



# Product and geographic scope changes of multinational enterprises in response to international competition

Thomas Hutzschenreuter and  
Florian Gröne

WHU Otto Beisheim School of Management,  
Vallendar, Germany

**Correspondence:**

T Hutzschenreuter, WHU Otto Beisheim  
School of Management, Burgplatz 2,  
Vallendar 56179, Germany.  
Tel: + 49 261 6509 200;  
Fax: + 49 261 6509 209;  
E-mail: th@whu.edu

**Abstract**

What happens when multinational enterprises (MNEs) face competition in their own home market from imports or through foreign direct investment (FDI)? We provide a differentiated assessment of the influence of these two types of foreign competition on the product and geographic scope of MNEs. We apply the awareness–motivation–capability framework to international business (IB), hypothesizing that an increase or decrease in scope depends on the motivation and ability of an incumbent firm to respond to an incursion into its home market, and on the objectives and commitment of the firm that is entering that market. We assessed the scope changes of 407 large US firms between 1987 and 2003, and found that increasing imports led to scope reduction, while increasing FDI had the opposite effect. Our analysis of 95 large German firms for the same period led to similar, but somewhat less consistent, results.

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## INTRODUCTION

Ever-increasing international trade and investment activity has meant a “clear and startling trend toward global competition” (Kogut, 1984: 151), presenting a growing challenge to multinational enterprises (MNEs) in their home countries (Sachs, Warner, Aslund, & Fischer, 1995). Such competition from abroad comes from imports or from foreign direct investment (FDI). What determines whether, and to what extent, large MNEs respond to foreign competition? Do they make adjustments to their product and geographic scope? Are they likely to react differently when the challenge comes from imports than if it comes from FDI?

Industrial organization (IO), the resource-based view of the firm (RBV), and transaction cost economics (Brouthers & Hennart, 2007; Sharma & Erramilli, 2004) have provided valuable perspectives on firm scope, industry structure, and the implications of foreign competition for competitive advantage. Competitive dynamics theory, a potential complement to the preceding theory strand, has emphasized attack and response actions, competitive signaling, and multi-point competition (Chen, Su, & Tsai, 2007; Ketchen, Snow, & Hoover, 2004a; Young, Smith, Grimm, & Simon, 2000). While competitive dynamics theory is relevant to

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the research questions at hand, it has seldom been applied at the international level (see Haveman & Nonnemaker, 2000; Yu & Cannella, 2007, for exceptions) and has not been used to investigate how competition affects the scope of the firm.

Research has provided a solid understanding of the different causes and effects of international trade and investment activity at the industry and country levels (Driffield & Love, 2007; Ghosal, 2002). Studies of US firms, for example, found a negative relationship between competition from imports and the extent of firm diversification, and a positive relationship between competition from imports and geographic scope and product scope relatedness (Bowen & Wiersema, 2005; Liu, 2006; Wiersema & Bowen, 2008). Plant-level studies show that Canadian firms refocus product scope in response to lower Canadian import tariffs (Baldwin & Gu, 2005). Other studies report patterns of industry refocusing and geographic market expansion, as well as a geographic concentration of production, following the implementation of the Maastricht treaty in Europe (Meyer, 2006; Rondi, Sleuwaegen, & Vannoni, 2003; Rondi & Vannoni, 2005). Overall, this literature has made considerable progress in capturing important aspects of foreign competition, including imports, tariffs, and policy-driven breakthroughs such as the European single market. But, “relevant aspects of international competition include more than international trade” (Caves, 1980: 114). Since FDI requires further investigation (Bowen & Wiersema, 2005), it seems logical that the next step be a study of the effects of FDI side by side with other aspects of foreign competition. A differentiated view on foreign competition may reveal whether different types of competition, notably imports and FDI, have similar or divergent impacts on MNE scope. Important strides have also been made toward a differentiated treatment of firm scope and its distinct product (e.g., Bowen & Wiersema, 2005; Liu, 2006) and geographic dimensions (e.g., Meyer, 2006; Rondi & Vannoni, 2005; Wiersema & Bowen, 2008). Combining the two research strands promises a more comprehensive view on causalities.

Thus we take a differentiated multidimensional view that links IB, competitive dynamics, and firm scope theory. In particular, we explore whether the competitive responses of domestic firms are different when faced with foreign competition from imports as opposed to FDI, and how product and geographic scope are altered, depending on the type of foreign attack. We focus particularly on

dynamic competitive actions and reactions, which promises to yield insights that are complementary to extant work with a stronger emphasis on longer-term globalization trends (e.g., Wiersema & Bowen, 2005, 2008). We begin by outlining the theoretical foundations of product and geographic scope in light of changing foreign competition. We then introduce an awareness–motivation–capability (AMC) perspective (Yu & Cannella, 2007) on foreign attack and incumbent response, and develop hypotheses on the influence of foreign competition on MNE scope. We test our hypotheses with panel data from large US and German firms, and conclude with a discussion of the implications of our results, the limitations of our study, and finally suggestions for further research.

## BACKGROUND

### Foreign Competition

In the pre-globalization era, cross-border economic activity was focused primarily on imports and motivated by comparative advantage (Porter, 1990). Today, the globalization of markets is forcing firms to operate as if the world were one large marketplace (Porter, 1986; Wiersema & Bowen, 2008), shifting focus from supply-side towards demand-side considerations in the face of increasingly homogeneous buyer preferences (Levitt, 1983). In addition to technological progress (Dunning, 1998a), declining transportation and communication costs (Wiersema & Bowen, 2008), new capabilities for coordinating global business networks (Buckley & Ghauri, 2004; Kogut, 1989), and falling trade and FDI barriers have driven cross-border activity (Sachs et al., 1995). Lower structural barriers to cross-border competition increasingly level the comparative advantage playing field (Buckley & Ghauri, 2004; Conn & Yip, 1997). As a consequence, globalization drivers have substantially eroded the effectiveness of barriers to competition, causing a shift toward idiosyncratic firm competitive capabilities.

Foreign competition, defined as MNEs from abroad engaging in cross-border activities in competition with domestic firms in their home market, has been shown to erode margins, drive industry productivity, and accelerate the quest for innovation and differentiation (e.g., Baldwin & Gu, 2004; Driffield & Love, 2007). Foreign competitors access foreign markets through various modes, including trade, greenfield investments, acquisitions, joint ventures, and licensing or franchising (Brouthers &



Hennart, 2007; Sharma & Erramilli, 2004), depending on their strategic motivations and capabilities, and on target market characteristics and institutional environments.

Imports and FDI, two main “transmission mechanisms of change across country borders” (Buckley & Ghauri, 2004: 83), are characterized by different levels of strategic commitment (Ghemawat, 1991; Johanson & Vahlne, 1990). FDIs that are significant in size, specific to a purpose, and highly integrated into multinational business networks, imply high commitment (Holm, Eriksson, & Johanson, 1999; Johanson & Vahlne, 2003) and sunk costs that lock firms into the continued use of assets (Brouthers & Hennart, 2007; Luo, 2004). As argued by contestability theorists (Cairns & Mahabir, 1988; Shepherd, 1984), sunk costs prevent “hit and run” entry. FDI can be seen to represent the entry of new firms or unrelated existing firms, which both need time and sunk costs to build up capacity, implying high commitment (Wegberg & van Witteloostuijn, 1992). A local operating base in the target market allows them to make up for geographical distance liabilities, and enables access to country-specific supplies, two advantages forgone with imports (Ghemawat, 2001; Zaheer, 1995). Because of these intrinsic differences, we refine our definition as follows: MNEs based abroad that export to a target market in competition with domestic firms in that market represent abroad-based foreign competition (AFC). Conversely, MNEs that enter a target market through FDI represent locally established foreign competition (LFC).

### Scope Changes

MNE scope research is concerned with firm boundary dimensions, including product and geographic scope. In the most basic of terms, product scope is defined by the relative importance of core and non-core business activities across product lines or industries (Robins & Wiersema, 1995; Rumelt, 1974). Geographic scope represents the relative importance of foreign activities (Goerzen & Beamish, 2003; Hitt, Hoskisson, & Kim, 1997). When an MNE is faced with competition it may take no action, or make scope adaptations. The MNE can respond directly to attacks either by reallocating resources to its threatened core products or markets, or by divesting and leaving the field open to the competitor. Alternatively, it can respond indirectly by expanding its scope into new businesses or geographies. Eventually, the response

depends on the perceived level of the immediate threat – principally, how the challenged MNE gauges the motivation and capabilities of the competitor, and its own to respond.

## THEORY AND HYPOTHESES

### Industry Characteristics and Foreign Competition Dynamics

Industries exhibit unique structures that have traditionally been regarded as relatively stable (Porter, 1990). Structural changes in industries, however, create genuine opportunities for foreign competitors. Hence the degree to which industries are subject to foreign competition depends on their idiosyncratic characteristics, such as market and cost conditions or government policies (Yip, 1989). Levitt (1983), for example, has forcefully argued that, over time, market opportunities may arise through increasing standardization of customer needs in different countries, enabling firms to serve a larger number of markets. Broader market activity, in turn, provides firms with the opportunity to realize economies of scale and scope, and may accelerate the accumulation of learning and experience (Contractor, Kundu, & Hsu, 2003; Kobrin, 1991; Kogut, 1984). Similarly, technology breakthroughs may eliminate long-standing comparative advantages, shifting cross-border competition momentum (Dunning, 1998a). Moreover, the elimination of trade and investment barriers may suddenly remove industry constraints to trade or international investment activity (Chisik, 2003; Yip, 1989). In sum, owing to their underlying structural differences, industries differ in terms of their attractiveness and accessibility to foreign competition, and thus are likely to be subject to different types of foreign competition momentum. For example, industries facing homogeneous customer needs, falling trade barriers, and a loss of comparative advantage are likely to show increased import competition. In contrast, industries characterized by strong and diverse local customer preferences, falling investment barriers, and an increase in comparative advantage are likely to encourage foreign entry through FDI. While the analysis of such structural characteristics is important in explaining thrusts and mode of foreign expansion – questions that have received broad treatment in the IB literature (Barkema & Drogendijk, 2007; Hutzschenreuter, Pedersen, & Volberda, 2007) – the present analysis focuses further down the chain of causality: building on the premise that

different industries are likely to be subject to different types of foreign competition dynamics, our objective is to explore whether domestic firms apply different competitive moves when confronted with import and FDI dynamics. To do so, we build on the AMC framework (Chen et al., 2007).

### **The Awareness–Motivation–Capability Framework**

The AMC framework identifies “three drivers of inter-firm rivalry” (Chen et al., 2007: 101) that explain the dynamics of competitive action and response (Chen, 1996; Smith, Ferrier, & Ndofor, 2001). For competitive rivalry to take place, the incumbent must first be aware of the attack. This means that competitive moves must be sufficiently large and generate signals that are noticeable to incumbents (Chen, Smith, & Grimm, 1992; Smith & Grimm, 1991). The motivation that actors have to attack or defend depends on the potential payoffs from the contested product or market, weighed against the severity and expected duration of the attack, and the strategic objectives on both sides (Chen et al., 1992; Ferrier, 2001; Porter, 1985). Finally, the capability that actors have to attack or defend depends on their resource endowments and the distance liabilities, commitment requirements, and possible implementation difficulties of their competitive moves (Chen, 1996; Chen et al., 2007; Smith, Grimm, Gannon, & Chen, 1991). In short, whether an incumbent does, or does not, respond to an attack hinges on its awareness of the attack, its motivation, and its capability to respond.

### **Attack Characteristics in International Competition**

A strategy based on imports can be implemented in smaller increments than one based on FDI (Barkema & Drogendijk, 2007), which calls for minimum efficient investment scale levels, but both stimulate competitive rivalry more profoundly than purely domestic competition does. Whether it be by imports or FDI, it is unlikely that the cross-border attack will go unnoticed by incumbent firms, as MNEs are usually quite large.<sup>1</sup> We assume foreign competition dynamics to be highly visible (Chen et al., 1992; Smith & Grimm, 1991),<sup>2</sup> and so also assume that domestic firms are aware of foreign competition, even if there are no signs of a competitive response.

There are several key differences between the attack motivation of a firm entering a market through imports, and one entering through FDI.

While imports can tap into domestic demand, they cannot be used to access local factors of production or local knowledge (Dunning, 1995). Executed from an existing operational base situated abroad, there are comparatively low incremental investment requirements, and more flexibility as decisions can be reversed to some extent, and markets can be added, removed or exchanged relatively easily (Chen et al., 1992; Smith & Grimm, 1991). In the case of FDI, on the other hand, the foreign firm is looking for both a sales outlet and a source of competitive-advantage-enhancing inputs, for example, local resources or knowledge. Significant investment and implementation steps, restructuring, and integration into the foreign firm’s own international value chain are long-term efforts. Reversing comes at a significant cost (Chen & MacMillan, 1992; Smith & Grimm, 1991).

AFC and LFC attack modes also differ in terms of their innate competitive capabilities. Foreign firms that enter a market through imports are vulnerable to distance liabilities (Miller & Eden, 2006; Zaheer, 1995). They lack first-hand market knowledge, and do not have direct commercial and institutional relationships locally. They are at a disadvantage when it comes to transportation, communication, and coordination – all of which adds to their costs and hinders their responsiveness to local market events. Finally, they are not on the ground to learn about cultural differences, customer behavior, and institutional conditions, which weighs on their ability to compete (Almor, Hashai, & Hirsch, 2006; Ghemawat, 2001; Yu & Cannella, 2007).

In contrast, firms that enter a market through FDI are able to develop capabilities that allow them to contest the target market. Their strategic investments are significant, and the complexity of coordinating and integrating operations can be daunting (Chen et al., 1992; Rugman & Verbeke, 2001). However, once operations are established, liabilities of distance decline, and local knowledge and resources are gained. Furthermore, FDIs can narrow the tacit distance gap, that is, the difference in information, culture, and institutions, *vis-à-vis* incumbent competitors (Peng, Lee, & Wang, 2005; Yu & Cannella, 2007).

### **Incumbent Response Implications**

For the vast majority of MNEs, their domestic market is the most important in terms of sales and operations (Rondi et al., 2003; Rugman & Verbeke, 2004). Incumbents allocate resources to building their home market business portfolio, and



are highly committed to protecting their investment. They are likely to defend domestic market power and market share. Competitive aggressiveness has been shown to improve the chances of a firm maintaining or improving its market position (Ferrier, Fhionnlaoich, Smith, & Grimm, 2002). Thus incumbents would be expected to be motivated to respond to threats to their home market, and to do so aggressively.

AFC targets output markets, and does not threaten the domestic supply base of incumbents, so there is an incentive for incumbents to fortify and further leverage scale economies, location advantages, and/or resource positions, especially if they are dissimilar to those of foreign rivals (Chen, 1996; Dunning, 1998b; Young et al., 2000). Incumbents do not have distance liabilities, and may enjoy advantages from access to location-specific resources, customers, knowledge, or strategic assets (Rugman & Verbeke, 2001; Yu & Cannella, 2007; Zaheer, 1995).

AFC challenges can be mounted with less of a commitment. Hence incumbents would expect their challenger to see reversing as a viable option in light of the lower set-up costs of exporting as opposed to FDI. This motivates incumbents to retaliate directly to challenges in order to keep competitors from gaining market traction (Chen et al., 1992; Porter, 1985). At the same time managers will try to avoid incurring significant costs by building on already existing resources and capabilities, focusing on their own markets where they are the most competitive and can command dynamic capabilities to coordinate immediate response actions (Sharma & Erramilli, 2004; Yu & Cannella, 2007).

The challenges posed by FDI are quite different. A firm entering the market through FDI not only threatens demand for an incumbent's product, but also competes on the supply side. Location benefits and favorable access to local resources are no longer weighted in favor of incumbents (Ketchen & Shook, 1996; Young et al., 2000), and so they have less of an incentive to fortify and exploit existing resource positions. On the contrary, such an attack gives impetus to the exploration of new differentiating resources that might rejuvenate the corporate portfolio (Stopford & Baden-Fuller, 1990; Zook, 2007).

Assuming more determination on the part of its competitor due to the sunk costs associated with FDI, an incumbent may be hesitant to try to meet the competition head-on, and hope rather to be

able to sustain rent-earning potential while avoiding conflict escalation (Chen et al., 1992; Young et al., 2000). There are so many strategic options open to firms entering through FDI that incumbents cannot predict with any confidence what the challenger is likely to do. In essence, incumbents cannot plan for, but rather must respond to, the attack (Chen et al., 1992): in other words, "commitment can deter retaliation" (Porter, 1980: 101). Hence incumbents have a weaker capability in contesting LFC challenges than AFC challenges.

The result of direct retaliation may be a fierce rivalry between deeply entrenched MNEs that, in the end, significantly reduces industry attractiveness and rent-earning potential (Chen, 1996). Consequently, an incumbent may conclude that a live-and-let-live stance is preferable in terms of the ongoing exploitation of the contested industries and resources (Baum & Korn, 1999; Haveman & Nonnemaker, 2000), and so turn to exploring strategic resources and long-term opportunities outside the contested home market and core product (Baum & Korn, 1996; van Witteloostuijn & Wegberg, 1992; Zook, 2007). Another indirect response option is to engage in parallel behavior, an "if you can't beat them, join them" stance, by which an incumbent contests the foreign competitor's position in multiple markets, creating mutual forbearance (Gimeno, 1999; Haveman & Nonnemaker, 2000; Knickerbocker, 1973). We summarize these applications of AMC in Table 1.

## HYPOTHESES

### Abroad-Based Foreign Competition Attack and Incumbent Scope Change Response

When a foreign firm challenges the core business of an incumbent through imports, the competitive advantage of the incumbent is at stake. Following the preceding reasoning, incumbents attempt to check foreign competition by leveraging local scale economies, enhancing product differentiation through specialization, exploiting synergies between product segments, applying price pressure, raising entry barriers, or simply by signaling their willingness to engage and retaliate (Ferrier, Smith, & Grimm, 1999; Stopford & Baden-Fuller, 1990; Yu & Cannella, 2007).

While peripheral product lines do not represent the locus of the current competitive advantage, strategic assets, and capabilities that determine MNE market share and performance, they may represent attempts by the MNE to redirect their

business, and so can be very important in terms of future competitive advantage (Baden-Fuller & Volberda, 1997; Helfat & Eisenhardt, 2004). Nevertheless, if the present livelihood of an MNE is at stake, and there is a realistic chance that a direct response will succeed, peripheral products are likely to be sacrificed, or at least de-emphasized, in a bid for internal consistency, complexity reduction, and strategic flexibility (Nutt, 2004; Sirmon, Hitt, & Ireland, 2007; Uhlenbruck, Meyer, & Hitt, 2003). Whereas product scope expansion, in contrast, would unintentionally distract managerial attention from core segments, low-commitment attacks imply a valuable defendability of core segments. In essence, managers will redirect resources away from peripheral activities toward core businesses, effectively reducing product scope in favor of increasing product portfolio coherence and scale efficiency (Liu, 2006; Meyer, 2006; Teece, Rumelt, Dosi, & Winter, 1994).

A similar argument can be made regarding geographic scope. Imports entering incumbents' home base pose a significant risk. Incumbents may strengthen their domestic market position through local product differentiation or by consolidating and concentrating their market footprint in order to exploit scale economies. Indeed, there is evidence that when MNEs are faced with competition from abroad, they seek to integrate their formerly loosely tied international activities more deeply with their home market as the natural anchor (UNCTAD, 1993, 2002). Geographic concentration

and home-market-centric or regional integration can help incumbents defend and increase market share and scale efficiency, enhance the domestic location advantages that they enjoy over their challengers from abroad, and also reduce overall levels of complexity that are part and parcel of highly dispersed geographic portfolios (Rugman & Verbeke, 2001; Stopford & Baden-Fuller, 1990). It is important to note that geographic refocusing does not necessarily mean that foreign market presence will be given up. It merely suggests greater concentration of resources and sales efforts in the incumbent's home markets or regions through redirection of investments, which will inevitably result in a lower relative weight for foreign operations (Rondi et al., 2003). In fact, expansion is another possible option for incumbents. Geographic scope change may mean relocating activities abroad to seek low-factor-cost efficiencies or to pursue parallel behavior strategies, staging a counter-attack on foreign competitors in their respective home market (Dunning, 1995; Knickerbocker, 1973). However, geographic expansion would imply an asymmetrical, indirect response to low-commitment AFC challenges as it entails strategic commitment and significant investment, and implementation is lengthy. Responding to a direct yet reversible challenge by engaging in longer-term investments into lower factor-cost operations abroad will not provide the desired immediate response. Geographic expansion has been seen as a means of lowering competitive barriers in the

**Table 1** Summary of AMC propositions

	<i>Abroad-based foreign competition (AFC)</i>	<i>Locally established foreign competition (LFC)</i>
<i>Attack</i>		
Awareness	Large, visible attackers Competitive actions in small increments	Large, visible attackers Competitive actions in large increments
Motivation	Output-focused More tactical than strategic	Output- and/or input-focused More strategic than tactical
Capability	Distance liabilities and location disadvantages Simple implementation, shorter-term commitment (i.e., higher agility, reversibility)	Decreased distance liabilities and location disadvantages Difficult implementation, longer-term commitment (i.e., low agility, reversibility)
<i>Response</i>		
Motivation	Contested output markets Attack reversibility Defense, exploitation of existing competitive advantage	Contested input and/or output markets Attack irreversibility Exploitation of existing, exploration of new source of competitive advantage
Capability	Stronger relative competitive position in domestic market Ability to respond directly	Weaker relative competitive position in domestic market Ability to respond indirectly



home market, and of decreasing incumbent commitment to the home market, which will raise attacker expectations that incumbents will not retaliate, but accommodate (van Witteloostuijn & Wegberg, 1992). In fact, responding to AFC attacks from their own domestic competitive arena gives incumbents the advantages of speed and agility (Yu & Cannella, 2007). Therefore we propose:

**Hypothesis 1:** When exposed to increasing competition from imports in their home markets, multinational enterprises will reduce their product scope.

**Hypothesis 2:** When exposed to increasing competition from imports in their home markets, multinational enterprises will reduce their geographic scope.

#### **Locally Established Foreign Competition Attack and Incumbent Scope Change Response**

FDI locks a firm into a new domestic competitive arena, and if there is failure or retreat, it will mean the loss of sunk costs, and significant new costs associated with exit barriers (Brouthers & Hennart, 2007; Ghemawat & del Sol, 1998; Luo, 2004). Foreign competitors will commit significant resources to such ventures only if they are confident that the enterprise will succeed. This depends in part on incumbents not being able to mount an effective defensive strategy. FDI market entry signals a credible risk to incumbents, and LFC momentum shows that domestic market power was not a sufficiently effective deterrent. As the competitor becomes more established, incumbent capability weakens. The incumbent no longer has exclusive access to local inputs, and the distance liability gap narrows. At the same time, the competitor becomes more committed and entrenched through local investment. Intensified competitive rivalry makes the industry less attractive in terms of local output markets. While this will mean that the incumbent will be less motivated to engage in competitive rivalry, it will not mean that it will be willing to abandon its present product focus altogether. Rather, it is likely to seek and exploit a profitable niche or sub-segment in the industry that it believes will secure returns, but will also check the escalation in rivalry. At the same time, incumbents can be expected to re-balance their product portfolio by engaging in long-term investments in promising new products that complement

disputed product lines, effectively expanding product scope while lowering relatedness (Hopkins, 1991; Sirmon et al., 2007; Uhlenbruck et al., 2003). This allows incumbents to explore intertemporal economies of scope in order to maintain long-term competitive capabilities and rent-earning perspectives (Baden-Fuller & Volberda, 1997; Helfat & Eisenhardt, 2004; Ketchen, Snow, & Street, 2004b). The opposite reaction (i.e., reduction of product scope) would make an MNE more dependent on core businesses that are under high-commitment attacks. This suggests not making use of this option.

Several strategic considerations may lead an incumbent to rethink its geographic footprint. Motivated by a rationale similar to that described in the context of product scope, incumbents may choose to enhance their competitive capabilities and prospects for growth through international expansion. Market-, resource- or strategic-asset-seeking investment into established economies, emerging markets, or other previously under-exploited geographies would lead to an increased geographic scope of activities (Dunning, 1998b). Specifically targeting the home markets of the attacker with a parallel behavior rationale may allow MNEs to match the home-based location advantage of the competitor (Knickerbocker, 1973). Incumbents may be able to neutralize or shift the momentum of competitors by mounting their own attack in the domestic markets of competitors, resulting in broader geographic scope. This would create a mutual-forbearance scenario with the objective of lowering competitive intensity and pre-empting future attacks (Baum & Korn, 1999; Gimeno, 1999; van Witteloostuijn & Wegberg, 1992). Finally, incumbents may expand their geographic scope through efficiency-seeking investments to explore potential new sources of competitive advantage in low-cost offshore markets that strengthen their competitive capabilities at home, adding a more diverse set of locations to their geographic footprint (Almor et al., 2006; Dunning, 1988; Rugman & Verbeke, 2001). The above-mentioned higher dependence on the home market would also apply in case of the opposite reaction. In summary, incumbents can be expected to engage in indirect responses to LFC attacks, as opposed to direct responses in the core business or home market, which leads us to propose:

**Hypothesis 3:** When exposed to increasing competition from FDI in their home markets,

multinational enterprises will increase their product scope.

**Hypothesis 4:** When exposed to increasing competition from FDI in their home markets, multinational enterprises will increase their geographic scope.

**RESEARCH METHODOLOGY**

**Methodological Context**

The main purpose of this study is to assess whether, and how, MNEs reconfigure product and geographic scope in the face of foreign attacks. Consequently, the research model is designed to assess causal statements about the influence of foreign competition on corporate strategy. We apply a longitudinal research design in response to calls for stronger emphasis on using time to assess causality (Greve & Goldeng, 2004). To test the hypothesized causal relationships, we relate changes in foreign competition intensity over one time period (i.e.,  $\Delta AFC_{t-1 \rightarrow t_0}$  and  $\Delta LFC_{t-2 \rightarrow t_0}$ ) to changes in scope configuration over a subsequent time period (i.e.,  $\Delta \text{Product Scope}_{t_0 \rightarrow t_2}$  and  $\Delta \text{Geographic Scope}_{t_0 \rightarrow t_2}$ ). Such temporal sequencing of measurement allows for the fact that it takes time to identify a foreign attack, to then assess motivation and strategic intent, and finally to determine the appropriate responses, that is, scope changes. Recent research underlines the importance of appropriate lags to avoid the bias that might be introduced if endogenous variables, such as firm performance, were captured simultaneously with the dependent variable (Bowen & Wiersema, 2007). Figure 1 gives an overview of the temporal structure of the model.

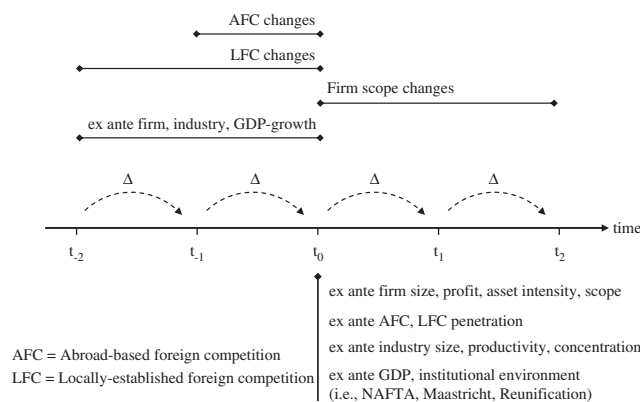
**Data and Sample**

Most large-sample longitudinal research draws on one of the few commercially available sources of secondary panel data, such as S&P's COMPUSTAT database. The largest component in the COMPUSTAT database is made up of US firms. As we are interested in foreign competition, obviously a global phenomenon, data from multiple countries are needed to increase generalizability (Hitt, Boyd, & Li, 2004). In many studies researchers have compared the Anglo-Saxon variety of capitalism with the central European or German variety, identifying important differences in the respective institutional environments and business practices (Geppert, Williams, & Matten, 2003; Whitley, 1994). This suggests that comparing US and German firms could reveal interesting insights on consistent or different effects.

We compiled data for a panel of large US and German firms for 1987 to 2003. Financial data were obtained from COMPUSTAT.<sup>3</sup> Data for German firms were supplemented in part by THOMSON. US firms were selected from the S&P 500 and if segment-level financial data were (also) available for both business and geography for at least two years during the target period, yielding 407 US firms with 5972 firm-year observations. German MNEs were selected from the HDAX<sup>4</sup> if segment data were available, yielding a total of 95 firms with 867 firm-year observations.<sup>5</sup>

We obtained import and FDI data from United Nations (UN) sources. Import data were taken from the COMTRADE database, which consolidates import and export data as reported by the respective national statistics offices. Imports were captured as aggregated trade flows from all exporting countries either into the US or Germany, broken down by three-digit SITC (revision 2) trade category. FDI data were taken from the UNCTAD FDI database, which serves as the basis for UNCTAD's World Investment Report. Investments were captured as aggregated inward FDI stock from all originating countries into the US or Germany, broken down by International Standard Industrial Classification (ISIC) (revision 2) industries.<sup>6</sup>

In addition, we compiled industry data as a basis for the calculation of foreign competition penetration ratios and control variables. Data on industry size, growth, and productivity were taken from the Groningen Growth and Development Centre (GGDC) 60-industry database, which provides an internationally comparable longitudinal industry



**Figure 1** Temporal model structure.





data set for OECD countries (GGDC, 2005). We obtained industry concentration data from the US Census Bureau (CR4 for 1997, 2002) and the German Statistisches Bundesamt (CR6, 1999/2000; 2001/2002).<sup>7</sup> We assigned imports, FDI, and other industry-level data to the sample firms' business segments using classification correspondence tables available through the UN Statistics Division and EUROSTAT websites.

### Dependent Variables: Firm Scope Change

We aligned our scope measures to core firm scope concepts that have become firmly established in decades of corporate strategy research. Building on the concept of core vs non-core business segments that lies at the heart of diversification research (Rumelt, 1974), we measure product scope by the share of non-core business segment sales relative to total sales (using COMPUSTAT business segment data).<sup>8</sup> On the geographic dimension, we apply an equivalent approach, capturing geographic scope by firms' foreign sales percentage (using COMPUSTAT geographic segment data).

Rather than using scope levels, we calculated changes for both scope dimensions, an approach taken in previous studies to reflect inter-temporal dynamics that lie at the core of our theoretical argument (e.g., Chung, 2001; Doukas & Lang, 2003). We cumulated scope change scores from  $t_0$  to  $t_2$  to reflect the time a firm takes to formulate and implement strategy, which is a key constraint on the ability of a firm to respond to challenges. Scope changes such as the creation, acquisition, or divestment of a product line, or the reconfiguration of geographic footprint are complex endeavors that can realistically be expected to last at least one to two years.

### Independent Variables: Foreign Competition Changes

AFC penetration changes at the industry level were calculated using UN import data, and LFC penetration changes were calculated using UN inward FDI stock data. Penetration ratios for every industry were calculated using industry-level GDP value-added data from the GGDC's 60-industry database as the denominator. In order to represent the influence of foreign competition across the entire business portfolio of incumbents, we used the change in the business-segment-sales-weighted average AFC or LFC across a given incumbents' business segments. AFC operates through imports.

The motivations and capabilities of attacking firms are fairly transparent: consequently a short-term response is possible. Therefore we measured AFC changes via import penetration changes between  $t_{-1}$  and  $t_0$ , using a one-year lag (Bowen & Wiersema, 2005; Liu, 2006). This is not the case with LFC, as changing FDI stocks do not necessarily imply immediate competitive effects. To enter a market through FDI, a competitor must first set up local operations or integrate newly acquired assets; then it is able to deploy its full competitive capabilities. To account for the implementation period, we capture LFC as changes in FDI stock between  $t_{-2}$  and  $t_0$ . Two-year lags have been used previously when the immediacy of causal relations was theoretically uncertain (Baker & Cullen, 1993; Swenson, 2007). Also, as FDI changes imply a geographic scope change for the attacker, this approach maintains methodological equivalence to scope change measures.<sup>9</sup>

### Control Variables

Firm-level controls include firm size (firm sales at  $t_0$ ), asset intensity (assets-to-sales ratio at  $t_0$ ), and MNE *ex ante* growth and performance (percentage change in sales between  $t_{-2}$  and  $t_0$ , and ROA at  $t_0$ , respectively). In addition, we control for the potential influence of *ex ante* scope levels (absolute product and geographic scope at  $t_0$ , using the same measures as for the dependent variables), and simultaneous scope changes on the opposite scope dimension (using the same measures as for dependent variables). At the industry level, we include industry size (industry value-added to GDP at  $t_0$ ), industry growth (percentage change in value-added between  $t_{-2}$  and  $t_0$ ), industry productivity (value-added per employee at  $t_0$ ), and industry concentration ratios. Also, *ex ante* AFC and LFC penetration levels at  $t_0$  are included as indicators of the degree of industry globalization at which firms are operating.

Additionally, the broader institutional environment can be an important influence on corporate strategy (Kristensen & Morgan, 2007; Peng et al., 2005). At the country level, we include GDP at  $t_0$  and *ex ante* GDP growth between  $t_{-2}$  and  $t_0$ . During our 1987 to 2003 window, there were significant regulatory and political changes in both the US and Germany. The North American Free Trade Agreement (NAFTA) went into effect in 1994. Germany was at the center of the European Union's single market, implemented under the Maastricht Treaty in 1993 (Bowen & Sleuwaegen, 2007; Burfisher,

Robinson, & Thierfelder, 2001; Kahrs, 2002). Also, the reunification of East and West Germany in 1990 had an impact on domestic demand and investment activity (Sinn, 2002). To control for these factors, we include dummy variables, 0 before the event, 1 after (Tables 2 and 3).

### Estimation Approach

Hausman specification tests confirmed the presence of fixed firm effects for both unbalanced country panels ( $p < 0.001$ ; Greene, 2003). A Breusch–Pagan test revealed heteroskedasticity ( $p < 0.001$ ; Breusch and Pagan, 1979). A Wooldridge test detected serial correlation in our panel (Wooldridge, 2002). While we captured context effects at the country and industry level through control variables, we also need to address possible time effects (Greve & Goldeng, 2004). Therefore we had to select an appropriate estimation procedure for estimates that remain unbiased under four conditions: the presence of actor (i.e., firm) effects, time effects, heteroskedasticity, and serial correlation. In addition, we had to protect our analysis against endogeneity bias that might result from the inclusion of simultaneous scope change control measures.

We incorporated time effects by recalculating all variables as differences from the respective time period means (Greve & Goldeng, 2004).<sup>10</sup> We estimated all models with the `xtivreg2`-procedure in Stata 9.2, using the “`fe`”, “`robust`” and “`bw(auto)`” options (Schaffer, 2007). `xtivreg2 fe` applies a two-staged least squares (2SLS) fixed effects estimator with instrumental variables (IV) for panel data models. “`Robust`” corrects standard errors for heteroskedasticity bias using the Huber–White sandwich estimator. “`bw(auto)`” applies the Newey–West estimator to correct for autocorrelation bias. We instrumented the endogenous scope change variable with one- and two-year lagged observations of the respective measure. Kleibergen–Paap and Hansen  $J$ -statistics confirm the validity of instruments and appropriate model identification (Baum, Schaffer, & Stillman, 2003, 2007; Wooldridge, 2002). In addition to IV 2SLS, we estimated all models with two-step GMM and LIML estimators. Results are consistent across estimation methods. Given space constraints, we discuss only IV 2SLS results.

### RESULTS

Table 4 shows results for regressions explaining changes in scope of US firms. In Models 1b and 1c,

the coefficients of changes in AFC are negative and significant at the 0.1% level (i.e.,  $-0.091$  and  $-0.092$ ), thus supporting Hypothesis 1 for US firms. The same obtains for geographic scope (i.e., Hypothesis 2), as is shown by negative coefficients in Models 2b and 2c ( $-0.050$  and  $-0.047$ ; significant at the 0.1% level). LFC changes have statistically significant positive effects on changes in product and geographic scope across all models (i.e., coefficients of  $0.048$  and  $0.061$  in Models 1b and 1c, and  $0.052$  and  $0.051$  in Models 2b and 2c), lending support to Hypotheses 3 and 4 for US firms. In summary, our theoretical propositions receive consistent empirical support for US firms. It is important to note though, that foreign competition dynamics contribute a relatively small amount of incremental explanatory power:  $R^2$  increases over the respective control models remain within one to two percentage points.

Estimates for German firms are shown in Table 5. Hypothesis 1 is supported in Models 3b and 3c: the coefficients of the change in AFC penetration ( $-0.145$  and  $-0.168$ ) are negative and significant at the 5% level and the 1% level respectively, while Models 4b and 4c support Hypothesis 2. Also, the hypothesized positive effect of LFC on changes in product scope (i.e., Hypothesis 3) finds support in Models 3b and 3c. Hypothesis 4, however, has to be rejected: as Models 4b and 4c show, LFC change does not appear to lead to significant geographic scope expansion. Coefficients are negative, but not significant. As for US firms, analyses with product scope relatedness and geographic scope diversity measures show consistent effects, underlining the robustness of results.

### DISCUSSION

Market globalization is leading to an overall increase in foreign competition across many industries. However, industry-specific foreign competition patterns are not consistent. Rather, they depend on idiosyncratic industry characteristics, and the particular industry environment. This is consistent with what we observe in our data. While past decades, on average, have seen substantial increases in both imports and FDI, industry-specific patterns have varied significantly. Momentum has shifted from imports to FDI, and vice versa, at different times, as underlined by negative correlation coefficients between import and FDI penetration changes (e.g., in automotive manufacturing or mining). In other cases, positive correlation coefficients indicate that imports and FDI have gained

**Table 2** Descriptive statistics, US firms

	Mean	Std. dev.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 $\Delta$ AFC penetration ( $t_{-1}-t_0$ ) <sup>a</sup>	0.12	0.44																		
2 $\Delta$ LFC penetration ( $t_{-2}-t_0$ ) <sup>a</sup>	0.76	0.05	0.03																	
3 $\Delta$ Product scope ( $t_0-t_2$ ) <sup>a</sup>	0.01	0.12	-0.05*	0.259																
4 Product scope ( $t_0$ ) <sup>a</sup>	0.37	0.20	0.04	0.03	-0.04															
5 $\Delta$ Geographic scope ( $t_0-t_2$ ) <sup>a</sup>	0.01	0.06	-0.14*	0.05*	-0.04	0.02														
6 Geographic scope ( $t_0$ ) <sup>a</sup>	0.19	0.21	-0.07*	-0.03	-0.00	-0.12*	-0.08*													
7 Firm size ( $t_0$ ) (US\$ million)	7472.07	14216.11	0.01	-0.02	0.01	0.20*	-0.00	-0.09*												
8 $\Delta$ Firm size ( $t_{-2}-t_0$ ) <sup>a</sup>	0.56	4.59	-0.14*	-0.04	0.01	-0.03	0.04	0.05*	-0.03											
9 Firm asset intensity ( $t_0$ )	1.43	1.59	-0.17	0.03	0.02	-0.01	0.01	0.12*	-0.06*	0.01										
10 Firm profit ( $t_0$ ) <sup>b</sup>	5.79	11.60	0.00	0.01	-0.02	-0.06*	0.02	-0.04	-0.01	-0.04	-0.21*									
11 Industry size ( $t_0$ ) (US\$ million)	139060.81	115875.54	0.01	-0.16*	-0.01	-0.14*	-0.19*	0.33*	0.06*	0.03	-0.07*	0.01								
12 $\Delta$ Industry size ( $t_{-2}-t_0$ ) <sup>a</sup>	0.14	0.16	-0.05*	0.00	-0.01	-0.06*	-0.07*	0.07*	-0.01	0.04*	-0.01	0.11*	0.19*							
13 Industry productivity ( $t_0$ ) (US\$ '000s)	177.48	666.93	-0.00	-0.02	-0.01	-0.02	0.03	-0.04	0.01	-0.00	-0.00	-0.03	-0.12*	-0.15*						
14 Industry concentration ( $t_0$ ) <sup>b</sup>	40.85	12.75	-0.00	-0.01	0.01	-0.15*	-0.00	-0.02	0.14*	-0.01	0.02	-0.01	-0.06*	-0.01	0.04*					
15 AFC penetration ( $t_0$ ) <sup>a</sup>	0.08	0.24	0.02	0.02	-0.01	-0.02	0.08*	-0.17*	-0.02	0.02	0.01	-0.05*	-0.53*	-0.16*	0.27*	0.16*				
16 LFC penetration ( $t_0$ ) <sup>a</sup>	0.04	0.12	0.00	0.05*	0.01	0.00	0.04*	-0.04	0.02	0.01	0.01	-0.04*	-0.21*	-0.07*	0.03	0.01	0.64*			
17 $\Delta$ GDP ( $t_{-2}-t_0$ ) <sup>b</sup>	3.03	1.31	0.33*	0.22*	-0.00	-0.00	-0.19*	-0.00	-0.00	-0.04	-0.00	0.00	0.00	0.10	-0.04*	0.00	-0.01	-0.01		
18 GDP ( $t_0$ ) (US\$ billions)	7575.23	1797.26	0.22*	-0.15*	-0.04	0.00	-0.32*	-0.12*	0.00	-0.04	-0.00	0.00	0.28*	-0.00	0.06*	-0.00	0.00	0.00	0.00	-0.04
19 NAFTA ( $t_0$ ) <sup>c</sup>	0.61	0.49	0.35*	-0.00	-0.05*	0.00	-0.35*	-0.11*	0.00	-0.03	0.00	0.00	0.23*	0.00	0.00	0.00	-0.00	-0.00	0.24*	0.87*

Note that means are based on raw values (factor scores for scope variables) that have not been adjusted for time effects.

\* $p < 0.05$  (two-tailed).

<sup>a</sup>Percent (i.e., 0.12 = 12%).

<sup>b</sup>Percentage points (i.e., 5.79 = 5.79%).

<sup>c</sup>Dummy variable.

**Table 3** Descriptive statistics, German firms

	Mean	Std. dev.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1 $\Delta$ AFC penetration ( $t_{-1}-t_0$ ) <sup>a</sup>	0.17	0.91																			
2 $\Delta$ LFC penetration ( $t_{-2}-t_0$ ) <sup>a</sup>	0.41	0.82	0.01																		
3 $\Delta$ Product scope ( $t_0-t_2$ ) <sup>a</sup>	0.01	0.14	-0.05	0.06																	
4 Product scope ( $t_0$ ) <sup>a</sup>	0.38	0.20	0.06	-0.01	0.27*																
5 $\Delta$ Geographic scope ( $t_0-t_2$ ) <sup>a</sup>	0.01	0.07	0.06	-0.02	-0.01	0.01															
6 Geographic scope ( $t_0$ ) <sup>a</sup>	0.49	0.24	-0.2	0.03	0.01	0.04	0.34*														
7 Firm size ( $t_0$ ) (US\$ millions)	7873.79	18805.41	0.02	-0.01	0.11	0.39*	0.03	-0.10													
8 $\Delta$ Firm size ( $t_{-2}-t_0$ ) <sup>a</sup>	0.36	3.48	-0.14*	0.00	0.01	-0.00	0.01	0.03	-0.00												
9 Firm asset intensity ( $t_0$ )	1.36	3.97	-0.01	0.01	-0.01	-0.11	-0.00	-0.06	-0.01	0.03											
10 Firm profit ( $t_0$ ) <sup>b</sup>	2.69	4.17	-0.06	-0.05	-0.02	-0.11	0.10	0.04	-0.05	-0.00	0.26*										
11 Industry size ( $t_0$ ) (US\$ millions)	39096.22	22674.70	-0.08	-0.09	-0.02	-0.12*	-0.11	0.07	0.00	0.01	-0.03	0.02									
12 $\Delta$ Industry size ( $t_{-2}-t_0$ ) <sup>a</sup>	0.14	0.25	-0.13*	-0.11	-0.04	0.00	0.13*	0.07	0.03	0.03	0.03	0.18*	0.08								
13 Industry productivity ( $t_0$ ) (US\$ '000s)	138.85	262.56	-0.02	-0.03	-0.03	0.08	0.06	0.10	-0.03	-0.00	0.00	-0.02	-0.19*	0.30*							
14 Industry concentration ( $t_0$ ) <sup>b</sup>	47.86	17.61	0.09	0.13*	0.00	0.07	0.04	-0.02	0.11	-0.10	0.02	0.04	-0.25*	-0.06	0.05						
15 AFC penetration ( $t_0$ ) <sup>a</sup>	0.15	0.26	0.05	-0.03	-0.00	-0.07	0.11	0.02	-0.02	0.03	-0.03	0.03	-0.39*	-0.04	0.26	-0.04					
16 LFC penetration ( $t_0$ ) <sup>a</sup>	0.10	0.15	-0.08	0.00	-0.01	0.03	0.02	-0.05	-0.01	0.03	-0.01	-0.05	-0.05	0.13*	0.08	-0.27*	0.30*				
17 $\Delta$ GDP ( $t_{-2}-t_0$ ) <sup>b</sup>	1.85	1.39	0.00	-0.02	-0.03	-0.00	-0.02	-0.01	0.00	-0.05	0.00	0.00	-0.00	0.00	-0.01	-0.00	-0.00	0.00			
18 GDP ( $t_0$ ) (US\$ billions)	2068.14	852.75	0.03	0.03	0.05	-0.00	0.03	-0.05	0.01	0.09	0.00	-0.02	-0.02	0.01	0.03	-0.02	0.05	0.06	-0.21*		
19 Maastricht Treaty ( $t_0$ ) <sup>c</sup>	0.84	0.37	0.00	0.02	0.02	0.00	-0.03	-0.00	0.00	0.18*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.00	-0.61*	0.35*	
20 Reunification ( $t_0$ ) <sup>c</sup>	0.95	0.21	-0.00	0.00	-0.07	0.00	0.01	-0.00	-0.00	0.10	0.00	0.00	0.00	-0.00	0.0	0.00	-0.00	-0.0	-0.29*	0.23*	0.50*

Note that means are based on raw values (factor scores for scope variables) that have not been adjusted for time effects.

\* $p < 0.05$  (two-tailed).

<sup>a</sup>Percent (i.e., 0.17 = 17%).

<sup>b</sup>Percentage points (i.e., 2.69 = 2.69%).

<sup>c</sup>Dummy variable.

**Table 4** Instrumental variables (IV) 2SLS regression, results for US firms

Variables	$\Delta$ Product scope ( $t_0-t_2$ )			$\Delta$ Geographic scope ( $t_0-t_2$ )		
	1a: Control model	1b: Base model	1c: Full model	2a: Control model	2b: Base model	2c: Full model
<i>Independent variables</i>						
$\Delta$ AFC penetration ( $t_{-1}-t_0$ )		-0.091 (0.022)***	-0.092 (0.024)***		-0.050 (0.011)***	-0.047 (0.011)***
$\Delta$ LFC penetration ( $t_{-2}-t_0$ )		0.048 (0.016)**	0.061 (0.018)***		0.052 (0.010)***	0.051 (0.010)***
<i>Interaction variables</i>						
$\Delta$ AFC penetration ( $t_{-1}-t_0$ ) × Product scope ( $t_0$ )			0.045 (0.011)***			
$\Delta$ LFC penetration ( $t_{-2}-t_0$ ) × Product scope ( $t_0$ )			-0.048 (0.018)**			
$\Delta$ AFC penetration ( $t_{-1}-t_0$ ) × Geographic scope ( $t_0$ )						0.030 (0.013)*
$\Delta$ LFC penetration ( $t_{-2}-t_0$ ) × Geographic scope ( $t_0$ )						-0.186 (0.088)*
<i>Firm-level controls</i>						
Firm size ( $t_0$ ) <sup>a</sup>	-0.002 (0.028)	-0.001 (0.028)	0.001 (0.028)	0.014 (0.032)	0.014 (0.031)	0.015 (0.031)
$\Delta$ Firm size ( $t_{-2}-t_0$ ) <sup>b</sup>	-0.682 (0.244)**	-0.755 (0.250)**	-0.991 (0.252)***	1.132 (0.636) <sup>†</sup>	1.184 (0.634) <sup>†</sup>	1.187 (0.648) <sup>†</sup>
Firm asset intensity ( $t_0$ )	-2.070 (1.272)	-1.946 (1.225)	-2.298 (1.322) <sup>†</sup>	-2.814 (1.515) <sup>†</sup>	-2.696 (1.517) <sup>†</sup>	-2.605 (1.519) <sup>†</sup>
Firm profit ( $t_0$ )	-0.529 (1.175)	-0.535 (1.189)	-0.396 (1.218)	2.484 (1.333) <sup>†</sup>	2.434 (1.333) <sup>†</sup>	2.474 (1.337) <sup>†</sup>
$\Delta$ Product scope ( $t_0-t_2$ )				-0.057 (0.024)*	-0.055 (0.025)*	-0.056 (0.025)*
Product scope ( $t_0$ )	0.779 (0.050)***	0.779 (0.050)***	0.789 (0.053)***	0.007 (0.040)	0.011 (0.041)	0.010 (0.041)
$\Delta$ Geographic scope ( $t_0-t_2$ )	-0.098 (0.028)***	-0.102 (0.028)***	-0.088 (0.028)**			
Geographic scope ( $t_0$ )	0.161 (0.045)***	0.162 (0.045)***	0.153 (0.045)***	0.823 (0.063)***	0.832 (0.063)***	0.868 (0.069)***
<i>Industry-level controls</i>						
Industry size ( $t_0$ ) <sup>a</sup>	0.024 (0.003)***	0.024 (0.003)***	0.023 (0.003)***	-0.018 (0.003)***	0.022 (0.004)***	-0.020 (0.004)***
$\Delta$ Industry size ( $t_{-2}-t_0$ )	-0.802 (0.096)***	-0.773 (0.097)***	-0.711 (0.094)***	0.276 (0.198)	0.310 (0.197)	0.321 (0.197)
Industry productivity ( $t_0$ ) <sup>c</sup>	0.319 (0.255)	0.329 (0.255)	0.272 (0.260)	1.028 (0.164)***	1.058 (0.161)***	1.022 (0.162)***
Industry concentration ( $t_0$ ) <sup>b</sup>	0.329 (0.334)	0.367 (0.336)	0.391 (0.330)	0.474 (0.306)	0.411 (0.304)	0.464 (0.305)
AFC penetration ( $t_0$ )	0.140 (0.211)	0.143 (0.210)	0.156 (0.214)	-0.125 (0.186)	-0.233 (0.193)	-0.213 (0.196)
LFC penetration ( $t_0$ )	0.414 (0.200)*	0.416 (0.200)*	0.382 (0.199) <sup>†</sup>	0.296 (0.273)	0.460 (0.284)	0.471 (0.288)
<i>Country-level controls</i>						
$\Delta$ GDP ( $t_{-2}-t_0$ )	0.011 (0.009)	0.021 (0.009)*	0.025 (0.009)**	-0.001 (0.010)	0.015 (0.010)	0.016 (0.010)
GDP ( $t_0$ ) <sup>a</sup>	-0.261 (0.137) <sup>†</sup>	-0.234 (0.137) <sup>†</sup>	0.009 (0.121)	-0.032 (0.170)	-0.093 (0.167)	-0.094 (0.167)
NAFTA ( $t_0$ )	-0.201 (0.041)***	-0.165 (0.042)***	-0.105 (0.044)*	-0.102 (0.053)	-0.165 (0.053)**	-0.165 (0.053)**
N	4637	4635	4633	4637	4635	4633
Centered R <sup>2</sup>	0.277	0.280	0.288	0.164	0.173	0.175
F	20.16***	19.73***	20.05***	26.69***	26.94***	24.38***

Unstandardized coefficients are reported with robust standard errors in parentheses. Intercept is not shown.

<sup>†</sup>p < 0.1; \*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001.

<sup>a</sup>Coefficient and standard error have been multiplied by 10,000.

<sup>b</sup>Coefficient and standard error have been multiplied by 100.

<sup>c</sup>Coefficient and standard error have been multiplied by 1000.

**Table 5** Instrumental variables (IV) 2SLS regression, results for German firms

Variable	$\Delta$ Product scope ( $t_0-t_2$ )			$\Delta$ Geographic scope ( $t_0-t_2$ )		
	3a: Control model	3b: Base model	3c: Full model	4a: Control model	4b: Base model	4c: Full model
<i>Independent variables</i>						
$\Delta$ AFC penetration ( $t_{-1}-t_0$ )		-0.145 (0.062)*	-0.168 (0.063)**		-0.029 (0.014)*	-0.030 (0.014)*
$\Delta$ LFC penetration ( $t_{-2}-t_0$ )		3.095 (1.146)**	2.507 (1.038)*		-0.034 (0.033)	-0.030 (0.036)
<i>Interaction variables</i>						
$\Delta$ AFC penetration ( $t_{-1}-t_0$ ) $\times$ Product scope ( $t_0$ )			1.179 (0.425)**			
$\Delta$ LFC penetration ( $t_{-2}-t_0$ ) $\times$ Product scope ( $t_0$ )			-0.113 (0.059) <sup>†</sup>			
$\Delta$ AFC penetration ( $t_{-1}-t_0$ ) $\times$ Geographic scope ( $t_0$ )						0.392 (0.180)*
$\Delta$ LFC penetration ( $t_{-2}-t_0$ ) $\times$ Geographic scope ( $t_0$ )						0.025 (0.034)
<i>Firm-level controls</i>						
Firm size ( $t_0$ ) <sup>a</sup>	-0.277 (0.073)***	-0.287 (0.075)***	-0.269 (0.075)***	-0.024 (0.032)	-0.028 (0.033)	-0.035 (0.032)
$\Delta$ Firm size ( $t_{-2}-t_0$ ) <sup>b</sup>	0.092 (0.057)	0.076 (0.053)	0.071 (0.055)	-0.011 (0.023)	-0.004 (0.022)	-0.001 (0.022)
Firm asset intensity ( $t_0$ )	0.068 (0.039)*	0.071 (0.037) <sup>†</sup>	0.055 (0.031) <sup>†</sup>	-0.001 (0.014)	-0.001 (0.013)	0.000 (0.013)
Firm profit ( $t_0$ )	0.465 (1.393)	0.042 (1.319)	-0.174 (1.272)	0.907 (0.826)	0.792 (0.840)	0.944 (0.823)
$\Delta$ Product scope ( $t_0-t_2$ )				-0.072 (0.083)	-0.090 (0.086)	-0.097 (0.084)
Product scope ( $t_0$ )	1.240 (0.106)***	1.255 (0.104)***	0.816 (0.180)***	0.226 (0.129) <sup>†</sup>	0.249 (0.134) <sup>†</sup>	0.261 (0.131)*
$\Delta$ Geographic scope ( $t_0-t_2$ )	-0.257 (0.123)*	-0.233 (0.122) <sup>†</sup>	-0.234 (0.121) <sup>†</sup>			
Geographic scope ( $t_0$ )	-0.130 (0.080)	-0.118 (0.081)	-0.094 (0.079)	0.540 (0.063)***	0.541 (0.064)***	0.539 (0.065)***
<i>Industry-level controls</i>						
Industry size ( $t_0$ ) <sup>a</sup>	-0.028 (0.049)	-0.019 (0.048)	-0.028 (0.047)	0.025 (0.022)	0.032 (0.022)	0.034 (0.022)
$\Delta$ Industry size ( $t_{-2}-t_0$ )	0.059 (0.370)	0.117 (0.369)	0.137 (0.369)	-0.081 (0.129)	-0.146 (0.127)	-0.179 (0.129)
Industry productivity ( $t_0$ ) <sup>c</sup>	0.165 (0.549)	0.228 (0.535)	0.111 (0.520)	-1.697 (0.608)**	-1.830 (0.625)**	-1.879 (0.630)**
Industry concentration ( $t_0$ ) <sup>b</sup>	-0.993 (0.539) <sup>†</sup>	-0.893 (0.524) <sup>†</sup>	-0.809 (0.526)	0.828 (0.289)**	0.788 (0.301)**	0.727 (0.297)*
AFC penetration ( $t_0$ )	-0.320 (0.474)	-0.381 (0.470)	-0.485 (0.479)	0.045 (0.205)	0.066 (0.206)	0.071 (0.199)
LFC penetration ( $t_0$ )	0.247 (0.444)	0.201 (0.442)	-0.017 (0.457)	-0.065 (0.178)	-0.091 (0.187)	-0.103 (0.177)
<i>Country-level controls</i>						
$\Delta$ GDP ( $t_{-2}-t_0$ )	-0.023 (0.035)	-0.020 (0.034)	-0.022 (0.034)	-0.034 (0.020) <sup>†</sup>	-0.041 (0.020)*	-0.043 (0.019)*
GDP ( $t_0$ ) <sup>a</sup>	-0.955 (0.541) <sup>†</sup>	-0.937 (0.531)	-0.585 (0.552)	0.022 (0.224)	0.121 (0.224)	0.069 (0.229)
Maastricht Treaty ( $t_0$ )	-0.355 (0.289)	-0.306 (0.284)	-0.500 (0.288) <sup>†</sup>	-0.026 (0.133)	-0.136 (0.144)	-0.183 (0.140)
Reunification ( $t_0$ )	-0.312 (0.114)**	-0.305 (0.115)**	-0.303 (0.115)**	-0.3921 (0.146)**	-0.394 (0.148)**	-0.288 (0.154)
N	521	519	517	521	519	517
Centered R <sup>2</sup>	0.338	0.355	0.371	0.442	0.446	0.449
F	12.76***	12.14***	12.33***	8.19***	7.60***	9.09***

Unstandardized coefficients are reported with robust standard errors in parentheses. Intercept is not shown.

<sup>†</sup>p<0.1; \*p<0.05; \*\*p<0.01; \*\*\*p<0.001.

<sup>a</sup>Coefficient and standard error have been multiplied by 10,000.

<sup>b</sup>Coefficient and standard error have been multiplied by 100.

<sup>c</sup>Coefficient and standard error have been multiplied by 1000.



momentum simultaneously (e.g., in high-tech manufacturing or the food and beverage industry). The longer-term evolution of the structural characteristics of industries in the context of fundamental globalization drivers (ranging from integrating financial markets to new technologies that lower transportation and communication costs, among others) impact on cross-border competition patterns and firm scope. The dynamic changes in foreign competition that we observe in our data, however, suggest that foreign competition patterns are driven not only by longer-term trends, but also by shorter-term competitive dynamics.

In past decades, IB research has built on two competing theoretical perspectives to explain firm internationalization (Rugman & Verbeke, 2004). On one hand, Dunning's eclectic paradigm suggests that firms internationalize for efficiency reasons in the presence of strong ownership, location, and internalization advantages (Dunning, 1995). On the other hand, the Scandinavian school (Johanson & Vahlne, 1977, 1990) has built on the behavioral theory of the firm (Cyert & March, 1963). According to this perspective the lack of international market knowledge is the key problem in internationalization. Hence internationalization is an incremental learning process. Only recently has research considered alternative explanations for firm internationalization, and firm behavior in international competition. For example, Hutzschenreuter and colleagues (2007) elaborate on the concept of managerial intentionality as an important, yet under-researched, aspect of firm internationalization (Hutzschenreuter et al., 2007). Extant theory emphasizes path-dependency and learning arguments to explain the evolution of firm scope, and thereby implicitly assumes scope change trajectories that follow relatively steady paths. The notion of deliberate actions and reactions driven by a manager's assessment of immediate challenges has received relatively little consideration in mainstream IB theory. Yet scholars recognize the "increasingly sophisticated decision making of managers in MNEs" (Buckley & Ghauri, 2004: 94), where managers optimize a complex matrix of ownership and scope configuration strategies as options for subsequent decisions in a dynamic pattern. Competitive dynamics theory rests on the assumption that managers are aware of their competitive environments, and that they derive motivation to act from the competitive context, and develop and deploy competitive capabilities (Chen et al., 2007; Yu & Cannella, 2007). Aiming to

complement IB theory with a new and promising competitive dynamics perspective, we focused on immediate foreign attack dynamics and incumbent competitive responses to provide insights into whether foreign competition dynamics impact on firm scope changes.

Assessing the influence of foreign competition on US and German firms side by side for the first time, our study builds on the emerging body of foreign competition research (e.g., Bowen & Wiersema, 2005; Liu, 2006; Wiersema & Bowen, 2008). We apply the AMC model to the context of international competition (Chen et al., 2007; Yu & Cannella, 2007), thereby complementing RBV and IO theories of foreign competition (e.g., Bowen & Wiersema, 2005; Liu, 2006; Meyer, 2006) with a competitive dynamics perspective. In line with previous studies, we show that AFC attacks drive firms to refocus their product portfolio (Bowen & Wiersema, 2005; Liu, 2006; Meyer, 2006), and that it is also likely that such attacks will lead incumbents to reduce geographic scope. This negative geographic scope relationship runs contrary to what has been found in previous studies (e.g., Meyer, 2006; Wiersema & Bowen, 2008), and suggests that the direct response of incumbents to imports is to defend their domestic market by exploiting competitive core business positions, reducing complexity, and consolidating their geographic market footprint (Rondi et al., 2003; Stopford & Baden-Fuller, 1990; UNCTAD, 1993).

While AFC attacks drive scope reduction, we found that LFC attacks drive product scope expansion in US and German firms, and geographic expansion in US, though not German, firms. According to Driffield and Love (2007), one of the most important and most researched questions in IB is what effect FDI has on the economies of the host countries. Considerably less attention has been paid to the effect FDI has on domestic firms. Adding an empirical treatment of FDI dynamics to this research stream, our results broaden and differentiate the mere notion of global focusing (Meyer, 2006). It appears that incumbents seek indirect responses (i.e., product and geographic scope expansion) when faced with highly committed foreign direct investors, who through their investment can attain location advantages and competitive capabilities that are similar to those of incumbents. Therefore our study shows that foreign competitive dynamics may be one additional driver of corporate rejuvenation and the quest for inter-temporal economies of scope

(Helfat & Eisenhardt, 2004; Stopford & Baden-Fuller, 1990; Wielemaker, Elfring, & Volberda, 2000).

### US vs German Context: Institutional Differences

The fact that US firms react to LFC attacks by expanding geographically, while German firms do not, suggests that scope change strategies may be affected by country-level factors related to core market characteristics such as size and growth, as well as the firm's institutional environment, national business culture, and commercial practices. For one, *ex ante* GDP growth apparently drives German firms to focus their geographic scope (see Model 4). This seems plausible, given the additional domestic demand resulting from overall economic growth. The situation appears to be somewhat different for US firms.

Model 1 suggests a positive impact of *ex ante* GDP growth on product scope change. This suggests that high GDP growth leads to new business exploration rather than core business exploitation. Also, Model 1 shows product scope refocusing by US firms in response to NAFTA implementation. This indicates that US firms exploit NAFTA-related growth opportunities by focusing on their core businesses. This is to be expected, as NAFTA is intended to do away with tariff barriers and to open markets (Burfisher et al., 2001), which means that there will be increased competition, which drives firms toward greater product portfolio focus and coherence. While one would have expected similar results for German firms in the light of the Maastricht treaty, our results are insignificant in that respect (Model 4). However, the results for the US firms lend support to the validity of the institutional relatedness perspective (e.g., Bowen & De Clercq, 2008; Kristensen & Morgan, 2007; Peng et al., 2005) that recognizes a "central role of the institutional environment in facilitating (or constraining) firms' behavior" (Dikova & van Witteloostuijn, 2007: 1029).

In comparison with their Anglo-Saxon peers, German firms tend to be more hesitant to embrace production relocation or offshoring as an efficiency-seeking strategy as an indirect response to LFC challenges (Farrell, 2005; Soskice & Hall, 2001). This may be rooted in Germany's institutional legacy and business culture, characterized by more rigid employment legislation, strong union involvement in strategy decisions, and an overall more stakeholder- and consensus-driven decision-making culture (Gooderham, Nordhaug, & Ringdal, 1999; Mayer & Whittington, 2004; Williams & Geppert, 2006). Also, the German reunification had

a significant effect on scope changes, as indicated by the negative coefficient for the respective control variable in Models 3 and 4. Following reunification, German firms appear to have refocused their product scope as well as their geographic scope. This may be due to the sudden additional domestic demand, which in all likelihood led many firms to postpone expansion initiatives in favor of exploiting their core business at home. On the demand side, the German reunification instantly increased domestic market potential by roughly 20%, as West Germany had a population of about 61 to 62 million and East Germany 17 to 18 million. This sudden consumer market "growth" was augmented by massive public spending aimed at revitalizing East German infrastructure and industry, and at the same time creating new opportunities for German firms to sell products and services domestically. This is illustrated by the sharp fall in the trade surplus in the early years of the 1990s (*Economist*, 2005). On the supply side, the government offered tax breaks, wage subsidies, and various other incentives to encourage investment into production facilities in the Eastern part of reunified Germany (Sinn, 2002). Thus German reunification may also explain the lack of support for Hypothesis 4.

### Convergence Toward "Optimal" Scope Configurations

Our results show that different foreign attacks with distinct underlying motivations and attacker capabilities lead incumbents to different strategies of scope reconfiguration. This suggests that scope development paths under foreign competition pressure are in fact not linear or continuous. We found instead clear evidence that different types of foreign competition trigger different strategic responses, implying discontinuous, context-specific changes in MNE scope. On the other hand, our results indicate that firm *ex ante* scope levels also significantly influence scope changes. This raises an interesting question regarding the respective influence of foreign competition and *ex ante* scope levels on scope changes.<sup>11</sup> Do firms pursue optimal scope levels by changing their scope under varying foreign competition dynamics, or are their scope levels largely predetermined by their *ex ante* scope levels? That is, do highly diversified firms continue to diversify no matter what, or do foreign competition dynamics have a moderating influence?

To answer these questions, we assessed the possible moderating effects of *ex ante* scope levels





on the impact of changes in foreign competition on changes in firm scope. Our results are given in Models 1c, 2c, 3c and 4c. Our empirical results clearly show that pressure from foreign competition drives firm scope toward an optimal level. The higher a firm's *ex ante* product or geographic scope levels, the more incumbents refocus scope in response to AFC, but the weaker their scope expansion in response to LFC. This is perfectly intuitive: firms with highly dispersed product portfolios are likely to be able to find more ways of restructuring their product portfolio to strengthen their core business, for instance by shifting resources from peripheral product lines or divesting portions of their non-core product portfolio. A similar point can be made regarding geographic scope. On the other hand, firms with highly dispersed product or geographic scope may be under less pressure to expand their scope to be able to fulfill corporate rejuvenation objectives, to identify future potential core businesses, or to explore foreign markets (Stopford & Baden-Fuller, 1990; Zook, 2007), as the chances are higher that they already have in their portfolio a product or geography that could be developed.

Our interaction analyses allow us to conclude the following: foreign competition dynamics and *ex ante* scope levels are both important factors, with significant influence on changes in firm scope. Higher *ex ante* scope levels provide positive reinforcement for scope expansion, indicating path dependence. Foreign competition increases influence firms to reduce or expand their scope. When *ex ante* scope levels and foreign competition changes are interacted, however, there is clear evidence that *ex ante* scope levels moderate the effect of foreign competition on firm scope changes. When responding to pressure from foreign competition, higher *ex ante* scope levels lead to either lower scope expansion or to increased scope reduction, ultimately contributing to scope convergence.

### Limitations

Our study is subject to various limitations. While there is no doubt that strategy content, process, and leadership are all important, our principal goal is to advance research on strategy content – that is, the nature of scope changes in the face of competition from imports or from FDI. Thus we rely on several assumptions for strategy process and leadership that are more fully developed in the literature on competitive processes and strategic intention-

ality (Chen et al., 2007; Lewin & Volberda, 1999; Volberda & Lewin, 2003).

There is also some room for improvement and further differentiation in our empirical research model. First, the national perspective on foreign attacks and incumbent responses within the home countries of incumbents does not control for size, integration, or growth at the global market level, nor does it assess the influence of attack–response cycles or multi-point competition at the global level (e.g., Chen et al., 2007; Greve & Mitsuhashi, 2004). We do not provide a “disentangled” analysis of foreign attack motivations, which would require disaggregated, firm-level import and FDI data as well as a richer characterization of the underlying strategic rationale, that is, market-, efficiency-, natural-resource- or knowledge-seeking LFC. This is also true for our incumbent firm scope measures that do not recognize different motivations of, say, geographic expansion. Developing measurement constructs that capture low factor-cost offshoring or other motivations to change scope remains a challenge. For similar reasons, we cannot isolate within-industry focusing effects of incumbents, that is, endeavors to secure a profitable subsegment that allows incumbents to coexist with locally established foreign competitors. Our aggregated measures of foreign competition also constrain our ability to identify its origin, and especially whether it comes from advanced and developing markets. Finally, our focus on the product and geographic scope dimensions does not leave sufficient room for an assessment of vertical scope aspects such as vertical integration and outsourcing.

As with any empirical study, we had to make some tough trade-offs and leave some important questions unaddressed to keep the study manageable. Many of the topics we have pointed out will undoubtedly require new approaches for gathering primary data. The significant methodological issues, and the budget and time that would be needed, may indeed represent a significant roadblock to future empirical research in this area.

### Future Research

Our study suggests several avenues for further research. The results might be different for analyses of smaller and less developed national markets. Moreover, the role of imports from the foreign subsidiaries of incumbents, the specific sub-forms of FDI (i.e., greenfield investment vs M&A) as well as “hybrid” foreign competition vehicles such as

joint ventures, strategic alliances, franchising or other forms of contracting, all warrant further investigation. Do firms follow efficiency, new customers, or strategic assets with a specific scope change? Do scope changes represent a counter-attack or an evasive move? A disaggregated analysis of foreign attacks and incumbent responses might reveal the nature of underlying strategic intentions, and so provide answers to these questions.

The AMC framework is a useful tool for the development of a coherent theoretical argument around international attack and response, but using it means that our study focuses on strategy content considerations rather than providing a comprehensive treatment of international competitive dynamics. However, the strategy process and leadership aspects of international rivalry offer numerous opportunities for further research, including the signaling, cognition and communication aspects of awareness to foreign attacks, the characteristics, motivators and constraints of responses, and the intentions of managers regarding response strategies and their implementation, just to name a few (e.g., Hutzschenreuter et al., 2007; Volberda & Lewin, 2003). Researchers will undoubtedly need to rethink methodological designs and measurement constructs. In-depth, single-industry analyses or case studies based on primary data may be more appropriate in this context than broad panel studies.

Finally, our results suggest that the broader environmental and institutional context of a firm may have an important influence on its response to international rivalry. Therefore future research should look at the characteristics and dynamics of broader national and supranational environments. Relevant factors may include policy and regulatory frameworks, the characteristics of economic institutions such as financial markets, resource markets, and demand structure, discontinuities in the technology and infrastructure, and cultural differences, among others (e.g., Hutzschenreuter & Voll, 2008; Kristensen & Morgan, 2007; Peng et al., 2005). While our study provides some initial evidence on institutional influences, this question warrants deeper and more differentiated investigation (Bowen & De Clercq, 2008; Jackson & Deeg, 2008).

### PRACTICAL IMPLICATIONS AND CONCLUSION

A competitive attack is one of the most difficult challenges faced by managers (Ketchen et al., 2004b). Our study analyzes the characteristics of the attacker, and the motivations and capabilities

of the respondent, using the AMC framework (Chen, 1996; Chen et al., 2007). We have shown that the seeds of the response to an attack are in the characteristics of the attack itself, and that the resulting scope change can go in completely different directions. We found that when an attack comes from imports, responding with product or geographic scope reduction could lead to leveraging and enhancing competitive advantage, and if the challenge is from FDI, scope expansion may be more appropriate for achieving additional efficiency gains, mounting a counter-attack, or exploring future growth areas. We believe that, in combination with the framework, our guidelines for evaluating responses will prove useful in management practice.

Our study serves as a reminder to managers to question conventional wisdom. While initial research on import-based competition suggests “global focusing” as a simplified summary of overall strategic developments, we have shown that adding FDI to the equation leads to a subtler theoretical and empirical analysis, and to potentially different managerial recommendations. We have shown theoretically and empirically how incumbent firms expand or reduce their product and geographic scope in reaction to a challenge to their market position through imports or FDI. Empirical analyses across US and German firms reveal foreign competition effects that are, with a few exceptions, consistent across both countries, suggesting that our conclusions may be applicable to firms with home markets that are similar to the US and German varieties of capitalism. Our study provides a competitive dynamics perspective that is relevant for scholars and managers alike, and opens several interesting avenues for further research.

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### NOTES

<sup>1</sup>Rugman and Verbeke (2004) show that the largest 500 MNEs account for over 90% of the world’s FDI stock, and conduct about 50% of world trade.

<sup>2</sup>As our study focuses on the strategic *content* aspects, that is, scope changes, of international



competitive dynamics, we do not explore strategy *process* aspects related to competition awareness in greater depth. We address this point in the limitation section.

<sup>3</sup>COMPUSTAT has some limits as a data source (e.g., Davis & Duhaime, 1992), but, to our knowledge, it is the only source of product and geographic segment data for the time frame required by the longitudinal design of our study.

<sup>4</sup>The HDAX index combines the DAX, which includes Germany's 30 largest public firms by market capitalization, the MDAX, which includes the next 70 largest public firms, and the TecDAX, which includes public technology-focused firms.

<sup>5</sup>Financial institutions, real estate companies, and financial holdings are not included, as the corporate strategies of such firms are significantly influenced by portfolio optimization objectives that are outside the focus of this study. All other industries are included.

<sup>6</sup>The level of detail available varies according to the base data reported by the respective national statistics offices. US data are broken down into 237 ISIC industries; German data are broken down into 68 ISIC industry sectors. In the case of Germany, industry sector-level figures were applied to all industries included in the respective sector.

<sup>7</sup>Industry concentration data are not available on a per-annum basis, which represents an unfortunate limitation. Having to deal with this limitation, we addressed this issue as follows. For the US, the 1992 data were used for the years 1987 to 1996, the 1997 data for 1997 to 2001, and the 2002 data for 2002 and 2003. For Germany, the 1999/2000 data were used for all years prior to 2001, whereas the 2001/2002 data were used for all other years.

<sup>8</sup>Core business size is measured by the largest business segment's sales.

<sup>9</sup>We performed robustness checks using independent variable lags of one, two and three years, as well as a weighted average composite approach that places increasing weights on more recent years using data for up to 10 years for AFC and LFC. While coefficients and significance levels varied slightly, overall effect directions and significance remained consistent. We reflect results based on the lags that best match our theoretical argument.

<sup>10</sup>This approach gives the same results as including time dummies without consuming as many degrees of freedom.

<sup>11</sup>We are grateful to an anonymous reviewer for raising these questions.

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### ABOUT THE AUTHORS

**Thomas Hutzschenreuter** is Dietmar Hopp Professor of Corporate Strategy at WHU – Otto Beisheim School of Management, Vallendar/Germany. Born in Germany, he is a German citizen. He received his PhD from Leipzig Graduate School of Management, Germany. His research interests are internationalization and diversification growth strategies, foreign competition, strategy processes, and globalization of value chain activities. He can be reached at [th@whu.edu](mailto:th@whu.edu).

**Florian Gröne** received his doctorate from WHU – Otto Beisheim School of Management (Vallendar, Germany) and is still affiliated with the same institution. He was born and lives in Germany and is a German citizen. His research interests include firm scope strategy changes and foreign competition. He can be reached at [florian.groene@whu.edu](mailto:florian.groene@whu.edu).

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