

The Timing of International Expansion: Information, Rivalry and Imitation Among Japanese Firms, 1980–2002

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ABSTRACT Sociological-based information theory and economics-based competitive rivalry theory operate as the dominant theories of interorganizational mimetic behaviour. Recent work has sought to integrate the ideas in these theories, or determine which has greater explanatory power. In this study, we juxtapose the concepts in these two theories, to illustrate the complementary nature of information-based and rivalry-based theories of mimetic behaviour. Specifically, we consider how the predictions of information-based theories are moderated by the home competitive context of the industry of a firm making an international expansion. Using a 1980 to 2002 sample of 4949 manufacturing plant entries made into 71 foreign countries by 783 publicly-listed Japanese manufacturing firms, we find that the competitive context in the home industry influences the propensity of a focal firm to imitate the actions of rival firms. Our results support our contention that the two theoretical approaches are complementary, with the complementarities extending from the limitations of each approach.

INTRODUCTION

International expansion is a strategic action that has important consequences for a firm's competitiveness and profitability, as well as its domestic and international competitive positions relative to its home country rivals. Rivalry and competition are consequently important drivers of international expansion decisions (Flowers, 1976; Hymer, 1976). Rivalries among firms that compete in the same country and industry typically emerge as the phenomenon of clustering, or bunching, in their decisions to enter a foreign market (Knickerbocker, 1973; Yu and Ito, 1988).

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This phenomenon of bunching extends from the observation that firms often imitate or mimic the decisions of each other when entering foreign markets. Two substantial streams of literature have emerged to explain the processes underlying mimetic behaviour: sociological-based information theory and economics-based competitive rivalry theory (Lieberman and Asaba, 2006). Although there is a broad recognition of the value of these two conceptual bases to explain imitation, empirical work comparing the predictions of these theoretical viewpoints has been limited (Chan et al., 2006; Gimeno et al., 2005). A comparison of the predictions of these theories can develop our understanding of the processes underlying mimetic behaviour, particularly as it relates to the influences of home organizational environment of a firm, and the organizational environment in which a decision is being made.

This distinction between organizational settings is fundamental to distinguishing between information and rivalry theories. An information based explanation of imitation connects propensities to engage in mimetic behaviour to the conditions in the organizational environment – the industrial and geographic setting for a decision or action – in which the decision or action is being made. In contrast, a competitive rivalry based explanation of mimetic behaviour focuses on conditions in the home organizational environment of a firm as the primary influence on mimetic behaviour. In this sense, the two explanations are complementary – competitive rivalry-based explanations focus on the conditions of the environment in which a firm is based, but not on the environment into which a firm is expanding. On the other hand, information based explanations of mimetic behaviour focus on the conditions of the environment into which a firm is expanding, without a consideration of the influence that extends from a firm's home organizational environment.

To examine the two theoretical approaches jointly, we require a setting in which there is substantial variance in both the organizational environments in which an organization is situated and into which an organization is growing. An international, multiple-industry setting provides substantial opportunities to explore how the literatures on information and rivalry explanations to imitation can be juxtaposed, to better understand their limitations and to examine whether they are complementary, supplementary, or distinct explanations of mimetic behaviour.

We attempt to make this contribution by focusing on the issue of a firm's decision to enter a market (Stalk and Hout, 1990). In modelling the entry decision, we explicitly consider the issues of inter-firm rivalry and home country competitive conditions, alongside our consideration of the impact of the inter-organizational environment of the destination (host market), including the influence of the decisions of other firms. This approach permits us to understand how rivalry, and information and legitimacy influences act independently or in a complementary, interactive manner, to influence a firm's decisions about its entry timing into a market.

We set as our focus a firm's international expansion decision, namely when to enter into a particular host country. Our model ties together predictions from a sociological perspective about how other firms' actions provide information about foreign markets, with predictions from a competitive rivalry perspective to international expansion. Our setting is the 4949 manufacturing plant entries made into 71 host countries by 783 publicly-listed Japanese manufacturing firms, in the 1980 to 2002 period.

BACKGROUND

The underlying idea of our conception of entry timing issues is that an international expansion is a strategic action that can change the balance of competition in a firm's home and international markets (Lieberman and Montgomery, 1988; Mitchell et al., 1994). Not only is an international expansion a strategically important action, it is a highly observable one (Martin et al., 1998). Competitors can readily track and counter a firm's international expansions by making foreign direct investments (FDIs) in similar locations. Given its high visibility, and its importance to a firm's strategic position, competitiveness and profitability, an international expansion is likely to engender strategic responses by competitors, like other similarly important strategic actions.

Theories of the choice and timing of foreign market entry explicitly recognize the importance of an international expansion decision for a firm's competitiveness, and have accordingly stressed the need to react swiftly to a competitor's moves (Flowers, 1976; Yu and Ito, 1988). The importance of the reactive and imitative aspects of the FDI decision is reflected in the literature we depict in Table I. This table presents a summary of the empirical and conceptual literature on imitation in expansion decisions, many of which were international.

As detailed in Table I, early work in examinations of the international expansion decision stressed how this decision influenced a firm's competitiveness, particularly with respect to the need to react swiftly to a competitor's moves (Flowers, 1976; Terpstra and Yu, 1988; Yu and Ito, 1988). These analyses focused on conditions in a firm's organizational environment in its home country as influences on imitation, with the conceptual work primarily restricted to competitive explanations. Even recent work by Guillén (2002) placed a similar emphasis on the drivers of imitation as extending from a firm's home organizational environment, but with no explicit consideration given to the organizational environment in the host country.

Meanwhile, other recent developments in examinations of the international expansion decision have been rooted in perspectives that emphasize how social influences and information derived from the organizational environment into which a firm was entering, conditioned a firm's entry decisions (Greve, 2000; Haveman and Nonnemaker, 2000; Martin et al., 1998). Research from a sociological perspective puts an emphasis on imitation in the entry decision, but it has done so largely independent of considerations about which sets of firms respond to information-based influences. In other words, research from a sociological perspective places an emphasis on conditions in the organizational environment in which a firm is making its investment. Even though research has noted that differential effects on imitation emerge from different analytical levels of organizational aggregation – country-level, local industry-level, firm-level and global industry-level (Chan et al., 2006) – a consistent limitation in this work (Garcia-Pont and Nohria, 2002; Haunschild and Miner, 1997; Henisz and Delios, 2001) is its lack of consideration of the influence of a firm's home geographic and industrial organizational environment.

With this limitation, sociology-based studies implicitly assume that firms across different industrial and geographical home organizational environments will have similar propensities for information-based imitation. Yet, rivalry perspectives stress that the

Table I. Sample of research on expansion, imitation and competitive reaction

<i>Author(s)</i>	<i>Setting</i>	<i>Conceptual base</i>	<i>Important findings</i>	<i>Limitations</i>
Flowers (1976)	European/Canadian FDI in the USA (1945–75)	FDI as an oligopolistic reaction.	In highly concentrated industries, FDI by leading firms leads to clustering, in response to the actions of the first investing firm.	Analysis is restricted to competitive explanations.
Yu and Ito (1988)	US tyre and textile industries (1977–82)	FDI as an oligopolistic reaction.	Oligopolistic reaction is more prominent in less competitively structured industries.	Analysis is restricted to competitive explanations.
Terpstra and Yu (1988)	20 largest US advertising agencies, 1972 and 1984	FDI as an oligopolistic reaction, and other firm level and market level factors.	Oligopolistic reaction, firm size, firm international experience, and host country market size have a positive impact on FDI decision.	Analysis is restricted to competitive explanations.
Haveman (1993)	US savings and loan associations (1977–87)	Organizational ecology and neoinstitutional theory – mimetic isomorphism.	Firms imitate large and successful organizations, but not always similarly sized organizations, while entering a new market.	Author acknowledges the role of economic forces but leaves that as a future research question.
Haunschild and Miner (1997)	Use of investment banker in acquisitions, USA, 1986–93	Imitation based on neoinstitutional and learning theories.	Firms make use of all three selective imitation modes – frequency, trait and outcome. These can operate simultaneously and are affected by outcome salience and uncertainty.	Adoption of a practice seen only as social phenomenon, and not driven by competitive considerations.

Martin et al. (1998)	Japanese automotive component suppliers' entry in the USA and Canada (1978–90)	Information constraints and market attractiveness constraints on international expansion.	Likelihood of a FDI by suppliers is related to competitor entries in an inverted U shaped manner and to the non-competitor entries in a positive manner.	It is not clear how the competitive and sociological factors interact to affect expansions decisions.
Greve (2000)	Tokyo banking industry (1894–1936)	Perspectives on experiential learning and rational consideration of future consequences.	Market niche entry decisions are influenced by local competitive environment, actions of large organizations and organization's own experience.	The role of environmental opportunities in affecting entry decisions not incorporated.
Henisz and Delios (2001)	Japanese firms' investments (1990–96)	Neoinstitutional theory and political institutions.	Prior internationalization to provides legitimization to a decision marked by uncertainty, when the uncertainty comes from lack of experience, but not when it is due to political environment.	The role played by market structure and competitive forces not taken into consideration.
Lu (2002)	Japanese firms' investments in 12 countries (1999)	Institutional and transaction cost based explanations.	Firms copy their own entry modes as well as those of other firms while making new FDI decisions; both, intra-organizational and inter-organizational mimesis matters.	The role of external environment in determining the entry mode not taken into consideration.

Table I. *Continued*

<i>Author(s)</i>	<i>Setting</i>	<i>Conceptual base</i>	<i>Important findings</i>	<i>Limitations</i>
Guillén (2002)	South Korean firms into China (1995)	Interorganizational approach based on ecological and neoinstitutional theories.	Imitation among firms from the same home-country industry increases the rate of foreign expansion. Imitation effects decrease after first entry.	The study did not explore how market structure interacts with sociological factors.
Gimeno et al. (2005)	US Telecommunications industry (1985–95)	Competitive and institutional explanations of inter-organization mimetic behaviour.	Firms mimic the entry moves of the prior firms, when both focal and prior firms have large shares in the same domestic market. Stronger support found for competitive explanations of mimicry than for an institutional perspective.	Limited sample, inadequate controls for environmental influences.
Chan et al. (2006)	Japanese firms FDI worldwide (1989–98)	Sociological (information-based) explanations of imitation.	Legitimacy and competition are two important forces in foreign market entry decisions. Market entry influenced by prior entry and prior exit decisions at four levels of analysis: the host country, global industry, local industry, and parent firm level.	Sample limited to single industry (Japanese electronics MNCs).
Barreto and Baden-Fuller (2006)	Portuguese banks (1988–96)	Mimetic isomorphism.	Banks imitate their legitimacy-based groups in branching decisions, but the mimetic branching reduces profitability.	Competitive explanations not taken into account in predicting branching decisions.

competitive conditions in a firm's home country, as well as the characteristics and actions of rival firms (Ferrier et al., 1999), exert a strong influence on the imitation of international expansion decisions.

Building from this juxtaposition of information-based and rivalry based theories of imitation, we seek to identify if and how these theories can act in a complementary manner to one another, or if they are fundamentally distinct from one another. In this approach, we extend recent work that has integrated (Lieberman and Asaba, 2006) and contrasted these two theoretical approaches (Gimeno et al., 2005). We build our study from a sociological explanation of imitation and inter-organizational influences on international expansion to identify how the home organizational environment as related to inter-firm rivalry (Flowers, 1976), as well the characteristics of competing firms (Ferrier et al., 1999), can act independently and jointly as impetuses to the international expansion decision.

HYPOTHESES DEVELOPMENT

Interorganizational Environment and International Expansion

An international expansion decision is one marked by considerable uncertainty and incomplete information (Hymer, 1976). Firms facing uncertainty are likely to imitate the decisions of other firms, as indicated in the arguments of neoinstitutional theory (Garcia-Pont and Nohria, 2002; Greve, 2000; Haunschild, 1993; Haunschild and Miner, 1997) and models of rational behaviour under conditions of imperfect information (Head et al., 2002).

Neoinstitutional researchers have identified how social influences have a heightened role for influencing decisions, when the decision environment or decision-maker is characterized by high uncertainty (DiMaggio and Powell, 1983). When faced with uncertainty, a firm turns to the decisions of other firms as sources of information and legitimacy for a course of action (Tolbert and Zucker, 1983). Firms tend to implement the same decisions as other firms with greater frequency as the number of other firms that have engaged in a decision increases (March, 1981).

Even though firms imitate the actions of other firms, not all firms are equally susceptible to imitative pressures and not all firms exert a similar imitative influence (Gimeno et al., 2005). With respect to the influence of other organizations, firms tend to look to other firms with which they have social contacts as guides for imitation (Baum et al., 2000; Garcia-Pont and Nohria, 2002). The basis for imitation can be frequency-based, when it is influenced by all other firms in a firm's immediate interorganizational environment, or it can be trait-based, when a narrowly-defined selective process is used for identification of the sets of firms to imitate (Haunschild and Miner, 1997).

Frequency-based imitation is a pure social imitative process in which a firm imitates the structures, practices and decisions that have been adopted by growing numbers of other firms. All organizations in the influence group, that is a firm's broad-based inter-organizational environment, have the same impact on a firm's decision-making process, as by their decisions, they each provide information to a firm that helps reduce its uncertainty about that decision. Considerable empirical support exists to support the idea of frequency-based imitation. Greve (1996) and Haveman (1993) find evidence

of frequency-based imitation in the market expansion context. Following this well-established literature, we establish our baseline expectation that entries made by other firms in the interorganizational environment will provide information to a focal entrant that will reduce its uncertainty about that market and positively influence its propensity to enter that market.

Hypothesis 1a: The likelihood of an entry in a host country will be greater, the greater the density of previous entries in that host country by all other firms from an entrant's home country.

Continuing with an information-based perspective on influences on entry rates, we can consider how trait-based imitation can be compared to frequency-based imitation. Trait-based imitation is a discerning imitation mode in which certain characteristics – industry peers, size, status – define the reference group for imitation (Garcia-Pont and Nohria, 2002; Haunschild and Miner, 1997). This form of imitation is based on an objective characteristic. Trait-based imitation has a higher degree of technical efficiency than frequency-based imitation, in the sense that compared to the information that comes from the observation of all other firms, information conveyed by the actions of similar firms should have a greater relevance to the decision faced by the focal firm (Baum et al., 2000; Davis et al., 1994; Haunschild, 1993). The technical element arises from the belief that a structure, decision or practice adopted by a firm with which a trait is shared is more likely to have a positive outcome for the imitating firm (Gimeno and Chen, 1998).

Previous research has found that similarity in size and the industries in which firms compete enhances the likelihood of a firm imitating other firm's actions (Baum et al., 2000; Haunschild and Miner, 1997). The influence of industry rivals is manifest in both legitimacy and information-related considerations. If rivals begin to engage in international expansion decisions, there is a greater legitimacy to a firm that would like to engage in a potentially controversial international expansion decision, even when it might be met by opposition from a subset of managers, executives or the board of directors, or even if it might have initial negative performance consequences (Barreto and Baden-Fuller, 2006). Entry can also be facilitated by shared information. The expansions of rivals can convey information that may help to reduce uncertainty about the benefits of entering a particular country. Consequently, if trait-based imitation occurs, we expect the likelihood of entry to be positively related to the frequency of entry by a firm's direct competitors (rivals).

Hypothesis 1b: The likelihood of an entry in a host country will be greater, the greater the number of previous entries by a firm's rivals.

Industry Context and International Expansion

Information-based imitation can occur where the entry of all firms, or the entry of industry counterparts conveys information and legitimacy to the international expansion decision. Unlike the case of the entry of all firms, entry by industry rivals conveys more than just information, it might also alter the competitive dynamics in the industry.

Whether a firm is susceptible to a change in competitive conditions based on the actions of rivals, is dependent on the conditions in the organizational environment of a firm's home industry.

Industry market structure comprises a number of factors including seller concentration, the extent of product differentiation and barriers to entry (Scherer and Ross, 1990). The influence of market structure on firm conduct has received generous attention in studies of domestic competition, but investigations of its relationship to international rivalry are fewer in number (Caves, 1996, chapter 4). Previous research has examined how oligopolistic conditions influences competition as played out in imitative behaviour in international competition.

Rivalry in international expansion emerges in a form of oligopolistic reaction, in which firms in highly concentrated industries have a high likelihood of rapidly imitating a rival's international expansion decisions (Flowers, 1976; Knickerbocker, 1973). Although Knickerbocker (1973) raised the possibility that competition in concentrated industries gives way to collusion when concentration levels are high, there is little evidence for successful collusion among firms competing in international markets (Caves, 1996, p. 93). Anand and Kogut (1997) provide evidence that industry rivalry and market opportunities play a major part in FDI decisions. Other scholars (Kogut and Chang, 1991; Yamawaki, 1998; Yu and Ito, 1988) also find that bunching and imitation in entry is positively related to concentration in the home country.

Firms engage in such imitative actions to minimize the perceived threat to their competitive position in domestic and international markets. If a firm does not follow the expansion moves of its competitors, it risks losing competitive ground as the competitor may accumulate new capabilities, information, experience and markets (Flowers, 1976). As the number of competitors in an industry increases, the effect of their actions on other firms becomes minimal. With more players in the market, it becomes difficult to respond to the collective actions of a large number of competitors (Yu and Ito, 1988). Correspondingly, we expect a firm will be more likely to make a competitive response to a rival's entry when home industry concentration is high.

Hypothesis 2a: The likelihood of an entry in a host country will be greater, the higher the concentration rate of a firm's industry in its home country.

The specific industry rivalry effect captured in the prediction of Hypothesis 2a, stands at odds with an implicit attribute of an information-based sociological explanation of imitation – namely its lack of consideration of the conditions in a firm's home organizational environment in its inclination to imitate other firms' practices and decisions (Lieberman and Asaba, 2006). As noted by Guillén (2003), neoinstitutional theory advocates that imitative behaviour occurs independent of economic factors, such as industry concentration.

Although plausible, this line of argument does not fully embrace the idea that competitors are engaged in a process of action and reaction that can reinforce leading positions in an industry, or displace incumbents (Ferrier et al., 1999). This process is most acute where there is a condition of high rivalry. Rivalries are likely to emerge when there is a high level of competitive interdependence, such as in an oligopolistic industry

(Gimeno et al., 2005). In a perfectly competitive industry, the actions of one firm are largely independent of the consideration of the competitive moves of other firms.

Firms in highly concentrated industries will be the most sensitive to rivals' actions in competitive markets. Although rivals' actions might have a legitimizing effect on market entry, rivals' market entries will exert an immediate competitive pressure on a firm to enter a foreign market. The intensity of this pressure is positively related to the concentration of a firm's industry in its home country. The immediacy of this pressure means that firms in concentrated industries will be more sensitive to similar levels of competitive moves on behalf of rivals, than firms in atomistic industries. In this sense, concentration should moderate the intensity of trait-based imitation. Firms in highly concentrated industries can not only gain information about the attractiveness of a market from a competitor's entry into that market, but that move also conveys information about a potentially changed competitive condition in the host market. In this sense, firms in concentrated industries should react with a great immediacy to a rival's entries, when those entries are few in number. As the number of entries made by rivals increases, the implications for changed competitive conditions are less pronounced. As a consequence, the positive impetus that competitive conditions in a firm's home organizational environment have on the relationship between the number of rival entries and the likelihood of a focal firm's entry become weaker, the greater the number of entries by rivals.

Hypothesis 2b: The lower the concentration rate in a focal firm's industry in its home country, the greater the marginal influence of an increase in the density of competitor entries on its likelihood of an entry in a host country.

Firm Characteristics and International Expansion

The international context has become an important arena for competition as leading firms in home economies transfer their competitive advantages to overseas markets (Caves, 1996). Moving early into a foreign market can be an action that potentially leads to competitive advantages in relation to home country rivals, but being an early entrant comes at the cost of encountering great uncertainty. Uncertainty levels can be a formidable deterrent to international expansion because of the significant demands to learn about and develop capabilities in a setting in which language, culture, buyers, suppliers and political and legal systems can be different (Xu and Shenkar, 2002).

Even with the information and capability challenges found in international expansion, early entrants can still succeed in international expansion (Mitchell et al., 1994). Although competitive rivalry and information-based theories identify how the actions of other firms inspire a focal firm to enter a market, these theories do not identify which firms will be the first or among the earliest to enter a market. Research on multinational firms has identified that firms with strengths in intangible assets that underlie technological or marketing-based advantages are leaders in international activity (Caves, 1996).

Extending this to issues of entry timing, a firm with strong intangible assets, as compared to other firms in its industry, is likely to be among the leaders in entry into a particular market because it has the competitive advantages to offset uncertainty and information disadvantages that are the most profound for international entrants. The

comparative strength of these competitive advantages, particularly in relation to other firms in its home industry, is likely to stimulate entry. Hence, industry incumbents that are leaders in developing unique technological and marketing capabilities, are likely to be leading firms in an industry in entering foreign countries, which means they will have the most rapid international expansion rates.

In terms of understanding how these capabilities form an impetus to entry, it is important to consider their degree of applicability and transferability to new geographic markets. The close location to market-based activities means that advertising-based assets have a greater degree of location specificity compared to technological assets (Anand and Delios, 1997). The location specificity extends from the extensive time (Dierickx and Cool, 1989), the close interaction between consumers and a firm (Wernerfelt, 1985), and the cumulative investments in marketing required to build advertising assets.

In comparison, technological assets are less location specific and fungible across geographic borders (Anand and Singh, 1997). Greater fungibility means that firms often pursue a strategy of building technological assets by diversifying R&D activities across geographic regions reputed for being technological hotbeds in a firm's field (Frost, 2001). Building marketing assets follows a different motive. The location specificity and low cross-border fungibility of marketing assets means that a firm engaged in FDI often follows a strategy of modifying or adapting its existing assets to its new market contexts, to transplant its home-based capabilities to its foreign locations (Carpenter and Nakamoto, 1989).

Taken together, these lines of reasoning suggest two different competitive dynamics in international expansion. The first occurs for firms that have strong advertising-based capabilities in the home country. A firm with strong advertising capabilities will be motivated to undertake FDI early to develop these capabilities in foreign markets. Meanwhile, a firm with strong technological capabilities faces no such exigency because the strengths of its technological capabilities are not devalued by waiting. Even so, the transferability of technological assets means that a firm might be motivated to go abroad to augment its technological capabilities by investing in countries in which it can source technological expertise (Kogut and Chang, 1991).

Although the underlying mechanisms are different, both paths suggest the same outcome. Leading firms with advantages based in technological or marketing assets should be among the leaders to invest in foreign markets, for reasons of exploiting existing assets and building new assets to be more competitive in local and international markets.

Follower firms should react rapidly, particularly when an early entrant rival has strong capabilities. The motivation for the follower firms is to maintain competitive parity with existing firms. To maintain this competitive parity, a follower firm should enter a market quickly. Rapid imitation will not provide a rival with the time to build a strong competitive position in a foreign market. Meanwhile, failing to follow rapidly may result in a loss of competitive position, further distancing a follower firm from its leading rivals, both in foreign markets and in domestic markets.

Moreover, as research on competitive reaction has shown (Ferrier et al., 1999), leading firms in an industry try to augment the extent of differentiation between themselves and

follower firms. Such differentiation in competitive space reduces the intensity of competition between firms (Gimeno and Woo, 1996), increasing opportunities for market share gains or gains in profitability. Follower firms can correspondingly gain on leading firms by taking actions that are similar to the leading firms. Imitation by competitor firms preserves the status quo of competition in an industry, which increases opportunities to reduce the competitive gap that leading firms in an industry are trying to lengthen through acts of competitive differentiation (D'Aveni, 1994).

Hence, we expect a dynamic in international market entry to emerge in which leading firms, in terms of their technological and marketing capabilities, make international entries first, but such entries are countered rapidly by follower firms, to maintain a competitive status quo.

Hypothesis 3a: The likelihood of an entry into a host country will be greater, the greater the focal entrant's technological (marketing) capabilities.

Hypothesis 3b: The likelihood of an entry into a host country will be greater, the greater a previous entrant's technological (marketing) capabilities.

When a firm makes an international expansion, whether in response to the possession of intangible assets or in response to the foreign entries of other firms, it accumulates international experience that can lead to the development of knowledge and capabilities useful for managing future international expansions (Barkema et al., 1996; Delios and Henisz, 2003). Consequently, a firm that has invested internationally in the past can develop a capability profile that enhances the feasibility and supports the success of its future expansions (Chang, 1995).

This capability profile includes two dimensions: a reduced level of uncertainty about the conditions in the host country markets under contemplation for entry, and an enhanced set of capabilities to operate in various host country environments (Johanson and Vahlne, 1977). The former dimension means that a firm operates with a greater level of certainty in its international operations. A reduction in a firm's uncertainty levels about markets means that it is less likely to engage in imitative behaviour. With greater levels of certainty, comes a lesser reliance on social considerations for decisions and actions.

Not only will a firm with significant international experience be less likely to face the market uncertainty related challenges that impede the international expansion activities of less experienced rival firms, it is also likely to be a good guide to follower firms. An experienced firm is one that is regarded as capable in foreign markets, hence its actions are likely to be imitated by follower firms. This imitation should occur rapidly such that an imitating firm does not have as great a risk of being at a competitive disadvantage compared to the entries of experienced rivals that have already entered a market. Further this imitation should come from a firm's less-experienced rivals. An inexperienced rival is a firm that not only has the highest predilection to engage in an imitative strategy, it is also the one most vulnerable to suffering a negative competitive repercussion, if it does not counter its inexperience and lack of presence in foreign markets by entering into a market into which other rivals have already made an international

expansion. Hence, we expect a dynamic in which internationally experienced firms will expand into new markets, but these entries will also precipitate entries by less experienced firms.

Hypothesis 4a: The likelihood of an entry into a host country will be greater, the greater a focal firm's international experience.

Hypothesis 4b: The likelihood of an entry into a host country will be greater, the greater a previous entrant's international experience.

METHODS

Setting

We use the international expansion of Japanese firms as the setting for this analysis. There are at least two features of Japanese firms' international expansion that make this a good setting in which to test our hypotheses. First, Japan's international expansion is a relatively recent phenomenon in which the majority of investments were made in the last two decades of the 20th century (UNCTAD, 2000, p. 39). This feature limits concerns about left-censoring especially when compared to alternate empirical settings such as the outward investment of firms from other regions (e.g. the USA, the United Kingdom, Germany) with high FDI outflows. Second, Japan has been a leading source of outward FDI, and its country distribution is extensive.

Data Sources and Sample

We derived our sample from the manufacturing firms listed on the first and second sections of the Tokyo Stock Exchange as of the end of 2002. The Nikkei NEEDS tapes, which was also the source of several of our independent variables for corporate and industry information, provided this list of firms. We matched this list of firms with the foreign subsidiary data provided in several editions of Toyo Keizai's annual compendium of overseas investment activity entitled, *Kaigai Shinshutsu Kigyō Souran*.

We used the 1986, 1989, 1992, 1994, 1997, 1999, 2001 and 2003 editions of *Kaigai Shinshutsu Kigyō Souran* to construct a longitudinal profile of international expansion activity. We inspected the depth of coverage of this source by comparing it to other sources, such as annual industry and company reports. We found that all but 2 per cent of Japanese public firms that had foreign subsidiaries were listed in *Kaigai Shinshutsu Kigyō Souran*. These observations corroborate Yamawaki's (1991) and Henisz and Delios' (2001) conclusion that *Kaigai Shinshutsu Kigyō Souran* coverage approximates the population of FDI of Japanese publicly-listed firms.

After matching corporate-level and industry-level data, with subsidiary data and international expansion records, we completed our data matching procedures, by adding country-level data. We used demographic and economic indicators from the World Development Indicators CD-Rom, World Bank and currency exchange rates from Pacific Exchange Rate Service. We also utilized the political hazards measure from Henisz (2000) and cultural distance measure derived from the data of Hofstede (1980).

We next introduced criteria for defining the sample for our analyses. The unit of analysis is a firm's entry decision, as stratified by country–industry pairs. To establish country–industry pairs, we divided the manufacturing firms in our sample into industry groups using the industry classification in the Nikkei NEEDS tapes. The industry groups are coherent and distinct, and conform to firm–industry classifications found in other leading sources of corporate information in Japan such as Daiwa's *Analyst's Guide*. The closest analogue to the industry classifications in the NEEDS tapes is a US three-digit SIC code. After forming these industry groups, we traced entry patterns by firms within an industry group in a host country, to form our annual records of firm entry timing in each country–industry category.

To avoid left-censoring, we only included country–industry pairs in which the first investment occurred in 1980 or later. The final step was to expand the data to include annual observations for all firms in the countries in which a firm had invested. The consequent number of entries was 4949 in 71 countries as made by 783 Japanese firms in 67 different industries based on three-digit SIC categories. In our sample, we included records on the years in which a firm did not make an investment in a foreign country. For each annual observation, we added covariates, as defined below, which were time-varying when available. We treated the end of 2002 for each country–firm pair as a right-censored case.

Measures

Dependent variables in previous research on competition and entry timing have been an entry or response variable, and a relative response timing measure that compares a firm's time for a response to an action of one firm, with the response time of other firms (Chen and Hambrick, 1995). We developed an entry decision variable that enabled us to test the rate of response (likelihood of entry) for a firm. To mark the decision by firm i to establish a manufacturing entry in country x in period t , we created the indicator variable E_{ixt} . This variable takes a value of 1 if firm i locates a manufacturing plant in country x at time t , and 0 otherwise. We started annual observations for all firms in 1980, and continued our observations for each firm–country pair until 2002.

Interorganizational environment. We developed three time varying measures from the entry histories of other firms in a host country–industry pair. The first measure, *Competitors' entries*, was the natural logarithm of an annual count of the number of previous entries, less exits, made by all rival Japanese firms in a country–industry pair. The second, *Japanese firms' entries*, was an annual count of the number of previous entries, less exits, made by all other Japanese firms in the same host country. We used the third, *Competitors' entries in nearby countries*, as a control variable to evaluate the influence on the likelihood of entry by firm entries made in countries that are geographically contiguous to a focal host country, or separated by a modest-sized (non-ocean or sea) body of water. We expect a positive association between *Competitors' entries in nearby countries* and the likelihood of entry.

Home industry context. *Four-firm concentration in Japan*, was a four-firm concentration ratio derived from the Fair Trade of Commission of Japan. *Industry size in Japan* and *Industry*

growth in Japan, were our two other measures of home industry influences on international expansion rates. Both *Industry size in Japan* and *Industry growth in Japan* are time-varying covariates developed from industry-level information provided in two editions of the *Analyst's Guide* and from aggregates of firm-level information from the NEEDs tapes.

Firm characteristics. We developed time-varying measures for the technological and marketing focus of a firm, for its international experience and for controls for its host country experience, export focus and firm size. *Technological intensity* and *advertising intensity* measured a firm's technological and marketing focus, using the standard proxies of R&D and advertising intensity. We computed these measures as five-year moving averages of the ratio of a firm's R&D (advertising) expenditures to its sales. For example, for observations in 1990, we used the average of R&D (advertising expenditures) to total sales for the 1985–89 period.

We had two time varying measures of international experience. The first, *International experience*, was a logarithmic transformation of the number of years of investment history a firm had in all countries but the host country. The second, *Host country experience*, was the log of the years of a firm's investment history in a host country.

Exporting was a five-year moving average ratio of export sales to total sales (Chang, 1995; Terpstra and Yu, 1988). *Firm size* was the logarithm of firm employment (Chen and Hambrick, 1995). *Capital intensity* was the ratio of total capital employed to total sales.

For each firm-level measure, we first computed values for all firms in our sample. We then developed industry-level measures based on the mean values for all firms that competed in an industry. Next we transformed absolute values for firm characteristics to create normalized values by industry. The normalized value controls for differences in industry averages, while identifying firms that have above or below average positions in the relevant characteristic within an industry. For each measure, the normalized value was calculated using the following formula:

$$N_{ij} = (X_{ij} - X_j) / X_j$$

where N_{ij} is the normalized value of a measure for firm i in industry j , X_{ij} is the actual value for firm i in industry j , and X_j is the mean value of that measure for industry j .

For the analyses reported in Table IV, we used the absolute measures and the normalized measures. For each firm, we had time varying measures for its characteristics, and time varying measures for the most recent entry by an industry rival in the host country. Where there was no previous entrant, we used industry means for the relevant characteristic.

Host country characteristics. Two control variables measured a country's relative attractiveness for foreign investment (ratio of annual flows of FDI to annual GDP, *FDI/GDP*) and for foreign trade (ratio of annual value of exports and imports to annual GDP, *Trade/GDP*). Three measures captured market potential: *GDP growth*, *population growth* and *GDP per capita*. The first measured current market size, while the second and third measured market potential. We included two measures of the uncertainty of the host country environment. The first is the political hazards index, as derived from the work of Henisz

(2000). The second is the cultural distance index developed by Kogut and Singh (1988) using Hofstede's measures (1980). We also included fixed effects for the year of observation.

Modelling Procedure

We estimated entry rates using an exponential event history model in which no age parametric dependence is specified in its functional form. This technique models the transition rate from an origin state (no entry) to a destination state (an entry) as a function of the prescribed covariates. Its general form is:

$$r_{jk} = \exp(\alpha_{jk0} + A_{jk1}\alpha_{jk1} + A_{jk2}\alpha_{jk2} \dots)$$

where r_{jk} is the transition rate from the origin state j to the destination state k (an entry into a country), with the observed covariate vector A_{jk} , parameters to be estimated α_{jks} , and constant α_{jk0} . In our modelling, the covariate vector, $A_{jk1} \dots N_s$, comprises the variables we have for the interorganizational and home industry environments, firm characteristics and control variables. The constant, α_{jk0} , varies by year as we employ fixed effects for the year of an observation. The relationship between the covariates and the transition rate is specified as log-linear to ensure transition rate estimates are not negative, and estimation uses the maximum likelihood method.

To estimate this model, we took the sample of all firm-country pairs and split it by annual observations to include all possible years t in which firm i could make an entry into country x . We continued all observations until the end of 2002, at which point our models were right-censored. We note at this juncture that our results were robust to other hazard model specifications, such as a Cox semi-parametric model, and a discrete time hazard specification.

RESULTS

Table II presents a correlation matrix and descriptive statistics for all variables in our models. Correlations between our variables were low to modest. The highest is a correlation of -0.66 between political hazards and per capita GDP, reducing any concerns we might have had about the deleterious effects of multi-collinearity on our coefficient estimates.

Table III presents the results for the analyses, independent of firm-level effects. Table IV presents the results for models including our various definitions of an entrant's and a previous entrant's characteristics. Model 1 in Table III includes host country characteristics plus fixed effects for year. Model 2 adds measures for the interorganizational environment. Model 3 adds measures of industry context, with Model 4 including the interaction term of number of competitors' entries by concentration. Models 2, 3 and 4 had successively better fits with the data, as given by the significance of the changes in the chi-square test statistics for model fit.

In each model, we report a coefficient estimate along with its standard error (in parentheses). The coefficient estimate shows the nature of the estimated relationship

Table II. Descriptive statistics and correlation matrix^a

<i>Variables</i>	<i>Mean</i>	<i>S.D.</i>	<i>1.</i>	<i>2.</i>	<i>3.</i>	<i>4.</i>	<i>5.</i>	<i>6.</i>	<i>7.</i>	<i>8.</i>	<i>9.</i>	<i>10.</i>	<i>11.</i>	<i>12.</i>	<i>13.</i>	<i>14.</i>	<i>15.</i>	<i>16.</i>	<i>17.</i>	<i>18.</i>	<i>19.</i>	<i>20.</i>	<i>21.</i>		
1 Per capita GDP * 10 ⁻⁴	1.13	1.12	1.00																						
2 Population growth	1.25	0.69	-0.49	1.00																					
3 GDP growth	5.08	4.26	-0.39	0.22	1.00																				
4 Trade/GDP	59.35	42.51	-0.31	0.34	0.08	1.00																			
5 FDI/GDP	3.62	4.12	0.20	-0.21	-0.03	0.25	1.00																		
6 Exchange rate	2.87	10.06	-0.20	0.03	-0.15	0.03	-0.07	1.00																	
7 Cultural distance	2.74	0.83	-0.23	0.37	0.21	0.53	0.23	0.03	1.00																
8 Political hazards	0.43	0.35	-0.66	0.15	0.40	-0.08	-0.09	0.34	0.09	1.00															
9 Competitors entries ^b	0.53	0.40	0.08	-0.10	-0.01	0.03	0.12	0.01	-0.01	-0.02	1.00														
10 Japanese entries * (10 ⁻³)	1.50	0.91	0.13	-0.04	-0.02	0.00	0.10	0.00	0.08	-0.05	0.09	1.00													
11 Competitors entries nearby countries ^b	0.22	0.25	0.28	-0.10	-0.04	-0.14	0.08	-0.07	0.07	-0.05	0.11	0.68	1.00												
12 Industry growth	0.96	1.11	-0.23	0.16	0.09	0.20	0.03	0.01	0.07	0.16	0.04	0.12	-0.19	1.00											
13 Industry size * (10 ⁻⁶)	0.02	0.09	-0.01	0.07	-0.02	-0.07	-0.13	-0.06	0.01	0.02	-0.09	-0.11	-0.14	0.05	1.00										
14 Four firm concentration	0.05	0.07	-0.07	0.05	0.00	-0.04	-0.03	0.03	-0.04	0.04	-0.15	0.19	-0.04	0.12	0.03	1.00									
15 Capital intensity	0.44	0.25	0.01	-0.01	-0.02	0.01	0.01	0.02	-0.02	-0.03	-0.18	-0.11	0.00	-0.17	-0.12	0.01	1.00								
16 Firm size ^b	7.97	1.32	0.00	0.01	-0.08	-0.01	-0.01	0.00	-0.12	-0.05	-0.17	-0.03	-0.15	0.14	0.00	0.20	0.14	1.00							
17 Exporting	0.19	0.19	-0.03	0.05	-0.04	0.00	0.01	0.00	-0.07	0.01	0.05	0.11	-0.09	0.28	0.04	0.15	-0.17	0.31	1.00						
18 International experience ^b	4.66	1.70	0.02	-0.06	-0.10	0.11	0.15	0.04	-0.09	-0.05	0.08	0.13	0.02	0.18	-0.10	0.03	0.04	0.66	0.35	1.00					
19 Host country experience ^b	1.94	1.48	0.33	-0.14	-0.21	0.01	0.13	0.01	-0.06	-0.29	0.06	0.36	0.35	-0.05	-0.10	-0.01	0.04	0.31	0.16	0.53	1.00				
20 Advertising intensity	0.01	0.02	0.06	-0.04	-0.02	-0.04	0.01	-0.01	-0.03	-0.01	0.09	-0.09	0.01	-0.05	0.03	-0.11	-0.02	0.05	-0.02	0.10	0.05	1.00			
21 Technological intensity	0.02	0.02	0.08	-0.10	-0.03	0.02	0.08	-0.01	-0.05	-0.04	0.19	0.02	0.01	0.09	0.01	-0.13	-0.16	0.29	0.16	0.29	0.16	0.16	1.00		

^aNotes: ^a Correlations >0.01 and <0.01 significant at p = 0.05.

^b Variable is a natural logarithm.

Table III. Rates of entry in international expansion: effects of industry and the inter-organizational environment^a

Variables	Model 1	Model 2	Model 3	Model 4
<i>Firm characteristics</i>				
Technological intensity				0.554** (0.210)
Advertising intensity				1.362*** (0.219)
International experience ^b				-0.113 (0.073)
Host country experience ^b				0.430 (0.303)
Exporting				-2.243*** (0.452)
Firm size ^b				0.470*** (0.110)
<i>Home industry context</i>				
Competitors entries * industry growth				
Competitors entries * industry size * (10 ⁻⁶)				
Competitors entries * industry concentration			1.094*** (0.177)	
Industry growth in Japan			-0.015 (0.236)	
Industry size in Japan * (10 ⁻⁶)			0.346*** (0.062)	
Four firm concentration in Japan				
<i>Interorganizational environment</i>				
Japanese firms entries * (10 ⁻³)		1.028*** (0.087)	1.059*** (0.091)	1.106*** (0.091)
Competitors entries ^b		-0.358*** (0.024)	-0.343*** (0.025)	-0.397*** (0.040)
Competitors entries in nearby countries ^b		0.142*** (0.015)	0.150*** (0.015)	0.152*** (0.015)
Capital intensity		-0.089* (0.040)	-0.040 (0.041)	-0.038 (0.041)
<i>Host country characteristics</i>				
Political hazards	0.213** (0.071)	0.031 (0.074)	-0.007 (0.074)	0.001 (0.074)
Cultural distance	0.075*** (0.023)	0.074** (0.023)	0.071** (0.024)	0.067** (0.024)
Exchange rate	-0.010*** (0.002)	-0.007** (0.002)	-0.006** (0.002)	-0.006** (0.002)
FDI/GDP	-0.006 (0.005)	-0.003 (0.005)	-0.001 (0.005)	0.000 (0.005)
Trade/GDP	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)
GDP growth	0.031*** (0.005)	0.034*** (0.005)	0.035*** (0.005)	0.035*** (0.005)
Population growth	-0.070* (0.028)	-0.113*** (0.029)	-0.125*** (0.029)	-0.121*** (0.029)
GDP per capita * 10 ⁻⁴	-0.008 (0.024)	-0.041 [†] (0.025)	-0.055* (0.026)	-0.056* (0.026)
<i>Model fit</i>				
Chi-square	219***	465***	530***	576***
Incremental chi-square	-	246***	65***	46***
Number of observations	39,214	39,214	39,214	39,214
Number of entries	4,404	4,404	4,404	4,404

^aNotes: *** p < 0.001; ** p < 0.01; * p < 0.05; [†] p < 0.10.

^bVariable is a natural logarithm.

between the independent variable and the likelihood of entry. A positive sign indicates that an independent variable increases the likelihood of entry for a focal firm.

The Interorganizational and Home Industry Environments

We used the frequency-based and trait-based measures of the inter-organizational environment to test Hypotheses 1a and 1b. Hypothesis 1a predicted that the likelihood of entry is positively related to the number of all other previous entrants in the host country from the home country. The positively signed coefficient ($p < 0.001$) on the number of Japanese firms entries variable supports this hypothesis. Hypothesis 1b predicted that the number of competitors' entries is positively related to the likelihood of entry. This hypothesis about trait-based imitation is not supported as the number of competitors entries variable is negatively signed ($p < 0.001$).

Hypothesis 2a predicted that home industry concentration would be positively related to the likelihood of entry. The positive sign on the concentration term ($p < 0.001$), provides support for this hypothesis. Further, support for Hypothesis 2b is provided in Model 4, in which we included the predicted interaction between concentration and trait-based imitation. As shown by the negative sign on the number of competitors entries and industry concentration interaction term ($p < 0.001$), the effect of trait-based imitation on the likelihood of entry was most pronounced when concentration rates were high, thus supporting Hypothesis 2b.

To examine the substantive nature of this effect, we can compute predicted rates of entry, and compare differences in entry rates at high and low levels of competitor entries across high and low concentration industries. At a low level of competitor entries (two entries by rivals), a firm from a highly concentrated industry had a predicted entry rate 1.3 times greater than for a firm from a low concentration industry. Meanwhile, when the number of competitor's prior entries was high (10 entries by rivals), the predicted entry rates for firms from high and low concentrated industries were about the same.

Further to home industry environment effect, we found that foreign entry rates tended to be greater in industries that were small (negative and significant coefficient estimate for *Industry size in Japan*) but growing rapidly (positive and significant coefficient estimate for *Industry growth in Japan*). When interacted with the number of competitors' entries, as in Model 4, we found that entry rates became more pronounced in faster growing and larger industries in Japan. For example, given a low level of competitor entries (two entries by rivals), firms in small but high concentration industries had an entry rate 1.49 times greater than firms in large, low concentration industries. Meanwhile, when the number of competitor entries was high (10 entries by rivals), the situation was reversed: the predicted entry rate for firms from a large, low concentration industry was 1.10 times greater than that for firms in small, highly-concentrated industries.

Firm Characteristics

Table IV shows the results for the tests of hypotheses of firm-level characteristics. Table IV has four models. Models 5 and 6 use absolute measures of firm characteristics, with Model 5 using measures for the entrant, and Model 6 having measures for the

Table IV. Rates of entry in international expansion: effects of firm characteristics^a

Variables	Model 5		Model 6		Model 7		Model 8	
	Absolute measures of firm characteristic for focal entrant	Absolute measures of firm characteristic for previous entrant	Absolute measures of firm characteristic for focal entrant	Absolute measures of firm characteristic for previous entrant	Normalized measures of firm characteristic for focal entrant	Normalized measures of firm characteristic for previous entrant	Normalized measures of firm characteristic for focal entrant	Normalized measures of firm characteristic for previous entrant
<i>Firm characteristics</i>								
Technological intensity	-0.811 (0.699)	-0.101 (0.672)	-0.101 (0.672)	-0.101 (0.672)	-0.003 (0.014)	-0.003 (0.014)	-0.006 (0.013)	-0.006 (0.013)
Advertising intensity	-1.051 (0.970)	-1.444 (0.930)	-1.444 (0.930)	-1.444 (0.930)	-0.010 (0.013)	-0.010 (0.013)	-0.022 [†] (0.013)	-0.022 [†] (0.013)
International experience ^b	0.001 (0.015)	0.050*** (0.016)	0.050*** (0.016)	0.050*** (0.016)	0.057*** (0.013)	0.057*** (0.013)	0.076*** (0.013)	0.076*** (0.013)
Host country experience ^b	0.101*** (0.014)	0.041** (0.014)	0.041** (0.014)	0.041** (0.014)	0.106*** (0.016)	0.106*** (0.016)	0.043*** (0.016)	0.043*** (0.016)
Exporting	-0.060 (0.095)	-0.006 (0.095)	-0.006 (0.095)	-0.006 (0.095)	0.003 (0.015)	0.003 (0.015)	0.000 (0.016)	0.000 (0.016)
Firm size ^b	0.153*** (0.018)	0.020 (0.018)	0.020 (0.018)	0.020 (0.018)	0.521*** (0.110)	0.521*** (0.110)	-0.268* (0.109)	-0.268* (0.109)
<i>Home industry context</i>								
Competitors entries ^b * industry growth	0.557** (0.212)	0.581** (0.210)	0.581** (0.210)	0.581** (0.210)	0.515* (0.212)	0.515* (0.212)	0.577*** (0.211)	0.577*** (0.211)
Competitors entries ^b * industry size * (10 ⁻⁵)	1.566*** (0.223)	1.503*** (0.221)	1.503*** (0.221)	1.503*** (0.221)	1.526*** (0.223)	1.526*** (0.223)	1.485*** (0.222)	1.485*** (0.222)
Competitors entries ^b * industry concentration	-0.154* (0.074)	-0.115 (0.073)	-0.115 (0.073)	-0.115 (0.073)	-0.141* (0.074)	-0.141* (0.074)	-0.132* (0.073)	-0.132* (0.073)
Industry growth in Japan	0.512 [†] (0.307)	0.445 (0.302)	0.445 (0.302)	0.445 (0.302)	0.565 [†] (0.307)	0.565 [†] (0.307)	0.471 (0.304)	0.471 (0.304)
Industry size in Japan * (10 ⁻⁵)	-2.954*** (0.466)	-2.528*** (0.466)	-2.528*** (0.466)	-2.528*** (0.466)	-2.227*** (0.460)	-2.227*** (0.460)	-2.507*** (0.462)	-2.507*** (0.462)
Four firm concentration in Japan	0.365*** (0.112)	0.416*** (0.112)	0.416*** (0.112)	0.416*** (0.112)	0.455*** (0.111)	0.455*** (0.111)	0.447*** (0.111)	0.447*** (0.111)
<i>Interorganizational environment</i>								
Japanese firms entries * (10 ⁻⁵)	1.114*** (0.093)	1.116*** (0.092)	1.116*** (0.092)	1.116*** (0.092)	1.021*** (0.092)	1.021*** (0.092)	1.093*** (0.091)	1.093*** (0.091)
Competitors entries ^b	-0.445*** (0.041)	-0.457*** (0.041)	-0.457*** (0.041)	-0.457*** (0.041)	-0.456*** (0.041)	-0.456*** (0.041)	-0.449*** (0.041)	-0.449*** (0.041)
Competitors entries in nearby countries ^b	0.120*** (0.016)	0.131*** (0.016)	0.131*** (0.016)	0.131*** (0.016)	0.126*** (0.016)	0.126*** (0.016)	0.130*** (0.016)	0.130*** (0.016)
Capital intensity	0.050 (0.043)	-0.014 (0.043)	-0.014 (0.043)	-0.014 (0.043)	-0.048 (0.042)	-0.048 (0.042)	-0.022 (0.041)	-0.022 (0.041)
<i>Host country characteristics</i>								
Political hazards	0.124 [†] (0.075)	0.033 (0.075)	0.033 (0.075)	0.033 (0.075)	0.123 [†] (0.075)	0.123 [†] (0.075)	0.023 (0.075)	0.023 (0.075)
Cultural distance	0.103*** (0.024)	0.078*** (0.024)	0.078*** (0.024)	0.078*** (0.024)	0.110*** (0.023)	0.110*** (0.023)	0.079*** (0.024)	0.079*** (0.024)
Exchange rate	-0.008*** (0.002)	-0.007*** (0.002)	-0.007*** (0.002)	-0.007*** (0.002)	-0.009*** (0.002)	-0.009*** (0.002)	-0.007*** (0.002)	-0.007*** (0.002)
FDI/GDP	-0.004 (0.005)	-0.002 (0.005)	-0.002 (0.005)	-0.002 (0.005)	-0.007 (0.005)	-0.007 (0.005)	-0.003 (0.005)	-0.003 (0.005)
Trade/GDP	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)
GDP growth	0.040*** (0.005)	0.036*** (0.005)	0.036*** (0.005)	0.036*** (0.005)	0.039*** (0.005)	0.039*** (0.005)	0.036*** (0.005)	0.036*** (0.005)
Population growth	-0.128*** (0.029)	-0.124*** (0.029)	-0.124*** (0.029)	-0.124*** (0.029)	-0.116*** (0.029)	-0.116*** (0.029)	-0.124*** (0.029)	-0.124*** (0.029)
GDP per capita * 10 ⁻⁴	-0.071** (0.026)	-0.065* (0.026)	-0.065* (0.026)	-0.065* (0.026)	-0.067* (0.026)	-0.067* (0.026)	-0.064* (0.026)	-0.064* (0.026)
<i>Model fit</i>								
Chi-square	874***	665***	665***	665***	821***	821***	671***	671***
Incremental chi-square	198***	89***	89***	89***	245***	245***	95***	95***
Number of observations	39,214	39,214	39,214	39,214	39,214	39,214	39,214	39,214
Number of entries	4,404	4,404	4,404	4,404	4,404	4,404	4,404	4,404

Notes: ^a *** p < 0.001; ** p < 0.01; * p < 0.05; [†] p < 0.10.
^b Variable is a natural logarithm.

previous entrant. Models 7 and 8 use normalized measures of firm characteristics, with Model 7 focusing on the entrant, and Model 8 looking at the characteristics of the previous entrant.

Hypothesis 3a predicted that the greater the technological or marketing capabilities of a firm, the greater the likelihood of its entry. Hypothesis 3b made a similar prediction, but with reference to the previous entrant. Models 5 and 7 present tests of Hypothesis 3a. For both absolute and normalized measures, there was no significant relation between technological or advertising intensity and the likelihood of entry. Hypothesis 3a is not supported.

In Model 6, the technological intensity of the previous entrant was not related to the likelihood of entry; while advertising intensity was negatively related, although only marginally significant ($p < 0.10$, one tailed). The results are similar when we use normalized values in Model 8. Thus we do not have support for Hypothesis 3b. These results show that an entry by an industry leader, in terms of its focus on developing technological or marketing capabilities, was not followed rapidly by rivals.

Hypothesis 4a predicted that firms with higher levels of international experience would have a greater likelihood of entry. The international experience measure was not significant in Model 5, but the host country experience was significant ($p < 0.01$), with a positive sign. In Model 7, which tested measures based on a firm's relative level of experience, the coefficient on international experience had a similar positive sign ($p < 0.001$), as did host country experience ($p < 0.05$). These results support Hypothesis 4a. Firms with higher levels of experience had a greater likelihood of entry.

Hypothesis 4b predicted that an entry by a firm with a high level of international experience would precipitate high rates of entry by rivals. In Models 6 and 8, the coefficient on the host experience measure was positive and significant ($p < 0.001$). Likewise, the coefficient on international experience was also significant in both the models ($p < 0.05$). These results support Hypothesis 4b as the international experience of a previous entrant was positively related to the likelihood of entry of the subsequent entrant.

DISCUSSION

We investigated the international expansion decision using information-based and competitive rivalry perspectives on imitation. Our research design aligns with a fundamental concern in which scholars have emphasized the need to give adequate and balanced attention to competitive and non-competitive motives of imitative behaviour (Deephouse, 1999; Gimeno et al., 2005). We give this balanced attention by bridging ideas from an economics-based approach to a sociological approach to imitation to show how these theories can augment each other in explaining international expansion decisions (Lieberman and Asaba, 2006). Our results illustrate how international entries can be explained by the actions of previous entrants, with consideration given to the organizational environment in which a decision is made, and the organizational environment in which a firm is situated.

Our arguments and analyses show that when making international expansion decisions, firms follow frequency-based imitation. As the density of home country entrants

from all industries increases, so does the likelihood of entry for other Japanese firms, supporting an information-based explanation of mimetic behaviour. When we shifted to an examination of trait-based imitation, and looked at how the entry density of competitors influenced entry rates, we did not find a positive relationship. Instead, we found that the organizational environment of the home market, in the form of the competitive environment, was a primary influence on the entry decisions of industry rivals. The effect of competitor's entries on entry rates was more pronounced in industries with a higher concentration, larger size and higher growth rates.

These results show that information-based and economics-based approaches to the explanation of international expansion complement one another. A firm's home industry context is an important moderator of how trait-based influences ultimately affect a focal firm's decision to enter a new geographic market. We find that firms from high concentration industries quickly imitate competitors' foreign entry moves during the early stage of entry into a new geographic market. In a concentrated industry, imitation plays out during the early stages of expansion into a geographic market, unlike in a less concentrated industry. This finding is consistent with the conclusion in Gimeno et al. (2005), who found that competition in the domestic market is an important predictor of the imitative behaviour of rival firms.

These results help inform understanding of timing issues in international expansion and have implications for research on international expansion, as based in sociological information-based theories and competitive rivalry theories. International expansion decisions are influenced by the organizational environment of the home country in which a firm is situated as well as the host countries in which its decisions are made, necessitating an integration of the information-based and competitive rivalry theories in the analysis FDI decisions. We contend that the examinations based on a sociological perspective that do not consider the competitive context might well lead to under-specified models, that leave the causal mechanisms in doubt, even when the empirical evidence is consistent with the predictions of the sociological approach.

Interorganizational Environments

A powerful paradigm for understanding the foundation patterns of new firms in a new market, or the entry of existing firms into new markets, is grounded in a sociological-based perspective. We found evidence that likelihood of entry was conditioned as an imitative response to the entry patterns of Japanese firms overall. However, we did not find support for trait-based imitation as the likelihood of entry was negatively related to the entries by competitors in the same industry group.

This latter observation raises the interesting question concerning why an increasing density of competitors' entries does not engender higher rates of response among industry rivals. In our setting, we examine the investments of firms across multiple markets, with competition that evolves across these varying market segments. In this setting, when there is a high density of industry rivals, firms respond more to the competitive signals of foreign market entry, than to the information signals that mark the attractiveness of a geographic market. Even with the limitations that exist in trying to capture the full range of potential motivating variables on a firm's international expansion, this finding is

consistent with research on multi-market competition in which an increase in multiple market contacts amongst the competitors lowers entry rates (Korn and Baum, 1999). Other work has also shown that firms may not always respond to the pressures arising from competitors' international expansion moves (Head et al., 2002).

This finding emerged from the multi-industry, multi-country design of our study. This aspect of our study allowed us to explore a basic, although often unstated, assumption in a sociological perspective on international expansion; namely, that heterogeneous firms operating in different industries will respond similarly to the legitimization pull for market entry, as created by the previous entry behaviour of other firms. As sociological explanations for firm behaviour gain greater traction in explanations of international strategy, it is important to recognize the limitation of this assumption. A key finding of this study is that the influence of information and legitimization on market entry is weaker in more concentrated industries, with a competitive rivalry basis to imitation being a more important influence.

Clearly, social processes matter for resolving information deficiencies and the uncertainties encountered when entering foreign markets. But even before considering the uncertainty a firm faces in international expansion, research must address the fundamental motivations a firm faces to go abroad in search of markets. International expansion is often sparked by the extent of industry rivalry in the home country. As research based in a sociological perspective begins to consider cross-national and/or cross-industry contexts when being extended to the study of international strategy, it is important for researchers to understand the boundary conditions of information-based and legitimization explanations of firm decisions and actions. The organizational environment in the home industry or market in which firms compete should be incorporated into predictions derived from a sociological perspective.

Inter-Firm Rivalry

When considering a rivalry perspective, we made an explicit consideration of the characteristics of a firm making an expansion decision vis-à-vis industry rivals. Even though we did not find support for entry being affected by a focal or previous entrant's possession of intangible assets, we did identify that entry was influenced by the experience levels of the entrants. Firms tended to rapidly imitate the entry moves of previous entrants that had more international experience.

Experience is an important consideration in understanding how competitive rivalry and information influence entry rates. A firm will be more susceptible to the competitive consequences of non-entry if it is relatively inexperienced. By contrast, a firm with substantial international experience need not respond as rapidly to the moves of rivals as its international experience marks both its established positions in foreign markets and its comparatively lower level of uncertainty about conditions in international markets, as well as perhaps a greater capability to operate in foreign markets. With the knowledge and learning that comes from garnering operating experience in international markets, a firm has less uncertainty about the competitive conditions and the business conditions in a host country, and can more readily enter that market than an inexperienced rival.

Although we found an entry dynamic emerging from comparative levels of experience, even with the limitations that exist in our measure of experience, we did not observe the same for a firm's relative possession of technological and marketing based assets. A complication in this analysis could be the mixed motivations for investment in which firms can invest abroad to either build or exploit their intangible assets (Kogut and Chang, 1991). Related to this, follower firms might not engage in competitive imitation, as such firms are less concerned about a disruption to the status quo of competition, than these firms are in making investments in their domestic markets to improve their competitive positions in technology and marketing. Investing abroad may divert resources from focused capability building activities, given that foreign investments require the use of scarce resources. This consideration is consistent with prior empirical work that has found a reduced expenditure on R&D spending to accompany a firm's expansion into new product markets (Hitt et al., 1994).

Alternatively, given the lack of influence of these rivalry-based variables of firm characteristics, research on an economics-based theory of international expansion and imitation can be moved forward by considering variables, such as status or size which influence the intensity of mimetic behaviour, as drawn from a sociological approach. For example, scholars have argued that firms do not always respond to the pressures arising from competitors' international expansion moves (Head et al., 2002). If a mimetic influence is not pronounced in certain instances, such as in low concentration or low rivalry industries, then it could be that only certain firms within a low concentration industry, such as high status, large size, or profitable firms, will spark imitation.

Related to this point is the idea that increasing numbers of competitors' entries might actually lead to a reduction, not an increase, in entry rates. At one level, prospective entrants can interpret competitors' entries as a signal of legitimacy, leading to increased entry. Yet, as competitors' entries begin to accumulate in numbers and the competitive behaviour of rival firms is observed by prospective entrants, competitors' entries can yield rising concerns about competition that overwhelm legitimization concerns. Competitors' entries can begin to deter rather than encourage new entry, because after a certain point of entry density by competitors, such entries signal substantial competition (Chan et al., 2006). Meanwhile, a high entry density by non-rival firms is unlikely to incur this stifling of entry rates. An effective tracking of this dynamic would require a long period of observation, with little left censoring.

Conclusion

We argue that information-based and rivalry-based perspectives on imitation in foreign market entry point to the different processes that underlie mimetic behaviour. An information-based explanation of imitation is centred on the conditions in the organizational environment in which a decision or action is being made. On the other hand, a competitive rivalry based explanation of imitation focuses on the conditions in the home organizational environment in which an organization is situated. However, not all firms imitate each other, and not all decisions engender imitation, even though mimetic behaviour is a common phenomenon. To understand which firms are more likely to imitate the actions of others, and why, we identify boundary conditions that limit the

applicability of information-based and rivalry-based perspectives to their explications of mimetic behaviour. The strength of information related-influences on organizational mimicry stems from the organizational environment in which an action is undertaken, but it is also dependent on the nature of the home organizational environment of the firm undertaking the strategic action. We find that information-based and rivalry-based perspectives on imitation are complementary, not competing, perspectives on mimetic behaviour.

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