| Model χ^2 | 6.8406 | | 13.3917** | | 14.075*** | 94.604*** |
| Percentage of correct model prediction | 92.93 | | 92.93 | | | |

Notes: * $p \leq 0.10$; ** $p \leq 0.05$; *** $p \leq 0.01$

internationalization and product diversification activities. We also found that larger subsidiaries tend to demonstrate better overall performance than smaller ones.

Our results indicate that Taiwanese subsidiaries in China having higher levels of outward internationalization demonstrate better performance than their less-internationalized peers. This result is similar to that found in Delios and Beamish's (2001) study of Japanese subsidiaries. However, with respect to inward internationalization, the apparently insignificant relationship between inward internationalization and performance is surprising. This finding may indicate that Taiwanese subsidiaries in China tend to take advantage of the low costs of production resources available in local markets. Most Taiwanese firms entering China seek to obtain low-cost labour, materials, and land, preferring not to have to import raw materials or components from areas other than China (Chen, 2003). When firms focus on accessing local strategic assets (i.e. labour and components), they usually build linkages within the local community with suppliers or sub-contractors, and these relationships may even enhance their R&D activities (Chen *et al.*, 2004). Given that this is the case, subsidiaries may not enjoy cost advantages by importing rather than by cultivating *guanxi*-based relationships. Therefore, the relationship between inward internationalization and performance may, in this study, appear to be insignificant; that is, inward internationalization may appear to have no impact on subsidiary performance. However, subsidiaries may still choose to use local market-specific resources to enhance their competitive advantages and more effectively affect outward internationalization. Subsidiaries may simply be using China's strategic position as a means to extend into other foreign countries. By making use of this highly strategic market, subsidiaries may be able to gain resources and market advantages that facilitate their advance into other to foreign countries and boost their performance. Another possible reason may be a simple failure to take notice of some mediating variables affecting the relationship between inward internationalization and performance. In Zhou *et al.*'s (2007) study, the contention was made that *guanxi*-related social networks must be taken into account when discussing the relationships between SMEs' inward internationalization strategies and their improved performance. The implication is that exploiting *guanxi*-related social networks is one way to establish both internal and external legitimacy, leading to better performance (Peng and Luo, 2000). Almost 60 percent of the samples in this study were SMEs; as such, they might be more susceptible to the liabilities of newness and smallness. *Guanxi*-related social networks, then, merit further exploration as mediators in the relationship between inward internationalization and performance.

Similar to Zhao and Luo's (2002) findings, our results also show that related-product diversification benefits subsidiaries' performance. Reinvestment in China associated with related-product diversification appears to have a positive impact on subsidiary performance, although such reinvestment appears to have no significant impact on the parent company's broader product lines. This suggests that subsidiaries might be well-advised to reinvest part of their earnings in local, related businesses. Because emerging markets such as China are characterized by such enormous business potential, foreign subsidiaries choosing to reinvest in locally-based, related businesses – thereby developing the local market by enforcing product diversification – perform better than their non-reinvesting peers and tend to enjoy higher levels of profitability. However, if subsidiaries choose simply to market product lines related closely to those of their foreign-based parents, there is no benefit to performance. This may be the case

because such closely-related products have little relevance to the local market. If internationalization efforts are to benefit firms' performance, the products they offer abroad through their subsidiaries must satisfy the needs of customers in local markets.

Managerial implications

This paper's findings indicate that larger-sized subsidiaries engaging in internationalization and product diversification strategies enjoy enhanced performance. The development of unique, transferable capabilities is critical to the success of both subsidiaries and their headquarters. Based on our findings, we offer some implications for the managers of both MNCs and subsidiaries, respectively.

We suggest that, in order to be responsive to local market demands in an emerging economy, the manager of an MNC's headquarters should facilitate subsidiaries' development of strategic resources by providing the subsidiaries with more resources, both tangible and intangible; by transferring competitive capabilities to their subsidiaries; and by allowing subsidiaries to have more autonomy in decision-making. If headquarters' managers engage in these practices, we believe that subsidiaries will more likely be able to cultivate their own capabilities, thus allowing them to successfully engage in internationalization and product diversification activities in emerging economies.

As for the subsidiaries, we suggest that managers should make every effort to build up a subsidiary's specific set of advantages. Exploiting these advantages will not only make it possible for subsidiaries to implement internationalization and product diversification strategies, but will also enhance the subsidiary's performance. Our findings suggest the following specific implications for these managers. First, subsidiaries engaging in outward internationalization will perform better than those engaging in inward internationalization. Second, subsidiaries engaging in related-product diversification will perform better than those engaging in unrelated-product diversification. Taking resource constraints into account, a subsidiary's manager should start with an outward internationalization strategy rather than an inward internationalization strategy, and should engage in a related-product diversification strategy before engaging in an unrelated-product diversification strategy.

Limitations and future research

There are several limitations to this study, and further investigation of the topics raised within the study is warranted. Because we used a government database, one limitation of this study is the difficulty of measuring subsidiary size. Subsidiary size, as a proxy for SSAs, was broken down into two groups – SMEs and larger enterprises – due to a lack of more specific data. To refine the concept of SSAs, future research might refer to resource-based variables that more directly reflect firm advantages. In this study, inward internationalization and outward internationalization were measured objectively. Recently, Zhou *et al.* (2007) surveyed SMEs in China with regard to their levels of inward and outward internationalization, but primarily made use of subjective measurements. Future researchers may wish to combine both modes of measurement to refine their analysis of the relationship between internationalization and performance.

In addition, Taiwanese firms are still in the early stages of internationalization. This study examined the performance implications of internationalization and product diversification using a sample of which 60 percent was comprised by SMEs. Thus, we advise caution when it comes to making generalizations based on our

findings. In the future, researchers might wish to verify whether our key findings apply to larger firms with more numerous foreign subsidiaries. Researchers might also wish to separate subsidiaries according to their different levels of permitted self-governance, as well as to examine the strategic role of subsidiaries. We have not, here, discussed the interaction effects between internationalization and product diversification on a subsidiary's performance. Future studies might fruitfully explore this relationship.

Our study has only examined the issue of subsidiaries' internationalization and product diversification strategies within the context of Taiwanese subsidiaries in China. Future studies might examine how subsidiary autonomy changes the findings that have emerged in this study. This study also does not discuss subsidiaries under different conditions of internal and external competition. Further research could compare subsidiaries demonstrating different strategic behaviors under different competitive pressures, or in host countries and within an MNC. Finally, this study focused exclusively on Taiwanese firms and their subsidiaries in China. Comparative studies might be conducted with the goal of providing some external validity for our findings so as to increase their generalizability. In this study, we used cross-sectional data and did not consider the patterns of subsidiary evolution that might also impact specific subsidiary advantages and create differentiation in various value-creating activities. In the future, researchers could use longitudinal data to examine the issue of internationalization and product diversification on subsidiaries' performance over time.

Conclusion

This study examines the relationships between subsidiaries' size, level of inward or outward internationalization, product diversification, and performance. The study is primarily concerned with the ways in which the size of a subsidiary, reflecting SSAs, influences subsidiaries' internationalization and product diversification efforts. The study's findings indicate that subsidiaries engaging in a relatively greater number of internationalization and product diversification activities will perform better than those engaging in fewer such activities. The study's research hypotheses were tested by analyzing a government-maintained database which tracked the activities of Taiwanese subsidiaries in China. The study's findings are as follows:

- Larger-sized subsidiaries tend to engage in more internationalization and product diversification activities, and to enjoy superior performance.
- A higher level of outward internationalization by subsidiaries leads to better performance.
- Subsidiaries investing in related businesses in a host country demonstrate higher levels of performance.

This study's contribution to the literature lies in its empirical examination of the strategic behaviors of subsidiaries, which have so far been largely overlooked, and in its having reached some enlightening conclusions with regard to those behaviors.

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