



# Within-country product diversification and foreign subsidiary performance

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**Abstract**

We examine the product diversification of a multinational firm within each of its host-country markets. Based on a sample of 12,992 foreign subsidiaries of Japanese multinational firms, we find that higher levels of within-country product diversity led to higher subsidiary performance where the institutional strength of the local market was weak, and where a firm's corporate product diversity level was high. Our study highlights the importance of examining a multinational firm's strategy in its individual host-country markets, as influenced by the institutional characteristics of a host-country market and the corporate-level strategy of the multinational firm.

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## INTRODUCTION

Much attention has been devoted to the product diversification strategy of multinational firms (Delios & Beamish, 1999; Tallman & Li, 1996). This research has extended the literature on the diversification strategy of domestic firms (Palich, Cardinal, & Miller, 2000) to construct arguments for the performance benefits of a multinational firm's product diversification strategy. Diversifying multinational firms are said to have similar risk–return trade-offs as diversifying domestic firms (Kim, Hwang, & Burgers, 1993), and to generate similar resource-based rents as domestic firms (Geringer, Tallman, & Olsen, 2000). Research has also progressed to examine the interaction effect of a firm's product and geographic diversity on its performance (Hitt, Hoskisson, & Kim, 1997), but such examination has remained largely at the corporate and global level.

This focus on the corporate and global aspects of a multinational firm's diversification strategy, however, stands at odds with research on multinational strategy that has distinguished between various strategic approaches a firm can pursue in its individual host-country markets (Bartlett & Ghoshal, 1989; Gupta & Govindarajan, 1991), and the strategic imperatives foreign subsidiaries use to implement a multinational firm's strategic intents in such markets (Birkinshaw & Hood, 1998). The consequence of this oversight is an inadequate recognition of the unique value-creating mechanisms of a multinational firm's diversification strategy in its host-country markets.

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We address this issue of what influences the success of a multinational firm's product diversification strategy within its individual host-country markets. We build our study on the recognition that a multinational firm can spread its business portfolio across countries as a coordinated global strategy, but it also can implement multiple host-country-level diversification strategies based on each country's specific environment (Bartlett & Ghoshal, 1989). Recent research has shown that the nature of the relationship between product diversity and corporate performance is context-dependent (Guillén, 2000; Mayer & Whittington, 2003). Particularly, domestic firms and business groups in emerging markets can gain competitive advantages by undertaking a product diversification strategy that fills "institutional voids" (Khanna & Palepu, 1997, 2000).

We examine whether the same logic can be applied to a multinational firm. A multinational firm can benefit from its overall corporate-level product diversity in its worldwide operations and achieve global operational efficiency (Kogut, 1985). Importantly, it might also reap the benefits of product diversification *within* a host country, depending on the contextual elements underlying this strategy. To investigate whether the latter benefit does accrue to a multinational firm, we focus on a firm's level of product diversity across all subsidiaries collectively, in each of its host countries. We term this concept *within-country product diversity*. We address two research questions related to this concept:

- (1) What are the subsidiary performance consequences of a multinational firm's within-country product diversification strategy, when matched to the institutional environment of the host country?
- (2) What are the subsidiary performance consequences of this diversification strategy, when matched to a multinational firm's corporate-level product diversification strategy?

By addressing these questions, we contribute to our understanding of how value can be created by a multinational firm's diversification strategy in its individual host countries. Researchers have demonstrated how host-country conditions influence individual aspects of a multinational firm's strategy and performance, such as its entry mode (Kogut & Singh, 1988), knowledge flows (Gupta & Govindarajan, 2000), and local adaptation

(Rosenzweig & Singh, 1991). We extend this host-country approach to look at the collection of a multinational firm's subsidiaries within a host country, and develop the concept of a host-country-level diversification strategy. Our approach develops an important link between corporate-level and subsidiary-level strategies, from which a multinational firm can create value.

In undertaking this study, we bridge ideas and concepts from the business groups literature to understand how a multinational firm can either gain or lose competitive advantages in its diversification strategy in host countries that vary in their level of institutional development. Using a multinational firm setting, we can test the robustness of an institutional voids perspective (Khanna & Palepu, 1997, 2000) to the case of foreign firms. In taking this approach, we adopt a similar research design to that in the business groups literature: namely, we look at a firm's subsidiaries within a host country as a group that can potentially provide benefits to the individual affiliates (subsidiaries) within that country. The multinational firm provides a setting in which we can isolate the influences of national institutions on firm performance, because we can hold the national origin of a firm constant while focusing on cross-national differences in host-country environments. Further, by looking at the relationship between corporate-level and within-country product diversification strategies, we identify an advantage of multinational firms that is not possessed by their local competitors. We examine these ideas using a sample of 12,992 foreign subsidiaries of 1563 Japanese firms.

## BACKGROUND AND HYPOTHESES

### Within-Country Product Diversification

Early research on how a multinational firm organizes its operational activities had its roots in Chandler's (1962) classic work on strategy and structure. Chandler argued that both internationalization and product diversification influence an organization's design and its structure. Subsequent work on multinational firms extended Chandler's ideas to develop a headquarters-centric perspective on a multinational firm's strategy, in which the focus was on understanding why multinational firms adopt certain types of organizational structure to organize their international activities in various host countries (Bartlett, 1979; Prahalad, 1976).

One of the conceptual approaches that has had a profound influence in understanding the organization of a multinational firm's activities was developed by Stopford and Wells (1972). Stopford and Wells looked at the international activities of 187 US multinational firms and identified four key organizational structures used when a multinational firm expanded abroad: a simple international division, area divisions, worldwide product divisions, and a matrix structure combining both product and area assignments.

As research on multinational firms progressed, and as multinational firms became more responsive to host-country conditions and the increasing need for subsidiary autonomy, more complex views of strategy and structure began to emerge, such as

Hedlund's (1986) heterarchy perspective on multinational firms. Research increasingly recognized that the organizational imperative extended beyond the headquarters–subsidiary nexus, and thus started considering *multinational* flows of resources and information among headquarters and subsidiaries, and among subsidiaries themselves (Bartlett & Ghoshal, 1989; Egelhoff, 1982; Gupta & Govindarajan, 1991). Consequently, there was a shift in focus from the multinational firm as a whole to comparatively small discrete organizational units, such as a firm's subsidiaries. This shift in focus led to the development of various strategic typologies and conceptualizations for a multinational firm's subsidiaries (Jarillo & Martinez, 1990; White & Poynter, 1984).

**Table 1** Product diversification of six multinational firms in China (2005)

<i>Name of multinational firm</i>	<i>Year of entry into China</i>	<i>Number of subsidiaries</i>	<i>Examples of products and activities in subsidiaries in China</i>
Kao	1993	6	Shampoo, conditioner, skin protection, sanitary products, cosmetics, laundry detergent, plastics, plastic molds, investment management post-sale services, R&D
Procter & Gamble	1988	13	Liquid detergent, shampoo, conditioner, oral care products, women health products, wash powder, laundry detergent, investment management, R&D center, academic research and education
Unilever	1986	18	Soap, liquid detergent, oil, grease, tea, tea bags, skin care, hair care products, detergent, ice cream, condiments, sauce, oral care products, investment management, R&D center
Matsushita Electric	1987	53	Color TVs, pager and mobile phones, electric irons, audio equipment, air-conditioners, electric components, remote controls, electric fans, ventilators, hand dryers, audio equipment, radio receivers, recorders, batteries, control appliances, VCRs, industrial equipment, electric welding machines, microwave ovens, storage batteries, semiconductors, automotive audio systems, refrigerators, carbon bars for battery, gas stoves, water heaters, rice cookers, international trade services, R&D, wireless telephones, fax machines, 3G mobile communications equipment, plasma display panels, software development, logistics services
Thomson	1995	9	R&D center for CD and DVD components, multimedia products, Thomson displays, home and special telephone, R&D center for Thomson consumer electronic products, R&D center for Thomson displays, R&D center for broadband products
Alcatel	1988	23	Integrated circuits, multimedia system components, electric equipment, communications system engineering, communications exchange, design and sales of network communications, digital and radio communication products, communications network support and development, digital products, fiber optic communications products, railway and subway system signals and equipment, IC cards, R&D center for communications software

*Note:* We derived the information in this table from each company's global and Chinese websites, as developed by Ma (2007). We also used the *Report of Transnational Corporations in China 2001–2006* (six yearbooks, published by China Economic Publishing House, edited by Chinese Academy of International Trade and Economic Cooperation, CAITEC). The source for the characterization of the multinational strategies is Bartlett and Ghoshal (1989).



Yet as multinational firms continue to grow and expand in their host-country markets – and in particular in many of the large host-country markets worldwide – these firms will operate multiple subsidiaries in a single host country (Ma, 2007). What we believe is absent is an explicit recognition of a host-country-level strategy that affects these multiple subsidiaries: can a multinational firm implement a collective strategy, for all its subsidiaries in a host country, that will enhance the growth and survival of individual subsidiaries?

One area in which we can situate an examination of the performance consequences of a host-country strategy is the within-country product diversity of a multinational (Xu, 2001). Product diversification is a major area of interest in a multinational firm's corporate strategy. It is a very relevant concept at the level of the host country as well. As an example, we take the case of foreign firms of varying multinational strategies and structures that were operating in China, the world's largest emerging market. In 2005, Matsushita Electric Industrial, which has been typified as having a global strategy, operated 53 individual subsidiaries in China (see Table 1). Individually, these subsidiaries are either diversified or focused; collectively, they produced a tremendous range of products, ranging from various types of electronic equipment to white goods, software development, investment services, and automotive products. Notably, there was little duplication in products by subsidiary. Except in a few instances, the products produced in one subsidiary were not produced in another subsidiary. Consequently, when considered collectively across all of its subsidiaries within China, Matsushita had a very high level of product diversity. We refer to the diversity of products across all of Matsushita's subsidiaries in China (or another host country) as its within-country product diversity.

Procter & Gamble, Unilever, and Alcatel – the first known to have an international strategy – each had fewer subsidiaries than Matsushita. But, similar to Matsushita, their subsidiaries collectively produced a number of products and conducted an array of activities, from R&D to manufacturing and sales. With little duplication in activities across subsidiaries, these firms also had a moderate level of within-country product diversity.

Other firms, such as Thomson, had a much more focused product line. Thomson operated nine subsidiaries in China, with several of these subsidiaries having duplicate or related R&D functions.

The duplication in activities across subsidiaries, as well as a generally more narrow product line within these subsidiaries, means that Thomson had a lower level of within-country product diversity than Matsushita. Meanwhile, Kao, a global multinational, also had a comparatively low level of within-country product diversity. It had just six subsidiaries, five of which were located in Shanghai, which were vertically linked from the production of basic chemicals for its consumer products, to the support services for its operations and sales in China.

Clearly, there are emerging differences in multinational firms' within-country diversification strategies that are being implemented, and these strategies do not seem dictated by the firms' strategic archetypes. By extending this conceptualization of firm-country-level diversification strategy across host countries and across firms, we can address the contextual issues of how the performance consequences of a within-country diversification strategy vary across host countries with different levels of institutional development and across firms with different ranges of product diversity at the corporate level.

### Within-Country Diversification and National Institutions

As with any other diversification strategy, within-country diversification involves both costs and benefits. A major set of advantages to corporate-level product diversity are the internal market efficiencies that are unavailable to a single business firm (Gertner, Scharfstein, & Stein, 1994; Grant, 1998; Palich *et al.*, 2000). However, higher levels of product diversity also tend to be associated with higher costs of governing a firm (Jones & Hill, 1988). Diversification makes economic sense only if the benefits exceed the incremental bureaucratic costs of governing an expanded firm (D'Aveni & Ravenscraft, 1994; Williamson, 1975). Extant research indicates that, for corporate-level product diversity, the level of a country's institutional development is a determinant for the relative size of such costs and benefits.

National institutions are a critical factor in shaping economic activity and firm behavior (North, 1990). Weaknesses in a country's political and legal institutions can lead to market failure, as characterized by information problems, misguided regulations, and inefficient judicial systems (Khanna & Palepu, 1997). Together these weaknesses can lead to high transaction costs for firms

engaging in market-based exchange for inputs and outputs (Wan & Hoskisson, 2003; Williamson, 1975). Under such a circumstance, corporate-level product diversification can be a strategic action by a firm to create substitutes for absent factors and institutions (Wan & Hoskisson, 2003). Business groups are another kind of organizational response to institutional weaknesses, in which product diversity levels can be increased by utilizing multiple-affiliated firms (Khanna & Palepu, 2000; Khanna & Rivkin, 2001). The resultant product diversity across the affiliated firms in a single business group can help these affiliated firms develop internal markets to compensate for institutional voids (Khanna & Palepu, 1997).

A multinational firm entering an institutionally weak market is exposed to the same high-level transaction costs in that market, caused by the institutional weaknesses. A multinational firm needs adaptive strategic and structural responses to cope with these institutional weaknesses, and high transaction costs in order to compete against domestic firms that have already adopted structures – such as the business group structure – in response to such an environmental pressure. For example, research has shown that multinational firms can change their capital structure opportunistically, to the effect that they will rely more on their internal capital markets across countries, and less on underdeveloped external financial markets, in order to reduce risks and overcome imperfections in individual markets (Desai, Foley & Hines, 2004, forthcoming). Although such strategic action has been taken at the corporate level, a within-country diversification strategy brings further benefits to a firm's subsidiaries locally.

A within-country diversification strategy helps a firm realize internal efficiencies in allocating financial and human resources inside a host country. The strategy is important in emerging but institutionally weak markets characterized by currency and capital restrictions, and by the difficulties of expatriate placement (Black, Gregersen, & Mendenhall, 1992; Gertner *et al.*, 1994). Internal market efficiencies achieved through allocating capital and labor among product-diversified subsidiaries may help reduce the impact of such imperfections without incurring the high costs of cross-border movement of capital and labor. The strategy can also deal with a third type of institutional imperfection identified by Khanna and Palepu (1997), namely product market failure due to information problems and

difficulties in building credible brands in emerging markets, as local consumers have greater exposure to a diversified product mix offered under the same corporate name.

Other areas of institutional weakness, such as government regulations and contract enforcement, are also areas in which a within-country diversification strategy can create value. Because governments in emerging markets are often guided by political motives such as GDP growth and full employment (Kornai, 1986), domestic firms undertaking a diversification strategy in that context can manage the external environment and their relationships with governments better than their non-diversifying counterparts (Li, Li, & Tan, 1998). Similarly, a multinational firm that diversifies in that environment is likely to have a stronger bargaining position *vis-à-vis* the host government than a non-diversifier because of the diversifier's presence and influence in multiple industry segments. A greater presence in a host country can also lead to a stronger local reputation and higher credibility, which helps to counter concerns from weak contract enforcement, as firms look for reliable partners in the local market.

In short, a multinational firm that diversifies inside an institutionally weak host market can fill voids in a way similar to diversifying domestic firms and business groups. Although individual subsidiaries of a multinational firm may be under the direct control of the global product divisions to which they belong, their collective presence in a host country can create opportunities for the firm to coordinate activities locally, represent collective interests in negotiating with host governments, and promote a corporate image or common brand names among citizens of the host country. In performing these tasks, a multinational firm's groups of subsidiaries can utilize their market power advantages and internal market efficiencies locally to deal with institutional imperfections in the host environment.

Our preceding discussion suggests that, in institutionally weak host markets, the benefits of diversifying locally probably exceed associated costs. In institutionally strong countries, however, many of the benefits we argued for may not be available to a diversifier, since there are no similar institutional voids to fill in the more efficient markets. Within-country diversification in those markets, therefore, would incur higher relative costs and lead to lower subsidiary performance than in institutionally weak markets.



**Hypothesis 1:** The institutional strength of a host country negatively moderates the relationship between a multinational firm's level of within-country product diversity and the performance of its subsidiaries in that host country.

### Within-Country Diversification and Corporate-Level Product Diversity

We have discussed the benefits of a multinational firm's within-country diversification strategy, in the context of the institutional environment in which a firm's subsidiaries are operating. In our analogy, subsidiaries of a multinational firm in a host country resemble affiliated firms in a local business group, whose performance increases with their collective product diversity level.

Subsidiaries of a multinational firm, however, differ from affiliated firms in a domestic business group in an important way: Not only do these collectively or individually diversified subsidiaries form a local group and have horizontal relationships with each other in the host country, but they are also vertically connected to their parent firm within the corporate hierarchy (Daniels, Pitts, & Tretter, 1984). Thus, just as a firm's corporate-level global strategy influences its foreign subsidiary-level strategy (Birkinshaw & Hood, 1998; Birkinshaw & Morrison, 1995), a firm's corporate-level diversification strategy can guide, and provide an efficiency logic for, its within-country product diversification strategy in a host market.

Corporate support from the parent firm is inevitably a critical element in a multinational firm's diversification moves (Li, 1995). We argue that the benefits of a within-country diversification strategy will be amplified when a multinational firm maintains a high corporate product diversity level. At a low level of corporate diversity, on the other hand, the relative cost *vs* benefit of a within-country diversification strategy will be higher.

A multinational firm's corporate-level product diversity is reflected in its aggregated range and intensity of product activities across its worldwide operations. Palich *et al.* (2000) identified several major advantages of corporate-level product diversity that can accrue to a firm as a whole. These include not only internal market efficiencies (e.g., allocation of financial and human resources) that are useful, according to Khanna and Palepu (1997), for filling voids in institutionally weak countries, but also market power advantages (e.g., reciprocal buying and cross-subsidy) that are unavailable to a single business firm, in both developed markets and

underdeveloped economies. With a high level of within-country product diversity, a multinational firm can achieve these efficiencies and advantages locally. With a high level of corporate product diversity, the firm can reap the same benefits globally, as well as transfer them to its foreign subsidiaries along its worldwide product divisions, or through other internal organizing mechanisms. Since synergistic benefits arise from product diversity both at the corporate level and at the host-country level, and as these benefits can be transferred from the corporate level to the host-country level, a within-country diversification strategy will have a stronger performance effect if it is pursued by a multinational firm with a higher level of corporate product diversity.

On the other hand, if a multinational firm maintains a low level of corporate product diversity, the strategic intent is not to gain market power and internal market efficiency benefits among its product areas. In this case, the market power and resources of the entire firm are concentrated in a single or a few businesses. Thus the net benefit of a within-country diversification strategy will be relatively low, since subsidiaries in a host country will have to bear many of the costs associated with diversifying into other product areas. Overall, in a host-country market, a multinational firm should benefit more from a high within-country diversification strategy when its corporate-level product diversity is higher. Put another way, the lower the level of corporate product diversity, the greater the costs associated with a given level of within-country product diversity.

**Hypothesis 2:** A multinational firm's corporate-level product diversity positively moderates the relationship between its level of within-country product diversity in a host country and the performance of its subsidiaries in that host country.

## RESEARCH METHODOLOGY

### Sample

We test our hypotheses using longitudinal data on the international expansion of Japanese firms. Japan has been a leading source of outward FDI, which has flowed to an extensive number of countries across several world regions. According to the data we compiled for this study, by 2001 more than 120 countries had received Japanese FDI, with 54 countries each possessing at least 30

Japanese foreign subsidiaries. This country spread provides the variance on national levels of institutional development necessary to test our hypotheses, while controlling for other national-level influences on subsidiary performance.

We derived our sample of foreign subsidiaries from annual editions of Toyo Keizai's compendium of Japanese foreign direct investment, *Kaigai Shinshutsu Kigyō Souran (Japanese Overseas Investments)*. We used each annual edition from 1990 to 2001 to construct longitudinal profiles of Japanese foreign direct investment for the 1988–2001 period. These profiles included information on the country and year of entry and the year of subsidiary exit, if an exit occurred. This process identified 29,279 subsidiaries that existed in the 1990–2001 period, of which 36% (10,614 subsidiaries) had exited by 2001.

### Dependent Variables

We used the exit rate and sales growth of subsidiaries as our dependent variables to measure performance. Our first dependent variable, subsidiary exit, was an indicator variable,  $E_{xt}$ , that took a value of 1 if subsidiary  $x$  exited at time  $t$ , or zero if otherwise. Observations started in the year 1988, continued until an exit occurred, or were right-censored in 2000, if the indicator variable was zero in every year for subsidiary  $x$ . Subsidiary exit has been used as an indicator of the success of a subsidiary (Delios & Beamish, 2001; Li, 1995). Prior research has shown that exit rates are negatively correlated with a subsidiary's financial performance (Shaver, 1994).

Our second dependent variable, sales growth, was the annual sales growth rate of a subsidiary. We obtained subsidiary sales information from *Kaigai Shinshutsu Kigyō Souran* and computed annual sales growth levels for each subsidiary. We constructed the sales growth measure on an annual basis for the duration for which a subsidiary existed in our data set. For this aspect of the analysis, we were able to obtain sales information for close to 50% of the subsidiaries in our sample, but not all subsidiaries reported sales in all years. Consequently, where we had sales information available for consecutive years, we identified the annual percentage change in sales, which was our annual sales growth rate. Where we did not have data available in consecutive years (e.g., sales information available in 1991 and 1993 but not 1992), we computed values using compound annual sales growth across the period for which we had data. As a consequence of limitations in the availability of sales data, we conducted our

sales growth analysis on a subset of the data used for the event history models, where our sample size for the sales growth analysis is 4689 subsidiaries and 39,816 subsidiary-years.

### Independent Variables

**Host institutional environment.** Our measure of the host institutional environment, institutional strength, draws on items that identify the strengths of the political and legal institutions in a host country (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998). We compiled indicators of bureaucratic corruption, anti-trust regulation, political transparency, judicial system efficiency, government bureaucracy, government policy transparency, and intellectual property protection from annual editions of the *World Competitiveness Report* (Wan & Hoskisson, 2003). We created institutional strength by a principal components analysis of these time-varying items. Each indicator had a loading of at least 0.70 on the resultant factor, which itself explained 68% of the variance in the indicators. In the resultant factor, institutional strength, high values marked strong institutional environments.

**Diversity measures.** The diversification strategy literature has yielded multiple operationalizations of product and geographic diversity such as the Rumelt (1974), Herfindahl, entropy, and industry count approaches (Palich *et al.*, 2000). Hoskisson, Hitt, Johnson, and Moesel (1993) identified strong support for the construct validity of an entropy measure (Jacquemin & Berry, 1979; Palepu, 1985). We computed three entropy-based diversity measures for each subsidiary:

- (1) within-country product diversity, a measure of the product diversity of a multinational firm in one of its subsidiaries' host countries;
- (2) corporate-level product diversity, the overall product diversity of the multinational firm; and
- (3) corporate-level geographic diversity, the spread of national markets of the multinational firm.

We include the geographic diversity measure as a control variable to align with previous research on the diversification strategy of multinational firms (Tallman & Li, 1996).

To calculate these diversity measures, we employed the widely used entropy method:

$$\text{Diversity} = \sum_{i=1}^N P_i \ln \left( \frac{1}{P_i} \right)$$

where Diversity is the value for corporate-level product diversity, geographic diversity, or within-country product diversity; and  $P_i$  is the share of the  $i$ th segment (product or geographic) in the total sales (or number of subsidiaries) of the firm in the relevant category.

For within-country product diversity, we measured the product activities of a firm's subsidiaries in a host country in a given year. First, we identified all the product activities (as coded into three-digit SICs) of all of the subsidiaries of a firm in a host country in a given year. We next identified the number of times a given three-digit SIC was reported across all subsidiaries of a firm in a host country in a given year.  $P_i$  was the percentage of counts of three-digit SIC appearances for a given product segment  $i$  in a given year. We use this count measure, given the incomplete sales data. Our weighted product count measure hence captures aspects of the scope of a firm's products, as in Lubatkin, Merchant, and Srinivasan (1993), but it also incorporates an element of the relative weighting of a product, by counting the number of subsidiaries in which a product is produced in a firm's subsidiaries in a host country. The limitation in this measure is that it does not also add a weighting of the product by the size of the subsidiary, and it does not weight a product by its share of a subsidiary's sales.

To measure corporate-level product diversity, we identified the different three-digit SIC businesses of a subsidiary's corporate parent and the percentage of the corporate parent's sales in each business. We then computed the measure following the entropy formulation. We consulted annual editions of the *Japan Company Handbook*, *Japanese Overseas Investments*, and the *WorldScope* database for the information on the corporate parent's product activities, and volume of sales within each, as necessary for the construction of this measure.

For corporate-level geographic diversity, using *Japanese Overseas Investments* as the source, we identified the number of subsidiaries a parent had in a country in a given year.  $P_i$  was the percentage of a firm's subsidiaries located in country  $i$  in a given year. Sales data by product by country are incompletely reported, but subsidiary counts can be appropriate to substitute for sales-weighted segment data (Sullivan, 1994).

**Other variables.** We included subsidiary age and its square in all models, along with subsidiary size (logarithm of subsidiary employment). The

indicator variable, new business line, marked with a value of zero, whether a subsidiary operated in its parent's main lines of business. We measured the size of the parent firm using the logarithm of parent firm employment, and included a measure of the parent firm's return on sales (parent firm ROS). We sourced these measures from the *NEEDS* tapes and the unlisted firm version of the *Japan Company Handbook*.

We measured the number of FDI establishments by foreign firms, using counts of Japanese and Korean firms for each industry in each host country (density), as we were unable to obtain data on all foreign firms' entries. For Korean firms, we obtained data from the database of foreign direct investment activity of Korean firms maintained by the Import-Export Bank of Korea. When Korean firms invest overseas, they are required by law to report their investments to the Import-Export Bank of Korea. We added density and density-squared to all models under the expectation that performance should be positively associated with density, at low levels of density, but negatively associated with density, at high levels of density (Freeman, Carroll, & Hannan, 1983). We measured cultural distance (Kogut & Singh, 1988) between Japan and a host country. We included annual measures of the ratio of FDI to GDP (inward foreign direct investment), the ratio of exports plus imports to GDP (international trade), per capita GDP, GDP growth and fixed effects for the year, region, and the two-digit SIC industry of a subsidiary.

### Analytical Techniques

Our hypotheses concern the relationships between a firm's diversification strategy, for a group of subsidiaries, and these subsidiaries' performance, with performance measured by subsidiary survival (exit) and subsidiary sales growth. As in the business groups literature in which researchers examine whether the benefits of group structure extend to affiliated firms in a group, we assume, by our research design, that the benefits of a within-country diversification strategy will be accessible to each of a firm's subsidiaries within that host country.

The structure of our data for the sales growth analysis was a pooled cross-section of data. Accordingly, we implemented panel data analysis. We estimated sales growth with a GLS model for a sample with annual observations and time-varying independent variables, and obtained robust standard errors. We estimated subsidiary exit rates using

event history analysis (Blossfeld & Rohwer, 1995). Event history analysis uses a longitudinal record of events in a sample from a population to examine the influences that a set of covariates (independent variables) have on the event. Our focal event is exit from a host country by a subsidiary of a Japanese firm. Each subsidiary  $x$  is considered to be at risk of exiting country  $i$  in each time period  $t$ , until an exit occurs. We used an exponential model in which time is measured in years, and there is no age-parametric dependence specified in the functional form of the model. The general form of this technique is

$$r_{jk} = \exp(\alpha_{jk0} + A_{jki}\alpha_{jki} + A_{jk2}\alpha_{jk2} + \dots)$$

where  $r_{jk}$  is the transition rate from the origin state  $j$  to the destination state (exit)  $k$ , with the observed covariate vector  $A_{jk}$ , parameters to be estimated  $\alpha_{jk}$ , and constant  $\alpha_{jk0}$ . The duration of an event is described by an exponential distribution. Significant positive coefficient estimates indicate that exit rates increase when a covariate increases in value.

To estimate the model, we took the base sample and expanded it to include all annual observations (spells) for a subsidiary. In each spell, a subsidiary was at risk of exit, and each spell was treated as right-censored unless an exit occurred. We joined annual observations for subsidiary, parent firm, and host-country data to each subsidiary-year record. We measured independent and control variables at a period's beginning and subsidiary exit at a period's end. When estimating the model, we utilized robust standard errors, as the assumption of the independence of observations might not hold, when the data are episode-split.

We restricted foundation dates to 1988 or after to minimize left-censoring in our data and to minimize inertial influences on subsidiary persistence (Van Witteloostuijn, 1998) so as to increase the likelihood that exiting subsidiaries were indeed ones that did not perform well (Delios & Beamish, 2001). After applying these criteria, we had 78,540 observations for 12,992 subsidiaries, of which 2963 had exited by 2001.

## RESULTS

Table 2 presents the means, standard deviations, and correlations of the variables in our study. The highest correlations were between subsidiary age, density, and their square terms, and between per capita GDP and institutional strength. Our two

dependent variables, subsidiary exit and sales growth, were correlated at 0.005 (not significant at the 0.05 level). The lack of a correlation between these two measures reinforces the importance of using multiple performance measures, as subsidiaries may have different mandates (Roth & Morrison, 1992).

Most correlations between the independent variables are less than 0.5: hence multicollinearity presented a low threat to the coefficient estimates. As an additional check for multicollinearity, we built the models hierarchically. We found that the coefficient estimates on main effects were stable, and the addition of the interactions and the quadratic terms improved model fit. Finally, we estimated all models using mean-centered variables and found no substantive differences in the interpretation of model coefficients, with the models reported in Tables 3 and 4. We report the non-mean-centered models to facilitate interpretation of effect sizes for estimated coefficients.

We show seven event-history models in Table 3. Model 1 is a main-effects-only model, inclusive of the institutional strength measure. In Model 2, we add the diversity measures. In Model 3, we add the quadratic terms for corporate-level product and geographic diversity. Model 4 includes the interaction term between within-country product diversity and the institutional strength measure. Model 5 includes the interaction term between within-country product diversity and corporate-level product diversity. Model 6 includes both interactions. Model 7 is the full specification, but run as a Heckman selection model, as we describe below. In Table 4, we present seven models for GLS estimates of subsidiary sales growth. We ran fixed- and random-effects GLS models, with the results of the Hausman test indicating that the fixed-effects models offered a superior set of estimates. We hence report the results of the fixed-effects models in Table 4, in the same specification pattern as the models in Table 3.

In discussing the results of the hypothesis tests, we will refer to the results for both event history and GLS models. Before moving to a discussion of the hypotheses, we first investigate the main effect of within-country product diversity. Models 2–4 in Table 3 show a negative and significant ( $p < 0.01$  or  $p < 0.001$ ) sign for the within-country product diversity measure, indicating that higher levels of within-country product diversity are associated with lower exit rates. Meanwhile, the non-significant coefficient estimate in Model 2 in Table 4 shows

**Table 2** Means, standard deviations, and inter-item correlations<sup>a,b</sup>

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Subsidiary age	1.000																		
2. Subsidiary age squared	0.952	1.000																	
3. Subsidiary employment <sup>c</sup>	0.078	0.073	1.000																
4. New business line	0.016	0.011	-0.368	1.000															
5. Parent firm employment <sup>c</sup>	-0.024	-0.026	0.117	0.132	1.000														
6. Parent firm ROS	-0.057	-0.052	0.008	-0.002	-0.067	1.000													
7. Inward foreign direct investment	0.181	0.175	-0.219	0.129	-0.014	-0.015	1.000												
8. International trade	0.043	0.036	-0.253	0.113	-0.080	-0.005	0.549	1.000											
9. Per capita GDP <sup>c</sup>	0.200	0.185	-0.358	0.212	0.008	0.038	0.445	0.411	1.000										
10. GDP growth	-0.298	-0.291	0.018	-0.046	0.026	0.013	0.076	-0.019	-0.174	1.000									
11. Cultural distance	0.003	0.002	-0.010	0.007	-0.050	-0.027	0.539	0.473	-0.061	0.075	1.000								
12. Density/10 <sup>3</sup>	-0.033	-0.022	0.063	-0.045	0.047	0.022	-0.052	-0.076	-0.022	-0.059	0.029	1.000							
13. Density squared/10 <sup>6</sup>	-0.036	-0.022	-0.018	0.001	0.020	0.018	-0.003	-0.009	0.069	-0.075	0.012	0.841	1.000						
14. Institutional strength	0.181	0.178	-0.331	0.189	-0.005	0.012	0.593	0.489	0.850	-0.008	0.225	-0.036	0.026	1.000					
15. Corporate-level product diversity	-0.026	-0.029	-0.025	0.079	0.466	-0.165	-0.022	-0.069	-0.040	0.009	-0.024	0.019	0.012	-0.040	1.000				
16. Corporate-level geographic diversity	-0.007	-0.009	0.113	-0.039	0.322	-0.094	-0.072	-0.144	-0.047	0.068	-0.010	0.059	0.006	-0.010	0.630	1.000			
17. Within-country product diversity	0.034	0.031	0.002	0.097	0.450	-0.036	0.057	0.023	0.050	-0.051	-0.043	-0.048	-0.022	0.010	0.536	0.241	1.000		
18. Subsidiary exit	0.113	0.108	-0.032	0.023	0.000	-0.029	0.027	0.000	0.041	-0.042	-0.019	0.004	0.005	0.043	0.025	0.003	0.007	1.000	
19. Sales growth (annual)	-0.023	-0.021	-0.029	0.033	0.033	-0.004	-0.009	0.008	-0.004	-0.029	-0.020	0.013	0.012	-0.035	0.060	0.026	0.046	-0.005	1.000
Mean	4.129	27.21	3.640	0.173	8.046	0.032	3.883	58.31	8.979	0.031	2.849	0.055	0.007	0.301	1.388	0.501	0.791	0.038	4.14
Standard deviation	3.189	34.28	1.797	0.198	1.337	0.115	4.633	78.61	1.491	0.055	0.990	0.065	0.015	0.886	0.593	0.330	0.200	0.191	25.89

<sup>a</sup>N=78,540, except for sales growth row, where N=38,816.<sup>b</sup>Correlations > 0.01 or < -0.01 significant at p < 0.05.<sup>c</sup>Variable is a logarithm.

**Table 3** Within-country product diversification and the exit rates of foreign subsidiaries: exponential event history analysis of exit rates<sup>a</sup>

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7 (Step 2 of the Heckman selection model)
Subsidiary age	0.384*** (0.023)	0.386*** (0.023)	0.387*** (0.023)	0.387*** (0.023)	0.388*** (0.023)	0.388*** (0.023)	0.385*** (0.026)
Subsidiary age squared	-0.026*** (0.002)	-0.026*** (0.002)	-0.026*** (0.002)	-0.026*** (0.002)	-0.026*** (0.002)	-0.026*** (0.002)	-0.026*** (0.002)
Subsidiary employment <sup>b</sup>	-0.119*** (0.013)	-0.099*** (0.013)	-0.094*** (0.013)	-0.095*** (0.013)	-0.094*** (0.013)	-0.096*** (0.013)	-0.087*** (0.013)
New business line	0.082*** (0.018)	0.059*** (0.018)	0.066*** (0.018)	0.066*** (0.018)	0.065*** (0.018)	0.065*** (0.018)	0.059*** (0.015)
Parent firm employment <sup>b</sup>	0.098*** (0.014)	0.007 (0.018)	0.008 (0.018)	0.008 (0.018)	0.008 (0.018)	0.011 (0.018)	-0.062 (0.052)
Parent firm ROS	-1.438*** (0.269)	-1.044*** (0.283)	-0.979*** (0.272)	-0.979*** (0.272)	-0.980*** (0.271)	-0.980*** (0.272)	-1.013*** (0.237)
Inward foreign direct investment	-0.004 (0.007)	-0.003 (0.007)	-0.005 (0.007)	-0.005 (0.007)	-0.005 (0.007)	-0.005 (0.007)	-0.006 (0.007)
International trade	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
GDP per capita <sup>b</sup>	0.028 (0.042)	0.054 (0.042)	0.074 (0.043)	0.073 (0.043)	0.077 (0.043)	0.078 (0.043)	0.050 (0.043)
GDP growth	-0.522 (0.430)	-0.529 (0.426)	-0.513 (0.424)	-0.519 (0.424)	-0.518 (0.424)	-0.545 (0.423)	-0.097 (0.456)
Cultural distance	-0.050 (0.033)	-0.060 (0.033)	-0.057 (0.034)	-0.057 (0.034)	-0.058 (0.034)	-0.061 (0.034)	-0.057 (0.032)
Density/10 <sup>3</sup>	-0.236*** (0.057)	-0.239*** (0.057)	-0.230*** (0.058)	-0.229*** (0.058)	-0.227*** (0.057)	-0.222*** (0.057)	-0.228*** (0.050)
Density squared/10 <sup>6</sup>	0.019*** (0.006)	0.019*** (0.006)	0.019*** (0.006)	0.019*** (0.006)	0.018*** (0.006)	0.018*** (0.006)	0.019*** (0.005)
Institutional strength	0.045 (0.066)	0.064 (0.065)	0.045 (0.066)	-0.055 (0.110)	0.137 (0.085)	-0.057 (0.110)	-0.031 (0.115)
Corporate-level product diversity		0.537*** (0.050)	-0.380* (0.173)	-0.387* (0.173)	-0.340 (0.176)	-0.385* (0.175)	-0.311 (0.211)
Corporate-level geographic diversity		-0.055 (0.084)	-1.346*** (0.209)	-1.341*** (0.209)	-1.351*** (0.209)	-1.341*** (0.209)	-1.332*** (0.212)
Within-country product diversity		-0.383** (0.127)	-0.387*** (0.133)	-0.328** (0.140)	-0.082 (0.133)	-0.238 (0.144)	-0.126 (0.264)
Corporate-level product diversity squared			0.199*** (0.051)	0.202*** (0.051)	0.196*** (0.051)	0.200*** (0.050)	0.204** (0.067)
Corporate-level geographic diversity squared			1.793*** (0.258)	1.781*** (0.258)	1.795*** (0.258)	1.764*** (0.257)	1.790*** (0.262)
Institutional strength × Within-country product diversity				0.323*** (0.112)	—	0.359** (0.137)	0.314** (0.145)
Corporate-level product diversity × Within-country product diversity					-0.117** (0.034)	-0.119** (0.041)	-0.215** (0.099)
Inverted Mills' ratio (IMR)							-0.554*** (0.180)
Model indices							
Wald chi-square	4,842***	4,890***	4,880***	4,996***	4,992***	5,004***	1,690***
Change in chi-square	—	48***	90***	16***	12***	8***	8***
Number of spells	78,540	78,540	78,540	78,540	78,540	78,540	78,540
Number of events (exits)	2,963	2,963	2,963	2,963	2,963	2,963	2,963

\*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05, all tests two-tailed, robust standard errors in parentheses.

<sup>a</sup>Region, two-digit SIC industry and annual fixed effects included in all models, but not reported.

<sup>b</sup>Variable is a logarithm.

**Table 4** Within-country product diversification and the sales growth rates of foreign subsidiaries: GLS analysis of sales growth rates

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7 (Step 2 of the Heckman selection model)
Subsidiary age	0.121*** (0.009)	0.123*** (0.009)	0.122*** (0.009)	0.122*** (0.009)	0.122*** (0.009)	0.122*** (0.009)	0.111*** (0.010)
Subsidiary age squared	-0.004*** (0.001)	-0.004*** (0.001)	-0.004*** (0.001)	-0.004*** (0.001)	-0.004*** (0.001)	-0.004*** (0.001)	-0.004*** (0.001)
Subsidiary employment <sup>a</sup>	0.169*** (0.017)	0.169 (0.017)	0.171*** (0.017)	0.170*** (0.017)	0.171*** (0.017)	0.171*** (0.017)	0.160*** (0.017)
Parent firm employment <sup>a</sup>	-0.170** (0.059)	-0.158** (0.060)	-0.148* (0.060)	-0.147* (0.060)	-0.143** (0.060)	-0.144* (0.060)	-0.210 (0.170)
Parent firm ROS	0.224 (0.200)	0.242 (0.200)	0.238 (0.200)	0.239 (0.200)	0.234 (0.200)	0.236 (0.200)	0.296 (0.201)
Inward foreign direct investment	0.004 (0.004)	0.004 (0.004)	0.003 (0.004)	0.003 (0.004)	0.003 (0.004)	0.003 (0.004)	-0.008 (0.005)
International trade	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	0.001 (0.001)
GDP per capita <sup>a</sup>	-1.072*** (0.141)	-1.039*** (0.142)	-0.998*** (0.143)	-0.991*** (0.143)	-0.998*** (0.143)	-0.993*** (0.143)	-1.000*** (0.142)
GDP growth	-0.032 (0.209)	-0.045 (0.209)	-0.075 (0.210)	-0.110 (0.210)	-0.084 (0.210)	-0.106 (0.210)	0.421 (0.308)
Density/10 <sup>3</sup>	0.095** (0.031)	0.090** (0.031)	0.082** (0.031)	0.084** (0.031)	0.082** (0.031)	0.083** (0.031)	0.076** (0.032)
Density squared/10 <sup>6</sup>	-0.003* (0.002)	-0.003 (0.002)	-0.003 (0.002)	-0.003 (0.002)	-0.003 (0.002)	-0.003 (0.002)	-0.001 (0.002)
Institutional strength	-0.168*** (0.029)	-0.161*** (0.029)	-0.156*** (0.029)	-0.027 (0.083)	0.030 (0.065)	-0.057 (0.087)	-0.031 (0.094)
Corporate-level product diversity		-0.279* (0.122)	0.528 (0.302)	0.496 (0.302)	0.432 (0.305)	0.445 (0.305)	0.411 (0.305)
Corporate-level geographic diversity		-0.085 (0.107)	0.415 (0.255)	0.428 (0.256)	0.407 (0.255)	0.420 (0.256)	0.404 (0.255)
Within-country product diversity		-0.155 (0.142)	-0.312* (0.150)	-0.428** (0.158)	-0.317** (0.150)	-0.400* (0.159)	-0.377* (0.160)
Corporate-level product diversity squared			-0.357** (0.126)	-0.344** (0.127)	-0.328** (0.127)	-0.329** (0.127)	-0.291* (0.128)
Corporate-level geographic diversity squared			-0.734* (0.329)	-0.747* (0.329)	-0.714* (0.329)	-0.731* (0.329)	-0.867** (0.328)
Institutional strength × Within-country product diversity				-0.237* (0.101)	—	-0.173* (0.114)	-0.174* (0.114)
Corporate-level product diversity × Within-country product diversity					0.995* (0.440)	0.989* (0.430)	0.998* (0.450)
Inverted Mills' Ratio (IMR)							-0.957* (0.409)
Model Indices							
F	70.89***	57.49***	51.61***	49.06***	49.01***	45.55***	43.50***
Degree of freedom	12, 35115	15, 35112	17, 35110	18, 35109	18, 35109	19, 35108	20, 35107
Number of observations	39,816	39,816	39,816	39,816	39,816	39,816	39,816

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, all tests two-tailed, robust standard errors in parentheses.

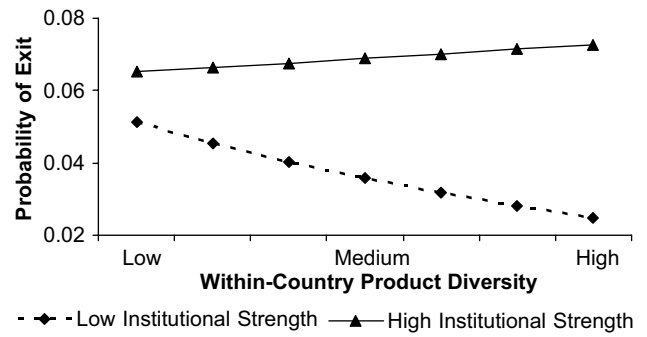
<sup>a</sup>Variable is a logarithm.

that, in the main-effects-only model, within-country product diversity has no apparent association with sales growth. In Models 3–6 in Table 4, the main effect of within-country product diversification becomes negative and significant ( $p < 0.05$  or  $p < 0.01$ ), marking the point that the growth rate for a subsidiary is lower, the greater the level of within-country product diversity.

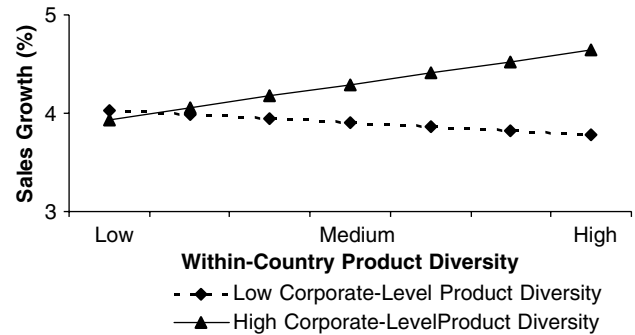
Hypothesis 1 established our prediction about the moderating influence of institutional strength in a subsidiary's host country. We expect that the positive influence of within-country product diversity on subsidiary performance will be greater, the weaker the institutions in a host country. We tested Hypothesis 1 in Model 4 (Tables 3 and 4) with the interaction between within-country product diversity and institutional strength. In Table 3, the positive and significant ( $p < 0.001$ ) coefficient estimate on this interaction term is consistent with this hypothesis, as it indicates that, for a given level of within-country product diversity, exit rates are lower, the weaker the institutions in a host country. In a similar way, the negative and significant ( $p < 0.05$ ) coefficient estimate on this interaction term in Table 4 shows that sales growth rates are lower in situations in which both within-country product diversity and institutional strength are high. These results provide support for Hypothesis 1.

Hypothesis 2 states our prediction about the moderating influence of corporate-level product diversity. We expect that the positive influence of within-country product diversity on subsidiary performance will be greater, the higher the corporate-level product diversity of a firm. We tested Hypothesis 2 in Model 5 (Tables 3 and 4) with the interaction between within-country product diversity and corporate-level product diversity. In Table 3, the negative and significant ( $p < 0.01$ ) coefficient estimate on this interaction term is consistent with this hypothesis, as it indicates that, for a given level of within-country product diversity, exit rates are lower, the greater the level of corporate-level product diversity. In a similar way, the positive and significant ( $p < 0.05$ ) coefficient estimate on this interaction term in Table 4 shows that sales growth rates are higher in situations in which both within-country product diversity and corporate product diversity are high. These results provide support for Hypothesis 2. In the fully specified Model 6 in both Tables 3 and 4, these results remain stable and consistent.

The nature of these relationships and the magnitude of effects are illustrated by Figures 1 and 2.



**Figure 1** Subsidiary exit by within-country product diversity and host-country institutional strength. *Note:* We determined values for predicted exit rates using coefficient estimates obtained from Model 6 in Table 3. All variables are entered at their mean values, except for within-country product diversity and institutional strength, which vary as depicted in the figure.



**Figure 2** Sales growth by within-country product diversity and corporate-level product diversity. *Note:* We determined values for predicted sales growth using coefficient estimates obtained from Model 6 in Table 4. All variables are entered at their mean values, except for within-country product diversity and corporate-level product diversity, which vary as depicted in the figure.

Figure 1 depicts the predicted exit rates by levels of within-country product diversity for firms situated in strong and weak institutional environments. At low levels of within-country product diversity, predicted exit rates are similar in countries with weak and strong institutions. As within-country product diversity increases, exit rates in institutionally weak countries decline strongly, while those in institutionally strong countries increase marginally. This result illustrates the support we obtained for Hypothesis 1.

Figure 2 shows the predicted sales growth by levels of within-country product diversity for firms with high and low levels of corporate-level product diversity. At low levels of within-country product



diversity, predicted sales growth is similar for firms with either high or low corporate-level product diversity. As within-country product diversity increases, predicted levels of sales growth increase positively for a firm with a high level of corporate product diversity, but decrease for a firm with low corporate-level product diversity. This difference in effects demonstrates the support we obtained for Hypothesis 2.

As a check on these results, we examined whether our results were sensitive to the choice of event history model, or to endogeneity concerns, with respect to the level of within-country product diversity. We found the results and interpretations of our alternative models to be largely consistent with those displayed in Models 1–6 in Tables 3 and 4.

To examine whether our choice of the exponential model influenced the results of the event history estimations, we re-estimated all models using discrete logit, cox, and gamma specifications, and found no consistent variance in coefficient estimates across these models (these results are available from the authors, upon request). We next instituted two checks for the possible endogeneity of within-country product diversity. For our first check we re-estimated exit rates and sales growth using a Heckman selection model, in which we first implemented the two-stage procedure by using a Heckman probit model to estimate the likelihood of a firm having a high level (greater than the mean) of within-country diversification. In the first step of the implementation of the Heckman selection model, we used corporate-level product diversity, parent firm size and its ROS, and the level of institutional strength and political hazards in a host country as our predictors of the binary level of within-country product diversity. We then included the inverted Mills' ratio from this first model in the second-stage event history and GLS models. We found the results to be substantively the same, as reported in Model 7 for each of Tables 3 and 4.

We note here that we did not use these results as our primary results. Unlike in the study by Shaver (1998), who implemented a selection model on entry mode choice to examine entry mode performance, where the entry mode choice literature was well established, our choice of the regressors for within-country product diversity is not driven by theory. Hence in implementing the Heckman selection model we approached the issue of sample selection statistically, rather than theoretically and then empirically, as a way to check for sample selection bias. This process creates risks to the

successful implementation of a Heckman selection model, which is not without its own weaknesses (Sartori, 2003). This approach does provide us with some insight into potential selection issues for the outcomes of a within-country product diversity strategy, but the primary exponential event history and GLS specifications are more sound theoretically than the Heckman selection model.

Next, we checked for endogeneity by instrumenting within-country product diversity in a two-stage least squares model for sales growth. We implemented a 2SLS model to look at the determinants of within-country product diversification in the first stage of the regression, while modeling within-country product diversification as a predictor of performance (sales growth) in the second stage of the analysis. In the first stage, we looked at corporate-level product diversity, sales growth, ROA, institutional strength, and political hazards as instruments of within-country product diversification. We then used the same specification as in the models in Tables 3 and 4, as the exogenous variables predicting sales growth, in the second stage.

Although we do not report the results of this analysis here (which are available upon request), we do note that these results were largely consistent with those reported in Models 6 and 7 in Tables 3 and 4. We decided not to use the 2SLS approach as our main specification, not because of the technical inadequacy of the instrument variables model, but instead because of the lack of theory to guide us in the choice of instruments of within-country product diversification. If the theory was better established in this regard, we could establish with some certainty what should be the specification in the first stage. But, as with the implementation of the Heckman procedure, we were guided more by conjecture than by theory. A potential solution is to use a formal over-identification test to determine whether the instruments fulfill the condition that they are not a direct determinant of sales growth, but this again is a situation that is more data-driven than theory-driven: hence we report the GLS and exponential models (Models 1–6 in Tables 3 and 4), as our primary results for our hypothesis tests.

## DISCUSSION

This study investigated an important form of organizational diversification: the within-country product diversification in each of a multinational firm's host-country markets. We found that the level of a multinational firm's product diversity in the host country of a subsidiary was related

to the subsidiary's survival rate and growth rate. This relationship was, however, contingent on the environmental and organizational context for the within-country diversification strategy.

Our results showed that higher levels of within-country product diversity yielded stronger performance benefits in host countries with weaker institutional environments, and the performance benefits were greater for subsidiaries of firms that had a higher level of corporate product diversity. Our research shows the significance of a host-country-level corporate strategy, which complements research on multinational strategy and structure (Bartlett & Ghoshal, 1989) and subsidiary-level strategy (Birkinshaw & Hood, 1998), while deepening research on the diversification strategy of multinational firms (Lu & Beamish, 2004; Tallman & Li, 1996).

Our evidence in support of the within-country diversification influences on performance comes from a sample of multinational firms. It provides substantial corroborating evidence for the tenet in strategy research that the institutional environment influences the strategies that firms can successfully employ (Peng, Lee, & Wang, 2005). With respect to diversification research, our results illustrate that multinational firms can diversify to overcome the high transactional costs associated with operating in a weak institutional environment, just as conglomerates and business groups do, to minimize costs and gain advantages (Khanna & Palepu, 2000). Importantly, our evidence comes from firms operating in multiple countries, thus demonstrating empirically that the influence of the institutional environment holds across parts of a firm investing in different countries worldwide.

### Within-Country Product Diversification

Research on the diversification–performance linkage has recently gone beyond an examination of product diversity at the corporate level, to a more micro level of study, such as within-industry and within-business (Li & Greenwood, 2004; Stern & Henderson, 2004). A need to better understand the value-creation mechanisms of a diversification strategy prompted this refocus. In contrast, research on the product diversification strategy of multinational firms has tended to remain at the corporate level, focusing only on its impact on corporate performance without considering the possible variations of such a strategy in a firm's individual host-country markets.

One study that came close to this recognition is Vachani (1991), who argued that diversification by a multinational firm within a homogeneous cluster of countries, termed related international geographic diversification, was superior to diversification across heterogeneous geographic regions, termed unrelated international geographic diversification. Advantages of related geographic diversification include lower coordination costs (Grant, 1987), spillover effects (Daniels & Radebaugh, 1989), and lower operational complexity (Ronen & Shenkar, 1985). By the same token, product diversification within a single country can be more advantageous than diversification across a cluster of countries, if one does not consider the benefits of geographic dispersion itself.

Consistent with this idea, and whereas extant research has mostly adopted a global perspective on the product diversification issue, we take a local approach to conceptualize a host-country-level product diversification strategy. Although multinational firms enjoy a competitive advantage in integrating a global value chain, national environments and institutions remain as powerful constraints on a concerted global strategy, and exert strong influences on the survival of foreign subsidiaries (Kostova & Zaheer, 1999; Westney, 1993). Any viable strategy must take into consideration the influence of local conditions to enhance a firm's competitiveness and performance in its host countries. This is especially so in emerging markets, where the institutional context can be strikingly different from that of developed markets. In this regard, diversification strategies, just like any other strategic aspect, need to strike a balance between the dual demands of global integration and local responsiveness (Westney, 1993). Managers of multinational firms and strategy researchers alike, therefore, should consider a firm's diversification strategies both at an overall level and on a host-country-by-host-country basis.

### A Host-Country Strategic Focus

Our examination of a within-country diversification strategy helps develop a broad notion of host-country-level strategy. This notion implies a treatment of a firm's collection of subsidiaries in a host country as an organizational entity that can provide competitive benefits to individual subsidiaries. For the most part, research has not considered the existence and influence of a focal subsidiary's fellow subunits – those of the same parent, as situated in the same host country (see, e.g.,



Rosenzweig & Singh, 1991: 345, Note 1). Even research that has taken a network perspective on foreign subsidiaries (Ghoshal & Nohria, 1989) has not explicitly discussed the impact of local institutions on these subsidiaries as a group and, by extension, a collective strategy at the host-country level that responds to the local environment. Our recognition of a multinational firm's product diversification strategies in each of its host countries helps to prompt a reconsideration of firm strategy, including business-level strategy, to have a strong country-level focus.

Our attention to a host-country strategy corresponds to the strategic practices of multinationals in recent years. Again taking China as an example, multinational firms such as Matsushita, which traditionally carry out a global strategy along product divisions, have now established their China headquarters to execute a nationwide China strategy (Cheng, 2003). Similarly, Philips has instituted a "One Philips" strategy for its operations in China (Huang, 2003). These examples illustrate how multinational firms have implemented a within-country diversification strategy, regardless of their respective global strategic stance. The examples are consistent with our point that there are important national forces that require an integrated host-country-level strategy.

### Links to the Business Groups Literature

With our host-country focus, this study fits into, and contributes to, the literature on the influence of national institutional environments over the effectiveness of a domestic business group's product diversification strategies (Khanna & Palepu, 1997, 2000; Khanna & Rivkin, 2001). The extension of Khanna and colleagues' framework to the case of a multinational firm provides a new setting in which to test ideas on how firms respond strategically to environmental contingencies. Our findings provide important corroborating evidence for the thesis that a firm's product diversification activities can fill institutional voids in institutionally weak markets. We are able to make this observation as we looked at the product diversification–subsidiary performance relationship for multinational firms operating across multiple host-country markets. This research design also constitutes an empirical extension of existing work, which has examined the same issue for domestic firms in two relatively homogeneous groups – six developed countries in Western Europe (Wan & Hoskisson, 2003), and 12 emerging markets in Asia and South America

(Khanna & Rivkin, 2001). The country span in our study – more than 50 nations with varying degrees of institutional development – coupled with the multinational firm perspective, presents a comprehensive extension to prior work.

In developing this perspective on within-country diversification, one important point of differentiation between our study and the business group literature, and between our study and the traditional multinational firm literature, is that we considered the relevance of the corporate context as well as the institutional context of the host country. Traditional theory on multinational firms, with its emphasis on the parent–subsidiary linkage only, would predict that subsidiaries of a multinational firm should diversify less than local business groups in a host country, since these subsidiaries could secure institutional support, through their corporate linkages, from the home country's institutions (Desai *et al.*, 2004, forthcoming). We argue, however, that diversifying in the host country will provide additional benefits for a firm's foreign subsidiaries, even though their corporate linkages might suggest they could adopt a more focused strategy than local business groups, in competing with these business groups. Thus our study has pointed to a competitive advantage for multinational firms diversifying within a host country, over their peer multinationals that carry out a focused strategy in the same host country, and over local business groups that do not enjoy a multinational corporate linkage.

Further, our study will prompt business group research to reconsider the merits of business group diversification in the context of international competition. If a multinational firm, through its parent–subsidiary linkage, can secure an advantage over local business groups by not having to diversify (and thus being able to focus), or by diversifying (and thus being able to achieve greater efficiencies), then what is the optimal diversification strategy for local groups? Such a question can be answered only in a study involving both multinational firms and local business groups, which diversify in the same institutional or competitive context.

### Limitations and Future Research

Our suggestions for future research extend from the limitations of our study. One limitation has to do with the two dependent variables. As in other studies on foreign subsidiary survival, subsidiary exit from a host country does not always equate to

failure. This is especially true when our sample of subsidiaries may have included joint ventures with a contracted duration of operation. Although recent research has shown that 90% of Japanese joint venture terminations are unintended (Makino, Chan, Isobe, & Beamish, 2007), and we have focused on exits made within the first 10 years of a subsidiary's lifespan, we accounted for, but have not fully removed, the possibility of misidentification. Similarly, for subsidiaries that are cost centers, sales growth might not be the most relevant performance measure. By using two dependent variables, and obtaining consistent results across both measures, we hope to have mitigated this limitation.

Our within-country product diversity measure represents a first step in gauging a multinational firm's diversification activities inside a host country. As we noted, this measure was based on the percentage of counts of three-digit SIC appearances instead of sales data. This measure is an improvement over unweighted product-count or categorical measures of diversity (Lubatkin *et al.*, 1993), but it would be further improved with product sales data, either at the levels of sales by subsidiary or by the percentage of a subsidiary's sales accounted for by a particular product. Moreover, we were not able to distinguish between the differential effects of related vs unrelated within-country product diversity, which may entail notable performance implications. Future research should develop refined measures of within-country product diversity, both related and unrelated, to further investigate their respective impact on firm performance.

Finally, our empirical results allow us to discuss the influences of corporate-level product diversity on the performance outcomes associated with a within-country diversification strategy. Clearly,

there are other elements of a corporate-level strategy that could be explored – the geographic scope and corporate structure of a multinational firm, its propensity to expand by acquisitions or joint ventures, the forms of linkages it has between subsidiaries across host countries, and the destination of its sales as opposed to the physical location of its subsidiaries – as influences on the effectiveness of various host-country-level strategies. Geographic diversity, in particular, may present a different set of costs and benefits than those arising from within-country product diversity, and the trade-off between the two strategies needs to be assessed. Our analysis has paved the way for this future work by highlighting the importance of exploring a multinational firm's strategies in its individual host-country markets, as influenced by a set of potentially complex relationships involving its corporate structure and the institutional structure that supports economic activity in those host-country markets.

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