



How much does home country matter to corporate profitability?

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Abstract

This paper provides researchers in the fields of international business and strategic management with information on the relative importance of home-country, industry, and firm influences on corporate profitability for firms with varying degrees of multinationality. The analysis relies principally on the Compustat Global reports for 1993–2003. The findings demonstrate that home-country and industry effects are more important to domestic firms than to multinationals. However, home-country influences are important even for firms with high degrees of multinationality. The evidence suggests that multinationals profit from industry-grounded opportunities to distribute activities across the countries in which they operate, but there are tradeoffs associated with internationalization. Multinationals may suffer from less protection afforded by the home-country environment and greater industry-level competition, but gain a broader scope for deploying idiosyncratic, firm-specific advantages through mechanisms enhanced by home-country experience. We conclude that industry effects in single-country studies should be interpreted carefully as influenced by the home countries of the multinational firms that are under study.

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INTRODUCTION

Researchers in the fields of international business and strategic management have long been interested in how geography and industry structure relate to firm performance. Yet only recently has the agenda of scholars studying the importance of firm and industry effects (McGahan & Porter, 1997, 2002; Rumelt, 1991; Schmalensee, 1985) merged with that of researchers interested in the influence of home- and host-country effects on corporate performance. In particular, Makino, Isobe, and Chan (2004) assessed the relative importance of firm, industry, and host-country effects on the performance of multinational enterprises (MNEs) headquartered in Japan. The findings have raised questions about the ways in which firm strategy, industry structure, and host-country characteristics interact to shape the performance of both domestic (i.e., single-country focused) and multinational firms, such as whether, when and how national policies are effective for promoting innovation in particular industries.

Scholars in international management have established that the performance of MNEs depends on the characteristics of their home

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countries as well as on the characteristics of the foreign countries that host their operations (e.g., Delios & Henisz, 2003; Henisz & Delios, 2002; LeCraw, 1993; Wells, 1993, 1994). Prior studies of home-country influences on corporate performance have been, principally, detailed analyses of firms that are headquartered in a relatively narrow set of countries and/or industries. Little cross-sectional evidence has been available on how home-country effects influence firm performance for firms in large numbers of countries and industries, which has limited our understanding of the influence of home countries in the performance of their corporations elsewhere in the world.

In this study we examine the performance of corporations headquartered in a range of countries around the world under the assumption that a firm's headquarters country is its home country.¹ In decomposing variance into components, we study the following effects (following Bowman & Helfat, 2001; Makino et al., 2004; McGahan & Porter, 2005):

- degree of multinationality, which represents the number of countries other than the home country in which a firm operates (akin to the variable labeled "FDI" in Berry & Sakakibara, 2008);
- year effects, which reflect differences in the average returns to firms by year;
- firm effects, which reflect differences in the average returns obtained by each firm over time;
- industry effects, which reflect differences in the average returns to domestic and multinational firms that operate in each primary industry;
- home-country effects, which reflect differences in the average returns to domestic and multinational firms within each home country;
- year–industry interaction effects, which arise from differences across years in the average performance of firms by industry;
- year–home–country interaction effects, which arise from differences across years in the average performance of firms within each home country;
- home–country–industry interaction effects, which reflect differences in the average returns to firms that share both home country and primary industry affiliations across countries and industries.

The model provides for the influence of home country in a direct component as well as in a

component tied to the firm's principal industry. By examining firms with varying degrees of multinationality, we seek to illuminate the importance of home-country influences – which we theorize may arise from cognitive imprinting, organizational capabilities, and institutional characteristics – even on companies with widespread international activities.

The data set for our study originates with the Compustat Global reports, which we matched with information from the *Directory of Corporate Affiliates* to assess the degree of multinationality. We analyze the accounting profitability – measured by return on assets (ROA) – of firms in three samples.²

The research makes five contributions. First, following Makino et al. (2004), we offer cross-sectional evidence on the importance of a firm's geography for its performance, and on the relative importance of home country, industry, year, and firm effects. Prior studies decomposing the variance of firm performance into industry, corporate, and divisional effects (Bowman & Helfat, 2001; McGahan, 1999; McGahan & Porter, 1997; Rumelt, 1991; Schmalensee, 1985) have left open questions about the representativeness of their findings for firms headquartered outside the United States. This study provides evidence to complement Makino et al. (2004) on the relative impact of industry and firm effects for firms located in other parts of the world.

Second, we extend theory by considering that industry structure may vary within and across countries. Earlier work had noted that industry effects could vary by country (Makino et al., 2004). We develop a parallel idea that country effects might vary by industry. This would occur with adjustments in response to trade flows (e.g., comparative advantage) and innovation opportunities in the mix and composition of a country's firms and industries (e.g., competitive advantage). In some instances countries exit from different industries, as firms in the United States have exited from consumer electronics and many areas of textiles, because of the loss of competitive and/or comparative advantage. In other instances investment occurs, as in Chilean wine, Canadian natural resource extraction, and Indian telemarketing services. A country's economic profile may be influenced by competition within industries, just as industries may have both a supra-location and location-specific effect. We do not impose a hierarchical structure on industry and country



effects, but rather allow for the possibility that each may be either dominant or subordinate to the other.

Third, we bridge and extend theory by considering the relationship between home-country influences and the extent of multinational operations. Typically, the headquarters country of a multinational is also its home country (Ghemawat, 2003, 2007). Corporate performance may be beneficially or adversely affected by home-country influences. Whether performance is enhanced or diminished depends on the nature of home-country institutions. Home-country influences reflect the cognitive imprinting of executives, managers, and other employees about, for example, the importance of consensus (Guillen, 1994; Stinchcombe, 1965). The home country may influence the way in which its corporations develop and leverage organizational capabilities such as flexible employment practices in other countries (Holburn & Zelner, 2008; LeCraw, 1993; Wells, 1993, 1994). Home-country institutions such as educational, technological or contractual norms may have a common influence on how locally headquartered firms compete, if and when they become multinational (Delios & Henisz, 2003; Henisz & Delios, 2002; Kriauciunas & Kale, 2006).

Each type of home-country influence may confer advantages or disadvantages – both comparative and competitive (Guillen, 1994). We theorize that the home country has a straightforward direct effect on the performance of domestic firms. Multinational firms are influenced by home-country factors, both directly in the same way as co-headquartered domestic firms and indirectly through the exportation of behaviors, activities and practices.³

Fourth, we extend prior decomposition research by examining the performance of firms headquartered in countries that have not been previously considered. Preceding researchers analyzing non-US firms reported on the performance of the foreign affiliates of firms headquartered in Japan (Makino et al., 2004) or in a small number of countries (Furman, 2001; Khanna & Rivkin, 2001). By exploiting newly available information, we study firms headquartered in 43 countries and thus can compare home-country effects across a range of settings.

Fifth, we examine performance at the level of the corporation rather than at the level of the division or foreign affiliate. Like Schmalensee (1985), but unlike McGahan and Porter (1997, 2003) or Makino

et al. (2004); Rumelt (1991) we do not analyze the profitability of business units. This allows us to avoid the challenges that arise when corporate profitability is not a simple weighted sum of the performance of constituent divisions owing to reporting anomalies, inter-divisional transfer pricing, obfuscation, and the absence of auditing (Raynor, 1999).

Overall, our approach allows us to develop a number of insights into the relationships between home-country influences and industry effects on corporate performance. The findings emphasize that home-country influences are important to performance, even for firms with high degrees of multinationality. Home-country and industry effects are even more important to domestic firms than to multinationals, however. The results are consistent with theory suggesting that the precise nature of home-country influences may shift as locally headquartered firms become more internationalized. We conclude that industry effects in single-country studies should be interpreted carefully as rooted in country context.

LITERATURE

The literature preceding this study falls into six related categories. First, a series of core studies decomposing variance in accounting returns has established that industry, corporate-parent, and business-unit effects are each important to firm profitability (McGahan & Porter, 1997, 2002, 2003; Rumelt, 1991; Schmalensee, 1985). In the United States during the 1970s, 1980s, and 1990s, fixed industry effects accounted for 8–20% of intertemporal variation in firm profitability over periods that spanned 4–20 years. During the same period, corporate-parent effects accounted for amounts of variation that were estimated to vary from as little as about 1% to as much as about 10% in profitability. Business-unit effects explain between about 30 and 45% of variation in the studies in which they were estimated. These studies descriptively identify various influences on performance rather than test for causality in a detailed way.

A second major precedent is studies that extend the decomposition literature with new variables, methods and data sets (see McGahan & Porter, 2005, for a review). Bowman and Helfat (2001) concentrate on how corporate centers influence business unit performance, such as through common policies applied to the units, the selection of the corporation's industries, and interventions specifically targeted at select units. They emphasize



that estimated business-unit and industry effects may reflect actions initiated at the corporate center, and thus the influence of the corporate parent on firm performance may be understated by estimated corporate-parent effects. Analogously, McGahan and Porter (2003) argue that industry effects may similarly arise from actions taken at the levels of business units and corporate centers. Makino et al. (2004) indicate that differences in host-country environment also may influence industry structure. We extend this logic by suggesting that, in some instances, host-country context may be shaped by industry structure (Sutton, 1991) and even specific firm strategies (as in the case of Nokia in Finland). In short, effects arising at any level – the firm, the industry or the country – may be influenced by actions taken at any level (McGahan & Porter, 2005).

An important methodological precedent also falls into this second category. Studying persistence in the effects at different levels and relying on established techniques (Jacobsen, 1988; McGahan and Porter (1997, 2003); Searle, 1971) and Waring (1996) show how autocorrelation varies with the length of the time series available for each firm. By estimating autocorrelation on firms for which a series is available, and by applying the estimated rate to the data set as a whole, these authors recovered information that would otherwise have been lost owing to a low number of observations on some firms in the data set. We use this technique, together with the clustering of errors by firm, to obtain unbiased estimates of home-country and industry effects on the expanded and complete samples. In the analysis of the main sample we do not estimate autocorrelation, but instead include conventional firm fixed effects. In all models, we do *not* incorporate the restrictive assumptions of random effects, zero covariance across classes, or zero rates of persistence.

A third but relatively small set of studies analyzes the importance of industry and firm effects on the performance of firms headquartered outside the United States. Furman (2001) analyzed data on firms in the United Kingdom, Canada, Australia, and the US, and found significant variation in industry and firm influences on accounting returns. Brito and Vasconcelos (2004, 2005) decomposed variance in firm foundings, growth, and survival into industry and other components in panel data sets for South America. None of these prior researchers examined industry effects across a broad range of industries and countries.

A recent line of work has established that business-group effects, analogous to corporate-parent effects, are important to firms in emerging economies (Khanna & Rivkin, 2001). Chang and Hong (2002) analyzed diversified Korean chaebols to find that business-group effects were important. These studies suggest that home-country influences may differ systematically for firms in low- or moderate-income countries as compared with those in high-income countries. As a result, we replicate our analysis on the firms in our complete sample from countries at varying levels of income development.

In other important precedents, Yip (1991) analyzed the profitability of European and American firms, and found that differences in the geographic scope of firms had an important influence on corporate profitability. Brouthers (1998) found that host-country and industry influences arose among 167 geographically diversified US manufacturers. These studies compelled us to replicate our results on European and manufacturer subsamples of our main, expanded and complete samples.

Several important precedents to this study evaluate country, industry, and firm-specific influences on the performance of multinational firms. Christmann, Day, and Yip (1999) evaluate 99 subsidiaries of two American and two European companies in 37 host countries, and find that industries by country were centrally important to performance. Makino et al. (2004) confirm that both host-country and industry effects are important to the performance of 616 Japanese multinationals. Unlike these prior studies, we deal specifically with home-country rather than host-country influences.

A fourth group of antecedent studies explores how home-country characteristics influence domestic and multinational firms (Flores & Aguilera, 2007; Henisz & Delios, 2001; Harzing & Sorge, 2003). The most specific antecedents deal particularly with the influencing process itself. Holburn and Zelner (2008) discuss “shared experiences and contexts” among managers and employees in making sense of the internal and external environment through simplifying “mental models” that constitute their cognitive frames (Guillen, 1994; Kaplan, 2008; Weick, 1995). Capabilities arise at the individual and organizational levels through learning, resource acquisition, and other processes that occur in the home country (LeCraw, 1993; Wells, 1993, 1994). Other kinds of institutional influences on firms that share home-country



affiliations may occur, such as the administrative processes of Lithuanian firms under the socialist regime (Kriauciunas & Kale, 2006).

Fifth, a long line of prior studies investigates how home-country institutions affect firms as they expand internationally (Henisz, 2000, 2006; LaPorta, 2006; LaPorta, Lopez-de-Silanes, Pop-Eleches, & Schleifer, 2004; LaPorta, Lopez-de-Silanes, Schleifer, & Vishny, 1997; Morck, Yeung, & Yu, 2000). Many industry studies suggest that the influence of home-country institutions varies. For example, Kyle (2007) shows how the proclivity of pharmaceutical firms to trade internationally depends on the experiences in exportation of other pharmaceutical firms from the home country. Home-country–industry interactions may be quite significant because of specialized indigenous resources, national development policies, cultures, and focused institutions that stimulate the development of some industries over others (Tallman & Li, 1996; Wright, Filatotchev, Hoskisson, & Peng, 2005). Porter (1990) suggests that firms can exploit these differences strategically.

Sixth, and finally, a literature in international business explores the degree of multinationality and corporate performance. Berry and Sakakibara (2008) investigate how the intangible assets and stock-market performance of Japanese firms relate to their internationalization. Goerzen and Beamish (2003) review earlier literature and conclude, consistent with the findings of Berry and Sakakibara (2008), that while the relationship between firm internationalization and corporate performance depends on many variables, the profitability of multinationals tends to improve with both time and the degree of firm multinationality.

THEORY

In the core literature on the decomposition of variance in firm performance, scholars originally sought to deny or establish the legitimacy of effects at various levels: Schmalensee (1985) argued that firm effects were not important; Rumelt (1991) showed that business-unit effects were important; McGahan and Porter (1997) refuted Rumelt (1991) and advocated that industry effects were important; and Bowman and Helfat (2001) argued for the importance of corporate-parent effects.

Recent research in this stream, drawing on the prior studies, has shifted in emphasis from establishing the legitimacy of effects at various levels to

assessing the relative importance of different kinds of effects. This subtle shift points to opportunities for studying such factors as the hierarchical nesting of the effects, the interactions between them, and the exclusion of data on focused firms (McGahan & Porter, 2005).

In this paper we seek to evaluate the effects of home country on firm performance, both directly, to establish importance, and to assess the relative importance of home country as compared with industry and other effects. We also assess interactions between them to shed light on the contingencies between industry structure and geography.

The Geographic Identity of Firms

The headquarters country of a firm is the nation in which it is incorporated, which is typically but not always the country of its founding (Ghemawat, 2007). In some instances firms incorporate in countries other than those of their founding, to pursue tax-advantaged status (such as is available in Bermuda, the Cayman Islands, and Hong Kong), create a toehold for subsequent expansion, achieve legitimacy, or access institutions that are otherwise unavailable. Yet empirical analysis suggests that this is relatively rare: more than 90% of firms are headquartered in the countries of their founding, which are also the countries of their original and core operations, as well as the countries in which their most senior management makes critical strategic decisions (Ghemawat, 2007).

A firm's home country is the nation with which it is identified culturally, normatively, operationally and/or by its founding. Typically the home country is the area of the firm's core operating units, and often the nation that constitutes the largest portion of the firm's sales. For firms with operations in only one country, the home country is almost always also the headquarters country. For most multinationals the home country is regularly the headquarters country. For the purposes of this paper, we assume that the firm's headquarters country is its home country.⁴

A firm's host countries are those in which it has foreign operations (also called "foreign affiliates"), which may occur through foreign direct investment, acquisitions and quasi-diversifications by alliances, joint ventures, and long-term contracts. Firms typically expand into host countries to export firm-specific advantages that accrued in the home country, to import advantages from the



host country, or both (Makino et al., 2004). In this analysis we consider the host-country involvement of firms by counting the number of foreign affiliates, which we describe as the firm's "degree of multinationality" (Berry & Sakakibara, 2008).

The Home-country Effect and Corporate Profitability

Home-country effects on performance have two major elements. The first is the influence that flows from the firm's core or founding operations, and the second flows from the firm's corporate-parenting activities. For domestic-only firms, these influences are imputed to profitability entirely in the home country. Multinational firms similarly impute performance effects from these influences in the home country, but they also may export them into host countries through one or more of three major mechanisms.

The first of these mechanisms arises from imprinting. Through the home-country experiences of individual employees, including managers and executives, as well as of teams of employees, "cognitive frames" emerge that shape firm operations in host countries (Guillen, 1994; Stinchcombe, 1965). Citing Denzau and North (1994); Holburn and Zelner (2008: 4); Walsh (1995) and Weick (1995) discuss these frames as "mental models" that managers and employees "use to interpret the environment and guide their actions". These frames may be contested differently in host countries as home-country points of view are exported into different contexts (Guillen, 1994; Kaplan, 2008). Cognitive imprinting and, in particular, the cognitive frames of CEOs from a particular country may influence the choice of host targets and the approach to deploying firm capital in host-country environments (Bowman & Helfat, 2001; Guillen, 1994) Thus cognitive imprinting that reflects the home-country environment may create variation in multinational performance in host countries. Cognitive frames also may commonly influence the performance of domestic companies in the home country.

The second major source of variation reflects firm-specific organizational capabilities broadly construed to include resources and organizational learning that originate in the home environment. These capabilities may arise at either the business-unit or corporate level from such varied factors as the natural-resource environment, historical circumstances, and specific national investments that commonly affect firms. Organizational capabilities

also may arise from elements of the home-country environment that affect firms differently, such as the efficiencies that may be induced by high levels of uncertainty and/or competition in product, factor, or capital markets (Porter, 1990). As a result, opportunities for transferring organizational capabilities rooted in the host-country context into host countries may increase – and may develop heterogeneously across firms – with the extension of international activities of firms from a common home country (LeCraw, 1993; Wells, 1993). Organizational capabilities may be evoked through the presence or even the absence of firms providing complementary products and services.

The third and final source of variation reflects institutions that commonly influence the home country's firms. One major source of institutional variation that is partly home-country-specific and partly exportable to host countries is in experience with political norms, behaviors, activities, and customs (Holburn & Zelner, 2008; North, 1990). For example, multinationals may benefit from institutional experiences in the home political environment through the exportation of knowledge about policymaking and political processes (Delios & Henisz, 2003; Henisz & Delios, 2002). Other sources of variation include the home country's educational system, infrastructure investment, and other trade policies (LeCraw 1993; Wells 1993, 1994), although this list is far from comprehensive. Home-country institutions may confer the greatest impact on performance when they are idiosyncratic: for example, Kriauciunas and Kale (2006) show how the administrative systems developed in Lithuanian firms during the socialist regime commonly influenced their performance after liberalization. This research suggests that experience with the exportation of experience from managing home-country institutions may be most relevant for firms with commitments to host-country environments, and thus may become more intensive after the initial commitments of multinationals to internationalization. The influences of home country on performance reflect many elements of local context (Porter, 1990), only some of which may be controlled by country policy. Makino et al. (2004) identify a systematic relationship between the level of institutional development in a country and the influence of host countries on foreign affiliate performance. As a result, we explore the importance of home country separately for firms from high-, moderate-, and low-income countries.



The Home Country, Degree of Multinationality, and Corporate Profitability

If location-specific advantages that arise from host countries exert a powerful effect on firm performance, then the profitability of firms with greater degrees of multinationality is exposed to larger host-country and host-country-firm-specific advantages. Thus the home-country influences on performance should diminish with the breadth of firm participation across host countries.

Alternatively, if home-country influences exert a powerful effect on firm performance, then multinational firms may be disproportionately affected by the advantages that accrue from their home countries. In such a situation, the profitability of firms with greater degrees of multinationality may not diminish in proportion to the breadth of firm participation across host countries, perhaps because the sources of home-country influence may be generated differentially between and among cognitive imprinting, organizational capabilities, and institutional context with internationalization.

Theory suggests that, regardless of their strength, home-country effects influence domestic-only and MNEs through different mechanisms. Goerzen and Beamish (2003) demonstrate that, overall, the performance of MNEs tends to be greater than the reported performance of domestic-only firms, but that multinational performance tends to increase with the degree of multinationality, and with time, principally because experience is required for multinationals to capitalize effectively on their breadth. Because these points suggest different relationships in the effects of home country on profitability for domestic and MNEs, we assess the effects in separate models, although we do this cautiously, as domestic and multinational firms also tend to occupy different strategic groups in industry structures (Porter, 2000). This distortion occurs because larger firms, which are typically the MNEs in our data set, tend to post both higher average levels of profitability and profitability closer to industry means. Thus the variance of profitability is lower than average in models on multinationals firms as compared with models on domestic firms, and thus the estimated industry effects may be biased downward (McGahan & Porter, 2005).

Industry vs Home-country Effects Given the Degree of Multinationality

Makino et al. (2004), citing Ghemawat (2003), explain that “industry is neither perfectly independent nor perfectly integrated across countries”.

Industry effects arise both between and across countries. When an industry is entirely local, then its activities, supplies, and demand are determined within the context of a particular country (Porter, 2000). For entirely global industries, activities may flow and change across countries to reflect shifting environmental conditions, but most industries are not entirely global (Ghemawat, 2003, 2007).

For industries with local structures (called “multi-domestic” by Porter, 2000), the direct effect of industry on profitability is relatively strong compared with home-country–industry interactions. The reason is that structural conditions are, by definition, largely determinative regardless of geography in industries of this type (Sutton, 1991). The forces of comparative advantage, which derive from differences in resource endowments and production intensity (Makino et al., 2004), may generate home-country–industry interaction effects for both domestic and multinational firms, but because industry structures are country-centric, the influence of home-country–industry interaction effects on corporate performance is diluted, especially for firms with high degrees of multinationality.

In global industries, multinationals are equipped to adjust more quickly to resource reallocation opportunities across country borders than firms that are exclusively domestic. The theory here, again drawing on Makino et al. (2004), is that the forces of comparative advantage at work within an industry may yield opportunities that are only available to firms that can redeploy resources across country boundaries. Differences in the host-country effects on multinationals may be amplified by the structures of these industries even despite high degrees of multinationality. Thus high home-country–industry interaction effects for multinationals would arise with diversity in the opportunities available to firms from different home countries based on variation across them in the degree of globalization in industry structures. Domestic-only firms would be confronted with low home-country–industry effects if industry structures were determinative of profitability regardless of geography, and high home-country–industry effects if industry structures depend more deeply on geographic differences among countries.

Porter’s (1990) “competitive advantage of nations” argument explains how high home-country–industry interaction effects may arise for



domestic firms: countries may support domestic firms through policies specifically designed to provide them with innovation, technology, and other productivity advantages over foreign direct investors. Variation across countries in the adoption of these policies could lead to home-country–industry effects, even in the presence of large direct industry effects among domestic firms. In other words, even if domestic firms demonstrate high industry effects on their performance, as theories of comparative advantage would suggest (Sutton, 1991), high home-country–industry interaction effects could be generated by variation in national policies toward industries (Porter, 1990).

If the forces of comparative and competitive advantage are strong, then even the existence of firms affiliated with an industry in a home country may be affected and may thus generate home-country–industry interaction effects. For example, affirmative policies in Chile toward the wine industry have led to the emergence of a vigorous trade there, while comparative advantage has mercilessly driven US firms out of consumer electronics industries. To ensure that our results are representative of the world as a whole, we replicate our results on a sample restricted to exclude countries with small numbers of industries.

HYPOTHESES

Three hypotheses are derived from the theory. The first reflects the idea that home-country influences on performance are important even when controlling for the degree of firm multinationality and the fixed effects of the industry, year, and firm. The theoretical logic is that home-country influences are important even for firms that participate in a range of host countries.

Hypothesis 1: Firm performance varies systematically and significantly by home country after controlling for the degree of firm multinationality and industry, year, and firm effects on performance.

The second hypothesis reflects the idea that home-country effects on performance arise for domestic and multinational firms, but that the nature of the relationship differs systematically. For domestic firms, the effects of home country flow directly through operations and corporate-parenting activities. For multinationals, these direct effects are blended with the dilution that occurs through participation in host countries where

location-specific influences on performance arise and with the enhancements that occur through the exportation and shifting mix of home-country influences.

Hypothesis 2: Home-country effects arise for both domestic and multinational firms, but have different levels of influence.

The next hypotheses are grouped into a set that together reflect the implications of comparative and competitive advantage for industry and home-country–industry interaction effects. Theory suggests that a finding of higher industry effects for domestic firms than for multinationals is consistent, all else equal, with the participation in local industries by domestic firms and in global industries by multinationals. Furthermore, multinationals are subjected to different sources of performance-leveling competition as they move internationally.

Why do firms move internationally despite the competition? Multinational firms may take advantage of accumulating and shifting home-country effects with internationalization as the imprinting, organizational capabilities and institutional context of the home-country become more or less relevant. If the estimated coefficient on the degree of multinationality is positive, then multinationality is associated with higher levels of performance (in an absolute sense) despite the extra industry-level competition. A finding of high firm-level effects suggests, overall, that multinationals exploit unique firm-specific advantages, as well as, perhaps, host-location advantages, to achieve performance benefits from multinationality despite the additional supra-industry competition.

Theories of comparative advantage suggest that multinationals may face profit opportunities unavailable to domestic firms if they can use home-country advantages to reallocate resources geographically in response to shifts in country-level productivity and factor allocations. The theory of the “competitive advantage of nations” put forth by Porter (1990) suggests that domestic firms may also benefit from globalization by responding to in-bound multinationals by imitating and adapting their innovative activities to the local context. Domestic firms also may make credible commitments to competitive positions abandoned by out-bound multinationals and benefit from national policies designed to foster local economic



development. Thus, while the theoretical mechanisms differ, the performance of both domestic and multinational firms may be influenced by industry conditions in the home country. Thus home-country–industry interactions are important because of the comparative and competitive advantages that influence firm performance. Hypotheses 3a, 3b, and 3c together provide strong support for theories of comparative advantage. Affirmation of Hypotheses 3a, 3b, and 3d together provides support for the theory of the competitive advantage of nations.

Hypothesis 3a: The profitability of domestic firms is affected more strongly by industry effects than that of multinational firms.

Hypothesis 3b: The degree of multinationality has a positive impact on performance, and multinationals accrue relatively large firm-specific effects.

Hypothesis 3c: Multinational firms demonstrate high home-country–industry interactions.

Hypothesis 3d: Domestic firms demonstrate high home-country–industry interactions.

The industries represented in our study may be subjected to varying accounting conventions and other anomalies related more directly to *ad hoc* policy than to underlying economic conditions. The manufacturing sector has been the most frequently studied in the decomposition literature, in part because the accounting anomalies are likely to be minimal (Raynor, 1999). We therefore replicate our results on a subsample of manufacturers only.

The countries represented in our main sample have varying regional characteristics. The United States, as the largest unified economy in the world, has been used as a benchmark in studies to identify the importance of geography without trade barriers (Porter, 2000). In our analysis, when US firms are excluded, the effects of home country are enhanced. In contrast, Europe during the 1990s underwent a major shift in trade policy to reduce barriers to economic integration (Ghemawat, 1991). As a result, we also replicate our results on models that include only European firms.⁵ In this instance, the effects of home country are hypothesized as greater than in the base model, because European firms retained their national identities

and home-country experiences while interacting liberally across the continent. The reduced trade barriers and increased integration are hypothesized to generate lower home-country–industry interaction effects by mitigating factors that favor a domestic firm in one European country over others in the same industry elsewhere in the region.

Finally, we identify whether the influence of country and industry effects depends on the level of economic development. Firms from low-income countries tend to participate in “local” industries (Porter, 1990; Sutton, 1991) that strongly constrain firm performance and are commonly influenced by the absence of home-country infrastructure, whereas firms from high-income countries face greater opportunity to reallocate resources based on their home country’s international competitiveness in particular industries. Thus each of the hypotheses regarding competitive and comparative advantage is evaluated for firms from high-, mid-, and low-income countries.

DATA

The data set is drawn from the Compustat Global report in its entirety, as accessed from Wharton Research Data Services on 21 January 2005. The report provides accounting and financial data on more than 10,000 companies with equity that is publicly traded on one or more of the world’s 80 major stock exchanges. The version that is available to university researchers covers firms from 62 countries over the 11 years from 1993 through 2003. The report includes information on each firm’s country of incorporation and principal industry affiliation, as measured using the North American Industrial Classification System (NAICS) codes.

The 65,532 records in the Compustat Global reports were screened to generate a data set that accurately represents the performance of a broad cross-section of firms. A total of 24,167 records were eliminated for lack of information on industry affiliation. An additional 128 records were dropped because they were tied to public administration (the NAICS’s group no. 9). From the remaining records, another 1253 were eliminated because they were associated with firms that posted less than 4 years of information.⁶ This screen ensures that the results are not biased by short-lived entities that were created to shield resources or to account for unusual activities. Following the precedents in the decomposition literature (McGahan & Porter, 1997, 2002, 2005; Rumelt, 1991), records



associated with very small firms were dropped (in particular, 1319 records tied to firms with less than \$10 million in sales, and 1104 records tied to firms with less than \$10 million in assets). These exclusions ensure that the analysis is not distorted by very small firms that do not represent the mainstream of economic activity.⁷ In addition, the records associated with the 12 largest Japanese firms were omitted, because their conglomeration across an unusually large number of industries made their reported industry affiliation meaningless. Two countries were omitted (Namibia and Mauritius) because they contained information on just one or two industries. Similarly, 36 industries were omitted because they contained information on just one country (leading to co-linearity between the country and industry effects). After the application of these screens, the data set included 35,450 observations on 4551 firms in 43 countries and 295 industries. In subsequent reports we refer to this group of 4551 firms as the “complete sample”.

The next step involved matching the 4551 firms represented in the Compustat Global data set with the information available on them in the *Directory of Corporate Affiliates*.⁸ This involved a process of comparing company names to classify potential matches as certain, likely, and unlikely. We then verified the likely matches by investigating the listed name in each database to make a conclusive decision about the trueness of the match. Certain and true matches were made for 1906 firms, which we refer to as the “expanded sample”, which includes firms for which we can assess the degree of multinationality. Thus there is a tradeoff between models on the complete and matched samples: the complete sample has many more firms (4551 vs 1906), but the matched sample contains information about the degree of firm multinationality.

The final step was to create a “main sample” of 1562 firms from the expanded sample. The firms in this sample were selected to ensure that sufficient numbers were available for each country and industry to estimate directly and independently the fixed effects of firm, country, and industry. (As explained briefly below in the methods section, unbiased estimates of the industry and firm effects are obtained in analyses on the main and complete samples by controlling for the fixed effects of firms through a different procedure.) In the main sample we can estimate firm effects as well as industry and country effects for firms with varying degrees of

multinationality. The main sample covers firms in 15 countries and four major sectors of the economy.

Table 1 describes the main, expanded and complete samples, and is presented in four panels. Panel A contains information on firm performance by year, which is measured as the ratio of net profit (as earnings after interest and taxes) to assets for each firm, which we describe as “return on assets”. The average ROA across the period is 5.82% in the main sample, 5.78% in the expanded sample, and 4.93% in the complete sample.⁹ The panel also shows how the firms in the main, expanded and complete samples are distributed by year. Toward the end of the period fewer firms are represented, because of delays in reporting. The main sample contains information only through 2002, because the number of firms in 2003 is low.¹⁰

The data set is not balanced, in that we include observations on firms even without a complete 11-year series of information on them. This feature is important, because firms represented for between 4 and 11 years are among the best and worst performers, and as a result their exclusion would dampen aggregate variability in performance. The average firm in the main sample is represented by 8.8 years of data and in the complete sample by 6.6 years.

The degree of multinationality is constructed from information in the *Directory of Corporate Affiliates* (Berry & Sakakibara, 2008). Panel B shows that 41.7% of the firms in the main sample have a degree of multinationality of 0, which indicates that all of their operating activity occurred exclusively in the headquarters country. In the expanded sample 43.2% of firms are domestic only. This information is not available for the complete sample. In the main sample an additional 11.9% of firms have a degree of multinationality of 1, that is, operations in only one country other than the headquarters country. About 60% of the firms had a degree of multinationality less than 2, although 21.6% had a degree of multinationality of 10 or more.

Panel C reports by industrial sector on firm performance, number, and the average degree of multinationality in the matched sample. As in prior studies that decompose variance in performance, the greatest number of observations is in manufacturing. The main and expanded samples cover firms in four sectors: mining/utilities, manufacturing, wholesale/retail/transportation, and information services/finance/professional services. The

Table 1 Description of data set*Panel A Number and profitability of corporations per year^a*

Year	Main sample						Expanded sample						Complete sample	
	All		MNEs		Domestic		All		MNEs		Domestic		All	
	Num.	Avg. ROA (%)	Num.	Avg. ROA (%)	Num.	Avg. ROA (%)	Num.	Avg. ROA (%)	Num.	Avg. ROA (%)	Num.	Avg. ROA (%)	Num.	Avg. ROA (%)
1993	1287	5.07	768	5.37	519	4.62	1394	5.05	813	5.48	581	4.44	2590	5.03
1994	1317	6.72	788	7.22	529	5.97	1441	6.65	845	7.31	596	5.71	2840	6.86
1995	1332	7.01	799	7.50	533	6.26	1468	6.76	860	7.46	608	5.77	2919	6.41
1996	1384	7.22	820	7.80	564	6.38	1531	7.22	886	8.24	645	5.82	3265	6.16
1997	1435	6.89	842	7.68	593	5.76	1610	6.63	923	7.54	687	5.40	4082	5.43
1998	1433	6.11	839	6.21	594	5.96	1612	5.83	922	6.14	690	5.43	4147	3.63
1999	1390	6.41	812	6.38	578	6.44	1566	6.41	895	6.56	671	6.20	4045	5.71
2000	1339	7.10	784	7.27	555	6.84	1511	7.06	863	7.32	648	6.72	3876	4.78
2001	1264	1.60	750	1.09	514	2.33	1428	1.91	824	1.43	604	2.57	3531	0.96
2002	1078	3.08	648	3.27	430	2.79	1224	3.23	713	3.17	511	3.31	2757	1.96
2003	0	n/a	0	n/a	0	n/a	807	6.24	471	6.19	336	6.32	1398	6.07
All	1562	5.82	911	6.09	651	5.43	1906	5.78	1083	6.16	823	5.26	4551	4.93

Panel B Degree of multinationality of firms^a

Degree of multinationality	Main sample		Expanded sample	
	No. of firms	Percentage of firms	No. of firms	Percentage of firms
0	651	41.7	823	43.2
1	186	11.9	234	12.3
2	101	6.5	115	6.0
3	56	3.6	65	3.4
4	52	3.3	61	3.2
5	48	3.1	53	2.8
6	31	2.0	37	1.9
7	31	2.0	31	1.6
8	40	2.6	46	2.4
9	28	1.8	39	2.0
10–72	338	21.6	402	21.1
All	1562	100	1906	100

Panel C Number of firms and average degree of multinationality by industry sector

Industry sector	Main sample				Expanded sample				Complete sample ^a
	No. of firms	Avg. degree of multinationality	No. of MNEs	Avg. degree of multinationality for MNEs	No. of firms	Avg. degree of multinationality	No. of MNEs	Avg. degree of multinationality for MNEs	No. of firms
Agriculture					9	2.41	3	5.01	39
Mining/utilities	191	2.55	72	7.15	199	2.68	81	7.35	549
Manufacturing	876	7.71	611	11.01	1053	7.85	731	11.28	2332
Wholesale/retail/transport	281	2.62	109	6.84	323	2.61	121	6.62	863
Info./finance/prof. services	214	5.53	119	9.62	246	5.27	125	9.45	570
Education/health					15	0.14	2	1.00	27
Entertainment/accommodation/food services					46	1.80	12	7.07	144
Other services					15	1.06	8	1.83	27
All	1562	5.99	911	10.12	1906	5.86	1083	10.13	4551

Panel D Number of firms and average degree of multinationality per country

Country	No. of firms	Avg. degree of multinationality	No. of MNEs	Avg. degree of multinationality for MNEs	No. of firms	Avg. degree of multinationality	No. of MNEs	Avg. degree of multinationality for MNEs	No. of firms
Argentina					1	0.00	0	0	5
Australia	32	5.05	13	11.49	41	4.97	13	11.49	93
Austria					1	1.00	1	1	18
Belgium					12	8.62	8	13.21	48
Bermuda					8	12.63	6	13.80	75
Brazil					16	1.57	2	11	40
Canada	66	2.63	40	4.53	73	2.53	40	4.43	87
Switzerland (che)	21	19.87	18	23.05	22	19.92	18	23.10	53
Chile					33	0.00	0	0	22
China					3	9.78	2	1.55	17
Columbia									6
Cayman Islands					1	2.00	1	2	10
Germany	66	11.65	45	16.48	68	11.73	45	16.72	185
Denmark	21	9.18	15	12.23	24	9.21	15	12.23	69
Finland					13	23.41	10	27.5	34
France	33	9.72	25	12.00	38	10.07	27	12.15	137
Great Britain	164	5.88	105	9.03	192	5.66	106	8.92	431
Greece					1	0.00	0	0	21
Hong Kong					3	1.53	2	2.42	30
Indonesia					3	12.77	3	12.77	66
India	19	13.63	10	28.16	20	12.79	11	24.67	109



Table 1 Continued*Panel D Number of firms and average degree of multinationality per country*

Ireland	16	3.15	12	4.33	18	3.21	12	4.33	26
Israel					8	4.95	3	10.85	15
Italy	27	4.83	7	16.48	29	4.75	7	16.50	44
Japan	264	7.60	167	11.81	284	7.50	199	11.72	1149
Korea					5	17.29	3	23.27	24
Luxembourg					3	0.00	0	0	6
Mexico					7	0.65	3	1	12
Malaysia					8	1.95	3	5.26	179
The Netherlands	17	9.67	15	10.67	21	9.45	16	10.44	50
Norway					3	18.63	3	18.86	28
New Zealand					10	0.32	2	1	11
Pakistan					5	0.20	1	1	21
Philippines					3	2.84	3	2.85	24
Portugal									10
Singapore	16	6.91	11	10.28	17	7.01	11	10.28	104
Spain					4	6.76	3	9.25	33
Sweden	23	11.95	20	13.34	23	11.87	20	13.33	66
Thailand					5	10.51	3	18.11	79
Turkey					2	7.91	2	7.91	11
Taiwan					6	2.25	2	6.60	37
USA	777	4.48	408	8.39	854	4.25	474	8.22	1046
South Africa					5	1.30	2	2.60	20
All	1562	5.99	911	10.12	1906	5.86	1083	10.13	4551

^aInformation on multinationality not available for the 4551 firms in the complete sample.^bNote: n/a = not applicable.

complete sample includes firms in these sectors as well as in agriculture, education/health, entertainment/accommodation/food services, and other services. The reason for the difference is that the main and complete samples report only on those industries that include enough firms to calculate directly firm, industry, country, and interaction effects. The analysis of the complete sample is not so restricted, and thus contains information on more industries.

Panel D reports by country on performance and the number of firms. The main and expanded samples contain information on firms in 15 countries, and the complete sample contains information on firms in 43 countries. The reason for the difference is that the main and expanded samples are restricted to cover countries that contain sufficient firms and industries to estimate separately the fixed effects of country, industry, firm, and interaction effects. The complete sample is not so restricted, and thus contains information on more countries. Please note that the estimates of country, industry, and interaction effects in the complete sample are not biased by the exclusion of firm effects. These analyses account for firm effects through a correction for autocorrelation and a clustering of errors by firm, in accordance with the recent literature (Jacobsen, 1988; McGahan & Porter, 2003; Searle, 1971; Waring, 1996).

The countries with the greatest numbers of firms in the main sample are the United States, Japan, and Great Britain with, respectively, 777, 264, and 164 firms. The average degree of multinationality for firms that are international in these three countries ranges from 8.39 in the US to 11.81 in Japan to 9.03 in Great Britain. These figures are above the average degree of 7.89 across the main sample as a whole. Countries with the lowest degrees of multinationality are Sweden, Italy, Switzerland, and India.¹¹ The 777 firms from the United States are at least as diverse internationally as the 388 from Europe.

The industry with the highest performance in multiple countries is residential building construction, with a ROA of over 100% in the US, Japan, and Great Britain. The industry with the lowest performance in multiple countries is software publishing, with a ROA below -100% in Germany and Canada. Custom computer programming yielded returns of 142% in Japan over the period of the sample, which is the second-highest level for a home-country-industry pair in our sample. The very same industry posted returns of -162% in Sweden, which was

the third-lowest level among the home-country industry pairs.

SPECIFICATION AND METHODS

Testing our hypotheses requires analysis of the variance in performance among the firms in our screened data set. The models we use for this analysis reflect the precedents in the variance-decomposition literature (Bowman & Helfat, 2001; Makino et al., 2004; McGahan & Porter, 1997; Rumelt, 1991). Equation (1) represents the full model employed to represent the performance of a particular firm k in year t :

$$r_{k,t} = \mu + \text{dom}_{k,t} + \gamma_t + \alpha_c + \beta_i + \kappa_{c,t} + v_{i,t} + \delta_{i,c} + \psi_k + \varepsilon_{k,t} \quad (1)$$

In this model, $r_{k,t}$ represents the ROA of firm k at time t . Firm k is assumed to be identified at time t with home country c and industry i . The variable μ represents the grand mean of the ROA among all firms represented in the data set. The variable $\text{dom}_{k,t}$ represents firm k 's degree of multinationality at time t . α_c is the influence of the affiliation with headquarters country c , and β_i is the influence of membership in industry i . The year controls are given by $\gamma_t, \kappa_{c,t}$ and $v_{i,t}$ which represent aggregate year, year-home-country, and year-industry influences, respectively. ψ_k are firm fixed effects, and are identified by multiple observations on a firm. The residual, $\varepsilon_{k,t}$ is the excess return to firm k at time t that is not explained by the estimated effects.

The residual, $\varepsilon_{k,t}$ may be serially correlated over time because of persistent shocks at any level with influence over successive years. For example, if a temporary positive industry shock in year 1 lasts into year 2, then the residuals for firms in the industry in year 2 may be correlated with the residuals in year 1. The same type of autocorrelation may occur at any other level in the analysis: home country, firm, and interaction effects. Thus we estimate and then correct for autocorrelation in the residuals. When we estimate the model on the expanded and complete samples, we must omit the firm fixed effects because we do not have sufficient information to estimate them with statistical significance. In these instances the estimated rates of autocorrelation are higher because of the persistent influence of firm-level factors over time. In all our models we cluster the error terms by firm, in addition to correcting for autocorrelation, to ensure that our estimates of

home-country, industry and interaction effects are not biased. Equation (2) represents autocorrelation:

$$\varepsilon_{k,t} = \rho\varepsilon_{k,t-1} + \omega_{k,t} \tag{2}$$

In Eq. (2) ρ is the coefficient of serial correlation between variables, and $\omega_{k,t}$ is the independently and normally distributed portion of the residual. High estimates of ρ are associated with any intertemporally persistent influence on performance. After algebraic substitution (the traditional Cochrane–Orcutt transformation), Eq. (1) becomes

$$\begin{aligned} r_{k,t} - \rho r_{k,t-1} = & (1 - \rho)(\mu + \alpha_c + \beta_i + \delta_{i,c} + \psi_k) \\ & + (\gamma_t - \rho\gamma_{t-1}) \\ & + (\text{dom}_{k,t} - \rho\text{dom}_{k,t-1}) \\ & + (\kappa_{c,t} - \rho\kappa_{c,t-1}) \\ & + (v_{i,t} - \rho v_{i,t-1}) + \omega_{k,t} \end{aligned} \tag{3}$$

To simplify Eq. (3), we define $r'_{k,t}$, μ' , α'_c , β'_i , $\delta'_{i,c}$, γ'_t , $\kappa'_{c,t}$, $v'_{i,t}$, ψ'_k , $\text{dom}'_{k,t}$ and $\varepsilon'_{k,t}$, so that each equals the corresponding value at time t minus the rate of serial correlation times the lagged value. This allows us to express Eq. (3) as

$$\begin{aligned} r'_{k,t} = & \mu' + \text{dom}'_{k,t} + \gamma'_t + \alpha'_c + \beta'_i + \delta'_{i,c} + \kappa'_{c,t} \\ & + v'_{i,t} + \psi'_k + \varepsilon'_{k,t} \end{aligned} \tag{4}$$

After verifying that $0 < \rho < 1$, we test our hypotheses by evaluating the contribution to total variance in $r'_{k,t}$ given the firm's degree of multinationality (represented by $\text{dom}'_{k,t}$), the home-country effects (represented by α'_c), the industry effects (represented by β'_i), and the home-country–industry interaction

effects (represented by $\delta'_{i,c}$). Thus we associate Hypothesis 1 – that home-country effects contribute to variance – with the finding that α'_c effects have a significant and differential impact on the total sum of squares. Similarly, we associate hypotheses about home-country–industry interaction effects with the finding that this class of effects has a significant and differential impact. To assess this impact, we identify the relevant F-statistics and show the incremental explanatory power for each class of effects.

RESULTS

The first column of Table 2 shows the results of the base analysis on the 1562 firms in the main sample. Hypothesis 1 is supported: 2.63% of firm performance is explained by home-country differences. This amount is larger than for year effects at 0.63% (which are not significant), but lower than for industry effects at 15.65% and firm fixed effects at 17.90%. The estimates for the year, industry and firm fixed effects are similar to those in the core decomposition literature. The similarity extends to the contribution of variance in year–industry effects at 8.57%, which compares with 7.84% in Rumelt (1991), and to the combined effect of industry and year–industry effects at 24.22% (which compares with 21.3% in McGahan & Porter, 2003). The estimated influence of host-country effects at 2.63% is lower than but comparable to the host-country influence of 4.3% estimated in Makino et al.'s (2004) “Model 3” (1036).

Table 2 Decomposition of variance for main sample

Set of effects	(1)	(2)	(3)	(4)	(5)	(6)
	Base model	MNEs only	Domestic firms only	Manufacturers only	Excluding US firms	European firms only
	$\rho=0.2040$	$\rho=0.3749$	$\rho=0.5148$	$\rho=0.2599$	$\rho=0.2454$	$\rho=0.2534$
Degree of multinationality (%)	0.04	0.04	n/a	0.27	0.02	0.12
Year	0.63 n.s.	1.04	0.32 n.s.	1.26	0.54 n.s.	0.64 n.s.
Home country	2.63	3.05	5.06	2.72	4.30	2.92
Industry	15.65	10.10	24.92	6.01	20.88	46.75
Year × Home country	0.77 n.s.	1.15 n.s.	1.98	1.74 n.s.	1.20 n.s.	0.70 n.s.
Year × Industry	8.57	12.13	14.26	7.01 n.s.	9.98	14.55
Home country × Industry	19.03	18.55	19.62	6.74	28.41	7.28
Firm	17.90	17.68	10.87	25.39	8.74	9.59
Model (%)	65.77	62.74	77.03	51.14	74.05	82.59
Error	34.23	37.26	22.97	48.66	25.95	17.41
No. of firms	1562	911	651	876	785	420

Level of significance: all effects significant at $p < 0.05$, with the exception of those marked as insignificant by n.s.



The degree of multinationality in the base model contributes to 0.04% of explained variance, which is low but significant. The estimated magnitude of the coefficient on the degree of multinationality (which is not reported in the table) is +0.0004, confirming that multinational firms post higher levels of profitability on average than domestic firms.

Columns 2 and 3 of Table 2 provide additional information on how these advantages and disadvantages arise. Column 2 shows the results for a model that includes the 911 multinational firms in the main sample, and column 3 shows the results for a model of the 651 domestic firms in the main sample. As hypothesized, home-country effects are significant for both domestic and multinational firms, but have different levels of influence: 3.05% in the variation of multinational firm performance is explained by home-country effects, while 5.06% in the variation of domestic firm performance is explained by home-country effects. Both of these figures are greater than in the base model, which reflects the fact that multinationals and domestic firms cluster in performance levels, so that the total amount of performance variation is reduced in columns 2 and 3 as compared with column 1.

Home-country effects in both models differ markedly in support of Hypothesis 2. At 5.06%, the home-country effects reported in column 3 for domestic-firm performance are 165% more influential than for multinational-firm performance (column 2). The contribution to variation of home-country effects in each model also differs in relation to industry effects. As noted earlier, industry effects may be biased downward in models that include only multinational or domestic firms (McGahan & Porter 2005), and yet industry effects in columns 2 and 3 are important and significant. For MNEs, the contribution of home-country effects is about a third as great as the contribution of industry effects, while for domestic firms the contribution to variance is about 20% as great as the contribution of industry effects. Thus home-country effects have a different character for domestic and multinational firms: while they are greater in an absolute sense for domestic firms, they are less in relation to industry effects than for multinationals.

The contribution to variation of the degree of multinationality in column 2 also reveals a difference in the structure of performance for multinational and domestic firms. The estimated contribution of the degree of multinationality is

0.04% in column 2, and is just barely significant at the 5% level. The estimated coefficient at +0.0003 (which is not reported in the table) on the degree of multinationality is less than in the base model. This occurs because the underlying mean and variation in performance for domestic firms differ from those of multinational firms. Broad multinationals perform slightly better on average than narrow multinationals, but multinationals of all types perform significantly better on average than domestic firms. This finding supports the hypothesis that the influence on profitability of home-country effects differs for firms in the two categories.

The third set of hypotheses provides evidence on the salience of comparative and competitive advantage in the profitability of domestic and multinational firms. All four assertions are strongly supported: (a) industry effects account for 24.92% of domestic-firm profitability vs 10.10% of multinational profitability; (b) the degree of multinationality has a positive impact on the performance of multinationals, and firm fixed effects on multinational profitability at 17.68% are greater than at 10.87% of domestic-firm profitability; (c) multinational firms demonstrate high home-country–industry interaction effects, which constitute 18.55% of profit variation; and (d) domestic firms demonstrate high home-country–industry interaction effects, which constitute 19.62% of variation. For both multinational and domestic firms the contribution to variance of home-country–industry interactions is greater than firm fixed effects.

Consistent with theory, these results provide strong evidence for the mechanisms of comparative and competitive advantage. Multinationals may face greater competition as they reallocate resources in response to shifts in comparative advantage by industry, but their firm-specific capabilities have strong impact, and their overall profitability is higher than that of domestic firms. Domestic firms, subjected to comparative advantage but without the breadth to reallocate resources across country boundaries, are more strongly affected by the profits that accrue to their industries and are less affected by firm-specific factors.

Columns 4–6 in Table 2 represent the results of models restricted to include only manufacturers, to exclude US firms, and to include only European firms. Home-country and home-country–industry interactions are important to manufacturers. A striking finding is the reduction in total explanatory power: the 51.14% of variance explained is

lower than in any of the prior columns. Year, firm and home-country effects are larger, while industry and home-country-industry influences are markedly lower than in the base model. Across all manufacturing industries firm-specific factors dominate, but home-country identity has some influence on performance. The lower level of industry effects as compared with the base model indicates that, within the sector, industries were relatively similar in performance characteristics.

The results for firms from countries other than the United States, which are represented in column 5, are similar to those for domestic firms in column 2: the effects of home country and home-country-industry interactions are even greater than in the base model. The agglomeration of regional factors in a country as large and diverse as the United States may obscure the more detailed effects of geographic identity on performance.

The results in column 6 for European firms reinforce this conclusion: compared with the base model, home-country effects are high, industry effects are very high, but home-country-industry interactions are low. This pattern suggests a homogenization across European industries: in each of the represented European countries, companies in the same industries tend to perform similarly – and much more similarly than their counterparts in other countries. This outcome may reflect the openness of European countries to intra-regional trade, and foreshadows a complex set of inter-relationships that are further evident in the estimates for the expanded, complete, and Amadeus samples, as discussed below.

Table 3 shows the results of models for the expanded sample. Overall, the results are stronger than for the main sample. Among manufacturers, both home-country and home-country-industry interactions are more important for total variation. The model excluding US firms is presented in column 5, with results quite similar to those in the main sample. The results for European firms are presented in Table 4 to facilitate comparisons across the three samples and an alternative measure using the Amadeus data set. Column 2 of Table 4 shows that the results are strikingly different in some aspects compared with the main sample: the degree of multinationality is much more important than in previous models, and the year-industry effect, while insignificant statistically, is greater in absolute magnitude. These outcomes suggest that the 388 European firms in nine countries for which we have data may not be well represented across the

Table 3 Decomposition of variance for extended sample

Set of effects	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Base model	MNEs only	Domestic firms only	Manufacturers only	Excluding US firms	Firms in high-income countries	Firms in mid-income countries	Firms in low-income countries	Without small countries	Without tax havens, UK or Belgium
	$\rho=0.3539$	$\rho=0.5248$	$\rho=0.5947$	$\rho=0.4798$	$\rho=0.3054$	$\rho=0.3496$	$\rho=0.8114$	$\rho=0.7840$	$\rho=0.4167$	$\rho=0.3612$
Degree of multinationality	1.31%	0.30%	n/a	2.03%	2.65%	0.50%	0.00% n.s.	0.00% n.s.	0.83%	1.19%
Year	1.15 n.s.	1.04	0.23	1.06 n.s.	0.52 n.s.	0.70 n.s.	1.17	1.71	0.53 n.s.	0.61 n.s.
Home country	3.03	3.05	4.74	4.14	4.92	1.70	2.62	6.80 n.s.	2.74	2.53
Industry	15.74	10.10	25.18	6.18	21.26	11.17	16.11	25.06	16.52	10.04
Year × Home country	1.35 n.s.	1.15 n.s.	2.67 n.s.	3.25 n.s.	2.21 n.s.	1.25 n.s.	5.06 n.s.	6.86 n.s.	0.90 n/s	1.82 n.s.
Year × Industry	9.98	12.13	15.15	6.72 n.s.	10.35	7.15	21.45 n.s.	37.37	10.70	12.81
Home country × Industry	18.54	18.55	17.91	9.02	26.10	18.02	13.25	4.06	16.30	13.06
Model	51.10%	46.07%	65.87%	32.40%	68.04%	40.49%	59.66%	81.86%	48.52%	42.06%
Error	48.90	53.93	34.13	67.60	31.96	59.51	40.34	18.14	51.48	57.94
No. of firms	1906	1083	823	1053	1007	1526	261	119	1821	1698

Level of significance: all effects significant at $p < 0.05$, with the exception of those marked as insignificant by n.s.



Table 4 European firms

Set of effects	(1)	(2)	(3)	(4)	(5)	(6)
	Firms in European countries only			Matched to Amadeus		
	Main sample	Extended sample	Complete sample	All	MNEs only	Domestic firms only
	$\rho=0.2534$	$\rho=0.3233$	$\rho=0.3974$	$\rho=0.0533$	$\rho=0.1005$	$\rho=0.0353$
Degree of multinationality	0.16%	1.67				
Year	0.64n.s.	0.62n.s.	0.78	0.36	0.43	1.45
Home country	2.92	3.31	1.18	0.31	0.35	39.18
Industry	46.75	46.92	19.02	13.50	12.28	13.56
Year \times Home country	14.55	1.00n.s.	1.12	1.39	1.41	9.79
Year \times Industry	0.70 n.s.	14.61n.s.	16.37	50.03	54.95	34.27
Home country \times Industry	7.28	7.44	10.72	5.56	5.11	0.40
Firm	9.59					
Model	82.59	75.57	49.19	71.15	74.53	98.65
Error	17.41	24.13	50.81	28.85	25.47	1.35
No. of firms	420	476	1296	4060	3426	634

years of the data set, and that an insufficient number of industries may be available to estimate their effects accurately. Even with these problems, however, the estimated effects of home country are greater at 3.31% of variation than in the main sample, where they account for 2.92% of variation (column 1 of Table 4).

Table 3 reports the results for firms from countries with varying income levels. Despite the low numbers of firms from mid- and low-income countries (261 and 119, respectively), the results provide striking evidence of a relationship between economic development and the importance of comparative and competitive advantage. Columns 6–8 show that home-country effects are significant in high- and mid-income countries but not in low-income countries. Industry effects are important in each model, but especially in low-income countries. Home-country–industry interactions are low in low-income countries but high in high-income countries. Overall, these results suggest that while comparative and competitive advantage may be at work in high- and mid-income countries, firms in low-income countries may tend to participate in industries that are common among them, and which do not vary much in profitability. The high levels of year – industry interaction effects accentuate the importance of industry structure to firms in low-income countries.

Table 3 also reports on several supplementary models undertaken to investigate robustness: Column 9 reports on a model that excludes small

countries,¹² and column 10 excludes firms from the tax-haven countries of Bermuda, the Cayman Islands and Hong Kong as well as two countries, the UK and Belgium, which faced an onslaught of relocating firms from other parts of Europe during the period under study.¹³ In each instance, home-country effects are significant and at about the same level of importance as in the main model. Home-country–industry interactions also remain significant. Thus the principal results are not sensitive to these exclusions – and in some instances are even strengthened.

Table 5 presents the decomposition models for the complete sample of 4551 firms from 43 countries. With the broadening of countries and industries the overall explanatory power of the model declines, but each set of effects remains roughly proportional in importance to the base model for the main sample: home-country effects are important at 1.12% of variation, and are about a quarter as important as industry effects, and home-country–industry interactions are large at 14.79% of total variation. The results for models that include only manufacturers, exclude US firms, examine firms in countries with different levels of economic development, exclude small countries, and exclude tax havens are similar to those for the expanded sample. Thus the main findings are supported for all hypotheses.

Table 4 shows results for the European firms in the various samples in columns 1–3, and confirms



Table 5 Decomposition of variance for complete sample

Set of effects	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>Base model</i>	<i>Firms in high-income countries</i>	<i>Manufacturers only</i>	<i>Excluding US firms</i>	<i>Firms in mid-income countries</i>	<i>Firms in low-income countries</i>	<i>Without small countries</i>	<i>Without tax havens, UK or Belgium</i>
	$\rho=0.4022$	$\rho=0.3899$	$\rho=0.3856$	$\rho=0.3704$	$\rho=0.8311$	$\rho=0.7921$	$\rho=0.4181$	$\rho=0.4047$
Year	0.65% n.s.	0.54%	0.65%	0.74% n.s.	1.23	3.57%	0.64%	0.68%
Home country	1.12	1.67	2.35	1.45	1.53	4.62	0.80	0.76
Industry	4.51	7.43	5.94	5.04	14.37	25.38	4.96	3.03
Year × Home country	2.98	1.30	5.13	3.61	4.02 n.s.	6.86 n.s.	2.44	3.22
Year × industry	7.31	7.24	8.98	8.29	20.16	37.37	8.93	10.01
Home country × Industry	14.79	19.23	16.51	19.40	15.65	4.06	12.92	10.50
Model	31.36%	37.41	39.56%	38.49%	56.96	81.86%	30.69%	28.20%
Error	68.64	62.59	60.44	61.51	43.04	18.14	69.31	71.80
No. of firms	4551	3806	2332	3505	531	214	4399	3957

Level of significance: All effects significant at $p < 0.05$, with the exception of those marked as insignificant by n.s.

their sensitivity to the broader representation of industries. Home-country–industry interactions are larger than for the main and expanded samples, consistent with the theory that accurate representations of comparative and competitive advantage require sufficient numbers of firms by industry and country. The results also point to structural changes that may have occurred with enhanced integration of the free European trade zone in 1995 and with the introduction of the euro in 1999; the changes may have been so significant that the fixed effects of home country and home-country–industry interaction obscure underlying shifts in competitive and comparative advantage that caused the exit of all firms in particular industries from some countries.

To further test for this possibility, we expanded the sample from the 1296 European firms in the expanded sample to 4060 firms that we could identify through a matching procedure with the Amadeus data set. The results are presented in columns 4–6 of Table 4. Across all three columns, home-country and home-country–industry interactions are significant, although they vary widely in importance. Overall, the results confirm the powerful presence of comparative and competitive advantage in Europe over the decade: domestic firms show strong industry effects; multinational firms show relatively strong home-country–industry interactions (as compared with domestic firms); and the results differ substantially between multinationals and domestic firms.

The differences in the results for the main, expanded, complete and Amadeus-matched

samples point to the need for more research on how European firms adjusted under major shocks to industry and country influences on firm performance during the 1990s. The small numbers of firms in some industries mean that industry effects may approximate firm fixed effects. We interpret the low impact of the industry–country interaction in terms of Porter’s (2000) suggestion that firms may specialize locally in such industries as restaurants and retail food distribution. These industries may be sufficiently fragmented within countries as to lead simultaneously to low participation by diversified firms and constraining industry structures that leave little scope for variation in profitability across geographies, thus generating important industry differences but not home-country–industry interactions.

A fruitful area for further research is an assessment of whether diversification by the European firms covered in both the Amadeus and Global Compustat data sets is associated with this specialization, that is, whether firms select headquarters locations within Europe to reflect the characteristics of countries. In aggregate, industry differences within Europe are even more important to firm performance than in the rest of the world, and these differences tend to be shared by firms from across the continent. While industry–country interactions continue to arise, they are not as important as in the rest of the world.

DISCUSSION

Insights emerging from the research fall into several categories. First, the multinational firms in our



study perform significantly better on average than the domestic firms, even when their degrees of multinationality are low. This finding challenges the idea that multinational firms must acquire experience either through time or across countries before they achieve benefits from their geographic diversification (Goerzen & Beamish, 2003). While broad multinationals perform better on average than narrow multinationals, the performance difference is more significant between domestic firms and multinationals extending even into only one host country. This finding raises questions for further study about the mechanisms by which multinationals achieve performance benefits. Do firms reallocate their activities across countries to take advantage of host-location opportunities, or do they export home-country advantages quickly? How do the sources of home-country advantage shift with the degree of multinationality? Does imprinting from the home country become more or less important as the firm acquires experience across host countries? Do organizational capabilities or institutional experience developed in the home country become more or less relevant as firms internationalize and achieve higher degrees of multinationality?

The second major result is that home-country effects on domestic and multinational performance arise, but have different levels of influence. We theorize that home-country influences may arise from imprinting, organizational learning, or firm experience with certain kinds of institutions in the home country. The opportunities and constraints in home-country influences are more intensive for domestic firms than for multinationals – a result that is compounded by larger and more significant year-home-country interaction effects for domestic firms (at 1.98% of total variation) than for multinationals (at an insignificant 1.15% of total variation). By contrast, multinationals have much larger idiosyncratic firm fixed effects (at 17.68% of total variation) than domestic-only firms (at 10.87% of variation). The pattern suggests that multinationals may use their home-country experience to develop idiosyncratic firm-specific capabilities that are not easily imitated. By contrast, domestic firms may benefit from home-country policies designed to support them, as discussed by Porter (1990) in the theory of the competitive advantage of nations.

A third major result is evidence of competitive and comparative advantage in the performance of both multinationals and domestic firms. Industry

effects on the profitability of domestic firms are greater than for multinationals, but large firm-specific effects more than offset the impact of the lesser industry influence. Multinational firms are, in general, idiosyncratic in performance as compared with their domestic counterparts. This difference may arise because of variation in the distribution of domestic firms across industries, which tend to participate more frequently in “local” businesses such as retailing and restaurants (Porter, 2000). Comparative advantage is evident in the large home-country–industry interactions, the significant home-country effects, and the high firm fixed effects for multinationals: evidence that multinationals exploit individual differences across host-country contexts, a phenomenon rich for subsequent study.

A fourth regularity derives from major changes in Europe during the decade shaped by economic integration and the introduction of the euro. One interesting aspect of European performance is the leveling of performance differences across industries, perhaps because of exit by inefficient firms and the acceptance of inter-country interdependencies, even in critical industries such as food and electricity production. The patterns evident for European companies suggest that firm-specific advantages arose with the implementation of integrative policies, which may have been followed by intra-industry imitation and/or the exit of inefficient firms. Again, further research is required to evaluate how home-country influences persisted as firms expanded across host countries within the region during the period.

Finally, we report strong home-country–industry interaction effects in all models and for all samples, including those that cover manufacturers and that exclude firms headquartered in the United States, small countries, or tax havens. This robust result points directly to differences across industries in the ways in which firms benefit from home-country advantages. In some industries, facets of the home-country environment may support the development or destruction of competitive advantages for domestic firms, while in other industries, home-country characteristics may enhance or diminish comparative advantage for both domestic and multinational firms.

CONCLUSION

This study affirms the importance of home-country effects for the performance of domestic and multinational firms. While multinationals perform



better on average than domestic firms, their performance is not explained by industry effects to the same degree as for domestic firms. Instead, multinationals demonstrate evidence of large firm fixed effects, which arise from idiosyncratic firm-specific differences among them. The strong impact of home-country–industry interactions on both domestic and multinational firms is consistent with the possibility that domestic firms aggressively compete within their home countries while multinationals reallocate activities across countries in response to industry-grounded opportunities that can be defended against imitation.

Further research is required in three major areas to evaluate and assess the mechanisms by which both domestic and multinational firms absorb home-country influences on performance: dynamics, persistence, and home- vs host-country interactions. First, the sources of home-country influence – namely imprinting, the accrual of organizational capabilities and the impact of institutions – are all dynamic processes. How precisely do these influences flow through the corporation as it competes domestically and internationally? For example, how does home-country imprinting influence the evolution of industry structures across geographic areas (Kaplan & Tripsas, 2008)? Does the relative importance of imprinting, organizational capabilities, and institutional experience inherited from the home country shift as internationalization develops? What is the influence of domestic and international competition on decisions about where and how to locate and manage operations? What are the implications for the performance of firms of public policies such as those described by Porter (1990) to support infant industries or to cultivate complementary services?

Second, home-country effects tend to have lower intertemporal variation than industry effects (i.e., year–home–country effects are lower in both significance and importance than year–industry effects). What are the sources of this persistence in home-country effects? Do imprinting, organizational capability and institutional variation flow persistently from home countries to influence firm performance over time? Is the persistence of high performance by country greater than the persistence of low performance? What kinds of policies are required to change or modify home-country influences, given their high levels of persistence?

Finally, the results of this study, together with those of Makino et al. (2004), point to opportunities for evaluating the interplay between home-

and host-country influences in the decomposition of variance. While many studies in international business have explored specific aspects of home-country influence in host countries, cross-sectional evidence for large numbers of home and host countries has not yet developed. The results of this study suggest that a detailed evaluation of context across home- and host-country pairs would reveal important insights about how firms profit from multinationality.

In sum, the results of this study affirm the assertion that industry effects in single-country studies should be interpreted carefully as rooted in the context of the country environment, and also point to the importance of the home country to multinational performance. Firms may face a trade-off in becoming multinational. They may suffer from less protection afforded by the home-country environment and greater industry-level competition, but gain a broader scope for deploying idiosyncratic, firm-specific advantages through mechanisms enhanced by home-country experience.

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NOTES

¹This assumption may be crude in some instances, such as for firms headquartered in countries known to be tax havens, and thus we test for the robustness of our findings as a result.

²In the main sample we study 1562 firms headquartered in 15 countries between 1993 and 2002. In an “extended sample” we examine 1906 firms headquartered in 15 countries between 1993 and 2003: in this sample we have insufficient information to estimate directly the importance of firm effects, although we can obtain unbiased estimates of the importance of home-country, industry, and other effects. The purpose of this sample is to explore how our results are affected by the inclusion of all of the



firms for which we have information on multinationality. Third, in a “complete sample” we study 4551 firms headquartered in 43 countries between 1993 and 2003. For the analysis of this sample we cannot assess either the degree of firm multinationality or, directly, firm fixed effects. The analysis affirms that the relative importances of home country and industry are not driven by the smaller number of countries and industries in the prior two samples.

³Home-country advantages may also be perpetuated as domestic companies benefit from institutional developments that flow back through MNEs into the home-country environment, such as occurred after Nokia’s international successes led to extensive investments in the communications infrastructure in Finland that benefitted other companies headquartered in Finland.

⁴Errors associated with this assumption are likely to dilute home-country effects in the empirical analysis, and thus bias against the finding that home-country effects are important. Nonetheless, we test for the robustness to this assumption in two ways: first, in a supplementary analysis that excludes firms headquartered in the “tax haven” countries of Bermuda, the Cayman Islands and Hong Kong; and, second, by evaluating the importance of home-country effects separately for domestic-only firms and MNEs.

⁵In an additional test we complemented the main results for European firms, which rely on the *Directory of Corporate Affiliates*, with results that rely on the Amadeus data set to assess the degree of firm multinationality.

⁶This exclusion was implemented by McGahan and Porter (1997) to ensure that the results are not affected by temporary entities that were established for the dispensation of assets and other transient phenomena. The main results are robust to the inclusion of these firms.

⁷Rajan and Zingales (1995) note that small firms may be particularly prevalent in developing countries, which, unfortunately, are not well represented in our data set. Nonetheless, to ensure that our results are not biased by the exclusion of these very small firms, we reintroduced them into the data set and replicated our analysis. While total variance increased (thereby depressing the explanatory power of all types of effects), the headquarters country, industry, and country–industry effects all were significant. Country–industry interactions were even more significant relative to country and industry effects than in the main analysis.

⁸Amadeus provides an alternative mechanism for assessing the degree of multinationality, as it contains

information on the number of subsidiaries of firms headquartered in the countries of Europe. For the analysis using Amadeus (accessed 18 October 2007) we performed a similar matching procedure for the firms in the Compustat global data set as used to obtain our “complete” sample. We were able to match 42% of the total of 9667 records in the Compustat data set for Europe with Amadeus firms. Of these, 84% were records of firms (identified as “ultimate parents” in Amadeus) that reported on more than one subsidiary. The average number of subsidiaries for matched firms that had subsidiaries was 19.

⁹Because our dependent variable is based on accounting reports, it is possible that differences in accounting policy in part explain our results. Accounting rule differences could contribute to our findings, particularly if accounting rules across industries vary systematically by country. For example, suppose that every country in the world employs a restriction that prevents pharmaceutical companies from capitalizing R&D. This policy would then generate a worldwide industry effect for pharmaceuticals. Suppose alternatively that Finland requires all companies to expense stock options but the US does not. Then we might expect to see differential country effects for Finland the US, all else equal. Accounting-rule differences generate country–industry effects only if an accounting policy is uniquely targeted by a particular country at a specific industry. For example, country–industry effects for Finland in pharmaceuticals would arise if Finland allowed pharmaceutical companies to recognize future revenue from the sale of “annuity drugs”, and if this policy was not adopted by other countries. To ensure that accounting results are not driving our main results, we replicate them in a sample that includes only manufacturers, for which accounting anomalies are thought to be low (Raynor, 1999).

¹⁰We also conducted sensitivity analyses on the expanded and complete samples to ensure that the conclusions of the study were not influenced by the reduced reporting for 2003. While goodness-of-fit dropped on some measures, the results were not affected measurably, and the conclusions were robust.

¹¹In the complete sample the countries hosting the best-performing firms are Greece, Turkey, and South Africa. Those with the lowest-performing firms are Luxembourg, Argentina, and the Cayman Islands.

¹²Our main analysis of the complete sample excludes firms from Namibia and Mauritius, because these countries hosted only one or two industries. As Panel D of Table 1 indicates, several additional countries (Argentina, Colombia, and Luxembourg) hosted just a few countries and industries. This means



that countries such as the US, Japan, and the UK, for which we have information on at least several hundred firms, are compared with countries with performance effects that are dominated by a small number of companies. To ensure that our results are not skewed by the inclusion of the less-populated countries, we replicated our analysis on only those countries for which we had information on more than five industries, and found consistent results.

¹³We conducted this analysis to ensure that the results were not affected by accounting anomalies associated with either tax advantages or the recent wave of corporate relocations for financial or regulatory reasons to the United Kingdom and Belgium from other areas of Europe. We also obtained consistent results in models that exclude only Bermuda, the Cayman Islands, and Hong Kong.

REFERENCES

- Berry, H., & Sakakibara, M. 2008. Resource accumulation and overseas expansion by Japanese multinationals. *Journal of Economic Behavior and Organization*, 65(2): 277–302.
- Bowman, E. H., & Helfat, C. E. 2001. Does corporate strategy matter? *Strategic Management Journal*, 22(1): 1–23.
- Brito, L. A., & Vasconcelos, F. C. 2004. Performance variance components: Introducing country effects. Paper presented at the meeting of the Academy of Management, BPS Division, New Orleans.
- Brito, L. A., & Vasconcelos, F. C. 2005. Variability of firm growth rates: A variance components analysis. Paper presented at the meeting of the Academy of Management, BPS Division, Honolulu.
- Brouthers, L. 1998. Explaining MNC profitability: Country-specific, industry-specific, and country–industry interactive influences. *Management International Review*, 38(4): 345–361.
- Chang, S. J., & Hong, J. 2002. How much does the business group matter in Korea? *Strategic Management Journal*, 23(3): 265–274.
- Christmann, P., Day, D. L., & Yip, D. 1999. The relative influence of country conditions, industry structure and business strategy on multinational corporation subsidiary performance. *Journal of International Management*, 5(4): 241–265.
- Delios, A., & Henisz, W. 2003. Political hazards, experience, and sequential entry strategies: The international expansion of Japanese firms, 1980–1998. *Strategic Management Journal*, 24(11): 1153–1164.
- Denzau, A. T., & North, D. C. 1994. Shared mental models: Ideologies and institutions. *Kyklos*, 47(1): 3–31.
- Flores, R. G., & Aguilera, R. V. 2007. Globalization and location choice: An analysis of US multinational firms in 1980 and 2000. *Journal of International Business Studies*, 38(7): 1187–1210.
- Furman, J. 2001. *Does industry matters differently in different places? A comparison of industry, corporate parent, and business segment effects in four OECD countries*, Unpublished Chapter of PhD Dissertation, Massachusetts Institute of Technology, Cambridge, MA.
- Ghemawat, P. 1991. *Commitment: The dynamic of strategy*. New York: Free Press.
- Ghemawat, P. 2003. Semiglobalization and international business strategy. *Journal of International Business Studies*, 34(2): 138–152.
- Ghemawat, P. 2007. *Redefining global strategy: Crossing borders in a world where differences still matter*. Boston, MA: Harvard Business School Press.
- Goerzen, A., & Beamish, P. W. 2003. Geographic scope and multinational enterprise performance. *Strategic Management Journal*, 24(13): 1289–1306.
- Guillen, M. F. 1994. *Models of management: Work, authority and organization in a comparative perspective*. Chicago: University of Chicago Press.
- Harzing, A.-W., & Sorge, A. M. 2003. The relative impact of country-of-origin and universal contingencies on internationalization strategies and corporate control in multinational enterprises: World-wide and European perspectives. *Organization Studies*, 24(2): 187–214.
- Henisz, W. J. 2000. The institutional environment for economic growth. *Economics and Politics*, 12(1): 1–31.
- Henisz, W. J. 2006. Political constraint index (POLCON) dataset. www-management.wharton.upenn.edu/henisz. Accessed October and November 2006.
- Henisz, W. J., & Delios, A. 2001. Uncertainty, imitation and plant location: Japanese multinational corporations, 1990–1996. *Administrative Science Quarterly*, 46(3): 443–475.
- Henisz, W. J., & Delios, A. 2002. Learning about the institutional environment. *New Institutionalism in Strategic Management*, 19(3): 339–372.
- Holburn, G. L. F., & Zelner, B. A. 2008. Policy risk, political capabilities and international investment strategy: Evidence from the global electric power industry. Working Paper, 30 May.
- Jacobsen, R. 1988. The persistence of abnormal returns. *Strategic Management Journal*, 9(5): 415–430.
- Kaplan, S. 2008. Framing contests: Strategy making under uncertainty. *Organization Science*, 19(5): 729–752.
- Kaplan, S., & Tripsas, M. 2008. Thinking about technology: Applying a cognitive lens to technical change. *Research Policy*, 37(5): 790–805.
- Khanna, T., & Rivkin, J. W. 2001. Estimating the performance effects of business groups in emerging markets. *Strategic Management Journal*, 22(1): 45–74.
- Kriauciunas, A., & Kale, P. 2006. The impact of socialist imprinting and search on resource change: A study of firms in Lithuania. *Strategic Management Journal*, 27(7): 659–679.
- Kyle, M. K. 2007. Strategic responses to parallel trade. NBER Working Paper W12968. <http://ssrn.com/abstract=971602>.
- LaPorta, R. 2006. Legal Systems dataset. <http://mba.tuck.dartmouth.edu/pages/faculty/rafael.laporta/publications.html>
- LaPorta, R., Lopez-de-Silanes, F., Schleifer, A., & Vishny, R. 1997. Legal determinants of external finance. *Journal of Finance*, 52(3): 1131–1150.
- LaPorta, R., Lopez-de-Silanes, F., Pop-Eleches, C., & Schleifer, A. 2004. Judicial checks and balances. *Journal of Political Economy*, 112(2): 445–470.
- LeCraw, D. J. 1993. Outward direct investment by Indonesian firms: Motivation and effects. *Journal of International Business Studies*, 24(3): 589–600.
- Makino, S., Isobe, T., & Chan, C. 2004. Does country matter? *Strategic Management Journal*, 25(10): 1027–1043.
- McGahan, A. 1999. The performance of US corporations, 1981–1994. *Journal of Industrial Economics*, 47(4): 373–398.
- McGahan, A., & Porter, M. 1997. How much does industry matter, really? *Strategic Management Journal*, 18(Summer Special Issue): 15–30.



- McGahan, A., & Porter, M. 2002. What do we know about variance in accounting profitability? *Management Science*, 48(7): 834–851.
- McGahan, A., & Porter, M. 2003. The emergence and sustainability of abnormal profits. *Strategic Organization*, 1(1): 79–108.
- McGahan, A., & Porter, M. 2005. Comment on “Industry corporate and business-segment effects and business performance: A non-parametric approach” by Ruefli and Wiggins. *Strategic Management Journal*, 26(9): 873–880.
- Morck, R., Yeung, B., & Yu, W. 2000. The information content of stock markets: Why do emerging markets have synchronous stock price movements? *Journal of Financial Economics*, 58(1): 215–260.
- North, D. C. 1990. *Institutions, institutional change and economic performance*. New York: Cambridge University Press.
- Porter, M. E. 1990. *The competitive advantage of nations*. New York: Free Press.
- Porter, M. E. 2000. Location, competition, and economic development: Local clusters in a global economy. *Economic Development Quarterly*, 14(1): 15–34.
- Rajan, R., & Zingales, L. 1995. What do we know about capital structure? Some evidence from international data. *Journal of Finance*, 50(5): 1421–1460.
- Raynor, M. 1999. *The administrative implications of creating and exercising real options through corporate diversification*, Unpublished Dissertation, Harvard Business School, Boston, MA.
- Rumelt, R. P. 1991. How much does industry matter? *Strategic Management Journal*, 12(3): 167–185.
- Schmalensee, R. 1985. Do markets differ much? *American Economic Review*, 75(3): 341–351.
- Searle, S. R. 1971. *Linear models*. New York: John Wiley & Sons.
- Stinchcombe, A. L. 1965. Organizations and social structure. In J. March (Ed.), *Handbook of organization*: 153–193. Chicago: Rand-McNally.
- Sutton, J. 1991. *Sunk costs and market structure: Price competition, advertising, and the evolution of concentration*. Cambridge, MA: MIT Press.
- Tallman, S., & Li, J. 1996. Effects of international diversity and product diversity on the performance of multinational firms. *Academy of Management Journal*, 39(1): 179–196.
- Walsh, J. P. 1995. Managerial and organizational cognition: Notes from a trip down memory lane. *Organization Science*, 6(3): 280–321.
- Waring, G. F. 1996. Industry differences in the persistence of firm-specific returns. *American Economic Review*, 85(5): 1253–1265.
- Weick, K. E. 1995. *Sense-making in organizations*. Thousand Oaks, CA: Sage.
- Wells Jr., L. T. 1993. Mobile exporters: New foreign investors in East Asia. In K. A. Froot (Ed.), *Foreign direct investment*: 173–191. Chicago: University of Chicago Press.
- Wells Jr., L. T. 1994. Foreign direct investment. In D. L. Lindauer & M. Roemer (Eds.), *Asia and Africa: Legacies and opportunities in development*. San Francisco CA: ICS Press.
- Wright, M., Filatotchev, I., Hoskisson, R., & Peng, M. 2005. Strategy research in emerging economies: Challenging the conventional wisdom. *Journal of Management Studies*, 42(1): 1–33.
- Yip, G. S. 1991. A performance comparison of continental and national businesses in Europe. *International Marketing Review*, 8(2): 31–39.

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