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Stability and Change in the Strategic Decisions of Multinational Enterprise

Majid Eghbali-Zarch, *The University of Western Ontario*

Supervisor: Paul W. Beamish, *The University of Western Ontario*

A thesis submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree in Business

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**STABILITY AND CHANGE IN THE STRATEGIC DECISIONS OF
MULTINATIONAL ENTERPRISES**

(Thesis format: Integrated Article)

By

Majid Eghbali-Zarch

Graduate Program in Business Administration

A thesis submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

The School of Graduate and Postdoctoral Studies
Western University
London, Ontario, Canada

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ABSTRACT

This dissertation investigates some of the antecedents and consequences of stability and change in multinational enterprises (MNEs). It focuses on the strategic level decisions of MNEs in their international activities. Essay 1 studies the role of the development and deployment of decision rules, as an organizational capability, since they may lead to consistency and stability in MNEs' international strategies. By focusing on recurring and high-stakes strategic resource allocation decisions, the study disentangles the time and space dimensions of the deployment of capabilities. The findings indicate a positive effect on performance for MNEs' spatial consistency across subsidiaries for expatriation (as a repetitive decision), and a negative effect for spatial consistency in equity ownership (as a quasi-repetitive decision). The study also observes a positive effect on performance for temporal persistence in expatriation.

Regarding the consequences of stability and change, Essays 2 and 3 investigate the MNE's evolution in the global space and the knowledge it acquires and amasses in its knowledge-base. This knowledge-base transcends the learning lessons originating from a firm's home country to a broader evolved home-base which incorporates all foreign subsidiaries of the MNE and its home country. Distance as a highly popular concept in international business is then revisited and reconceptualized. Essays 2 and 3 argue that the internationalization process of the firm shifts its reliance on the original home country as a source of knowledge, to the broader domain of the MNE's activities and the portfolio of its locations. It may either rely on the knowledge from *all* its subsidiary locations, or on the learnings from the *most similar* location in the portfolio to the focal host country. These two approaches lead to *theoretical* development of two (multilevel) distance constructs at the MNE level: average distance measure based on a composition approach and minimum distance measure using a compilation approach. The former has already been introduced in the literature and the latter is a newly introduced and developed measure in this dissertation. Essay 3 provides a comparative analysis to compare the predictive power of the new and extant distance measures. Overall, the findings of this dissertation indicate the superiority (and complementarity) of the two MNE-level distance measures.

Keywords

Repetitive Strategic Decisions, International Resource Allocation, MNE's Dynamic Capability, Simple Rules, Expatriation; Equity Ownership, Distance, Average Distance Measure; Minimum Distance Measure; MNE-Level Distance, Location Portfolio, Knowledge Based View of MNE, Evolved Home Base, Spatial Consistency, Temporal Persistence, Multilevel Construct.

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Chapter 1 - INTRODUCTION

Background

Firms evolve through cycles of, and interplay between, states of stability and change. These states in a firm in general, and in a multinational enterprise (MNE) in particular, may have different *antecedents* and *consequences*. As for the antecedents, two categories are worthy of attention. First, a common source of stability is attributed to a firm's tendency to develop and deploy *routines and capabilities*. Regardless of the size, geographic domain, level of internationalization, or industry, almost all firms make routinized decisions at all levels, be they operational or strategic. Capabilities entail established capacities to make successful routinized decisions at the strategic level. These routines and capabilities are believed to benefit the firm and enhance its performance. A second category of antecedents for a firm's stability pertains to the structural tendencies (e.g. organizational path dependency), behavioural tendencies (e.g. within organizational coalitions; slack and aspirations), and cognitive tendencies (e.g. organizational and managerial status-quo biases) that make the firm continue with its status-quo choices.

The evolution and interplay of a firm between stability and change, especially in its international domain, has *consequences* as well. As a firm evolves, it learns from experience and the success and failure of itself and others. These learning lessons impact the knowledge base, identity, and mindset of the firm. The way the firm perceives itself and others evolves as well. All these changes, in turn, influence the way the firm and its managers make their strategic decisions. As an example, the concept of home country may mean one thing to the firm when it is inexperienced and before it has any international activity. This concept changes as the firm moves towards becoming an MNE with footprints across the globe. As another example, a firm at an earlier stage of international evolution uses a different knowledge base and set of experiences to assess the extent to which it is distant (in any of the common distance dimensions of culture, administrative, geographic, and economic) from target host countries compared to when it is rather advanced in the process of internationalization. Thus, the stability and change of a firm in general, and in an MNE in the

process of internationalization in particular, have consequences for the decision-making processes of the firm that need specific attention.

As for the antecedents of stability, when dealing with repetitive decisions such as resource allocation, firms tend to develop routines and capabilities through a learning process and then deploy them to future iterations of a similar situation. The routinized approach increases the efficiency and speed of decision making. Despite this tendency, they need to be wary of certain decisions for which a routinized approach is not suitable or certain situations and contingencies where a routinized approach needs adjustment and adaptation. The possession of routines and capabilities, if developed and deployed properly, is generally believed to be a source of advantage. However, they may at times pose threats to the firm by creating unfavourable path dependencies, causing behavioural biases, and setting precedents that hinder any required or timely change. Whereas scholarly contributions on different aspects of routines and capabilities are extensive, they have overlooked the case of resource allocation within MNEs across international subsidiaries (Doz, 2005).

The merits and demerits of routines and capabilities become more salient when they are applied to strategic decisions. Strategic decisions, defined as “important, in terms of actions taken, the resources committed, or the precedents set” (Eisenhardt & Zbaracki, 1992), are distinct in that they do not occur as often as operational routines and capabilities (i.e. are less repetitive and frequent). For example, whereas decisions for equity ownership level at a certain subsidiary can be made every few years, the decisions pertaining to production, sales, or customer service may change every month. Among other strategic decisions, resource allocation across subsidiaries of MNEs is a crucial element. MNE headquarters allocate financial resources (e.g. equity ownership of subsidiaries), human resources (e.g. expatriates), and cognitive resources (e.g. managerial and organizational attention) across their subsidiaries on a regular basis.

The study of processes (e.g. routines and capabilities) for repetitive resource allocations by the headquarters of MNEs to their subsidiaries, as a strategic decision, is an important area of inquiry for two reasons. First, MNEs have multiple subsidiaries that are spread across the international space. The resource allocation practice is a repetitive decision in these organizations. The international domain of an MNE transcends different national

borders, institutional contexts, and cultures, which makes the case of the MNE a more complex one than that of a local firm. Thus, as previously argued by other scholars, it can be used as a context for the development of management theories (Roth & Kostova, 2003). Secondly, the learning through repetition, as cycles of experimentation, becomes more ambiguous and subtle. This is due to the spatial distance between subsidiaries, and national borders that surround them. In fact, the complexities due to learning and path dependencies resulting from the application of routines and capabilities will be exacerbated in this context. This makes the study of the MNE context useful both for theory and practice. In summary, the adherence of MNEs to their status quo as a result of the application of certain routines and capabilities can lead to a stable pattern of action.

The change and evolution of MNEs in the international space has consequences particularly with regard to their international decisions. A firm in its earlier stages of international expansion and evolution, for example, relies on a different knowledge base, experience set, and managerial mindset as it matures in its international presence. Through cycles of international stability and change (e.g. growth), the geographic footprints of the MNE evolve as well, both in terms of depth (i.e. the number of footprints) and breadth (i.e. the salience of the footprints reflected in their size and age). The experience and learning effect emerging from each of the subsidiaries in the location portfolio of an MNE contribute to how the firm and its managers analyze and decide on future international moves. The consequence of this evolution, thus, is translated into the way the MNE makes choices such as location, entry mode, ownership level, and partner selection, among others.

Among the many concepts particular to the scholarship and practice of international business, the notion of international distance has been extensively developed and applied. This concept can also be influenced, arguably, by the evolution of MNEs. The term “psychic distance,” for example, as a perceptual measure of differences between home and host countries, was used by Johanson and Vahlne (1977). Later, the CAGE framework was introduced by specifying the four dimensions of culture, administration, geography, and economy along which the differences could be operationalized (Ghemawat, 2001). Recently, Berry et al. (2010) added five more dimensions (financial, political, demographic, knowledge, and global connectedness) to the concept. What is different among this appreciable trend of

advancements is the number of dimensions they have assumed for the construct and what is common among them is that they all consider home and host country as the benchmarks for the assessment. These fixed measurement end-points make international distance a country dyad-level construct. That is, no matter what firm we are considering from any specific home country, their distance to the target host country is constant.

While these contributions have been tremendously helpful for international business scholarship, they have surprisingly overlooked the fact that the evolution of the MNE in the international space can have relevant consequences for the perceptions of firms of *their* international distance. Indeed, Johanson and Vahlne (1977) considered, as a main assumption in their internationalization model, psychic distance as an exogenous factor. This assumption was never challenged by others. Two reasons can be presented in favour of re-examining this assumption and instead accepting that firms originating from the same home country may perceive their distance from a target host country differently. First, studies have shown that the effect of international distance may diminish as firms gain international experience (Wilkinson, Peng, Brouthers, & Beamish, 2008). It has also been found, in a firm-level study, that in a given time period, international expansion into culturally distant countries negatively impacts a firm's performance (Hutzschenreuter & Voll, 2008). Secondly, the notion of the home country of a firm may evolve as it globalizes. Recent trends of moving a firm's headquarters, or deploying a multiple headquarters structural model, move managers from a domestic mindset (Nadkarni & Perez, 2007) towards acquiring a global mindset (Levy, Beechler, Taylor, & Boyacigiller, 2007). The current practice of the conceptualization and measurement of international distance from home to host country works well for studies in areas such as international trade (Beugelsdijk & Mudambi, 2013). At the firm level, however, a measure that incorporates a firm's portfolio of subsidiaries and footprints can be more powerful and result in firm-level heterogeneity, even among firms originating from the same home country.

Thus, guided by the research questions elaborated in the next section, this thesis investigates the antecedents and consequences of the interplay between stability and change. The study follows the framework presented in Figure 1. In this figure, the major elements of the antecedents and consequences of the states of stability and change of MNEs are explicated,

the specific focus of this thesis on the strategic resource allocation within MNEs is highlighted, and the base theories utilized to study the phenomenon are mentioned.

Research Questions (RQs)

- **RQ(1)**: How does the adoption of a routinized approach to resource allocation among the subsidiaries of an MNE matter?
- **RQ(2)**: How is this approach different for varying degrees of the repetitiveness of decisions?
 - The role of the **degree of repetitiveness**.
- **RQ(3)**: How does what MNEs learn during their states of stability and the dynamism of their activities (e.g. international resource allocation, or international expansion, etc.) in the international space influence their perceived spatial distance?

Dissertation Overview

I follow an integrated-article approach (three integrated essays) in this thesis. The three essays fit under the overarching umbrella of the focal phenomenon: *stability and change in an MNE's decision making*. Collectively, the essays follow several common themes that can explain how they integrate. First, the thesis in aggregate has a specific emphasis on learning and the knowledge base of MNEs. In Essay 1, learning influences are used to explain the mechanisms through which decision rules and capabilities are developed and fine-tuned. The ambiguities of learning from experience (March, 2010) and their impact on the development and deployment of decision rules that are developed as capabilities are also explored and discussed. In Essays 2 and 3, learning from experience and the local context becomes central as the two MNE-level distance constructs are theoretically developed. To do so, these Essays endogenize the knowledge that is amassed by the MNE into the two distance measures, as opposed to treating learning from experience as an exogenous factor.

Second, the mechanisms through which managers make strategic decisions have been emphasized using the relevant literature. In Essay 1 the managerial decision making mechanisms are explored in the development and deployment of decision rules. This Essay examines the balance between stability and change in resource allocation decisions by

considering the behavioural tendencies that makes the firms lean more toward a state of stability than change. These tendencies can be based on behavioural biases as well as the preferences to develop rules, routines and policies when decisions are repetitive. Similarly, Essays 2 and 3 strive to build on the managerial decision making mechanisms in conceptualizing the distance constructs (Zaheer et al., 2012).

Third, the global integration and local adaptation arguments can help in explaining the linkage and complementarity of the three Essays. The commonly accepted wisdom in international business suggests striking a balance between integration and adaptation, as each have benefits and are at times essential. Essay 1 explores the underlying behavioural tendencies that lead to consistencies in international space and persistence over time. As such, instead of a balanced approach between integration and adaptation, more emphasis is exerted on the former. In Essays 2 and 3, based on the need for local adaptation, the location of local context and distance are linked with MNE-level decisions. Hence the three Essays in aggregate help in providing a holistic examination of tendencies that makes the firms take more of an integration approach and at the same time assess the adaptation required, based on its evolution.

In sum, the three essays in aggregate focus on stability and change in a firm's international strategies. They collectively embrace the importance of learning and the knowledge-base of the firm, incorporate managerial decision making mechanisms in studying the focal phenomenon in the dissertation, and highlight different behavioural and organizational factors that may make an MNE swing towards a global integration versus local adaptation approach.

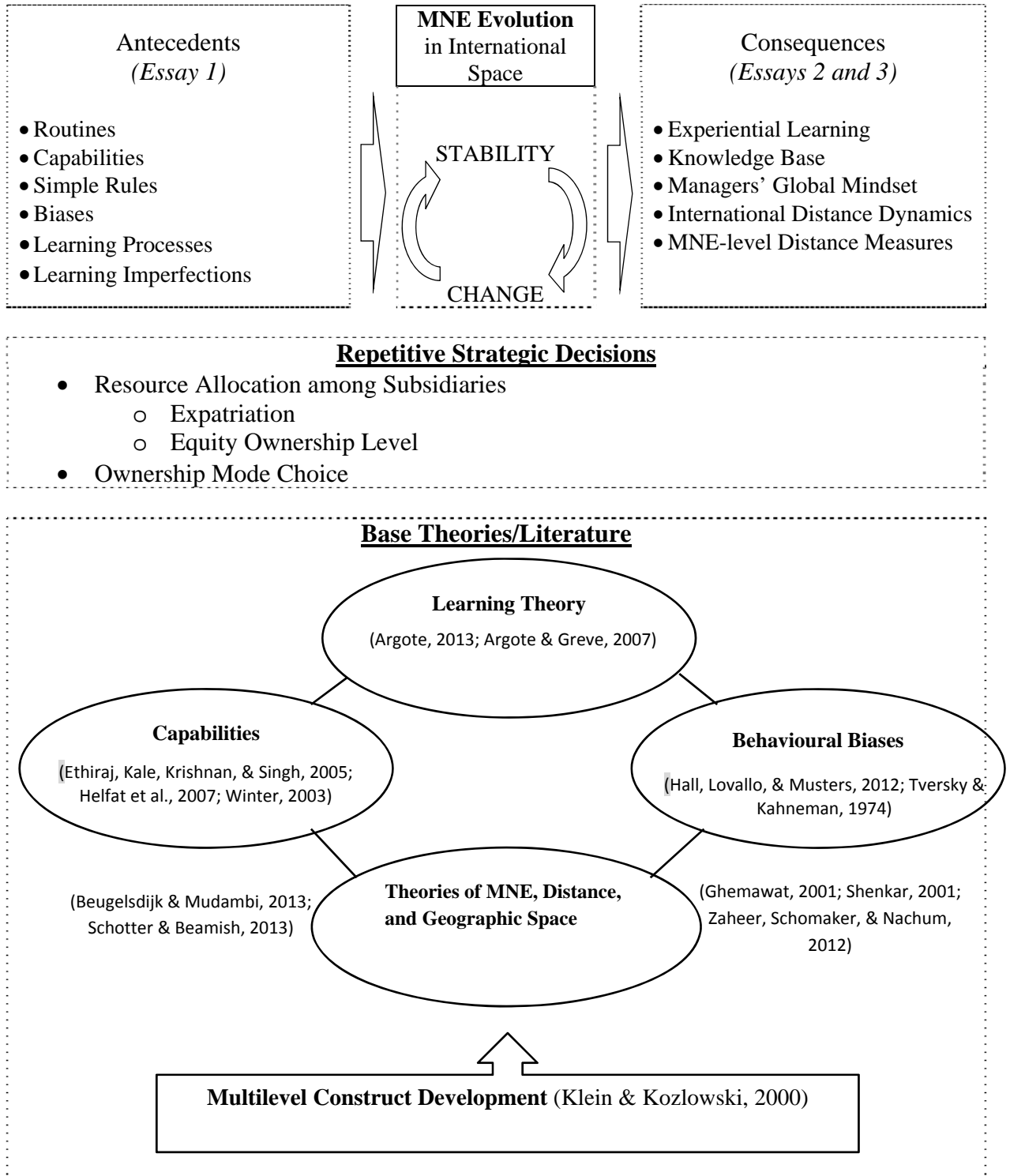


Figure 1 - The Dissertation Framework

Table 1 - Overview of the Dissertation

	Essay 1	Essay 2	Essay 3
Title	<i>MNEs' Spatial Consistency and Temporal Persistence in Repetitive Strategic Resource Allocation Decisions</i>	<i>MNE Dynamics, Distance, and the Role of Place and Space in the Organization of Its Locations</i>	<i>Distance Lies in the Eyes of the Beholder: The Effect of MNE Dynamics and Its Evolved Home-base</i>
Research Question(s)	1 - How does the adoption of a routinized approach to resource allocation among the subsidiaries of an MNE matter? 2 - How is this effect different for varying degrees of the repetitiveness of decisions?	How does what MNEs learn during their states of stability and the evolution of their activities (e.g. international resource allocation, or international expansion, etc.) in the international space influence their perceived spatial distance?	1 - How do MNEs' portfolios of locations, including both original home countries and host countries of subsidiaries, influence the distance considered in strategic decisions pertaining to subsidiaries? 2 - Can distance at the MNE level improve predictions pertaining to MNEs' international strategy decisions?
Theoretical Lenses/Base Literature	Learning theory; (dynamic) capabilities; behavioural economics/strategy	Learning theory; economic geography theories; international distance literature	Knowledge-based view of MNEs; economic geography literature; international distance literature; multilevel construct development
Intended Contributions	To the theory of the MNE (and MNEs' stability and change); to capability literature by considering time and space and the degree of repetitiveness	To international business literature (and the theory of the MNE) by introducing a perceptual, firm country dyad-level measure for distance	To international business literature (and the theory of the MNE) by developing two MNE-level distance measures and comparing their predictive validity with the extant international distance measures
Data Sources	Toyo Keizai and other publicly available datasets such as the Nikkei Economic Electronic Databank (NEEDs) and World Bank data	Toyo Keizai and other publicly available datasets such as NEEDs and World Bank data	Toyo Keizai and other publicly available datasets such as NEEDs and World Bank data

Essay 1

Essay 1 in this dissertation is entitled “MNEs’ Spatial Consistency and Temporal Persistence in Repetitive Strategic Resource Allocation Decisions.” It examines stability and change in the repetitive resource allocation decisions of MNEs. MNEs allocate resources (both financial and human resources) on a regular basis to their subsidiaries across the international space (Bower, 1970; Doz, 2005; Noda & Bower, 1996). The repetition of these resource allocation practices across space and over time creates an opportunity for firms to develop and deploy rules, routines, and capabilities for later iterations of the same decisions. The development of these decision-making processes has both pros and cons. They are helpful, as they are the translation of a firm’s learning from experience. They make the decision-making process more efficient and less prone to errors and failures. Notwithstanding their benefits, they can potentially harm the company as well. The company may fall into the competency trap (Levitt & March, 1988) or follow behavioural biases such as status-quo bias (Lovallo & Sibony, 2010; Powel, Lovallo, & Fox, 2011; Tversky & Kahneman, 1974).

This essay develops a theoretical argument followed by empirical analysis with regard to the development and application of decision rules and capabilities in repetitive strategic decisions. The essay evaluates the impact of the application of decision rules by investigating the stable pattern of actions in the subsidiaries of the MNE. The role of the degree of repetitiveness is also explored through two representative decision types for repetitive and quasi-repetitive decisions: equity ownership decisions and expatriation decisions.

The essay makes two contributions. First, by investigating the impact of rule-based and routinized decision making in the context of the MNE, it considers the role of spatial dispersion of subsidiaries as the destination for the resources allocated by the headquarters. The complexity of the resource allocation to subsidiaries that are located across international space, within different national and institutional borders, is higher than in the case of resource allocation to multiple business units all located in one country (Dellestrand & Kappen, 2012; Doz, 2005). Thus, the essay contributes to the literature on the stability and change of MNEs in their resource allocations. Secondly, it theorizes the role of the repetitiveness of resource allocation decisions. Since the main mechanism for the development of decision rules and capabilities is learning from repetition and experience, the frequency of the decision matters.

Following Winter (2003), Essay 1 introduces two categories of repetitive and quasi-repetitive decisions represented, respectively, by equity ownership and expatriation (for financial and human resource allocation practices). Unlike repetitive decisions, quasi-repetitive decisions such as those involving equity ownership provide fewer chances for experimenting and correcting errors based on performance feedback.

Essay 2

Essay 2 is entitled “MNE Dynamics, Distance, and the Role of Place and Space in the Organization of Its Locations.” The essay explores the consequences of the dynamics and evolution of the MNE in the global space from the perspective of its managers when they make decisions pertaining to their international business activities. It asks how the evolution of the MNE and its managers’ mindsets influences the knowledge base of the MNE and its decision-making processes, especially in the context of international business. This influence in turn impacts other factors that affect the type of decisions and strategies that the firm makes for its future international business activities. International distance as a highly used and appealing construct in international business can be one of these factors.

This Essay is a developed version of my conference paper (Eghbali-Zarch, 2013a) presented at the Academy of International Business (AIB) annual meeting¹. The same paper was the winner of the best paper award in the Association of Japanese Business Studies (AJBS) in Istanbul as well (Eghbali-Zarch, 2013b). In the conference version of this paper, I developed a concept named “evolved home-base” as a mean to conceptualize a multi-level and dynamic distance measure. The evolved home-base incorporated all the subsidiaries of the MNE as well as its original home base. Whereas the source of knowledge and experience of the firms before they internationalize is mainly their home country, after they internationalize this source is their evolved home base. As such, a dynamic and multi-level distance measure was developed using a weighted average distance approach. The measure is dynamic (i.e. time-variant) as it changes over time due to changes in a firm’s evolved home base. It is multi-level. An MNE is at a higher level of analysis and is comprised of subsidiaries as well as its home country location that are collectively at the lower level of

¹ An earlier version of this manuscript was entitled “*Towards a Dynamic Perspective on Distance: The Role of Space and Place in the Organization of MNE’s Locations*”.

analysis. In its empirical illustration, the paper tested the effect of this weighted average distance, the dispersion within MNE's evolved home base, as well as their interaction on the ownership strategy of the MNE.

Recently, Zhou and Guillén (2015) have introduced a similar concept, namely home-base, and established that liability of foreignness can be dynamic as the MNE evolves. They have also operationalized liability of foreignness using a similar weighted average measure of distance based on MNEs' home-base. Their hypotheses entail similar main effects, namely the weighted average distance as well as the diversity within the home-base of MNE. Their effect on the likelihood of market entry has been empirically tested and supported.

Building on the aforementioned body of research, this essay extends the theoretical arguments on the weighted average measure. Additionally, it introduced a novel MNE-level distance measure called minimum distance measure (or the closest distance measure). This measure which is distinct yet complementary to the weighted average distance measure uses the most similar location in the MNE's evolved home-base to the focal subsidiary as a benchmark to assess the balance of knowledge that an MNE lacks (due to its liability of foreignness) for an informed decision. By adopting a different level of analysis, *MNE to host country dyad*, and introducing the two MNE-level measures, it results in firm-level heterogeneity among firms originating from the same home-country.

This essay utilizes the international business and economic geography literatures on location and space to propose that the spatial evolution of a firm in the global space results in a temporal dynamic in its proximity to a new target host country. This approach is currently part of a burgeoning trend in international business scholarship, particularly after the publication of the special issue of the *Journal of International Business Studies* on the Multinational in Geographic (Beugelsdijk & Mudambi, 2013). Further theoretical development of the two multilevel constructs as well as establishing their superiority vis-à-vis extant home to host country distance measure is followed in Essay 3.

Essay 3

Essay 3 mostly builds on Essay 2 and complements it in establishing the advantages of the proposed distance constructs. It develops two MNE-level distance constructs in a more nuanced manner using the multilevel construct development literature in organizational research methods (Klein & Kozlowski, 2000). It also utilizes a knowledge based view of MNEs (Kogut & Zander, 1993) as its theoretical lens. As such, MNE-level distance is defined as the knowledge gap between what an MNE has learnt through experience in its location portfolio so far and the stock of knowledge that is required for strategic decision making, absent any liability of foreignness. The Essay makes a comparison between the extant (home and host) country dyad-level international distance and the MNE–(host)country dyad-level distance measures to assess their explanatory power in predicting international business decisions (such as ownership level).

To develop the constructs, it follows previous studies (Zhou & Guillén, 2015) that suggest that a fundamental assumption in extant home–host country distance measures needs to be revisited: the assumption that the knowledge base of MNEs is based on learning lessons from their home country. Instead, for distance measures in international business pertaining to firm-level decision making, it is essential to assume that the MNEs' knowledge base goes beyond their home countries to incorporate learnings within their foreign subsidiaries. This assumption and the resultant MNE-level distance measures are aligned with the mechanisms through which they affect managerial decision making. Starting from this assumption, Essay 3 elaborates the theoretical underpinnings of two MNE-level constructs: average distance measure and minimum distance measure. The latter is a novel measure.

Essay 3 suggests a multilevel construct development approach (Klein & Kozlowski, 2000) for the two constructs. Here, the constructs at the MNE level (or upper level) are based on the attributes of subsidiaries of the MNEs (at the lower level). The processes that lead the learning lessons at the lower level to the development of the knowledge base at the higher level are thus assumed to be bottom-up emergent processes. Two emergent processes are used to develop the two constructs: *composition* and *compilation*. The composition approach assumes that all the elements at the lower level contribute to the upper level of the construct. Aggregate measures are often considered in this category, as is the case for the average-based

distance construct in Essay 3. The compilation approach, on the other hand, assumes that only one (or some) of the elements in the lower level contributes to the higher level of the construct. Here, Essay 3 utilizes the subsidiary with the minimum distance for MNE-level distance.

Finally, the predictive power of the two developed distance constructs at the MNE level is compared to that of extant home–host country distance as a litmus test to evaluate their superiority. To do so, Essay 3 focuses on the effect of economic distance on ownership mode choice. Considering both model fit (as a measure of the predictive power of constructs) and statistical significance, the findings of Essay 3 suggest that MNE-level distance measures are superior.

In summary a few areas can be highlighted as the novel contributions of Essay 3. First, the Essay has built on previous studies that introduced the concept of (evolved) home-base (Eghbali-Zarch, 2013a; Zhou & Guillén, 2015) to justify the development of MNE-level distance measures. Second, it extends previous studies that have used average distance measure in their operationalisations (Baaij & Slangen, 2013; Dai, Eden, & Beamish, 2013; Nachum & Song, 2011; Zhou & Guillén, 2015) to develop the measure theoretically using multilevel construct development literature (Klein & Kozlowski, 2000). Third, it introduces a novel MNE-level distance measure (namely minimum distance measures), and theoretically develops it as a multi-level construct. In theoretical development of the two measures, this Essay establishes the theoretical rationale for the relationship between lower and higher level entities (i.e. bottom-up emergence processes). It also clarifies the level of analysis of the construct, the multi-level (emergence) bottom-up processes that apply to any of the two measures. Most importantly, it explains the assumptions underlying the development of the each of the multi-level measures. Fourth, the Essay assesses the superiority of the two MNE-level distance measures (versus extant distance measures) based on their predictive power. It also establishes that the two MNE-level distance measures complement each other in explaining MNEs' international decisions and strategies.

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Chapter 2 - Spatial Consistency and Temporal Persistence in MNEs' Repetitive Strategic Resource Allocation Decisions

Abstract

Although scholarship on organizational capabilities, particularly those manifested as decision rules, has provided meaningful contributions to our understanding of the patterns of strategic decisions, less is known about strategic decisions in the context of multinational enterprises (MNEs). By focusing on recurring, high-stakes strategic resource allocation decisions, we disentangle the time and space dimensions of the deployment of company capabilities. More specifically, we examine the stability patterns in MNEs and their subsidiaries as a result of the deployment of organizational capabilities. We develop two complementary core constructs for our purpose: *temporal persistence* and *spatial consistency*. Utilizing two primary dimensions of international strategy, namely expatriate assignment and equity ownership-level decisions, respectively representing *repetitive* and *quasi-repetitive* decisions, we consider the role of the degree of repetitiveness in the stability and dynamism of decisions and its influence on firm performance. We find a positive effect on performance for MNEs' spatial consistency across subsidiaries for expatriation (as a repetitive decision), and a negative effect for spatial consistency in equity ownership (as a quasi-repetitive decision). We also observe a positive effect on performance for temporal persistence in expatriation.

Keywords: Repetitive Strategic Decisions; International Resource Allocation; MNEs' Capabilities; Decision Rules; Spatial Consistency; Temporal Persistence; Expatriation; Equity Ownership.

Introduction

A central area of study in the strategy literature examines how organizations resolve the tension between stability and change (Farjoun, 2010; Poole & Van de Ven, 1989) or, analogously, efficiency and flexibility (Eisenhardt, Furr, & Bingham, 2010). This tension becomes more apparent and challenging when the natural tendency of firms to develop and deploy routines and capabilities through learning (Cyert & March, 1992; Levitt & March, 1988; March, 2010; Nelson & Winter, 1982; Winter, 2000) is considered. These routines and capabilities are at times manifested as organizational decision *rules and procedures* (Cyert & March, 1992; Zhou, 1997), and a fair amount of organizational learning is encoded into decision rules through inferences from history and previous recurrent, salient, or consequential experiences (Levitt & March, 1988; March, 2010; Schulz, 1998).

Although the scholarly literature has emphasized the need to resolve this tension, empirical evidence reports the pervasive tendency of most organizations to adhere to status-quo choices rather than change (Hall, Lovallo, & Musters, 2012) in their strategic decisions. A strategic decision has been defined in the strategy literature as “*one which is important, in terms of the actions taken, the resources committed, or the precedents set*” (Eisenhardt & Zbaracki, 1992). This inclination towards stability is partly attributed to the tendency of managers to use existing knowledge and rules of thumb in the face of complexity and uncertainty (Eisenhardt & Martin, 2000). Despite a large body of strategy literature on this subject, studies have paid scarce attention to the context of the *international (strategic) resource allocations* of firms.

In this study, we examine the strategies of MNEs across international space and over time. More specifically, we focus on their high-stakes recurring decisions, such as resource allocations (Bower, 1970; Bower & Gilbert, 2005; Doz, 2005; Noda & Bower, 1996). These decisions are frequently and iteratively decided upon in an international business context and often follow explicit or implicit routines and practices (Dellestrand & Kappen, 2012). Therefore, the repetitiveness of the decisions, as well as the importance of the locations of the recipient subsidiaries (of the resources) in the international space, plays a crucial role pertaining to our phenomenon of interest. In addition, due to the spatial separation of their subsidiaries, MNEs are an appropriate context for developing organizational theories (Roth &

Kostova, 2003). Thus, we use MNEs as a context in which to study the temporal and spatial resolution of the tension between stability and change. To this end, we pose two research questions in our study: (1) How does the deployment of organizational capabilities, particularly those manifested as organizational rules, play a role in the creation of a balance between change and stability? (2) Does the degree of repetitiveness of decisions matter in this respect?

The repetitive nature of and need for such strategic decisions encourages firms to develop capabilities (Nelson & Winter, 1982; Winter, 2000) to exploit what they have learned from their experiences (Levitt & March, 1988) and to use them in decision making in similar situations. These capabilities, at times embodied in organizational decision rules (Zhou, 1997), may keep firms from departing from the status quo. Following the same rules and routines makes the observed pattern of strategic decisions (Mintzberg, 1978) of MNEs vary in a stratum from stability on the one end, to change and adaptive behaviour on the other (Farjoun, 2010; Nelson & Winter, 1982). Investigation of MNEs that tend to espouse their commitment to the status quo (Ghemawat, 1991) in their international strategies (such as expatriation and ownership levels) is thus worthy of specific attention.

We focus on expatriation and equity ownership strategies as we believe that these, among others, are two primary dimensions of international strategy decisions (Brock, Shenkar, Shoham, & Siscovick, 2008; Delios & Beamish, 1999; Dhanaraj & Beamish, 2004) and resource allocation (Doz, 2005). These decisions: (1) are *important* in terms of choices and subsequent actions, as they deal with strategic resources (i.e. expatriates as strategic human resources and equity assets as strategic financial resources); (2) require *resource commitment*; and (3) set precedents for follow-up decisions. These three components are the main elements of the definition of strategic decisions in the strategy literature (Eisenhardt & Zbaracki, 1992), as mentioned earlier. International strategic decisions of firms can also include location choice, partner choice, entry mode choice (i.e. acquisition versus greenfield), etc., which are not the focus of this study.

The two dimensions of international strategy decisions are distinct as much as complementary to each other for our purpose. They are distinct in that they represent the two main types of resources: financial and human resources. They are complementary for our

study in that they may differ in their degree of repetitiveness. Whereas expatriate allocation decisions are usually more frequent and happen almost every year because of the rather short stints of expatriates (Groysberg, Nohria, & Herman, 2011; Landry, 1997), the allocation of financial resources through equity ownership does not occur as often. Lovallo and Sibony (2010) counsel that each of the two types is influenced by different behavioural biases and warrants distinct processes that organizations can use to “de-bias” their decisions. One type “includes repetitive but high-stakes decisions that shape a company’s strategy over time” and the other “consists of rare, one-of-a-kind strategic decisions” (p. 13). Winter (2003) coined the terms “repetitious” versus “quasi-repetitious” for routines and capabilities that deal with each of these decision types. The use of international expatriation and ownership strategies thus helps us theorize these two main types of decisions.

Basing our theoretical arguments on the behavioural theories of the firm¹ (Argote & Greve, 2007; Cyert & March, 1963; Gavetti, Greve, Levinthal, & Ocasio, 2012; Kahneman, 2011; Tversky & Kahneman, 1974), behavioural economics (Kahneman, 2011; Tversky & Kahneman, 1974), and rule-based decision-making capabilities (Argote & Greve, 2007; March, 1994; March, Schulz, & Chou, 2000; Schulz, 1998; Zhou, 1997), we hope to contribute in at least two areas. First, we contribute to the literature on the balance between stability and change by separating time and space dimensions (sequential versus simultaneous). Based on our empirical findings, we discuss which one is preferable and in what situations (mainly based on the degree of repetitiveness of the strategic decision). Our second contribution is targeted towards theories of MNEs’ stability and change dynamics. Specifically, we introduce two central constructs: (1) *spatial consistency* in expatriation or ownership strategies (the extent to which MNEs use the same proportion of *expatriates*, or keep the same *ownership level*, across all their subsidiaries); and (2) *temporal persistence* in expatriation or ownership strategies (the extent to which MNEs use the same proportion of *expatriates*, or keep the same *ownership level*, in each of their subsidiaries *over time*). Through a multilevel empirical setting (Hitt, Beamish, Jackson, & Mathieu, 2007; Salvato & Rerup, 2011) of Japanese MNEs and their subsidiaries during the period of 1996–2009, we

¹ Reflecting on the application of the behavioural theory of the firm in the international business field, Aharoni (2010) observes that “...*Organization Science* published a special issue (*Organization Science*, 2007) reporting on the most recent research in this area. None of the papers in that issue — not even any of the hundreds of papers cited — is in international business!” (p. 87). He suggests that the IB field needs more studies based on the behavioural tradition.

test and find support for the hypotheses we develop on the performance implication of MNEs' spatial consistency and temporal persistence in their international strategies.

Theory and Hypotheses Development

The spatial dispersion of MNEs' subsidiaries and activities can both create adverse effects and be a source of opportunities that MNEs may exploit through their international strategies and resource allocations. It is this dispersion across international space that makes MNEs an extreme case of (recursive) strategic decision making (Dellestrand & Kappen, 2012). The dispersion raises an extra layer of coordination and complexity (compared to a single-country domestic firm). This is mostly due to the possession of subsidiaries across widespread geographic distances, and across cultural, linguistic, institutional, etc. distances that reflect the complexity of MNEs and the exacerbating effect of distance (Ghemawat, 2001). Through the development and deployment of decision-making routines and capabilities, some MNEs are better than others in orchestrating and coordinating activities across subsidiaries and between subsidiaries and headquarters (Kilduff, 1992). In contrast, behavioural biases (Tversky & Kahneman, 1974) and adverse experience effects (Cyert & March, 1963; March, 2010) play a countervailing role and may trap an MNE in its adherence to the status quo even when there is a need for adaptation. We will discuss each of these mechanisms in turn, straddling both the behavioural theory of the firm and behavioural economics.

The pattern of repeating strategic decisions and behaviours and its pertinent learning mechanisms have been studied in both the capability literature (Winter, 2000), the behavioural theory of the firm (Cyert & March, 1963; Gavetti et al., 2012), and behavioural strategy (Powel, Lovallo, & Fox, 2011). In the capability literature, the repetition of a decision is argued to contribute to learning, even without conscious awareness. The firms that possess and deploy capabilities demonstrate a rather stable pattern of strategic actions that reflects a temporal persistence of decisions and an adherence to the status quo. A firm that has the capability of being a serial acquirer, for instance, demonstrates a stable pattern of choosing the acquisition mode for growth over other modes. Cisco is a good example, as it has been known to prefer the acquisition mode for growth over alternate modes, such as organic growth (Paulson, 2001).

Adherence to the status quo has been attributed to two main mechanisms of decision making from different strands of scholarship. First, in behavioural economics, causes such as status-quo bias (Kahneman, 2011; Kahneman, Knetsch, & Thaler, 1991; Samuelson & Zeckhauser, 1988) are well-established sources of status-quo decisions, mostly due to the loss-aversion tendencies of decision makers. Second, according to behavioural theories of the firm, organizations and their managers have the tendency to use the logic of appropriateness (Cyert & March, 1963; March, 1994) to make seemingly complex but repetitive decisions, rather than the logic of consequences. Unlike the latter, the former logic is less calculative and needs less organizational and managerial cognitive effort. Instead, rules and heuristics used for decision making are only revised and changed every so often due to the apparent needs imposed by the circumstances (March et al., 2000).

Consistent with the above mechanisms and based on the nature of decisions in MNEs' international strategies, we introduce two constructs to disentangle the balance between the advantages and disadvantages of adherence to status-quo decisions: *spatial consistency* and *temporal persistence*. MNEs' decisions, such as resource allocation to their subsidiaries, create a pattern of strategic action (Mintzberg, 1978) that reflects their international strategies (Bower & Gilbert, 2005; Doz, 2005). Therefore, the level of analysis for this construct is the multinational enterprise (see Table 2 for details of definition, levels of analysis, etc. of the core constructs). In turn, we consider the mechanisms through which each of these constructs plays a role.

Table 2- Definition of core constructs

Construct	Spatial Consistency (across subsidiaries) - Expatriation Strategy - Ownership Strategy	Temporal Persistence - Expatriation Strategy - Ownership Strategy
Definition	Extent to which MNEs use the same proportion of <i>expatriates</i> , or keep the same <i>ownership level</i> , across all their subsidiaries	Extent to which MNEs use the same proportion of <i>expatriates</i> , or keep the same <i>ownership level</i> , within each subsidiary over time
Level of Analysis	MNE	Subsidiary
Type of Variance	Cross-sectional (within MNEs across subsidiaries)	Longitudinal (Within subsidiaries over time)
Operationalization	Operationalized through (the inverse of) the coefficient of variation (standard deviation divided by mean), plus one of expatriate ratios or ownership percentage across subsidiaries of each MNE every year $\frac{1}{1 + COV}$ Maximum consistency = 1 Minimum consistency = 0	Operationalized for: - Expatriation Strategy: Inverse of the three-year moving variance of expatriate ratio (Audia, Locke, & Smith, 2000) — log transformed - Partnership Strategy: Dummy variable capturing whether or not the ownership percentage of a subsidiary has changed at all

First, spatial consistency pertains to the dispersion of MNEs' activities throughout international space and is defined in this study as the extent to which MNEs use the same rules and principles to allocate their resources among their subsidiaries. The use of consistent decision rules among all subsidiaries is a double-edged sword. It can be beneficial in that firms develop and use rules to exploit what they have learned from their experiences (Levitt & March, 1988) and save managerial and cognitive efforts in making repetitive and routine decisions. It can also, at times, be unfavourable. Since decision rules are dominantly developed and revised based on a firm's experiences, risk and novelty aversion lead firms to avoid experimenting with new options. These decision rules and routines can put firms in a state of adaptive learning (Denrell & March, 2001). Previously tried and failed options result in firms avoiding other similar ones even if those options have the potential, if treated differently, to lead to success. Denrell & March (2001) use the example of the cat and the hot stove by Mark Twain to explain what they call a "*hot stove effect*." If a cat sits on a hot stove, it will avoid any other stove, hot or cold. The firm tends to fall into the so-called "competency

trap” (Levitt & March, 1988; March, 2010, p. 30). This state is not necessarily always unfavourable, as it is a state of exploitation (March, 1991) of what the firm has learned and the knowledge it has acquired. It also involves an error-correction mechanism but only within the options that have already been tried. This state is unfavourable, partly because the unexplored options cannot be assessed by the firm, as they are never experienced. This can also be due to the proximity to — and the indirect influence of — others with similar experiences (Denrell, 2008), the convenience of already tried choices, and the learning effect of the experiences, which limits the information and search options of the firm.

Second, temporal persistence is defined as the degree to which MNEs adhere to their status-quo decisions for each of their subsidiaries over time. Whereas spatial consistency is a *cross-sectional* construct that reflects homogeneity or invariance across international space, temporal persistence is a *longitudinal* construct that aims to capture the stable pattern of (international) strategic decisions over time and at the subsidiary level (see Table 2). Both spatial consistency and temporal persistence capture the exploitive approach of the MNE (as opposed to explorative approach), complementing each other in two distinct dimensions of space and time. Temporal persistence can be a double-edged sword in its influence on performance. It can benefit the firm in that it saves the costs of decision making if it is a result of the deliberate deployment of certain capabilities. It can be harmful, if not detrimental, if it is the fruit of biased organizational and managerial tendencies to adhere to status-quo decisions.

The *degree of repetitiveness* of an iterative decision has been influential within both the routine and capability literatures (Feldman & Pentland, 2003; Winter, 2000, 2003) and in behavioural studies (Lovallo & Sibony, 2010, p. 13). In the routines literature, Feldman and Pentland (2003) include the term “repetitive” in their definition of routine (“*repetitive* and recognizable pattern of action carried out by multiple actors” (p. 95; emphasis added). In the capabilities literature, Winter (2003) uses the terms *repetitive* versus *quasi-repetitive* decisions for this purpose and discusses their interrelationship with capabilities. Resource allocation to business units or initiatives is an example of repetitive strategic decisions that occur almost annually. Some decisions, however, are a one-shot decision (such as market selection decisions or entry modes of greenfield versus acquisitions). It is notable, though, that a one-shot decision at the subsidiary level can become repetitive at the MNE level if the

parent firm has to deal with similar situations on other occasions across international space over time. Similarly, other strategic issues can have a quasi-repetitive nature (i.e. they are not highly repetitive, but at the same time are not a one-shot decision type). Miller and Friesen (1980), for example, observed in their data an average of six years between changes of strategy. As for expatriate assignment decisions, since the typical expatriation stints are 18 to 24 months (Landry, 1997) and expatriate training stints are 6 to 18 months (Black & Gregersen, 1999), we believe that it is reasonable to consider expatriation as a repetitive decision.

Thus, it is obvious that in order to investigate the pros and cons of taking an exploitive approach (March, 1991) in an organization's recurring choices and adhering to status-quo decisions, the *degree of repetitiveness* of the decisions matters. To this end, we focus on two types of decisions in MNEs' international strategies that represent repetitive and quasi-repetitive international strategic decisions, respectively: *expatriate allocation* to subsidiaries and *equity ownership level*. We believe these choices are two major constituents of MNEs' international strategies, as they possess the key elements of a strategic decision as defined earlier (Eisenhardt & Zbaracki, 1992), but with an international focus: they are both important decisions in terms of actions taken, (financial and human) resource commitments required, and precedents they set. Financial and human resource are inherently different from each other and the pattern of MNE behaviour in each may impact its performance through different mechanisms. We now develop hypotheses on the impact of spatial consistency and temporal persistence of MNEs in each of the expatriate allocation and ownership-level decisions. Figure 2 synthesizes the hypotheses and the conceptual model.

Spatial Consistency of MNEs' Decisions

The spatial consistency of MNEs can be treated as a pattern of stable strategic actions in MNEs if one can identify similar policies, principles and rules applied to the subsidiaries of MNEs consistently and coherently. For example, when appointing expatriates to a joint venture in a host country, some MNEs insist on always appointing their expatriate managers for the chief financial officer role (Yan, 2003). MNEs may exercise some consistency when allocating financial resources among subsidiaries as well. Bardolet, Fox, and Lovallo (2011) find that diversified firms tend to allocate capital equally across their business units, regardless of how the firms' units are partitioned. They argue that this can be attributed to a

behavioural bias that leads to naïve diversification, i.e. “a bias to allocate $1/n$ of capital to each of the n units” (p. 1478). MNEs revise decision rules every so often based on changes in circumstances or learning from experiences, resulting in a dynamism in the rules themselves (March et al., 2000). All in all, MNEs that have a higher tendency in their managers to use consistent decision rules (Zhou, 1997) exhibit higher spatial consistency among their subsidiaries.

Natural tendencies of development and the application of *rules and principles* to use the logic of appropriateness in organizational decision making (Cyert & March, 1963), along with the deliberate development of decision rules (March et al., 2000; Zhou, 1997) as capabilities, have the potential to lead to MNEs’ spatial consistency. As scholars of the behavioural theory of the firm have alluded, using the logic of appropriateness is naturally preferred by organizations to the logic of consequences in decision-making situations.² Additionally, the capability literature can help in understanding the benefits of applying coherent decision rules and being spatially consistent among all subsidiaries along the two decision types of expatriate assignment and equity ownership levels. As discussed earlier, the two strategic decisions swing between repetitive and quasi-repetitive strategic decisions, respectively (Winter, 2003). MNEs that develop and deploy organizational decision rules as their distinctive capabilities, and use them for iterative strategic decisions such as resource allocation (Noda & Bower, 1996) to address complex situations, are believed to outperform others (Levinthal, 2000). This is especially important in the case of MNEs, as they deal with multiple subsidiaries in different markets with varying degrees of dynamism and change. They face another layer of dynamism above and beyond that faced by firms that operate merely in a single domestic market.

² *Nudge*, a *New York Times* bestseller by Thaler & Sunstein (2008), cites Harry Markowitz, a financial economist and Nobel laureate, in his use of “rules of thumb” when answering the question of how he allocated his retirement account: “*I should have computed the historic covariance of the asset classes and drawn an efficient frontier. Instead ... I split my contributions fifty-fifty between bonds and equities*” (p. 123). This is a clear example of the tendency to use the logic of appropriateness (March, 1994) rather than sophisticated calculations based on the logic of consequence.

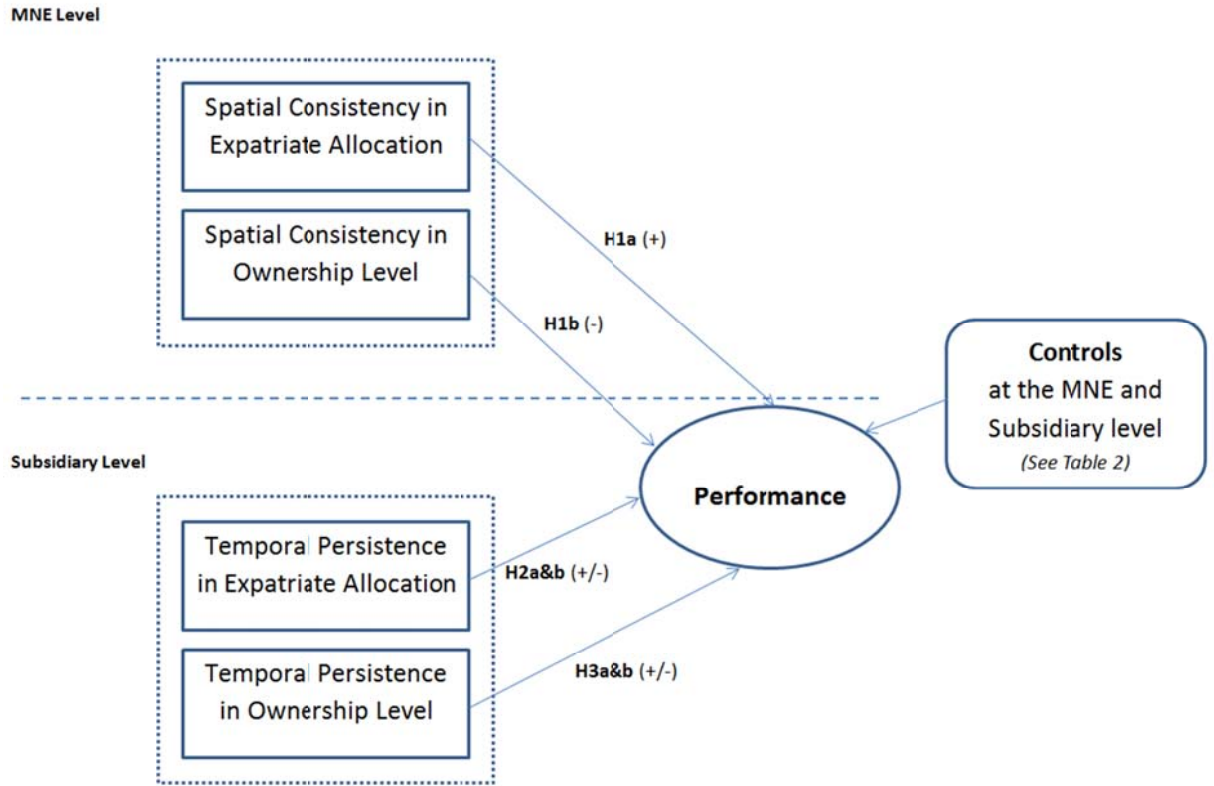


Figure 2 - Hypotheses and the conceptual model

Behavioural lenses can help in the analysis of the sources and performance consequences of the revealed spatial consistency in MNEs' resource allocations, such as for expatriates and equity. A host of studies in the behavioural economics literature (DellaVigna, 2009; Kahneman, 2011; Thaler & Sunstein, 2008; Tversky & Kahneman, 1974) have pointed out the presence of biases and heuristics and their (usually negative) tendency to make people act in ways that undermine our assumptions of rational human nature. However, as the negative connotation of the term "bias" implies, they rarely attend to the potentially positive impacts of some of the natural tendencies of human beings such as the use of rules, heuristics, and intuition.³ The behavioural strategy literature, in contrast, has recently highlighted some of the beneficial aspects of the systematic use of rules and heuristics in strategy making (Bingham & Eisenhardt, 2011; Powel et al., 2011).

Another source of the observed spatial consistency in MNEs can be coherence due to managers' use of heuristics, which are defined as rules of thumb that are used for frugal decision making (Gigerenzer & Goldstein, 2011; 2002, 2011). The use of heuristics in behavioural economics has been mostly studied in association with biases and their impacts on deviation from what is believed to be optimal or standard (Tversky & Kahneman, 1974). The strategy literature and a related stream of literature in psychology, however, have illustrated that the use of heuristics in (strategic) decision making can lead to higher performance (Bingham & Eisenhardt, 2011; Gigerenzer & Brighton, 2009; Gigerenzer & Goldstein, 2011). In such situations, the decision maker makes inferences from previously used heuristics to make high-stakes strategic decisions using the most relevant information in the allotted time. As discussed earlier, MNEs typically encounter an additional layer of dynamism due to their presence in multiple locations across international space. For example, if a single-country firm faces exchange-rate risks in one country, the MNE is exposed to the possibility of change in any of the countries in which it is present. Therefore, given that the use of heuristics is a plausible source of an MNE's spatial consistency, we expect higher performance as a result.

Psychology scholarship in particular has been very effective and influential in our understanding of the role of rules and heuristics as well. In fact, both the behavioural

³ On a related note, a recent study by Banalieva and Dhanaraj (2013) has used "home region orientation" instead of "home bias" to avoid the implied negative connotation inherent in the word "bias."

economics and strategy literatures have based their studies of the use of rules and heuristics in decision making on insights from psychology. One related concept in the psychology literature to our discussion on the use of heuristics in the spatial consistency of MNEs' decision making is the so-called “*less-is-more*” effect (Gigerenzer & Brighton, 2009; Gigerenzer & Goldstein, 2011, p101). The argument is that more information and knowledge of details is not always beneficial for making better decisions and judgements. Frugal heuristics have the advantage of using less (but more relevant) information, computation, and time and of improving the accuracy of decision making. They “use core capacities to make fast and frugal judgements” (Gigerenzer & Goldstein, 2011, page 102).

The use of more relevant information is especially important in the context of the international business activities of MNEs because they face uncertainty and unfamiliarity with their host local environments. One argument for the highly used concept of the “liability of foreignness” (Zaheer, 1995) in international business is limited familiarity with local markets. We argue that by using heuristics in their decision making, managers of MNEs can alleviate this liability to some extent. The use of heuristics and decision rules in decision making that presumably leads to the spatial consistency of MNEs in their international strategies can, therefore, be beneficial. This is particularly important as MNEs repetitively make decisions pertaining to similar international markets and activities. Indeed, as the behavioural economy literature put it, “repetition induces cognitive ease and a comforting feeling of *familiarity*” (Kahneman, 2011, page 66, emphasis added). But in order for a rule-based decision mechanism to be effective for MNEs and result in all the aforementioned benefits, there needs to be the condition of repetitiveness in place. That is, the decision needs to be repetitive enough so that the MNE can manage to overcome the potential negative consequences of the use of rules in decision making, as we discuss next.

The repetitive and quasi-repetitive strategic decisions of MNEs do not differ as much in the use of decision rules (Zhou, 1997) and the revealed spatial consistency as they do in the *dynamics* of rules (March et al., 2000). The process of revising the rules in organizations is an evolutionary process in which rules are applied and experimented with; based on the results and feedback through an adaptive learning mechanism (Argote, 1999; Levitt & March, 1988), a set of rules is revised and reapplied. If an MNE has a rule of assigning an average of 5% expatriate employees to subsidiaries, for example, it may decide to change this average based

on what it learns over time. Alternatively, for quasi-repetitive decisions, if the decision rule is to enter new markets through acquisitions (e.g. Cisco, as discussed before) or wholly owned subsidiaries, the outcome is consistent among subsidiaries across international space (in the focal dimension of international strategy under consideration). This consistent pattern then shapes the MNE's international strategy. The feedback from the application and prototyping of the rule is more instantaneous and in real-time in the case of repetitive decisions than with quasi-repetitive decisions. This helps the MNE to alleviate the biased tendencies that lead to rule development and consistency, or "de-bias" itself as Lovallo and Sibony (2010) put it, and enjoy the merits of rule-based decision making, as we established above. Thus, if spatial consistency in expatriation (as a repetitive decision) is observed in an MNE, we expect a higher performance.

Hypothesis 1a – An MNE's spatial consistency in expatriate allocation among its subsidiaries is positively associated with performance.

In the case of quasi-repetitive decisions, however, the frequency of decision making is not as high. This can make the reliance on rule-based decision making unfavourable for two reasons. First, the MNE and its managers as expert decision makers may not have enough chances to experiment, learn, and "de-bias" (Fischhoff, 1982) themselves. Second, the time between decisions may be so high that the logic of rule-based decision making may not hold. Over time, the context and situational conditions under which the experimentation and rule development have occurred may change. Thus, the pursuit of spatial consistency in equity ownership (as a quasi-repetitive decision) by MNEs (e.g. the MNE uses a wholly owned ownership arrangement in all its subsidiaries) is not a favourable decision in their international strategies.

Hypothesis 1b – An MNE's spatial consistency in equity ownership level among its subsidiaries is negatively associated with performance.

Temporal Persistence of Subsidiaries – A Puzzle

We defined temporal persistence as the extent to which MNEs adhere to the status-quo *proportion of expatriates*, or *ownership level*, in each of their subsidiaries over time. The construct is longitudinal in that it captures the invariance *over time*. One can argue that many well-established constructs in management and strategy such as path dependency (Sydow, Schreyögg, & Koch, 2009), administrative heritage in international business (Bartlett & Ghoshal, 1989), and imprinting or founder effect (Marquis & Tilcsik, 2013) can influence such behaviour in MNEs. Yet temporal persistence is distinct by itself in two ways. First, it complements the spatial consistency construct in the context of our study of MNEs' international strategies. It helps us decompose the impact of the deployment of capabilities of decision rules into space and time dimensions. Second, to help assess the effect of temporal persistence and link it to the rule-based decision-making logic (Cyert & March, 1992; March, 2010; Zhou, 1997), we assumed that the revealed strategy (Mintzberg, 1978) of the MNE reflects what the managers intend (given their bounded rationality, although they can still be behaviourally biased). This assumption is in accord with the so-called “capability perspective” in studies of routines (Parmigiani & Howard-Grenville, 2011) as constituents of capabilities (Nelson & Winter, 1982).

Learning from experience is a major facet of the development, adaptation, and maintenance of capabilities (Winter, 2000). By categorizing prior performance into success or failure, organizational learning occurs (Cyert & March, 1963) and capabilities develop, with decision rules as their central element. Success indicates that current strategies are favourable, and organizations adhere to status-quo strategies to avoid wasteful search efforts (Levinthal & March, 1993). The success and repetition of previous decisions and actions inspires confidence in continuous learning processes (Schwab & Miner, 2008), which in turn draws attention to further search (Joseph & Ocasio, 2012; Ocasio, 1997). This positive impact of organizational learning is intuitive and well researched in the literature (Bingham & Davis, 2012; Gavetti et al., 2012).

All the *prima facie* benefits of learning from experience and feedback notwithstanding, experiential learning can at the same time be potentially imperfect. The imperfections of the lessons learned from experience due to their ambiguities can be attributed to a few causes (March, 2010, p. 106). First, the causal structure of experience is *complex* and *noisy*. That is,

real-life experiences are far from the controlled environment of laboratory experiments. Multiple confounding effects exist. This makes the lessons learned from experience at times potentially superstitious (Levitt & March, 1988), tautological, and systematically biased. Second, endogeneity is involved in the history of experience. The application of rules and practices through choices influences the history that shapes experiences. Therefore, decision rules and experience co-evolve. Third, history is constructed in the eyes of the beholder. Learning from the history of experience is based on contrived narrations and stories made for a specific purpose. Finally, experience provides its learning lessons based on inadequate evidence. Organizations tend to learn from small samples of one or fewer events (March, Sproull, & Tamuz, 1991). In sum, it is difficult to learn from experience perfectly, and the risk of misleading and erroneous learning exists (Baumard & Starbuck, 2005). In the context of our analysis, we thus expect both benefits and harm from the adaptive processes of persistence in the status-quo decisions of expatriation and equity ownership choices.

Accordingly, and specific to the context of our study, temporal persistence has the potential to be both a blessing and a curse. It can be a blessing for the firm where: (1) it is the outcome of an adaptive learning process (Denrell & March, 2001) or is the result of the use of rules, heuristics, and capabilities in decision making and (2) there is no need to make abrupt changes due to exogenous environmental changes. Change, by itself, is not always beneficial. It can at times even be unnecessarily costly (unless it is vital for a firm's fitness and survival). As discussed before, although temporal persistence reflects a state of stability, it can be the result of the iterative (deliberate) application of capabilities manifested in rules and heuristics (Bingham & Eisenhardt, 2011). It can also help specify boundary conditions for managers or to provide priorities that arguably enhance the firm's performance.

The temporal persistence of MNEs in their international strategies can be a curse due to organizational and managerial biases and experiential learning imperfections. No matter what the strategic dimension is (expatriation, equity ownership, international expansion, etc.), managers, as boundedly rational humans, tend to favour the status-quo state for reasons such as anchoring on previous international decisions as the default choice and loss aversion, i.e. losses are more hurtful than gains are pleasant (Hall et al., 2012; Tversky & Kahneman, 1974). Experiential learning imperfections, as explained above, can be another reason for unfavourable temporal persistence. Absent a temporal ambidexterity capability (Eisenhardt et

al., 2010; Nickerson & Zenger, 2002), MNEs tend to overemphasize efficiency through temporal persistence.

A main distinction in this study between the influence of spatial consistency and temporal persistence on performance is related to the effect of learning from experience or the adaptive learning process. We believe the impact of experience on spatial consistency can be considered as distal and to some extent indirect, whereas in the case of temporal persistence the influence is more proximal and direct. The influence on spatial consistency is rather spurious, as its effect is channelled through the adjustment and dynamics of rules (March et al., 2000). In the case of temporal persistence, however, the adaptive process is more direct and immediate.

The adjustment of expatriate assignments within a subsidiary over time, for example, is done based on feedback from past achievement of the typical goals (performance, control, learning, etc.) for sending such a relatively expensive resource abroad (Edström & Galbraith, 1977). Some studies of expatriation in international business advise that the expatriate ratio within subsidiaries should decrease as the subsidiaries age, and that they should use more local managers and staff instead (Beamish & Inkpen, 1998) to adapt to local contexts, and to increase their local legitimacy (Kostova & Zaheer, 1999). Others report that this is not always the case (Perkins, 2009). Some MNEs use as many or at times more expatriates as their subsidiaries age for reasons such as control, trust, and common languages with managers at headquarters. Riaz, Rowe, and Beamish (2014) find that subsidiaries that more slowly decrease their use of expatriates beyond their foundation illustrate higher growth rates. The behavioural bias argument, as a third category, suggests that the expatriate numbers in subsidiaries may not change due to different status-quo biases. Temporal persistence in expatriate level, therefore, can be the result of either unfavourable status-quo biases (Dow, 2006; Samuelson & Zeckhauser, 1988) or the deliberate decision of managers and organizational capabilities to remain in a state of exploitation (Levinthal & March, 1993; March et al., 1991) with its arguable benefits.

Ownership level within each of the subsidiaries, like any other strategic choice, may be adjusted through an adaptive process as well (Beamish & Banks, 1987). It is generally accepted that after a reasonable duration, but probably not as frequently and repeatedly as in

expatriation decisions, the ownership level of a subsidiary may be renegotiated and adjusted (c.f. Chung & Beamish, 2010; Inkpen & Beamish, 1997) to attain a fit and adapt (Lawrence & Lorsch, 1967).

The two international strategy types of expatriate staffing and equity ownership decisions in this study, as we have argued, represent repetitive and quasi-repetitive strategic decisions, respectively. The influence of temporal persistence in each of these decision types can be analyzed based on what we have established so far. Regardless of the pros and cons of temporally persistent behaviour per se, as described previously, the degree of repetitiveness of decisions may influence the outcome and soundness of adherence to status-quo decisions. The repetitiveness attribute of strategic decisions can be beneficial in two ways. First, more repetitive decisions provide the opportunity for more frequent and recurrent feedback (Baum & Dahlin, 2007) and adjustment and change of decision rules (March et al., 2000). Second, although behavioural biases are always present, the behavioural economics literature has observed that managers, “through repetition, will learn their way out of biases” (Constantinides, Harris, & Stulz, 2003, page 1068) or “de-bias” themselves (Fischhoff, 1982). Quite ironically, quasi-repetitive decisions may be beneficial too (albeit through different mechanisms). Less repetition facilitates the “less-is-more” effect (Gigerenzer & Goldstein, 2011). The experience gained by making less repetitious decisions based on heuristics helps the firm in making better inferences.

In sum, temporal persistence seems to be a double-edged sword that may or may not benefit MNEs. It can be beneficial where learning and the deployment of capabilities, as well as the deliberate and mindful application of decision rules, are the source of persistence. It can be harmful in cases where managerial and organizational biases are its source or where experiential learning imperfections dominate. Thus, mixed arguments can be made for the effect of temporal persistence in repetitive and quasi-repetitive strategic decisions on performance. Hence, we offer the following competing hypotheses:

Hypothesis 2a – Higher temporal persistence within subsidiaries regarding expatriate allocation practices is associated with higher performance.

Hypothesis 2b – Higher temporal persistence within subsidiaries regarding expatriate allocation practices is associated with lower performance.

Hypothesis 3a – Higher temporal persistence within subsidiaries regarding equity ownership level is associated with higher performance.

Hypothesis 3b – Higher temporal persistence within subsidiaries regarding equity ownership level is associated with lower performance.

Methods

The developed theory and the hypotheses were tested using different annual editions, from 1996 to 2009, of Kaigai Shinshutsu Kigyō Souran, Kuni-Betsu (Japanese Overseas Investments, by Country), a directory of foreign direct investment (FDI) information published by Toyo Keizai (TK), which is a subsidiary-level dataset. As our theory is meant for MNEs, we dropped firms with fewer than 5 subsidiaries as well as subsidiaries with fewer than 20 employees from the sample. Small subsidiaries in the dataset are sales offices rather than typical subsidiaries. The sample is an appropriate setting for our research inquiry. Firstly, the dataset encompasses a close-to-population coverage of Japanese FDI across global space and over time. This is crucial, since one of the highlights of this study is the decomposition of time and space in the repetitive decisions of the MNEs. After the list-wise deletion of the missing data, the final sample included an average of 464 MNEs with a total of 10,955 observations.⁴ Secondly, the dataset has a multilevel structure linking the subsidiary-level information with the MNE-level data. Other sources of data were used to complement the TK dataset, such as (1) the Nikkei Economic Electronic Databank of Nihon Keizai Shimbun, Inc. as a source to match Japanese MNE parent-level data with parent firms in the TK dataset, (2) IMD World Competitiveness Data, (3) World Bank World Governance Indices, and (4) United Nations country-level economic data.

Dependent Variable

To measure the performance implications of the capabilities of the deployment of decision rules and the pertinent spatial consistency and temporal persistence in international resource allocation, we used subsidiary-level economic profit. It is coded in our data as a categorical variable in three self-reported categories of profit — “gain,” “breakeven,” and “loss.” We

⁴ As we explain later, the number of observations in one of the models (#4) is 4814. We created an inverse Mills ratio for this model to control for the potential selection bias in the results.

grouped the breakeven and gain cases into one category (coded as 1, and 0 otherwise) and had a dichotomous variable for performance.

Independent Variables

Temporal persistence in expatriation – We created this measure using the inverse of the three-year moving variance of expatriate proportion (the number of expatriates divided by the total number of employees). We then made a logarithmic transformation thereof because of its skewed distribution.

Temporal persistence in ownership – We measured the subsidiaries' temporal persistence in ownership using an indicator variable. The variable is set equal to 0 if the subsidiary has experienced at least one instance of change in ownership level of the focal MNE in the study period and 1 otherwise. We used an indicator variable for the (absence of) event of change, instead of a continuous variable, because of the nature of such strategic decisions on ownership level. First, ownership decisions are closer to quasi-repetitious decisions (Winter, 2003). MNEs rarely make highly frequent adjustments (e.g. annual changes) in their ownership levels in subsidiaries. Therefore, given the study's time period, using a continuous change measure (such as variance over time) is not a proper way of measuring this type of temporal persistence in the status quo. Second, research has established that after the first event of change, later change decisions are more likely to occur (Amburgey, Kelly, & Barnett, 1993). Also, Chung and Beamish (2010) posit that after the first instance of change in subsidiary ownership, some firms have the tendency to fall into the "trap of continual ownership change." For the above reasons, we believe, a dummy variable for the one or more change events in each subsidiary can reasonably be used to identify those with a high level of temporal persistence in ownership.

Spatial consistency in expatriation – Using the proportion of expatriates in the subsidiaries of each MNE, we created the measure by first summing the covariance of expatriate proportion across the subsidiaries of each MNE with one and then inverting it. The inversion is applied to turn the measure of covariance into a measurement of consistency (or lack of variance). We added one to the covariance to be able to create the measure for all the

figures ranging from zero to the highest level of covariance.⁵ The covariance over time is a continuous variable that is in accord with the high repetitiveness of such strategic decisions (Winter, 2003) per our discussion in the Theory and Hypotheses Development section. The measure ranges from zero to one (zero representing low persistence and one representing high persistence). The summary and further details are presented in Table 2.

Spatial consistency in ownership – This measure was created similarly to the spatial consistency in expatriation. That is, we summed the coefficient of the variation (standard deviation divided by mean) of expatriate ratios across subsidiaries of each MNE with one and then inversed it.

As discussed earlier, our spatial consistency constructs are cross-sectional (across international space), and the temporal persistence constructs are longitudinal. The definition, operationalization, and details of levels and units of analysis of the core constructs are summarized in Table 2.

Control Variables

The control variables and theoretical rationale for including them are summarized in Table 3.

⁵ If the expatriate proportion was equal in all the subsidiaries (hypothetically), then the covariance would be zero. This would make the inverse figure of the covariance mathematically implausible.

Table 3 - Control variables and their rationale

No.	Level of Analysis	Control Variable	Rationale	Operationalization/Source of Data
1	Subsidiary	Subsidiary Size	Scale economies	Ln (number of employees)
2	Subsidiary	Subsidiary Expatriate Ratio	The effect of precedents (path dependencies) on expatriation policies	Number of expatriates/number of employees
3	Subsidiary	Subsidiary Ownership Level	The effect of precedents (path dependencies) on ownership policies	Percentage of ownership by the Japanese parent
4	Subsidiary	Number of Japanese Parents	Home country network insidership	Count of number of Japanese parents
5	MNE	MNE's Number of Subsidiaries	Parent size effect	Count of number of MNE's subsidiaries
6	MNE	MNE's Slack Resources	It is associated with search and organizational change (Cyert & March, 1963)	Current ratio (Current assets/current liabilities)(Kim, Kim, & Lee, 2008)
7	MNE	Multinationality (Nachum, Zaheer, & Gross, 2008)	Control for international expansion	Foreign sales/Total sales
8	MNE	MNE's Geographic Diversification	Scope economies	$1 - \sum(s_i)^2$
9	Subsidiary (Industry)	Service/Manufacturing Dummy	It controls for the difference between behaviours of service and manufacturing firms (Boddewyn, Halbrich, & Perry, 1986)	Dummy variable (Service = 1)
10	Subsidiary (Institution)	International Experience of Local Managers	It controls for differences in the institutional context of subsidiaries (regarding the possibility of recruiting skillful local managers instead of expatriates)	IMD World Competitiveness Data
11	Subsidiary (Institution)	Political Stability	Institutional dynamics may make the firm depart from pursuing spatial consistency or temporal persistence in its international strategies	World Bank (World Governance Indices)
12	Subsidiary (Institution)	GDP Growth Percentage	Economic growth may cause changes in financial or human resources allocated to subsidiaries	United Nations Data
13	Subsidiary (Region)	Region Effect Dummies	It controls for differences between the regions where the subsidiary is located	Includes Asia (the base group), North America, South America, and Europe
14	Subsidiary	Lagged Performance	Success begets success	$Performance_{t-1}$ & $Performance_{t-2}$
15	Subsidiary	Year Dummies	Year fixed-effects to control for temporal changes	Dummy variables for each of the years from 1996 to 2009
16	Subsidiary	Inverse Mills Ratio (IMR)	It controls for the nonselection hazard of observations due to sample size difference of Model 4 versus base model	IMR was created using heckman command in Stata 13

Analysis

Given the multilevel structure of the phenomenon (Hitt et al., 2007; Raudenbush & Bryk, 2002), the natural structure of our data, and our theory and design, we believe multilevel modelling strategy is appropriate for our analysis. In particular, multiple observations of each subsidiary over time, as the lowest level (level 1), are nested in subsidiaries (level 2) and subsidiaries are nested in MNEs. The nested structure implies a lack of independence between observations nested in the same group. Thus, by using a multilevel modelling strategy, we controlled for the lack of independence among levels to avoid biased standard errors of regression coefficients that occur when higher level variables impact lower level variables (Raudenbush & Bryk, 2002). Since performance as our dependent variable is a binary variable, we specified a multi-level mixed effect model using *melogit* command in Stata 13 (Rabe-Hesketh & Skrondal, 2012).

The sample size in Model 4 (Models 1 to 5 in Table 4 will be explained soon) is considerably smaller than the sample size in the base model. First, since temporal persistence in expatriation is a longitudinal construct and has an element of three-year moving variance in it, the sample will have fewer observations because of the exclusion of the first two years. Second, temporal persistence in expatriation is operationalized using the (logarithm of the inverse of) three-year moving variance of expatriate proportions. Hence, this variable will be missing if any of the expatriate ratios in three consecutive years are missing. To account for this difference and avoid sample selection bias, we calculated an inverse Mills ratio, or the non-selection hazard which represents the probability of inclusion of a subsidiary's observation in Model 4 vis-à-vis the base model. We coded observations as 1 if they were present in Model 4's sample and zero otherwise. Stata's heckman two-stage model was then used for calculating this probability. The inclusion of the inverse Mills ratio in Model 4 rules out the possibility of sample selection bias. Arrfelt, Wiseman, and Hult (2013) have used a similar approach in their analysis.

Depending on the target hypotheses meant to be tested in the pertinent model, each of the four main constructs of temporal persistence and spatial consistency in expatriation or ownership strategies is included in Models 2 to 5, after the base model (Model 1) is analyzed

using merely the control variables (see Table 4). The full model used for our estimation follows:

$$\zeta_{ijt} = \Pr(\text{Performance}_{ijt} = 1)$$

$$\begin{aligned} \text{Level 1: } \text{logit}(\zeta_{ijt}) = & \pi_{0ij} + \pi_{1ij} (\text{Temporal Persistence Constructs})_{ijt} + \pi_{2ij} (\text{Size})_{ijt} \\ & + \pi_{3ij} (\text{Expatriate Ratio})_{ijt} \\ & + \pi_{4ij} (\text{Ownership})_{ijt} + \pi_{5ij} (\text{\# of Japanese Parents})_{ijt} \\ & + \pi_{6ij} (\text{Service Industry Dummy})_{ijt} \\ & + \pi_{7ij} (\text{Local Managers' Intl. Experience})_{ijt} \\ & + \pi_{8ij} (\text{Political Stability})_{ijt} + \pi_{9ij} (\text{GDP Growth})_{ijt} \\ & + \pi_{10ij} (\text{Region Dummies})_{ijt} + \pi_{11ij} (\text{Year Dummies})_{ijt} \\ & + \pi_{12ij} (\text{Inverse Mills Ratio})_{ijt} + \pi_{13ij} (\text{Performance})_{ijt-1} + \varepsilon_{ijt} \end{aligned}$$

$$\text{Level 2: } \pi_{0ij} = \beta_{00j} + r_{ij}$$

$$\begin{aligned} \text{Level 3: } \beta_{00j} = & \gamma_{000} + \gamma_{001} (\text{Spatial C})_j + \gamma_{001} (\text{MNE's No. of Subsidiaries})_j \\ & + \gamma_{002} (\text{MNE's Slack})_j + \gamma_{003} (\text{MNE's Slack_Squared})_j \\ & + \gamma_{004} (\text{Multinationality})_j + \gamma_{005} (\text{Geographic Diversification})_j + \mu_j \end{aligned}$$

Results

Descriptive statistics and correlations are presented in Table 3. First, the highest correlation in the matrix pertains to political stability and the international experience of local managers ($r=0.51$, $p<0.05$), which is not considered high (Mason & Perreault, 1991) and suggests that the constructs are distinct from each other. Also, as reported in Table 4, the maximum variance inflation factor score of the variables is 5.72 (averages range from 1.75 to 2.00), which is much lower than the threshold of 10 commonly used in the literature (e.g. Tan & Tan, 2005) to denote a multicollinearity problem (Tabachnick & Fidell, 2013). Second, the average expatriate proportion of the subsidiaries in our sample is around 5% and the average ownership level of the Japanese parent is 55.18%. The ownership level specifically signals the

appropriateness of the setting, since the sample is not biased towards wholly owned subsidiaries or minority joint ventures.

As explained earlier, multilevel and longitudinal logit regression was used to analyze the effects of our four main effect variables (spatial consistency in expatriate allocation and equity ownership, and temporal persistence in each). Table 4 reports the coefficients and standard errors of the multilevel analysis of the likelihood of profit gain at the subsidiary level. Model 1, our base model, includes only our control variables at the subsidiary and MNE levels. Other core constructs representing our hypotheses were added sequentially in subsequent models. The intra-class correlation (ICC) for all the models ranges from 8.9–9.4%, indicating the variance explained within groups (MNEs) as opposed to across groups.

Hypothesis 1a states that the consistent allocation of expatriates by MNEs among their subsidiaries positively influences performance. Our analysis presented in Model 2 supports this hypothesis ($p \leq 0.05$). Based on Hypothesis 1b, we expected a negative impact of MNE-level consistency in ownership level on performance. Results presented in Model 3 indicate a negative and significant ($p \leq 0.05$) effect of MNEs' consistency in ownership level on performance. Thus, Hypothesis 1b is supported as well.

For Hypotheses 2a and 2b, as well as 3a and 3b, we developed competing hypotheses on the relationship between temporal persistence in expatriate proportion and equity ownership level on performance. In Model 4, temporal persistence in expatriate allocation is added to the base model of control variables. We found marginal support for Hypothesis 2a (coefficient=0.03, $p \leq 0.1$). Model 5 constitutes the control variables as well as temporal persistence in ownership level. We found no support for either Hypothesis 2a or 2b, as the coefficient in this model is not significant.

Table 4 - Correlations and descriptive statistics

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1- Subsidiary Size (log)	4.91	1.29	1.00															
2- Subsidiary Expatriate Ratio	0.05	0.08	-0.39*	1.00														
3- Subsidiary Ownership Level	55.18	40.54	-0.12*	0.27*	1.00													
4- Number of Japanese Parents	1.28	0.74	0.12*	-0.09*	-0.15*	1.00												
5- MNE's Number of Subsidiaries	32.99	40.82	0.07*	-0.01	-0.13*	0.18*	1.00											
6- MNE's Slack Resources (Current Ratio)	1.67	1.21	-0.02	-0.04*	0.09*	-0.12*	-0.10*	1.00										
7- MNE's Multinationality	1.55	9.41	0.04*	-0.01	0.001	-0.02	-0.01	0.06*	1.00									
8- MNE's Geographic Diversification	0.72	0.33	-0.03*	-0.02*	0.03*	-0.07*	0.13*	0.05*	-0.06*	1.00								
9- Service Industry (subsidiary dummy)	0.06	0.24	-0.05*	0.01	0.02*	-0.02*	-0.03*	0.05*	0.002	0.02*	1.00							
10- International Experience of Local Managers	5.14	1.78	-0.20*	0.19*	0.20*	-0.19*	-0.04*	0.01	-0.001	0.03*	0.03*	1.00						
11- Political Stability	0.15	0.8	-0.23*	0.21*	0.14*	-0.13*	-0.02	0.03*	-0.01	0.02*	-0.05*	0.53*	1.00					
12- GDP Growth Percentage	4.59	4.24	0.03*	-0.04*	-0.01	-0.05*	-0.03*	0.01	0.02	-0.01	-0.02*	-0.13*	-0.06*	1.00				
13- Spatial Consistency in Expatriate Proportion	0.48	0.12	-0.12*	0.03*	0.07*	0.03*	-0.16*	0.01	-0.03*	-0.12*	0.05*	0.01	-0.04	0.01	1.00			
14- Spatial Consistency in Ownership Level	0.6	0.14	-0.03*	0.05*	0.39*	0.04*	-0.16*	0.07*	0.01	-0.03*	0.01	-0.05*	-0.09*	0.04*	0.21*	1.00		
15- Temporal Persistence in Expatriate Proportion	12.39	11.9	0.01	0.003	0.01	-0.01	0.01	-0.02	0.001	-0.001	0.02	0.01	-0.01	-0.01	0.01	-0.02	1.00	
16- Temporal Persistence in Ownership Level	0.53	0.5	-0.03*	0.05*	0.001	0.02*	0.001	-0.06*	-0.01	0.004	0.03*	-0.02	-0.01	0.03*	0.05*	0.03*	0.02	1.00

*Two-tailed correlations significant at 0.05 level (based on the complete sample of 10,955 observations).

Table 5 - Results of multivariate logit analysis of performance on spatial consistency and temporal persistence in expatriation and equity ownership

	Model 1 (Base Model)	Model 2 Spatial Consistency in Expatriate Allocation	Model 3 Spatial Consistency in Equity Ownership	Model 4 Temporal Persistence in Expatriate Allocation	Model 5 Temporal Persistence in Equity Ownership
Fixed Effects					
<i>Subsidiary Effects</i>					
Subsidiary Size (log)	0.07 (0.046)†	0.08 (0.046)†	0.07 (0.046)	0.24 (0.319)	0.74 (0.046)†
Subsidiary Expatriate Ratio	0.82 (0.834)	0.80 (0.822)	0.79 (0.836)	0.37 (1.290)	0.84 (0.837)
Subsidiary Ownership Level	-0.0001 (0.001)	-0.0003 (0.001)	0.0009 (0.001)	0.002 (0.005)	-0.0002 (0.001)
Number of Japanese Parents	-0.006 (0.048)	-0.008 (0.048)	0.001 (0.041)	0.30 (0.572)	-0.0006 (0.048)
<i>MNE Effects</i>					
MNE's Number of Subsidiaries	-0.0007 (0.002)	0.00 (0.002)	-0.001 (0.002)	0.02 (0.055)	-0.0006 (0.002)
MNE Slack Resources	0.31 (0.149)*	0.31 (0.148)*	0.32 (0.148)*	0.01 (0.436)	0.31 (0.150)*
MNE Slack Resources-Squared	-0.03 (0.020)	0.03 (0.020)	0.03 (0.020)	0.02 (0.020)	-0.03 (0.020)
MNE Multinationality	0.002 (0.012)	0.004 (0.015)	0.001 (0.011)	-0.03 (0.027)	0.002 (0.012)
MNE Geographic Diversification	0.22 (0.214)	0.26 (0.215)	0.21 (0.214)	0.05 (0.260)	0.22 (0.215)
<i>Industry Effects</i>					
Service/Manufacturing Subsidiary Dummy	0.64 (0.634)	0.61 (0.635)	0.62 (0.631)	-0.14 (0.670)	0.65 (0.633)
<i>Institutional Effects</i>					
International Experience of Managers	0.12 (0.056)*	0.13 (0.056)*	0.12 (0.056)*	0.83 (1.750)	0.12 (0.056)*
Political Stability	0.07 (0.080)	0.07 (0.080)	0.06 (0.080)	0.03 (0.130)	0.07 (0.080)
GDP Growth Percentage	0.07 (0.013)***	0.07 (0.013)***	0.07 (0.013)***	0.03 (0.020)	0.07 (0.013)***
<i>Region Effects Dummies (Base group: Asia)</i>					
North America	-0.38 (0.128)**	-0.37 (0.128)**	-0.39 (0.128)**	-0.22 (0.204)	-0.38 (0.128)**
South America	-0.23 (0.286)	-0.22 (0.287)	-0.24 (0.286)	-0.37 (0.468)	-0.23 (0.287)
Europe	-0.03 (0.158)*	-0.28 (0.158)*	-0.32 (0.158)*	-0.06 (0.250)	-0.31 (0.158)*
<i>Constant</i>	-3.17 (0.486)***	-3.69 (0.557)***	-2.63 (0.553)***	-8.98 (10.670)	-3.14 (0.491)***
<i>Inverse Mills Ratio</i>				2.92 (7.351)	
<i>Year Fixed Effects included (1995-2009)</i>					
<i>Lagged Performance Included</i>					

p<=0.1† ; p<=0.05* ; p<=0.01** ; p<=0.001***

Table 5 (Continued) - Results of multivariate logit analysis of performance on spatial consistency and temporal persistence in expatriation and equity ownership

	Model 1 (Base Model)	Model 2 Spatial Consistency in Expatriate Allocation	Model 3 Spatial Consistency in Equity Ownership	Model 4 Temporal Persistence in Expatriate Allocation	Model 5 Temporal Persistence in Equity Ownership
Main Effects					
Spatial Consistency in Expatriate Allocation (H1)		0.89 (0.461)*			
Spatial Consistency in Equity Ownership (H2)			-0.89 (0.445)*		
Temporal Persistence in Expatriate Allocation (H3)				0.03 (0.020)†	
Temporal Persistence in Equity Ownership (H4)					-0.04 (0.094)
Random Effects					
MNE Level Intercept Variance	0.34 (0.087)	0.322 (0.086)	0.324 (0.085)	0.324 (0.117)	0.341 (0.087)
Number of Observations	10955	10955	10955	4814	10955
Number of MNEs	464	464	464	434	464
Average Observation per MNE	23.6	23.6	23.6	11.1	23.6
Number of Subsidiaries	2762	2762	2762	2017	2762
Log Likelihood	-2030.83***	-2028.97***	-2028.86***	-884.99*** (LPsL)	-2030.73***
Wald Chi-Square	2597.38	2605.21	2604.13	742.95	2597.17
Degrees of Freedom	33	34	34	34	34
ICC	0.093 (0.022)	0.089 (0.022)	0.089 (0.021)	0.090 (0.033)	0.094 (0.022)
Variance Inflation Factor Range (Mean)	1.01 - 5.70 (1.80)	1.01 - 5.68 (1.75)	1.02 - 5.71 (1.78)	1.03 - 4.84 (1.88)	1.01 - 5.72 (2.00)
AIC	4127.67	4125.94	4125.72	1837.98	4129.47

p<=0.1† ; p<=0.05* ; p<=0.01** ; p<=0.001***

(LPsL)= Log Pseudo Likelihood

The interpretation of the coefficients in nonlinear estimation approaches such as logistic regression is different from that in linear models such as ordinary least squares. The coefficient in nonlinear models depends on the level of the independent variable in the model. Scholars have advised using post-estimation graphs to interpret coefficients in such models. Thus, we created the graphs presented in Figure 3 using Stata 13 software. The graphs are organized to present a two-by-two framework for our paper on the consistency and persistence in expatriation and ownership strategies of MNEs. They illustrate the probability that a subsidiary is not in a state of loss for different levels of the independent variables. As we reported previously, in the case of expatriation, both spatial consistency and temporal persistence positively influence performance. For ownership strategy, we only found support for the positive relationship between spatial consistency and performance. Further, visual investigation of the graphs indicates that the average lines are close to linear models. Although in non-linear estimations (such as logit) the coefficients reported in the models technically correspond to the average values of the independent variables, our post-estimation graphs indicate that we can roughly use these coefficients for judgements on the whole range of our independent variables.

Robustness Checks

First, the reported results are based on a conservative sample. We wanted to be sure that we used a consistent sample for all the models in the presence of some missing values in each of our independent variables in different observations (e.g. spatial consistency in expatriation may be missing in some observations and spatial consistency in ownership in others). Therefore, in order to account for the missing values, we used the most restricted sample among Models 1 to 5, or their “common denominator” (excluding Model 4, which has a substantially smaller sample size for reasons explained earlier). We ran the analysis with non-restricted samples as well, which differed by 1 to 2 percent in terms of sample size, and found similar results.

Second, the dependent variable (DV) in the dataset is a categorical measure of performance (gain, breakeven, and loss are the categories). We also grouped breakeven and loss together versus gain as another group. The results were almost identical. The only difference was in the level of significance in two cases: (a) spatial consistency in expatriation

was a significant ($p \leq 0.05$) predictor of performance in the reported results, with the results being marginally significant ($p \leq 0.1$) in the alternative treatment of the DV, and (b) temporal persistence in expatriation was marginally significant ($p \leq 0.1$) in the reported results, with the results being significant ($p \leq 0.05$) in the alternative treatment of the DV.

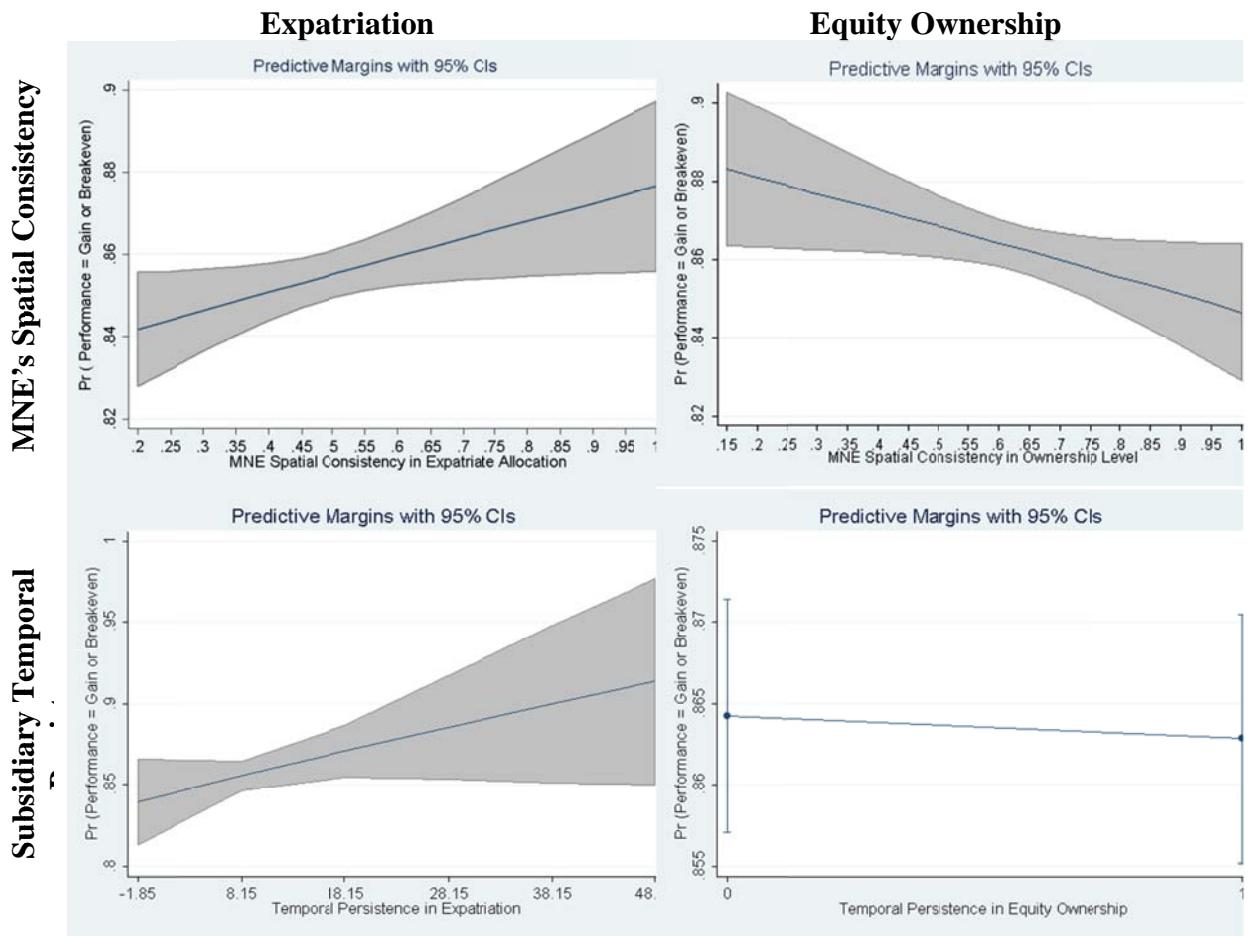


Figure 3 - Post-estimation predictive margins graphs for multilevel logit analysis using melogit command in Stata 13

Discussion

Stability due to the deployment of decision rules in the repetitive decisions of firms (e.g. related to resource allocation) is an important but generally overlooked phenomenon, particularly in the context of MNEs (e.g., Doz, 2005; Noda & Bower, 1996). The longitudinal and internationally widespread nature of resource allocation by MNEs to their subsidiaries makes this practice complex. To harness this complexity, we decomposed the interplay between stability and change in resource allocation practices into time and space dimensions. By focusing on the two resource allocation practices of expatriation and equity financial ownership decisions, we investigated the performance implications of being consistent across space as well as persistent over time. We found that spatial consistency and temporal persistence in expatriation helps. That is, if MNEs can develop capabilities for decision making on international strategy dimensions such as ratio of expatriate employees in subsidiaries, and then apply them consistently across all of their subsidiaries, they will likely experience higher performance. In the case of ownership decisions, this approach is not necessarily beneficial. Our results indicated that spatial consistency in ownership (e.g. having whole ownership in all subsidiaries) hurts performance. Our analysis for temporal persistence in ownership was not statistically significant. Thus, although the development of decision rules is recommended in general, managers should be careful in using this recommendation depending on the type of decision they are making.

Our study has theoretical and empirical contributions in three areas. First, it contributes to the literature on the theory of MNEs. In this literature, Dunning and Lundan (2008) suggest that “the theory of the determinants of MNE activity ... must draw upon ... international resource allocation based upon the spatial distribution of factor endowments and capabilities” to investigate the *location* and *ownership* of production and the way their transactions are managed and *organized* (p. 79). We believe our study has addressed this call by (1) investigating the role of the development and deployment of decision rules for strategic decision making, as an *organizational* capability, pertaining to resource allocation in the international space, and (2) focusing on the organizational impact of the deployment of decision rules for MNEs’ *ownership* decisions. We believe that our longitudinal dataset of 464 Japanese MNEs, with an average of 33 subsidiaries (Table 5), adds to the strength of this contribution. That said, we note that our study does not focus on the *location* strategy of the

MNEs, as suggested by Dunning and Lundan (2008), and leaves it to future research to explore using the mechanisms and constructs we developed.

Second, our study contributes to the capability literature in general and rule-based decision making through learning in particular (Ethiraj, Kale, Krishnan, & Singh, 2005; Levinthal, 2000; March, 2010; March et al., 2000; Nelson & Winter, 1982; Winter, 2000; Zhou, 1997) by shedding light on (1) the role of the degree of repetitiveness of strategic decisions and (2) the development and deployment of decision rules in the context of international resource allocations. We do not claim that our study has provided a comprehensive investigation of the role of the degree of repetitiveness.⁶ However, we do believe that our exploration of the role of two international decision — expatriation and equity ownership, respectively representing repetitive and quasi-repetitive decisions — opens the door for follow-up studies on this subject. Echoing both academic and practitioner studies (Lovallo & Sibony, 2010; Winter, 2003), we suggest that the degree of repetitiveness matters in deciding to base MNEs' international strategic decision-making processes on organizational rules, principles, and heuristics. Our findings suggest that spatial consistency due to the application of decision rules benefits firms but does not help in quasi-repetitive decisions such as those related to equity ownership.

Third, we quantitatively study rule-based decision making in the context of international resource allocation. Argote and Greve (2007, p. 339) highlight that “To the modern reader, the weaker part of the empirical work in *A Behavioral Theory of the Firm* is the quantitative testing of propositions drawn from the case studies, theorizing, and simulation.” We believe that our study addresses this call. We developed two core constructs: spatial consistency and temporal persistence. These measures are helpful in assessing the extent to which rule-following decision making can be traced in the revealed strategies and actions of firms. The logic and mechanisms we used to develop these constructs and apply them to harness the complexity of a spatiotemporal phenomenon suggests an empirical contribution. The constructs, their operationalization, and the theoretical mechanisms we used can be redeployed as a toolkit in other research contexts. Stability and change in other dimensions of the international strategy of MNEs such as location choice, partnership and

⁶ For a perfect theory of the role of the degree of repetitiveness, there is a need for enough variance and a continuous measure that covers all strategic decision types and their degree of repetitive information to make a holistic assessment of the impact of high versus low repetitiveness.

alliance strategies, etc. can be explored using similar constructs. They can similarly help in the analysis of strategic decisions of single-country (yet spatially heterogeneous) multi-business firms.

Our analysis and results also have implications for practice. Some companies tend to develop and maintain clear rules and policies for their international strategies. For ownership mode, for example, Cisco is famous for preferring acquisitions to the in-house (organic) development of technologies or joint ventures. The company appears highly consistent across space as a result of the application of the policy of preference for acquisition over other modes in its ownership decisions. But can other companies consider Cisco's approach as a role model? While it has been suggested by previous research that firms will be better off if they can strike a balance between exploitation and exploration (March, 1991), there are counterexamples in practice such as Cisco. Our research also shows that spatial consistency in certain strategic dimensions (such as expatriation) is helpful, but not in others (equity ownership in our study). Although we believe that repetitiveness matters in this distinction, as it contributes to error correction and the fine tuning of organizational rules and policies, we prefer to avoid overgeneralizing by providing practical recommendations for high versus low repetitiveness. As we explained before, this conclusion needs a research setting that incorporates an exhaustive range of the degrees of repetitiveness, which we leave to future research. However, our results confidently indicate that spatial consistency and temporal persistence in expatriation benefit a firm's performance. Also, we do not recommend spatial consistency in ownership (e.g. all the subsidiaries are wholly owned by the MNE rather than a mix of joint ventures and wholly owned subsidiaries), as our results show that it hurts a firm's performance. A summary of these points and some examples are provided in Table 6.

Table 6 - Summary of practical implications

	Expatriation	Equity Ownership
MNE's Spatial Consistency	<p><i>Spatial consistency in expatriation helps:</i></p> <p>It is beneficial if a firm develops and deploys decision rules for expatriate proportion in its subsidiaries.</p>	<p><i>Spatial consistency in ownership hurts:</i></p> <p>A consistent ownership level across subsidiaries is not recommended.</p>
Subsidiary's Temporal Persistence	<p><i>Temporal persistence in expatriation helps:</i></p> <p>Avoid frequent changes in the expatriate proportion within subsidiaries.</p>	<p><i>N/A; no recommendations here. (findings are not significant in this quadrant)</i></p>

Future Research

First, we assumed that what is revealed as the strategic behaviour of the MNE reflects the intention of the firm and its managers. This assumption can be assessed and relaxed in future research. Managerial intention is not easy to track in archival datasets. Complementary field investigations and qualitative designs are needed to study the parameter. Such studies might distinguish between intentional persistence and consistency and inadvertent (or biased) adherence to the status quo. In fact, (Ghemawat, 1991, p. 24) presents a framework for the decomposition of strategic choice into passive inactivity (or inertia) and active choice making. Active choice making, in turn, can take two forms: mindless, routine choices and mindful choices. Lastly, mindful choices can fall into two types: uncalculated principle-based choice and calculated choice based on cost-benefit analysis. This last dichotomy is similar to what March (1994) terms as decision making based on the logic of appropriateness (following rules and principles) and the logic of consequences (cost-benefit analysis of the alternatives). A great potential for contribution exists, for future research, in parsing out these different effects and their impact on firm performance.

Second, we only examined the expatriation and ownership dimensions of international resource allocation strategies that, we believe, represent repetitive and quasi-repetitive decisions (Winter, 2003). Future research can focus on other dimensions of international strategy. Some examples include the influence of spatial consistency and temporal persistence on international entry mode (acquisition versus greenfield), international alliance decisions (e.g. home-country, host-country, or third-country partners), and international market expansion and location choice, among others. The international market expansion dimension can be linked to the stream of literature in international business on home-country orientation (Banalieva & Dhanaraj, 2013) and regionalization (Arregle, Miller, Hitt, & Beamish, 2013; Rugman & Verbeke, 2004). As for the resource type, a third category of organizational resources, beyond human and financial resources, is cognitive resources. Managerial attention, for example, is believed to be a limited resource that MNEs allocate to different issues pertaining to their subsidiaries and strategies (Ocasio, 1997). A related question can be asked as to how MNEs and their managers can use decision rules in the allocation of this limited resource.

Third, we studied decision rules in general, as a special category of organizational capabilities. Decision rules can have different types with varying applications. A related stream of literature, for example, suggests that the use of *simple* rules can be a source of *dynamic* capability and help firms, especially in volatile environments (Bingham & Eisenhardt, 2011; Eisenhardt & Martin, 2000; Eisenhardt & Sull, 2001; Sull & Eisenhardt, 2012). Additionally, whereas in our study the level of analysis for organizational rules is the MNE, rules can similarly be developed (or emerge) and be deployed at other levels such as the network level (Kogut, 2000), market level (Martinez-Moyano, McCaffrey, & Oliva, 2014), and (micro) individual level (Heugens, Van Riel, & Van Den Bosch, 2004). Future research can provide an exhaustive typology for decision rules at different levels of analysis.

Fourth, we used data on the foreign direct investment of Japanese multinationals. Whereas Japan, as the third-largest economy in the world, has had a highly influential role in the global economy in the past few decades, it has some specificities in its business system such as a highly networked and intertwined (keiretsu) ownership structure. Future research can test the theories developed in this paper on non-Japanese contexts as well.

Sixth, some firm specific factors such as MNEs' strategies (Bartlett & Ghoshal, 1989) and subsidiary mandates (Birkinshaw, 1996) are assumed to be exogenous in this study. MNE's strategy may fit in any of categories of international, global, multinational, and transnational strategies, as specified by Bartlett and Ghoshal (1989). Each of these strategies emphasizes varying relative importance for headquarters versus national subsidiaries. Since Japanese MNEs as our empirical setting generally follow a global strategy, our study has controlled for this effect. However, future studies can examine the effect of variance in MNE's strategy. Further, we know that subsidiary mandates vary within an MNE (Birkinshaw, 1996). Some subsidiaries may hold a world product mandate which makes them responsible for the global development, manufacturing, and marketing of a certain product. Other subsidiaries may be more specialized and focused on a limited section of the value chain. While we have assumed homogeneous mandates for subsidiaries, future studies can incorporate subsidiary mandate and role.

Seventh, studies in international business have established the importance of striking a balance between global integration and local adaptation. While this study focused on an integration approach by the MNE through development and deployment of decision rules as capabilities, we have acknowledged the importance of local context and adaptation by incorporating subsidiary level control variables in our empirical analysis. Future studies can examine the development and deployment of decision rules by considering the importance of the local context in their theoretical development as well.

Eighth, our dependent variable was a binary variable for the choice between WOS or JV in the MNE's international ownership strategy. Firms may first decide if they wish to have a partner or pursue a WOS, and then if they chose to have a partner, they will consider what ownership level they may want to hold. Further a continuous ownership variable can have advantages and disadvantages. The advantage is that the information is more nuanced and fine-tuned. The disadvantage arises due to the fact that a continuous increase in the level of ownership may not have a homogeneous effect. For example a 10% increase may have a different effect from a 25% ownership level than a 40% ownership level. Certain thresholds that impact each partner's level of control creates certain categories (such as JV versus WOS or a minority JV versus a majority JV) that matter. As such, the decision on ownership mode (i.e. WOS vs. JV) and the level of ownership (using a continuous ownership variable) are

related yet distinct. In this study, we dichotomized our continuous ownership variable to be able to capture the first decision (the choice between WOS and JV). Future studies can consider the effect of using a continuous ownership variable as well.

Ninth, as we elaborated in Table 2, spatial consistency and temporal persistence are theorized and measured at the MNE and subsidiary level respectively. Future studies can examine the effect of temporal persistence at the MNE level as well. This can help elucidate the effect of (and the need for) revising and re-examining resource allocation decision rules at the MNE level as well.

Finally, we assume that the locus of decision for allocating resources is headquarters of the MNE. This approach assumes that subsidiaries have little or no agency or influence. Future studies can examine how assuming a possibility of influence from subsidiaries may impact the development of resource allocation decision rules as well as the resultant spatiotemporal stability in the MNE's revealed pattern of action.

Conclusion

We examined the effect of the deployment of organizational capabilities manifested as decision rules on performance, as well as the learning mechanisms that lead to the development of such rules. We used human and financial resource allocations (expatriates and equity ownership, respectively) by MNEs to their subsidiaries as our contexts. We found that deployment of consistent decision rules across subsidiaries of MNEs in certain decision types such as expatriation benefits firms, while such a practice hurts in the case of other decision types such as equity ownership. One explanation for such a difference, we argued, is the degree of repetitiveness of the decision. Repetitive decisions facilitate organizational learning and lead to more effective decision rules and policies. Further, our temporal analysis of the deployment of decision rules indicated that persistence over time in particular decisions such as expatriation can be helpful too.

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Chapter 3 - MNE DYNAMICS, DISTANCE, AND THE ROLE OF SPACE AND PLACE IN THE ORGANIZATION OF ITS LOCATIONS

Abstract

Distance is an influential factor in the practice and scholarship of international business and impacts the decisions and activities of multinational enterprises (MNEs). As MNEs evolve in the global landscape, the impact of international distance on their activities changes. This study investigates this interaction. We argue that for firm-level decision making, distance to the target host country is influenced by the firm and the whole portfolio of its extant footprints. We suggest this as an alternative view to the established measurement of distance (from the MNE's home country to the target host country). The extant measure is based on the home–host country dyad level as the benchmark for assessment. We use the MNE–host country dyad level to develop a measure with arguably improved predictive validity. The extant measure has great merit in studies focused on such issues as international trade. Our conception incorporates firm-level heterogeneity for firms originating from the same home country. Utilizing the international business and economic geography literatures on location and space, we propose that the spatial evolution of a firm in the global space results in a temporal dynamic in its proximity to a new target host country.

Keywords: *Distance, MNE dynamics, MNE evolution, location strategy, global location portfolio, economic geography*

Introduction

“We regard ourselves as having a home base in each of the 23 countries where we operate.”

-Marc Beckers, the executive in charge of UniCredit’s “Group Identity & Communications”

(Dvorak, 2007)

“Developing new business through globalized diversification and establishing the Three Regional Headquarters management system” was announced as one of the key strategies of Canon by its CEO, Fujio Mitarai. (Canon Corporation, 2012)

MNEs accumulate knowledge as their location portfolios evolve in the global space. The stock of knowledge and the learning lessons at different stages of international expansion and activities impact how MNEs pursue the next stage of expansion and commitment in their international networks of activities (Johanson & Vahlne, 1977). As MNEs advance in their multinationality, they increasingly depend on their knowledge base, which is embedded in their globally interconnected network of activities and subsidiaries (Kogut & Zander, 1993), rather than their home-country-specific advantages. In fact, as an MNE’s locations and knowledge base evolves, the learning lessons from foreign locations may complement the original home-country influence on the MNE’s decision-making processes. Therefore, unlike in the earlier stages of internationalization in which decision factors such as psychic distance are more salient, their impact diminishes as the firm learns from its international experience in other countries (Wilkinson, Peng, Brouthers, & Beamish, 2008).

The concept of distance, an extensively used index in international business (IB) scholarship and practice, can thus be arguably influenced by the evolution of MNEs (Ambos & Håkanson, 2014; Ghemawat, 2001; Hymer, 1960; Shenkar, 2001; Zaheer, Schomaker, & Nachum, 2012). The term “psychic distance,” for example, as a perceptual measure of differences between home and host countries, was used by (Johanson & Vahlne, 1977). Later, the CAGE framework was introduced by specifying the four dimensions of culture, administration, geography, and economy along which the differences could be operationalized (Ghemawat, 2001). Recently, Berry, Guillén, & Zhou (2010) introduced five more dimensions to the concept by adding financial, political, demographic, knowledge, and global connectedness to the CAGE dimensions. What is different among these advancements is the

number of dimensions they have assumed for the construct. What is common among them is that they all consider home and host country as the benchmarks for the assessment. These fixed measurement end-points make international distance a *country dyad-level* construct. That is, no matter what firm we are considering from any specific home country, their distance to the target host country is constant. We see a missed opportunity here through a *lack of firm-level heterogeneity*, which will be explained next.

While the extant contributions have been insightful for international business scholarship, most have somewhat surprisingly overlooked the fact that the evolution of MNEs in the international space can have relevant consequences for the perceptions of firms of *their* international distance and foreignness (Hymer, 1960; Zaheer, 1995) to other markets. Indeed, after (Johanson & Vahlne, 1977) assumed psychic distance as an exogenous factor in their internationalization model, this assumption was not challenged by others. Two reasons can be presented in favour of instead accepting that firms originating from the same home country may perceive their distance from a target host country differently.

First, studies have shown that the effect of international distance may diminish as firms gain international experience (Wilkinson et al., 2008). It has also been found in a firm-level study that in a given time period international expansion into culturally distant countries (with added cultural distance) negatively impacts a firm's performance (Hutzschenreuter & Voll, 2008). Thus, the impact of existing country-to-country measures of distance does not remain constant as MNEs evolve. Secondly, the salience of the notion of a home country may gradually vanish and become partially substituted with the learning lessons from international experience as firms globalize. In fact, throughout its temporal and spatial evolution, an MNE may not have a constant *sense of place* (Sedon, 1972) regarding its original home country. Nestle, as an example, is headquartered in Switzerland, but 95% of its sales take place outside its home country. It has also made numerous acquisitions of companies headquartered in other countries.

Recent trends of changing a firm's headquarters configuration, or deploying a multiple headquarters structural model (Dvorak, 2007; Laamanen, Simula, & Torstila, 2012), move its managers from a domestic mindset (Nadkarni & Perez, 2007) towards acquiring a global mindset (Levy, Beechler, Taylor, & Boyacigiller, 2007). The current practice of the

conceptualization and measurement of international distance from home to host country is perfect for studies such as international trade (Beugelsdijk & Mudambi, 2013). At the firm level, however, a measure that incorporates a firm's portfolio of subsidiaries and footprints can be more powerful and can acknowledge the existing firm-level heterogeneity among firms originating from the same home country. The predictive validity of such a measure can be assessed vis-à-vis the extant (home to host) country dyad distance measure.

While acknowledging the contributions of the extant scholarship on international distance as a country dyad-level construct, particularly for country-level studies such as those in international trade (Chen, 2004), this study extends the concept and introduces two measures at the firm level. This perceptual measure reflects the incompatibility of MNEs' stock of knowledge at each point in time with the attributes of the new target host country. It brings firm-level heterogeneity into the construct of distance by adopting a different level of analysis: *MNE-country dyad*. We ask: *How does what MNEs learn during their international activities influence their perceived distance and subsequent international decisions?* The study utilizes the international business and economic geography literatures on location and space to propose that the spatial evolution of a firm in the global space results in a temporal dynamic in its proximity to a new target host country. Economic geography concepts and theories are receiving burgeoning attention among IB scholars (Beugelsdijk, McCann, & Mudambi, 2010; Beugelsdijk & Mudambi, 2013; Schotter & Beamish, 2013).

Finally, a comparison is made between the extant (*home and host*) *country dyad-level* international distance and the *MNE-(host)country dyad-level* distance to assess the change in the predictive validity of the new construct in explaining international business decisions (such as ownership level). We suggest that the new way of treating the construct will also help improve some of the limitations of the current construct acknowledged in previous literature, including the inability to capture the asymmetries of distance (Brock, Shenkar, Shoham, & Siscovick, 2008; Shenkar, 2001) and the directionality of measurement (Zaheer et al., 2012). This is all achieved by incorporating the MNE, and the knowledge it acquires during its evolution in the global space, into the conceptualization and measurement of distance.

In what follows, first we present the conceptual background and theoretical development. Then we develop two measures at the MNE-(host)country dyad level. Finally,

in a comparative analysis, we apply our measure to examine the ownership decisions of MNEs and contrast its predictive validity with that of the extant measure in the IB literature (at the home country–host country dyad level). The article concludes by discussing the implications of the comparison and suggesting future research avenues using our novel approach.

Conceptual Background and Theoretical Development

Distance, an extensively utilized concept in the IB scholarship, has been considered independent of the firm and the evolution of its activities and knowledge base. At the same time, IB theories have explicitly attended to firm dynamics. Some theories such as the Uppsala model of internationalization (Johanson & Vahlne, 1977) have explicitly focused on the dynamics of MNE activities and expansion. In this theory, the decisions and activities of the firm at each stage of its internationalization depend on the previous locations in which it has operated and the knowledge and commitments it has pursued. Other frameworks, such as Dunning's eclectic paradigm, incorporate the dynamics of MNE evolution more implicitly (Dunning, 1977, 2001). This OLI paradigm posits that multinational activities are driven by three types of advantages, namely ownership (O), location (L), and internalization (I) advantages. It is the specific configuration of these advantages that influences a firm's decisions in undertaking foreign activities. Location is one main pillar in the OLI framework and ownership advantages are firm-specific advantages that originate directly from resources owned or controlled by a firm.

In the OLI framework, location-specific advantages are based on the resources, networks, institutional structures, or other advantages that are specific to a country. As the firm expands the portfolio of its international footprints, its location-specific advantages evolve through learning, development of its knowledge base, and decreases in its foreignness. Finally, internalization advantages are accrued to a firm when it eliminates the transaction costs associated with market interaction and internalizes these activities by bringing them inside the hierarchy of the firm (Buckley & Casson, 1976). The three pillars in the OLI framework are intertwined and collectively utilized to explain an MNE's international

activities and decisions. This joint consideration of the three pillars accounts for the evolution of the MNE. For example, if the location portfolio of the MNE evolves, the resultant change in its knowledge base, its learning from experience, and network embeddedness alters the asset (e.g. knowledge base) ownership configuration of the MNE and thus its internalization decisions are influenced.

Notwithstanding the explicit or implicit consideration of MNE evolution in IB theories, they have been neglected in the conception and measurement of distance. This is surprising, as distance is at the core of the decision factors considered by firms and their managers in their international activities. In fact, Zaheer, Schomaker, & Nachum (2012) suggest that scholars need to conceptualize the effect of distance by paying attention to the mechanisms through which distance operates. They also suggest that firm-level characteristics need to be incorporated to account for firm heterogeneity. In accordance with these suggestions, we suggest that (1) the benchmark for conceptualizing distance be amended from the home–host country dyad to the MNE–host country dyad. We also suggest that (2) the MNE portfolio of home and foreign locations be considered together in assessing the distance to the target host country. We follow prior studies (Eghbali-Zarch, 2013; Zhou & Guillén, 2015) and further develop the concept of *evolved home-base* in the next section for this purpose. Finally, (3) alternative measures can be utilized based on *average* and *minimum* distance in addition to the extant measure of home to host country distance. Whereas average distance measure has been previously introduced and used, minimum distance measure is novel. Each of these measures can have its own merits, and possibly complement each other, depending on the research question.

Evolved Home-base

Most distance measures have been based on direct line measurement between the base and destination centres of two (home and host) countries (Berry et al., 2010). This benchmark for the measurement has been helpful, especially for studying international trade exchange at the country level (Chen, 2004). In these studies, firm-level heterogeneity is not assumed. However, in studies of firms and their decisions to invest and operate abroad, the inter-

country dyadic measurement of distance appears to have conceptual limitations. As a firm starts internationalizing, it increases its presence in the global space. The mechanisms through which distance operates differ for a firm that has not internationalized versus a firm which is now considered a MNE. In the latter case, in its decision-making practices pertaining to international activities, the MNE incorporates all the elements of its location portfolio (including its original home and foreign locations) as well as the lessons learnt from its activities in each of these countries. This is as if the MNE had a home-base in all the locations of its activity in the global space, as quoted in the epigraph of this paper from the manager of UniCredit's "Group Identity & Communications". The second epigraph highlights the trend in the multiplication of the headquarters of MNEs (Dvorak, 2007), which makes MNEs depart from the orthodox centralized decision system to a more dispersed structure that considers all its locations and headquarters in decision making. Our key point is that, as a benchmark for the measurement of distance, the concept of home evolves as the MNE internationalizes.

The practitioner's view of the concept of home alluded to in the previous paragraph notwithstanding, the scholarly literature in IB has treated the concept of a firm's home country and its evolution after internationalization differently as well. Discussions vary between arguing that firms rely on single home countries (Porter, 1990), several home-bases (Rugman & Verbeke, 2001, 2009), and adopted home-bases (Buckley & Ghauri, 2004). Other studies have argued that the influence of a home country wanes after a firm increases its internationalization to the point that the (evolved) home-base replaces the original home country (Zhou & Guillén, 2015). On the one hand, Porter (1990) asserts that a high percentage of core assets, competencies, and strategic decision-making power concentrated in one country would lead to the qualification of a firm as being a single-home-based company. On the other hand, other scholars have suggested a different account of a home country of a firm, especially after it internationalizes (Buckley & Ghauri, 2004; Rugman & Verbeke, 2009). These scholars believe that it is a fallacy to assert a single home country for an internationalized firm (Rugman & Verbeke, 2009, 170). Rugman and Verbeke (2009) argue that when a high percentage of activities (e.g. core assets, competencies, strategic decision making, and power concentration) of a firm is based outside its original home country, the firm will be viewed as functioning through several home-bases. Finally, Buckley and Ghauri (2004) propose the concept of *adopted home*, suggesting that as firms internationalize, they

adopt a global home as opposed to an initial home country. In fact, Porter (2008) later refines his view of a single home-base and recognizes the importance of foreign locations to the overall competitiveness of MNEs.

It is apparent, therefore, that the progress of a firm's foreign activities and commitments transforms the original state of its home country to one that is spread globally (Buckley & Ghauri, 2004) or to multiple home-bases (Rugman & Verbeke, 2009). The importance and nature of a home-base of a firm evolves due to the dynamics of firm activities, networks, and assets internationally. Thus, we build on the previous studies that have introduced the concept of *evolved home-base* (Zhou & Guillén, 2015) to account for these dynamics. Similar to the aforementioned IB literature, we define a firm's evolved home-base as its portfolio of locations that incorporates its original home country as well as its foreign footprints in the global space. Depending on their importance (or weight), an MNE's footprints contribute to its experience and learning, and the characteristics of the evolved home-base as it expands or shrinks globally.

We use the concept of *evolved home-base* to illustrate the MNE–host country dyad level of analysis in the conception of distance. That is, when an MNE contemplates making decisions pertaining to its international strategies and activities, it uses its existing portfolio of locations (or its evolved home-base) as a benchmark for identifying the dissimilarities (or distance) between this evolved home-base and the target host country. To do so, the psychology literature suggests that managers of firms focus on *the most salient features of the most similar location* (or category of locations) to the target host country (Tversky, 1977). Some locations in the evolved home-base may be either more similar or dissimilar to the target host country than the original home country. The latter category causes an effect called “added distance” in the literature (Hutzschenreuter, Kleindienst, & Lange, 2014; Hutzschenreuter & Voll, 2008).

The concept of evolved home-base is used in the following section to develop two alternative measures based on the MNE–host country dyad level, namely: (1) average distance (or proximity) and (2) minimum distance (or proximity). The average distance approach assumes that each geographic locale that is flagged by the firm, as well as the pertinent experiential learning in that context, contributes to the aggregate understanding of the global

marketplace by the MNE. The average measure is then argued to be the best approximation of the aggregate effect. The minimum approach, on the other hand, assumes that the MNE considers the most salient feature of the most similar location in its evolved home-base relative to the target host country.

Distance and the Role of Place and Space

The concept of the liability of foreignness has been the focus of studies in IB (Hymer, 1960; Zaheer, 1995). Differences in local institutional contexts have also been considered an important restriction in the organization of MNE activities across national borders (Henisz & Delios, 2002). These differences are the basic premise for the concept of distance along multiple dimensions. Due to its usefulness and extensive application in the theory and empirics of IB scholarship, distance has been the subject of multiple studies, each focusing on aspects such as dimensionality, validity, and limitations of different distance measures, among other aspects (Ambos & Håkanson, 2014; Berry et al., 2010; Ghemawat, 2001; Shenkar, 2001; Xu & Shenkar, 2002; Zaheer et al., 2012). All these studies have considered the concept of distance as an exogenous factor to the internationalization process of the firm. We suggest, however, that when an MNE has a network of activities with several centres of excellence (Cantwell, 1995), multiple headquarters (Canon Corporation, 2012; Dvorak, 2007), and in a nutshell an *evolved home-base*, the portfolio of the MNE's locations of activities will be considered by its managers for assessing these institutional differences. For this purpose, the concepts of place and space become helpful.

The economic geography literature has suggested a modification to Dunning's OLI framework that is suitable for integrating economic geography theory with international business theory while conceptualizing distance (McCann, 2011). The schema is called "Place, Space, and Organization" (PSO) (Beugelsdijk et al., 2010). The O and I pillars of Dunning's eclectic framework can be grouped under O (organization), while the L (location) of Dunning's framework needs to be split into both *place* and *space*. Place emphasizes location-specific characteristics, while space emphasizes geographical distance and network characteristics. While place and space are interrelated, they are also quite distinct from one

another (McCann, 1995). As such, place and space dimensions need to be related both individually and in combination with the organizational aspects now combined in a composite O (organization). The PSO schema can be used to treat distance at the MNE–host country level, and make it endogenous to the dynamics of MNEs and the internationalization processes of firms.

As MNEs increase their international presence by operating more subsidiaries, headquarters, and footprints in new geographic locations, not only do they get a “*sense of the places*” (Dicken & Malmberg, 2001; Schoenberger, 2000; Sedon, 1972; Zaheer & Nachum, 2011) they have newly entered, but they also revise their understanding of extant places where they are present. The idea of a sense of place was developed by geographers in order to explain interpretations of a place as well as interrelations of individuals and groups with the place (Sedon, 1972). This interpretation assigns distinct meanings to the same place by different groups which in turn are tied to the interpreter’s identity.

In sum, we suggest an alternative conception of distance based on two arguments. Firstly, an MNE’s portfolio of locations evolves in the global space. Secondly, as the MNE evolves globally and due to its significance in the global marketplace (McCann & Acs, 2011), its understanding of the places it is present in evolves too. Therefore, distance to a particular target host country varies for an MNE according to its different stages of internationalization, and for different MNEs from the same home country. In what follows, we will illustrate how the suggested alternative perspective can be translated into the measurements of distance at the MNE–host country dyad level.

Distance at the MNE–Host Country Dyad Level

Average Distance Approach

To illustrate how our conceptualization of distance impacts empirical studies, in this section we will develop a measure that encompasses the temporal and spatial evolution of MNEs. The measure is based on the extant footprints of an MNE and their salience (reflected in the

weight measure w_i in the formulae) in changing the understanding of the MNE over time. The extant footprints, or the evolved home-base, reflect how far the MNE has expanded to date from its original home and what this reconfigured home-base looks like in the global marketplace. This constitutes the numerator of the formula suggested below for the proximity of the evolved home-base (H) to the new target host country; or $PROX_{Hj}$. It is the numerator (i.e. how far the MNE has gone from its original home) that changes over time.

$$PROX_{Hj} = \frac{\frac{1}{n} \sum_{i=1}^n (w_i \times DIST_{hi})}{DIST_{hj}} \quad (1)$$

$PROX_{Hj}$ is the proximity of the evolved home-base (H) to the new target host country (j); $DIST_{hi}$ is the distance of the original home (h) to the i^{th} country in which the MNE already operates; $DIST_{hj}$ is the distance of the original home to the new target host country; the MNE is assumed to have n footprints and w_i is the weight of each footprint i.

This average measure is based on the presumption that for MNE-level international decisions, the whole portfolio of the MNE locations (or what we call the evolved home-base), in aggregate, influences its degree of foreignness vis-à-vis the focal target host country. The average measure reasonably reflects the aggregate effect, as it incorporates the effects of locations that are more similar to the target host country, as well as those that are more dissimilar. The more dissimilar locales are known to add to the distance (Hutzschenreuter et al., 2014; Hutzschenreuter & Voll, 2008) rather than to decrease it. Depending on their weights, each added footprint in the evolved home-base (or location portfolio of the MNE) has a marginal effect on the addition to the summation in the numerator. The denominator is a fixed figure. In fact, it is the same as the extant measure of distance based on the original home (h) and the target host (j) country dyad level. The larger this figure, the smaller the proximity to the target host country.

We used a proximity measurement to represent distance measures. Distance and proximity are conceptually similar (the higher the distance, the lower the proximity). We used a proximity measure (how close an MNE is to the target host country) to develop the measure because it is aligned with the way the temporal and spatial dynamics of distance are encompassed here. It is the ratio of how far the MNE's domain of evolved home-base has extended from its original home to the fixed distance between the MNE's original home and

the target host. In fact, the measure reflects the progressive evolution of the MNE to move closer to (or farther from) other host countries over time. The measure can simply be inverted to represent distance rather than proximity.

Berry et al. (2010) introduce a set of measures for institutional distance. Each of the dimensions of distance in their study can be applied to calculate the respective dynamic measure of distance (or proximity) based on our proposed formula. The contribution in this study combined with Berry et al. (2010)'s contribution provides a multidimensional and dynamic measure with which to capture the complexity of our phenomenon of interest. Depending on the research questions at hand, the dimensions can be combined or used separately to investigate their effect on the international behaviour of firms.

The advantage of the above-developed measure for MNE–host country distance, which is basically an average measure, is that both closer and more similar locations of an MNE as well as its farther and more dissimilar locations are incorporated. This is in accord with the two streams of literature that have argued with regard to locations closer to and farther from the focal host country. The former suggests a diminishing effect of distance after the firm gains knowledge and experience (Wilkinson et al., 2008), and the latter proposes an added effect of distance in cases that the firm enters locations that are more different from the host country than the original home country (Hutzschenreuter et al., 2014; Hutzschenreuter & Voll, 2008). Both these effects are considered in the average measure in formula 1.

The measure introduced here is not meant to exhaustively reflect all the aspects and attributes of the international domain or evolved home-base of the MNE. Instead, we mean to use the measure to show one way of operationalizing our proposed theory. An empirical question can be raised regarding the amount of improvement this alternative measure provides vis-à-vis the extant distance measure. Further, other attributes of the evolved home-base of the MNE such as dispersion (Roberson, Sturman, & Simons, 2007) may matter too. In our empirical illustration, we consider both dispersion and distance in the alternative format together.

Minimum Distance Approach

In a study in the psychology literature, Tversky (1977) identifies features of similarity between entities, the relationship between similarity and difference (Tversky & Gati, 1978), and alternative approaches to similarity such as feature matching (p. 329). The author uses a list of 21 pairs of countries for the purpose of his study. We can develop the alternative approach for the minimum distance measure using these studies in cognitive psychology, as they suggest that a similarity-based reasoning is used to apply the information from the most similar learnings for inferences regarding new entities (Tversky & Gati, 1978).

The average distance measure assumes that the influence from all locations in the evolved home-base of a firm is important. Based on the aforementioned cognitive psychology rationale, an alternative argument may, however, suggest that managers of a firm use a similarity-based reasoning and selectively use the information and knowledge from more similar locations to decide upon the strategies pertaining to the focal host location. That is, for example, if a Swedish firm intends to plan activities in a country such as Canada, and has a presence in both the U.S. and China markets, it will most likely depend more on the knowledge and experience from the United States for inference in its Canada decisions rather than the China experience. In fact, in the economic decision-making literature, categorization has been suggested to be an optimal solution in cases where inductive inference from what has already been learnt is used in future decision making (Peşki, 2011). Here, the decision maker divides the locations of its presence or familiarity into categories and uses the most similar category as the basis for decision making with regard to the focal host country. Thus, this argument can lead us to develop an alternative approach: *taking the most similar or proximate location from the existing footprints as a benchmark for MNE decisions*. This can be accounted for in a formula such as the following, or using other techniques based on a network representation of the location portfolio of the MNE:

$$PROX_{Hj} = \text{Min} \frac{(w_i * DIST_{hi})}{DIST_{hj}} \quad (2)$$

Empirical Illustration

To demonstrate the value of our proposition for the reconceptualization of international distance (and that of location), we examine the choice of foreign market ownership decisions in the international joint venture context. Whereas entry-mode decision (greenfield or acquisition) is a one-shot decision which happens at the time of entry to a foreign market, ownership mode has a more dynamic nature and can change over time (Chung & Beamish, 2010). An MNE may decide to enter a market by having a minority share in an equity joint venture just to be on the safe side when entering a new and uncertain context. Later, as the MNE gets a better sense of that place and understands the context, it may decide to increase its share by buying its partners' shares. This evolving and dynamic nature of ownership decisions of MNEs makes this phenomenon suitable for examining our theoretical proposition of distance. Also, as an illustration, we will focus on geographic distance, among multiple dimensions of distance introduced in the literature (Berry et al., 2010). The process implemented for our analysis can be easily replicated to study any other dimension as well.

We combined two sources of data. The major part of our data is from *Kaigai Shinshutsu Kiyou Souran* ("Japanese Overseas Investments"), an annual publication of Toyo Keizei Inc., which provides subsidiary-level information on the overseas activities of Japanese MNEs. The database has been found reliable for the study of Japanese foreign direct investment (Delios & Henisz, 2003). The 2006 version contains information on 324,614 observations of subsidiaries representing more than 5,000 public and private firms established in over 100 countries from 1987 to 2006. The second source of our data includes the geographic distance between the centres of countries calculated using the Mahalanobis method by Berry et al. (2010).

We developed two measures and investigated their effect on an MNE's decision on the ownership mode. Firstly, we developed the proximity of the evolved home-base of the MNE to the target host country for investment. Secondly, we calculated the dispersion of the MNE's evolved home-base to see how it would affect the ownership mode. Based on our proposition of re-conceptualizing distance as a multilevel and dynamic construct, we used a longitudinal (growth) multilevel (three-level) analysis method (Hox, 2010; Raudenbush & Bryk, 2002) as a consistent technique with the theory we proposed.

In what follows, first we explain the detailed process of development of each of the measures in the context of our data to iterate how they will support our theoretical propositions of distance. Then we discuss the details of the longitudinal multilevel method we implemented. Finally, we discuss the results and the implications.

Geographic proximity of the evolved home-base to the target host country (GeogProx)

– The aim of developing this measure was to illustrate how the different conception of distance affects the empirical tests. To evaluate the distance to a target country, an MNE does not just consider its original home country. For a Canadian company that has already entered Sweden, entering Denmark or Finland in the next stage does not have the same implications as the initial entry to Sweden. Sweden is now part of its evolved home-base. With that in mind, we develop the proximity measure to capture this evolution. The way the measure is developed enables us to have different proximity figures to a specific host country for the same MNE at different times.

The current subsidiary locations of the MNE for each year together with the number of employees of that subsidiary (time-varying) were used to calculate a measure representing how far the MNE has gone from its original home (the numerator of our measure of proximity). The between-country geographic distance data, together with the number of employees as weights of each footprint, were used for this purpose. This measure, which is time-varying, can intuitively reflect the amount of departure of the weighted hypothetical centroid of the MNE's evolved home-base from its original home country. In the next stage, we developed the GeogProx measure, which is the equivalent of $PROX_{Hj}$ developed above, but just for the geographic dimension of distance. Next, we group-mean centered the measure to avoid multicollinearity problems (Hofmann & Gavin, 1998) and capture the within-group variance (to reflect the dynamics of distance) intended in our conceptual development.

GeogProx captures the *dynamic* attribute of the central phenomenon in this paper in that the centroid and the domain of the MNE's evolved home-base change over time and therefore, even for the same subsidiary, the proximity measure changes over time. This in turn affects the MNE's decision in its ownership structure in the subsidiary over time. An MNE may enter a country through a minority joint venture (JV), for example, and increase its ownership level to a majority JV later. In this example, the previous record of the minority JV

in the dataset will help shift the evolved home-base such that now the MNE feels closer to the same foreign country and increases its ownership share since it seems less risky and more manageable.

Geographic dispersion of evolved home-base (GeogDisp) – The level of dispersion of an MNE’s subsidiaries in different international locations is believed to enhance its capabilities and understanding of the international context of business (Goerzen & Beamish, 2003). An MNE that runs 80% of its business outside its original home country might have concentrated foreign activities in a few subsidiaries, or alternatively it can be more dispersed through a larger number of subsidiaries. The level of dispersion of an MNE’s evolved home-base will affect the way it makes sense of the global space and the international distance.

To develop the GeogDisp measure, an entropy measure was used for global dispersion (Kim, 1993) of MNEs over time. The weight of the subsidiaries was again assessed using their number of employees. GeogDisp is at the MNE level and includes all the subsidiary records of an MNE in a specific year. Based on the pattern regarding how the MNE spreads globally, this measure may change over time. This measure was grand-mean centered to avoid multicollinearity (Hofmann & Gavin, 1998). We examine how the differences among MNEs in this measure affect their decisions on the level of ownership. GeogDisp is a *multilevel* measure in that the lower-level subsidiaries of an MNE and their pattern of dispersion will affect the measure at the MNE level. It has a *dynamic* notion as well, in that it captures the changes in the MNE’s dispersion over several years of data.

Ownership – The time-varying ownership information of the subsidiaries are available in the dataset. The dataset includes all Japanese foreign investment in different modes of entry (greenfield or acquisition) or modes of ownership (wholly owned subsidiary or JV). We used a subsample of all JVs in order to have enough variance in our data and avoid a skewed dataset. The self-selection bias is not a source of endogeneity in our data because we are interested in examining different levels of ownership in a JV and not the choice of JV versus wholly owned subsidiary (Hamilton & Nickerson, 2003). The subsample of JVs was extracted from the dataset only after we had developed our MNE-level measure of GeogProx and GeogDisp, because theoretically we are arguing that as the MNE spreads over the world, the

evolved home-base expands. Therefore, we needed to include all the MNE's subsidiaries (both JVs and non-JVs) while developing the proximity and dispersion measures.

The ownership figures for the subsidiaries had 22% missing data, which is relatively high. We used the multiple imputation technique to develop figures for this group. Multiple imputation is preferred over other techniques in dealing with missing data (especially when we have a very large sample size) in that it does not change the mean and variance of the distribution of the non-missing data (Wu, 2010). The common method among multiple imputation techniques is based on a regression model to create imputations for the missing data. In this technique, the variable with missing data is treated as a response and other observed variables are treated as predictors. We used the ownership percentage of all Japanese partners of an MNE as the predictor variable.

Data Analysis

For our data analysis, we used a longitudinal (growth) multilevel technique because it was a perfect fit for our proposition of re-conceptualizing distance in international business as a multilevel, dynamic construct. Hierarchical linear modeling (HLM) is particularly suitable for testing cross-level relations when individual data are nested within groups (Raudenbush & Bryk, 2002). Using HLM to test cross-level interactions is superior to using ordinary least square (OLS) regression because including individuals from the same group violates regression assumptions and underestimates standard errors of group-level variables, leading to the overestimation of relationships (Hofmann & Gavin, 1998; Raudenbush & Bryk, 2002). With HLM, cross-level moderating effects are tested using a slopes-as-outcomes model.

The application of HLM in studying a growing phenomenon is useful because it can resolve the problem of multicollinearity. The assumption of the independence of error terms and the predicting variables in regression does not hold for repeated observations of the same subject. Oftentimes, the attributes of the subject at a specific time are highly correlated with its past records. HLM can resolve this issue by taking multiple observations of the same subsidiary at a lower level and regressing the dependent variable (DV) on the time variable to explain the variations of the DV. Then, adding other predictor variables of interest will be

useful in explaining the rest of the variance at higher levels (Singer & Willett, 2003). The descriptive statistics of the variables that we used in our models are presented in Table 7.

Using HLM, one can investigate both the random effects and fixed effects. Higher-level variables can be examined to see how they affect the outcome variable and the slopes of the lower-level predictors (random intercept and random slope). Random intercept models allow lower-level slopes to vary within groups (a moderation effect will be examined).

Specifying a model that properly fits the data at the lower level (base model) when we use HLM for longitudinal studies is crucial because the interpretation of the effect of other higher-level predicting variables is based on the comparison of each model with the base model. This comparison is made by comparing the *deviance* of the model (-2 Log Likelihood) (Raudenbush & Bryk, 2002). Alternatively, one can ask the software to compare the model with the null hypothesis that the models are not different. By rejecting the null through a chi-square test using the additional degrees of freedom, one can claim that the recent model has improved compared to the previous one. We used the first five models (Table 8) in our analysis to examine all linear and non-linear combinations of both fixed and random slope models to make sure we attained the best possible model fit at the lower level.

Table 7 - Means, Standard Deviations, and Correlations among Study Variables

Variables	Mean	S.D.	1	2	3	4
Ownership	49.38	23.86				
Time	6.57	4.730	1			
Time ²	65.56	86.381	0.007*	0.323**		
Geographic Proximity	79.23	240.01	0.014**	0.185**	0.049**	
Geographic Dispersion	14.19	777.82	-0.013**	-0.014**	-0.013**	-0.021**

Number of observations = 90,080

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Models 1 to 5 in Table 8 were used to attain the best model that fits the growth trajectories based on the data. These models are unconditional and include just the Time variable. Model 1 is the initial one that the HLM software examines with no predictor variable. Then, we used group-centered Time (the age of the subsidiary), and group-centered Time² with fixed and random slopes in the subsequent Models 2 to 5. The model comparison results indicated that there had been meaningful improvements in all the sequences. However, in Model 5 when the slope of Time² was changed from a fixed to a random condition, the coefficients of the variable were not significant anymore. This indicates that although the model has a better fit than Model 4 (chi-square (6) = 9996.39, $p < 0.001$), Time² does not significantly vary among subsidiaries.

Model 6 is specified by adding GeogProx at level 2 (subsidiary level) with fixed slopes. The model comparison results indicate a better model fit compared to Model 5 (chi-square (1) = 16.10, $p < 0.001$). In the specified Model 7, we allowed the slope of GeogProx to vary randomly. Significant model fit improvement resulted compared to Model 6 (chi-square (4) = 10.09, $p < 0.05$). Both coefficients of GeogProx in Models 6 and 7 are significant fixed effects for the ownership of the subsidiary. That is, as the proximity of the evolved home-base of the MNE to a particular country increases, the MNE decides to have higher ownership shares in the JVs.

Models 8 and 9 examined the effect of the interaction of the higher MNE-level geographic dispersion with the subsidiary-level geographic proximity of the global home to the host country. Neither of the model fit results for the two specified models show significant improvement in model fit compared to Model 7. The interaction effect, therefore, is not a predictor of the JV level of ownership for MNEs. We exclude the interaction term in the next sequence of our model specification as a result.

Models 10 and 11 are specified by adding the geographic dispersion of MNEs to level 3 of Model 7, assuming fixed and random slopes consecutively. Model fit comparison outputs show significant improvement in Model 10 compared to Model 7 (chi-square (3) = 664.90, $p < 0.001$). Hence, the GeogDisp is a significant predictor of the MNE's subsidiary-level ownership. Finally, Model 11 is the best specified model so far. In comparison to Model 10, it

has a significantly better fit (chi-square (4) = 667.83, $p < 0.001$). The models specified for each of the three levels of Model 11 are illustrated in Table 8.

In sum, we used the longitudinal multilevel data of Japanese foreign direct investments to examine the effect of the dynamic and multilevel measures of distance (or proximity) on the ownership decisions of MNEs at the subsidiary level. Using hierarchical linear modelling (Raudenbush & Bryk, 2002), we developed 11 models to fit the data. Results indicate that the geographic proximity of MNEs' evolved home-bases to their host countries, along with geographic dispersion of the MNEs are significant predictors of their ownership shares in JVs. The interaction of GeogProx and GeogDisp did not show a significant improvement in the models.

Table 8 - Longitudinal Multilevel Models (dependent variable = subsidiary ownership)

	Model 1 (Base Model)		Model 2		Model 3		Model 4		Model 5	
	γ	S.E.	γ	S.E.	γ	S.E.	γ	S.E.	γ	S.E.
Level 1 (time)										
Intercept	50.85***	0.296	50.83***	0.298	50.96***	0.299	50.90***	0.299	50.94***	0.30
Time			0.386***	0.007						
F.S.					0.411***	0.023	0.407***	0.023	0.399***	0.023
R.S.										
Time²							0.007***	0.001		
F.S.									0.000071	0.003
R.S.										
ICC	0.89		0.90		0.83		0.83		0.84	
Deviance	662441.51		659414.10		622454.74		622415.97		612419.57	
Model Comparison										
Compared Model			(1)		(2)		(3)		(4)	
Chi-square			3027.41***		36959.36***		38.768***		9996.39***	
D.O.F.			1		4		1		6	

– † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

– F.S. = Fixed Slope; R.S. = Random Slope

Table 8 (Continued) - Longitudinal Multilevel Models (dependent variable = subsidiary ownership)

Level 1 (time)	Model 6		Model 7		Model 8		Model 9		Model 10		Model 11	
	γ	S.E.	γ	S.E.	γ	S.E.	γ	S.E.	γ	S.E.	γ	S.E.
Level 1 (time)												
Intercept	50.83***	0.30	50.78***	0.30	50.78***	0.30	50.78***	0.30	49.16***	0.487	50.77***	0.30
Time												
F.S.												
R.S.	0.399***	0.023	0.399***	0.023	0.399***	0.023	0.399***	0.023	0.373***	0.024	0.399***	0.023
Time²												
F.S.												
R.S.	0.0003	0.117	0.0004	0.003	0.0004	0.003	0.0004	0.003	0.0004	0.003	0.0004	0.003
Level 2 (Subsidiary)												
GeogProx												
F.S.	0.005***	0.001										
R.S.			0.01***	0.002	0.01***	0.002	0.008***	0.002	0.014***	0.003	0.01***	0.002
GeogProx × GeogDisp												
F.S.					-0.00003	0.00003						
R.S.							-0.00003	0.00009				
Level 3 (MNE)												
GeogDisp												
F.S.									0.002***	0.0005		
R.S.											0.003†	0.002
ICC	0.83		0.84		-		-		0.99		0.89	
Deviance	612403.46		612393.38		612393.21		612400.89		613058.28		612390.45	
Model Comparison												
Compared Model	(5)		(6)		(7)		(7)		(7)		(10)	
Chi-square	16.10***		10.09**		0.17		7.51		664.90***		667.83***	
D.O.F.	1		4		1		6		3		4	

– † p<0.1, * p<0.05, ** p<0.01, *** p<0.001

– F.S. = Fixed Slope; R.S. = Random Slope

Model 11 Formulae:

Level 1 Model: $OWNERSHIP = \pi_0 + \pi_1(Time) + \pi_2(Time^2) + e$

Level 2 Models: $\pi_0 = \beta_{00} + \beta_{01}(GeogProx) + r_0$; $\pi_1 = \beta_{10} + r_1$; $\pi_2 = \beta_{20} + r_2$

Level 3 Models: $\beta_{00} = \gamma_{000} + \gamma_{001}(GeogDisp) + u_{00}$; $\beta_{01} = \gamma_{010} + u_{01}$; $\beta_{10} = \gamma_{100} + u_{10}$; $\beta_{20} = \gamma_{200} + u_{20}$

Mixed Model: $OWNERSHIP = \gamma_{000} + \gamma_{001} \times GeogDisp + \gamma_{010} \times GeogProx + \gamma_{100} \times Time + \gamma_{200} \times Time^2 + r_0 + r_1 \times Time + r_2 \times Time^2 + u_{00} + u_{01} \times GeogProx + u_{10} \times Time + u_{2-1} \times Time^2 + e$

Discussion and Conclusion

This study aims to revisit the concepts of distance (Berry et al., 2010; Ghemawat, 2001; Shenkar, 2001) by incorporating MNE evolution in the international space. Accordingly, the study develops two firm-level measure of distance that incorporates firm-level heterogeneity in understanding the effect of distance and liability of foreignness on MNE decisions, activities, and operations. Unlike the previous studies of distance that assume that the knowledge base of the MNE is based on its original home country, our study argues that as the MNE evolves in the global space, it relies on its (evolved) home-base (Eghbali-Zarch, 2013; Zhou & Guillén, 2015) rather than original home country for the knowledge required for its decisions. Therefore, the distance that impacts the level of uncertainty and liability of foreignness of an MNE, when considering entry or operations in a focal host country, is conceptualized from its global home-base to the host country.

Prior studies and conceptions of distance primarily assumed that the knowledge base of MNEs, their liability of foreignness, and their distance from a target host country are based on their original home country. In addition, well-established theories in international business such as the internationalization process model (Johanson & Vahlne, 1977) have accounted for MNE dynamics in their international expansion. Further, recent empirical studies of distance have used the MNE portfolio of locations (Nachum & Song, 2011) in their operationalization and empirical analysis of distance (e.g. Nachum, Zaheer, & Gross, 2008). We base our argument on challenging previous assumptions and building on the literature on the role space and place in the organization of MNE's activities (Beugelsdijk et al., 2010) to provide a perspective that treats distance as a knowledge gap at the MNE level.

Thus a main contribution of our study is to challenge earlier assumptions regarding the source of MNE's knowledge-base. As a result, two MNE-level distance measures that complement each other are examined. The average distance measure has already been introduced in previous studies in international business (e.g. Baaij & Slangen, 2013; Dai, Eden, & Beamish, 2013; Nachum & Song, 2011) and the minimum distance measure is developed as a novel measure. Our approach to the development of the MNE-level distance measures endogenizes MNE dynamics into the concept of distance. First, the average distance

measure uses all locations in an MNE's portfolio to assess its proximity from a target host country. It has the advantage of utilizing all locations in the MNE portfolio within its home-base. It is based on the diversity of encounters of the MNE to multiple institutional contexts and a variety of learning experiences. The second measure, on the other hand, is more targeted and focused. While it suffers from a lack of exhaustive coverage of the MNE's international locations, it considers the most similar location to assess the distance from a target host country. For example, if Ikea entered Canada in 1976 and a decade later it tried to enter the United States, based on this measure it would use the knowledge and experience of operating its business in Canada rather than the experience of operating in its original home country, Sweden. This measure also excludes some locations that result in "added distance" (e.g. Hutzschenreuter et al., 2014; Hutzschenreuter & Voll, 2008). Additionally, it is aligned with the psychology literature that suggests that managers of firms base their decisions on the most similar piece of their knowledge to the decision situation at hand (Tversky, 1977; Tversky & Gati, 1978).

This study also contains limitations that create opportunities for future research. While we use theoretical arguments and anecdotal evidence to support the need for extending the current conception of distance, to establish the superiority of the new measure there is a need for objectively assessing the predictive power of the measure. Future research can make a comparative analysis by contrasting the predictive power of extant home–host country-level distance measures with those of new measures. Further, other dimensions of international strategy such as entry mode, market, and partner selection (among others) can be the basis for further analysis in future research. Additionally, we used country borders as our unit of analysis to develop the two distance measures which assumes within-country spatial homogeneity. While this assumption may not be accurate for many countries, it does not affect our main arguments in the development of the two measures. Future studies can use our distance measures and apply them to other units of analyses such as subnational regions, societies, or cities. Finally, our novel approach to extending the concepts of distance and liability of foreignness creates numerous opportunities to reassess many previous studies that investigate the impact of distance on international decisions, operations, and activities. The directionality and asymmetry attributes (Tversky, 1977; Tversky & Gati, 1978) of the

preferred measure can also be discussed, as recommended by the previous studies of distance in the IB literature (Shenkar, 2001; Zaheer et al., 2012).

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Chapter 4 - DISTANCE LIES IN THE EYES OF THE BEHOLDER: THE EFFECT OF MNE DYNAMICS AND EVOLVED HOME-BASES

Abstract

A central assumption in the extant conceptualization and measurement of distance is that the knowledge base which the firm utilizes in its international activities is predominantly rooted in its home-country attributes. This study questions this assumption. It argues that the internationalization process of the firm shifts its reliance on the original home country, as a source of knowledge, to the broader domain of the MNE's activities and locations in its evolved home-base. It may either rely on the knowledge from all the locations in its evolved home-base in *aggregate*, or on the *most similar* location to the focal host country. This shift creates a variance among firms originating from the same home country in their perception of distance to a focal host country. We develop two distinct yet complementary distance measures at the MNE level: average and minimum distance measures. We suggest that they provide a more accurate reflection of how firms and their managers make decisions pertaining to their IB activities. We also provide a comparative analysis to assess and contrast the predictive power of (1) the extant original home to host country distance, (2) distance based on the *aggregate* of the locations in the MNE's evolved home-base, and (3) distance based on the *most similar* location in the MNE's evolved home-base to the focal host country. We find that MNE-level distance measures are a better predictor than extant international distance measures for the international strategies of firms.

Keywords: Distance, MNE-level distance, knowledge-based view of MNE, evolved home-base; Average distance measure; Minimum distance measure

Introduction

“For global companies, there are many places that can feel just like home.”

(Desai, 2009, p. 1272)

Distance has long been a perennial element in the discourse of international business scholarship and genuine advances have been made (see Zaheer, Schomaker, & Nachum, 2012 for a recent commentary). In part, distance reflects the difference between what firms know and what they need to know to surmount uncertainties of international markets due to their liability of foreignness (Hymer, 1960; Zaheer, 1995). Studies range from considering it as a one-dimensional construct such as geographic distance to seeing it as a multidimensional construct exemplified in psychic distance (Dow & Karunaratna, 2006; Evans & Mavondo, 2002; Nebus & Chai, 2014), the CAGE distance frameworkⁱ (Ghemawat, 2001), or institutional distance (Berry, Guillén, & Nan, 2010). Regardless of its salient dimension(s) and depending on the decision situation at hand, distance is at the heart of international business research and practice.

A common feature of extant scholarly treatments of distance is that they all assume that the main source of a firm’s knowledge is based in its home country. This presumption is rooted in earlier theories of multinational enterprises (MNEs), such as the product life cycle (Vernon, 1966), which suggested that firms leverage the knowledge acquired by running their businesses in their home countries to expand to international markets. As such, the existing literature considers the home countries of firms as benchmarks for conceptualizing and measuring distance. This assumption can, however, be questioned (Alvesson & Sandberg, 2011) when we consider the mechanisms and processes of decision making by executives, as recommended by recent studies of distance (Zaheer et al., 2012, p 19). The assumption appears particularly shaky when firms take themselves to the next level by internationalizing and becoming MNEs. In fact, previous studies have found that the effect of cultural distance (based on the original home country) diminishes as a firm expands internationally (Wilkinson, Peng, Brouthers, & Beamish, 2008). Relaxing the home-country orientation, we suggest, may allow for an improved measure with a predictive power that does not decline as the firm evolves in its international space.

MNEs have the ability to learn and create knowledge and transfer it across borders within their boundaries (Kogut & Zander, 1993; Tallman, 2003). Subsidiaries of MNEs can be knowledge users or knowledge providers (Gupta & Govindarajan, 1991) within the organization. Monteiro, Arvidsson, and Birkinshaw (2008, p 90) believe scholars have a consensus that an MNE “is an international network that creates and applies knowledge in multiple locations” (Almeida, Song, & Grant, 2002, p 148). Thus, changes in an international network of subsidiaries can be a source of change and evolution within the MNE and where the knowledge base of the firm is developed, amassed, or deployed. Moreover, subsidiary roles can evolve over time (Birkinshaw & Morrison, 1995) and add another layer to the evolution of MNEs in the global space. To overcome foreign-market uncertainties and liabilities of foreignness (Zaheer, 1995), MNEs predominantly rely on their knowledge base. As an MNE evolves in the global space, its level of liability of foreignness changes as its source of knowledge for decision making shifts from its home to a broader global base of knowledge, called its (evolved) home-base by Zhou and Guillén (2015) and Eghbali-Zarch (2013). Both of these studies conceptualize MNEs’ (*evolved home-base* as the collection of countries in which the firm has accumulated operational experience and knowledge, including the home country. At this stage, MNEs will consider the perceived distance from evolved home-bases to host markets in their decision-making mechanisms. We believe that accounting for this shift in the conceptualization and measurement of distance results in a more accurate distance measure with enhanced predictive power. In sum, the distance literature has less widely appreciated the evolution of firms and MNEs as the decision makers and perceivers of distance.

Incorporating the evolved home-base of MNEs as a benchmark for the construct of distance has other benefits too. Distance that is assessed based on original home countries and host countries is at the country level, rather than the firm level. It can thus be helpful in studies of international trade where economic exchange between pairs of countries is of interest (Beugelsdijk & Mudambi, 2013; Chen, 2004), but is less so for firm-level studies. One consequence of this level of analysis mismatch is the loss of firm-level heterogeneity. Here, distance to a particular host country would be the same for all the firms with the same original home country regardless of their size, industry, or stage of internationalization.

This study takes a knowledge-based approach (Kogut & Zander, 1993) and addresses this potential for improvement by assuming that knowledge-base of an MNE is comprised of the knowledge that is generated in the MNE's evolved home-base. We define MNE-level distance as *the knowledge gap between what an MNE has learnt through experience in its evolved home-base so far and the stock of knowledge that is required for strategic decision making, absent any liability of foreignness* (Zaheer, 1995). We ask two research questions. First, how does an MNE's evolved home-base influence the distance considered in strategic decisions pertaining to subsidiaries? The second (empirical) question asks if distance at the MNE level can improve predictions pertaining to an MNE's international strategy decisions.

We develop two MNE-level distance measures. First, average distance measure has already been deployed in the empirical analyses in previous studies (Baaij & Slangen, 2013; Dai, Eden, & Beamish, 2013; Nachum & Song, 2011; Zhou & Guillén, 2015) without examining it as a multi-level phenomenon. We build on these studies and theoretically develop this measure as a multilevel construct (Hitt, Beamish, Jackson, & Mathieu, 2007; Klein & Kozlowski, 2000). Our study establishes that for certain kinds of knowledge, lower level entities (i.e. subsidiaries) contribute to the MNE's knowledge-base at the higher level of the construct through a *composition* bottom-up emergence process. Second, we introduce and theoretically develop a novel MNE-level distance construct called minimum distance measure. Here, not all subsidiaries of the MNE contribute equally to the knowledge-base of the MNE. Certain subsidiaries may be more relevant and salient depending on the knowledge type and decision situation at hand, while others may be disengaged and isolated (Monteiro et al., 2008). Our minimum distance measure is based on the well-established Theory of Similarity from psychology (Tversky, 1977). This literature suggests we store our knowledge in cognitive categories. Then to deploy the knowledge for certain situations, we base our decisions on the most similar category to the decision situation under consideration. For the minimum distance measure, we suggest that contributions of subsidiaries to the MNE's knowledge-base follows a *compilation* bottom-up emergence process. Here, MNEs' decisions will be based on their experience from the most similar subsidiary to a focal subsidiary under consideration. We will explain each of the composition and compilation processes in the construct development section. We also establish that our two measures complement (rather than substitute for) each other.

This research inquiry is important and potentially helpful. Firstly, issues surrounding distance as a popular construct have created a burgeoning demand for further work to reinforce and restore its credibility. In particular, issues of directionality (Zaheer et al., 2012), asymmetry (Shenkar, 2001), and firm-level heterogeneity (Beugelsdijk, Brakman, Van Ees, & Gerretsen, 2013) have been raised previously. Secondly, the more accurately we approximate executives' decision-making processes, the closer we get to the "sweet spot" of both relevant and high-quality academic research (Baldrige, Floyd, & Markóczy, 2004). This has been emphasized by previous research on distance by suggesting paying attention to mechanisms through which distance is involved in managers' decision making (Zaheer et al., 2012). We believe distance at the firm level (and MNE level in particular) tells us more about the way managers think and decide. Consider the example of IKEA's penetration in North America. The company's debut in Canada and the United States dates back to 1975 and 1985, respectively. When IKEA's managers were contemplating entry to the United States in the 1980s, they considered their experience of running their business in Canada as a representative North American market in order to fine-tune their plans for the U.S. market. Distance between Sweden (i.e. IKEA's original home country) and the United States would have been less relevant for IKEA's entry into the United States. Instead, IKEA quite possibly relied on the knowledge base of its evolved home-base to identify the difference between what it knew versus what it should have known to succeed in the United States.

Theoretical Background and Conceptual Development

Two streams of literature can complement each other in investigating the interaction between the evolution of firms in the international space, their learning from experience, and future international decisions and actions. First, MNEs constantly learn, accumulate, and integrate knowledge (Kogut & Zander, 1993). They base their next international moves on the stocks of knowledge and previous levels of commitment in their international networks of activities (Johanson & Vahlne, 1977). Further, by leveraging their globally interconnected networks of subsidiaries and activities, in addition to their home-country-specific advantages, MNEs advance in their multinationality (Kogut & Zander, 1993; Tallman, 2003). Thus, the influence of decision factors such as cultural distance (as measured from original home country to focal host country) diminishes as MNEs learn from their international experience (Wilkinson et al.,

2008). MNEs will then likely shift their sources of knowledge from their home countries to their broader evolved home-bases, which encompass both their home countries and their networks of subsidiaries.

In addition to a knowledge and learning perspective, we also use insights from economic geography on the evolution of MNEs with place and space. Whereas extant accounts of international distance are ideal for studies of international trade, for studies at the firm and MNE levels, they can be complemented by advances in economic geography and the role of place and space (Beugelsdijk, McCann, & Mudambi, 2010). This literature is rich in understanding the role of geographic location (or place) and space in the development, deployment, and spillover of knowledge in settings such as industrial clusters (Beugelsdijk & Mudambi, 2013). In effect, the interaction between spatial structures of MNEs in geographical space and their economic activities is what economic geography has to offer in addition to the economic analysis of MNEs. This interaction is important, as it incorporates both the “heterogeneity of firms” and “diversity of locational environments” (Cantwell, 2009, p 35).

Aligned with the literature on the link between space, place, and the organization of activities of MNEs (Beugelsdijk & Mudambi, 2013; Guthey, Whiteman, & Elmes, 2014; Hernes, 2004), and staying away from philosophical conceptions of place (Cresswell, 2007; Guthey et al., 2014), we define place as analogous to location: “a point on a map” located in a set of informal and institutional relations (Guthey et al., 2014 , p 256). We also use a simple account of what space entails: “any characteristic that generates variation and heterogeneity among places” (Beugelsdijk & Mudambi, 2013, p 414). Place and space from economic geography can together help elaborate MNEs’ organization of international activities (Beugelsdijk et al., 2010). Kim, Delios, and Xu (2010), for example, tied organizational geography to two types of organizational learning (experiential and vicarious) to examine Japanese MNEs’ subsidiary exit decisions from China.

A combination of the knowledge-based view of MNEs and concepts such as place and space from economic geography can explain some of the decision mechanisms of MNEs in their international activities. Considering MNEs as stocks of knowledge accumulated through different learning mechanisms, we suggest that this accumulated knowledge base can be the source of variation and heterogeneity that is at the heart of the difference between place (or

location) and space. The same geographic place, thus, may entail distinct geographic spaces for different MNEs, depending on their experience and the learning lessons they add to their stocks of knowledge. Additionally, an MNE's previous knowledge base prior to its business activities at certain locales impacts its experience, how it perceives it, and what it will learn from it. Overall, an MNE's stock of knowledge based on both its home-country knowledge and the accumulated knowledge from its international experience impacts its view of international space.

The evolution of MNEs outside their home markets and their encounters with international locations diminish their reliance on the knowledge they have acquired in their home markets. Instead, they complement their home-country-specific advantages with the knowledge from foreign subsidiaries. The transition is initially from a home-country focus to a home-region orientation (Banalieva & Dhanaraj, 2013), and later to an evolved home-base (Zhou & Guillén, 2015). The combination of the knowledge view of the MNE and conceptions of place and space can strongly explain this shift. The evolved home-base of an MNE will have high overlap with the international space of activities of the MNE. This change in the source of knowledge impacts the MNE's perception of distance to a focal host country. Here, in order to make its next international move or decision, an MNE relies on its accumulated knowledge in its evolved home-base. The result is a change in the level of analysis in theory and measurement. The new level of analysis will thus be the MNE's evolved home-base to host country dyad (versus the extant home country to host country dyad).

Treating the change in the level of analysis is simpler to handle theoretically than empirically (i.e. construct development and measurement). Extant IB literature has measured distance using the centroid of capital cities of home and host countries (e.g. Kim et al., 2010, p 585). With the new level of analysis, we deal with a set of locations, each of which contributes to the knowledge accumulated by MNEs on one side and any host country on the other. Aggregation of any kind at the MNE level will result in the loss of nuances due to

variety. On the other hand, aggregation provides a measure that incorporates all the constituents of an MNE's locations, albeit in exchange for the loss of details and diversity.

To address this extension of the concept of distance through a change in the level of analysis, we briefly review existing distance measures at the country level and then develop our distance measure at the firm level.

Extant Distance Measure — Country Level

Country-level distance in international business scholarship is partially rooted in international trade. Here, it is mostly used in the denominator of gravity models (e.g. Bergstrand, 1985). The fact that distance is in the denominator of such models indicates that it has a negative impact on international trade. Initially, it was based on geographic distance between pairs of countries, but later it was extended from geographic distance to dissimilarities in other dimensions such as legal, cultural, and economic dissimilarities. Yet the label (distance) remained unchanged. Psychic distance, defined as “*factors preventing or disturbing the flows of information between firm and market*” (Johanson & Wiedersheim-Paul, 1975, p 308), was then used in the field of international business. Later, a series of further dimensions was introduced by other scholars to add more nuanced dimensions to the construct that could be used in different research and practice contexts depending on the questions at hand. The construct turned out to be one of the most popular constructs (if not the most) in international business, to the extent that international management is known as the management of distance (Zaheer et al., 2012, p 19).

No matter what dimension of dissimilarities among countries they represent, all distance measures exacerbate impediments to the flow of information across transacting parties that are often located in different countries. Their dimensional differences notwithstanding, distance measures so far have had a common feature — they all reflect the differences between a firm’s home country and any host country. Their level of analysis is on the home to host country dyad level because implicit in their assumption is that a firm’s knowledge source is based solely in its home country. The literature on the construct is vast and hard to reconcile. However, we synthesized the research most relevant to our study in Appendix A.ⁱⁱ

Emerging Distance Measures — MNE–Host Country Dyad Level

It is evident from Appendix A that although most extant measures take the home–host country dyad as their level of analysis, there is an emergent trend of studies that incorporate all locations of an MNE in their level of analysis (Baaij & Slangen, 2013; Dai et al., 2013; Nachum & Song, 2011; Nachum, Zaheer, & Gross, 2008; Zhou & Guillén, 2015). More specifically, Baaij and Slangen (2013), for example, use disaggregated MNE headquarters outside of an original home country as the benchmark. Nachum et al. (2008) use the host country–network dyad as their empirical level of analysis. The inclusion of the MNE, its network of locations, we believe, signals the importance of going beyond the country dyad level of analysis and utilizing an MNE–host country dyad level of analysis.

To the best of our knowledge, no study has taken a systematic approach to theoretically develop and assess this level of analysis and compare its predictive power vis-à-vis the extant country dyad-level measures. To develop such multi-level constructs, it is important to discuss the theoretical rationale and assumptions for the relationship between lower and higher level entities. For example, how does the knowledge generated at the subsidiary level contribute to the knowledge-base of an MNE? Multi-level construct development literature, we suggest, can be deployed to discuss such bottom-up emergence processes (Klein & Kozlowski, 2000). Our study thus attempts to develop MNE-level distance measures based on the mechanisms and processes through which they are applied in MNEs' decision making pertaining to their international strategies and activities.

This approach may improve studies that have firms or MNEs as their unit of analysis, in several ways. Firstly, it is a better reflection of how managers of MNEs make their decisions. For example, when IKEA entered the United States in 1985, it built upon its 10 years of experience in Canada rather than just the knowledge it possessed from its home

country, Sweden. In assessing the knowledge it needed to launch and run its operations in the United States, it considered the knowledge it had acquired from both Canada and Sweden, or other locations in its evolved home-base. Further evidence of relying on a broader home-base rather than solely the original home country is provided below.

“We regard ourselves as having a home base in each of the 23 countries where we operate,” says Marc Beckers, the executive in charge of UniCredit’s “Group Identity & Communications” (Dvorak, 2007)

Secondly, as this level of analysis reflects managers’ decision-making mechanisms more accurately, it has the potential to provide stronger predictive power in empirical analyses. Thirdly, it accounts for arguments from studies that suggest that the effect of distance diminishes as firms gains international experience by endogenizing the international experience of MNEs in their foreign locations into the concept of distance. Fourthly, unlike extant distance measures, the new distance measure will be time-varying. It is thus aligned with MNE dynamics in the global marketplace. In summary, we propose the following:

Proposition: An MNE–host country dyad-level distance measure provides a more accurate reflection of the mechanisms of managerial decision making in international strategies and activities.

As we replace the home country with the evolved home-base, we now deal with a diverse set of locations and compare them with the focal host countries. Since we link the knowledge base of the MNE to the learning and knowledge developed and amassed in its subsidiaries (i.e. lower level), we face the so-called bottom-up emergent process in multilevel constructs (Hitt et al., 2007; Klein & Kozlowski, 2000). Depending on the assumptions about the contributions of subsidiaries to the MNE’s knowledge base, and the interdependencies of the MNE in contributing to the MNE’s knowledge base, the bottom-up processes can be of either the composition or compilation type (Klein & Kozlowski, 2000, p 60). In composition emergent processes, the assumption would be that all subsidiaries of the MNE have contributions to the MNE’s knowledge base that are similar in *type* and *amount*. This emergence process type can entail “the use of simple descriptive statistics to represent the processes that associate lower level data to higher level constructs” (Hitt et al., 2007, p 1389).

In compilation bottom-up emergent processes, however, contributions to the MNE knowledge base by individual subsidiaries would be dissimilar in both *type* and *amount*. In this emergence process type, measures from lower-level entities are combined in nonlinear and complex ways to reach a whole that is hardly reducible to its constituent elements (Hitt et al., 2007, p 1389). Composition and compilation are the two extreme ends of the spectrum of the emergence typology provided by Klein and Kozlowski (2000, p 66). Other emergence processes in between, collectively called fuzzy composition or compilation processes (Bliese, 2000; Klein & Kozlowski, 2000), hold varying assumptions about the type and amount of contribution by the lower-level units (subsidiary learning lessons, in our case).

For the knowledge contributions of the subsidiaries of an MNE to its knowledge base, with which the MNE assesses its knowledge gap vis-à-vis a focal host country, we can conceive of two emergence process types. These two emergence processes will then be the basis for the two distance constructs we develop at the MNE–host country dyad level of analysis. Firstly, MNEs may accumulate a general knowledge type based on learning lessons in all subsidiaries. For example, in the case of the economic dimension of distance, a general understanding of how the global economy operates may be achieved by running businesses in a variety of countries with different economic development levels. In this example, one may use a weighted average economic development level of countries that host all MNE subsidiaries to achieve the overall contribution of lower-level learning to the higher level of the construct. Thus, we assume similar contribution *types* (i.e. economic knowledge) and dissimilar contribution *amounts* (reflected in the weight of each subsidiary used for the weighted average).

Secondly, an MNE may rely only on certain subsidiaries, or even just one, in making a particular decision regarding a focal host country. In the case of the economic dimension of distance, the MNE may base the assessment of its knowledge gap of a focal host country on the most similar location in its evolved home-base to that focal host country. Here, the country with maximum similarity (or minimum dissimilarity) to the focal host country will be the basis for the assessment of MNE–host country distance. The emergence process, from the lower level to the higher level, in this case is of a fuzzy compilation type, as suggested by Klein and Kozlowski (2000). In fact, they call this emergence process type a

“minimum/maximum” emergence model (p. 71). We develop our second MNE–host country dyad distance measure using this emergence process model. We base the rest of our argument only on the economic dimension of distance, keeping in mind that it can be applied to other dimensions of distance as well.

On the one hand, by taking a composition emergent approach (Klein & Kozlowski, 2000), we use the weighted average characteristics of all countries in the MNE’s evolved home-base and compare it with any focal host country. We call this measure the average home-base distance (henceforth *AvgHB_Dist*) to the target host country. This approach takes all the subsidiaries in the MNE’s evolved home-base into consideration. The relative importance of subsidiaries, or the amount of their contribution to the higher level of the construct, is accounted for by using a weighted average (e.g. by using the size of the subsidiary as a proxy for the amount of its contribution). Accordingly, the measure can be formalized as follows:

$$AvgHB_Dist_{hHt} = GDP_{ht} - \frac{1}{n} \sum_{H=1}^n (w_{Ht} \times GDP_{Ht}) \quad (1)$$

AvgHB_Dist_{hHt} is the distance of the evolved home-base (H) to the new target host country (h); *GDP_{ht}* is the gross domestic product of a focal host country (h) at time t; *GDP_{Ht}* is the gross domestic product of all the n countries in the evolved home-base (H) at time t; and *w_{Ht}* is the weight multiplier to attain a weighted average. The weight multiplier is a product of the age of a subsidiary at time t multiplied by its (log) number of employees at time t.

On the other hand, using a fuzzy compilation approach (Bliese, 2000; Klein & Kozlowski, 2000), we can develop a measure that uses the characteristics of the most relevant or salient country (or countries) in the evolved home-base depending on the decision at hand as well as the target host country. That is, among the countries in the evolved home-base of the MNE, distance from the most similar (or most proximate) location will be used to decide on issues such as the level of adaptation required, perceived uncertainty, and most other international business decisions. We call this measure the minimum distance to the MNE’s evolved home-base (henceforth *MinHB_Dist*). Whereas the *AvgHB_Dist* measure has already been implemented (but not systematically assessed) in some studies in IB (e.g. Baaij & Slangen, 2013; Nachum & Song, 2011), *MinHB_Dist* is new (to the best of our knowledge). It

is aligned with (1) arguments from cognitive psychology on decision making which suggest that managers of firms focus on the most salient features of the most similar location (or category of locations) in their evolved home-base to the target host country (Tversky, 1977), and (2) findings from previous studies which suggest that in knowledge creation and transfer between subsidiaries of MNEs, some subsidiaries are more capable and influential, while others may be disengaged and isolated (Monteiro et al., 2008). In sum, while *MinHB_Dist* suffers from a lack of coverage of all evolved home-base components and does not benefit from their diversity (unlike *AvgHB_Dist*), it is superior both in capturing similarity-based decision rationales (Tversky, 1977) and accounting for influential subsidiaries in knowledge creation and transfer within MNEs (Monteiro et al., 2008).

$$MinHB_Dist_{Hht} = Min_{H=1}^n (GDP_{ht} - GDP_{Ht}) \quad (2)$$

In developing the two measures of *AvgHB_Dist* and *MinHB_Dist*, we assume that variations across places (or locations as the geographic units of analysis) are based on national borders and use national institutions (Dunning, 1993; Hymer, 1960) as the primary unit of analysis. We deliberately make this assumption for two reasons. First, it helps in focusing on the main argument in our study. It can be relaxed in later studies by using a different unit of analysis, as our main argument holds independent of this assumption. However, making this assumption helps make our comparison by staking out common ground with previous literature on MNEs' international expansion and the role of distance. Whereas the extant home country–host country-level distance measure accounts for the differences in dimensions such as culture, economy, administration, and geography (CAGE) (Ghemawat, 2001) between an MNE's home country and a focal host country, in our new MNE-level measures one side of comparison is the MNE's evolved home-base. For the distance measure in this case, either the average CAGE dimension or the most similar one in the MNE's evolved home-base will be considered. Second, making this assumption helps in controlling for the border effect (Beugelsdijk & Mudambi, 2013) (by research design) in our analysis of the predictive powers of our distance measures versus the extant distance measure.

A summary of definitions, levels of analysis, and theoretical underpinnings of extant country dyad-level measures as well as the two distance measures we develop at the level of the MNE home-base–host country dyad are provided in Table 9.

Hypotheses Development

Two categories of insights from their knowledge bases can help MNEs in future international activities. First, a holistic understanding of the international business environment is gradually developed and absorbed as MNEs gain experience with their global footprints. The more diverse the range of locations and continents, and the longer their presence in these locales, the more comprehensive this type of knowledge will be, all else being equal. Additionally, the more proximate (or similar) the collection of locations in the MNE's evolved home-base to the target host country on average, the more useful the knowledge for the decision of interest. This type of insight can contribute to an overall global mindset (Levy, Beechler, Taylor, & Boyacigiller, 2007) held by a firm's managers. Second, among the locations in an MNE's evolved home-base, there are places where the learnings from experience are more relevant to the focal decision pertaining to the host country of interest. These two categories of insights can be attributed to the two MNE-level distance measures we developed earlier: *AvgHB_Dist* and *MinHB_Dist*. These two categories of learning are also analogous to what the learning literature has presented as the generalist versus specialist approach to organizational learning (Argote, 2013, p 41).

Table 9 - Definitions of Country Dyad-level and MNE-level Dissimilarity Measures

Dissimilarity measure	Definition	Benchmark for measurement		Level of analysis	Theoretical underpinning (for decision making pertaining to the target host location)
		From	to		
<i>Existing distance measures</i>					
Psychic distance	Sum of factors preventing the flow of information to and from the market (Johanson & Vahlne, 1977); factors that make it difficult to understand foreign markets (Johanson & Vahlne, 2009)	Home country	Import/ host country	Country dyad level (i.e. original home–host country dyad)	Differences such as language, education level, business practices, culture, and industrial development may impede the flow of information between the home and import/host country
International distance (Intl_Dist)	The extent to which the original home country of the MNE is dissimilar to the focal host location in any relevant dimension (Berry et al., 2010) such as economic or cultural aspects, among others	Original home country	Host country/ location	Country dyad level (i.e. original home–host country dyad)	Differences in relevant dimensions of distance between the original home country and the focal host country impact the MNE’s strategic decision making as well as operations (Berry et al., 2010)
<i>Emerging distance measures</i>					
Average distance from MNE home-base to host country (AvgHB_Dist)	The extent to which the <i>overall</i> knowledge base of the firm/MNE learnt from entry and operations in its evolved home-base can facilitate a superior approach to decisions pertaining to the target host country	Home-base average	Host country/ location	MNE home- base–host country dyad level	Assuming that MNEs are dispersed knowledge systems that have the ability to exploit and transfer knowledge across borders (Almeida, 1996; Fang, Jiang, Makino, & Beamish, 2010; Kogut & Zander, 1993), they rely on the collective knowledge (Hecker, 2012) of their subsidiaries to make IB decisions
Distance from the most similar location in the MNE’s evolved home- base (MinHB_Dist) to the focal host country	The extent to which <i>the most similar</i> location in the firm/MNE’s evolved home-base to the target host country can facilitate a superior approach to its international business decisions	The most similar location in the home- base to the focal host country	Host country/ location	MNE home- base–host country dyad level	Managers of firms rely on the most salient features of the most similar locations in their evolved home-base to the target host countries (Tversky, 1977)

To develop our hypotheses, we use an important dimension of the MNE's international strategy, namely the mode choice decision to have a wholly owned subsidiary (WOS) or a joint venture (JV). Ownership strategy has been at the centre of attention for IB scholars, with many believing that we need more studies in this area (Hennart & Slangen, 2015). Further, since distance can be assessed along different dimensions, such as the CAGE dimensions of Ghemawat (2001), for practical reasons we focus on economic distance to make our case. Here, we follow the suggestion by Zaheer et al. (2012) to “focus on one or two well-chosen dimensions rather than compress many dimensions into one.” Focusing on one dimension also makes the measures reasonably comparable with the extant country-level distance measures. While we focus solely on economic distance in our theory development and empirics, our approach to the development of MNE-level distance measures can be applied to other dimensions such as culture and geography, among others. In our hypotheses, therefore, we theorize the effect (as well as the predictive powers) of both country-level and MNE-level economic distance on firms' ownership strategies.

Economic distance, defined as “differences in economic development and macroeconomic characteristics” (Berry et al., 2010), increases the costs of doing business abroad incurred by MNEs (Hymer, 1960) by impacting activities such as production, marketing, and distribution. This impact can be due to dissimilarities in markets and the mechanisms for achieving operational efficiency (Johnson & Tellis, 2008), and difficulty in the application of knowledge developed at home to host-country markets (Madhok, 1997). This dimension, also emphasized in institutional literature on dissimilarities across nations (e.g. Berry et al., 2010; Caves, 2007), has been linked to entry and ownership modes in previous studies (e.g. Iyer, 1997; Yeung, 1997). Both home- and host-country economic dissimilarities and ownership modes of more than 50% (including WOSs) are found to negatively impact the likelihood of survival of subsidiaries (Tsang & Yip, 2007). Further, in a meta-analysis, Morschett, Schramm-Klein, and Swoboda (2010) concluded that economic distance (measured through differences in size and the growth of home and host economies) is negatively associated with the likelihood of establishing a WOS. We thus follow this line of research in our first hypothesis using the extant country-level economic distance and then continue to develop hypotheses pertaining to our MNE-level measures.

Hypothesis 1: The international economic distance between the original home country of an MNE and a focal host country is negatively associated with the likelihood of choosing a WOS rather than a partnership mode.

The relationship theorized for international economic distance in our first hypothesis is based on the assumption that the main source of MNEs' knowledge bases is their original home countries. We suggested, however, that given the evolved home-base literature (Zhou & Guillén, 2015), the international experience argument (Delios & Beamish, 2001), and the "added distance" concept (Hutzschenreuter, Kleindienst, & Lange, 2014; Hutzschenreuter & Voll, 2008), this assumption may not be realistic. Thus, by instead assuming that the locations in MNEs' evolved home-bases are the source of knowledge for decisions pertaining to their international decisions and activities, we developed two MNE-level distance measures. In the case of the economic attributes of the MNE's locations, one measure will be based on the relative dissimilarity of the average economic condition of all locations in the MNE's evolved home-base (*AvgHB_Dist*), and the other will be based on the difference between the most similar location (economically) in the MNE's locations and the focal host country (*MinHB_Dist*).

For the relationship between *AvgHB_Dist* and the ownership strategy of the MNE, a similar mechanism to international economic distance can be used to explain the drivers of ownership strategy of the MNE, except that in this case, the MNE will consider its learning and knowledge base from all locations in its evolved home-base (i.e. both the home country and foreign subsidiaries). All else being equal, we can still conclude that if the average economic conditions (e.g. size) of the MNE's locations are dissimilar to those of the focal host country, it will prefer to choose a partnership mode rather than a WOS.

Hypothesis 2: A firm with a higher than average home-base distance to the target host market will be less likely to choose a WOS than a partnership mode.

As for minimum distance to the target host, the comparison is based on one location that is economically most similar to the target host country. It is based on the argument that firms consider learning from the most similar location or situation they have previously experienced to make decisions pertaining to their international activities in a focal host

country (Tversky, 1977). Aligned with this argument, Nachum and Song (2011) suggest that “in reality ... certain sub-units are likely to exercise a greater impact on individual moves than others” and leave it to future research to explore (p. 400). Yet, a logic similar to that used for the effect of international economic distance can be used to suggest that, all else being equal, the higher the dissimilarity of the most similar location in an MNE’s evolved home-base to the focal host country, the lower the likelihood that the MNE’s ownership strategy will lead to a WOS mode choice.

Hypothesis 3: A firm with a higher minimum home-base distance to the target host market will be less likely to choose a WOS than a partnership mode.

In Hypotheses 2 and 3, although we use the two new MNE-level measures, the direction of the relationship does not alter. For both measures, making an assumption that is more aligned with “mechanisms through which distance operates” (Zaheer et al., 2012, p 18) in managerial decision making can result in better predictive power. Both *AvgHB_Dist* and *MinHB_Dist* have been developed based on the assumption that MNEs rely on the knowledge accumulated over time in their evolved home-base, which include both their home and foreign locations.

Hypothesis 4: Firm-level distance measures have higher predictive power than country-level distance measures in explaining an MNE’s choice of ownership mode.

Our two MNE-level distance measures are distinct yet interrelated. Each of them is based on a distinct logic that deserves particular attention. *AvgHB_Dist* is based on the fact that an MNE can be considered as a location portfolio (Nachum & Song, 2011) and that its knowledge base is comprised of the learnings from experience in each of these locations. Obviously, as MNEs evolve in the global landscape, their knowledge bases evolve as well. Some locations may be more similar to future host locations and therefore the knowledge bases of MNEs become closer to what is needed for international activities and decisions in future host locations. Other locations, however, may increase the knowledge gap of MNEs through the so-called “added distance effect” (Hutzschenreuter et al., 2014; Hutzschenreuter & Voll, 2008). Thus, taking an average of the distance of all locations in an MNE’s evolved home-base (e.g. Zhou & Guillén, 2015), as in *AvgHB_Dist*, can provide an aggregation that

captures both of these effects. *MinHB_Dist*, on the other hand, is based on the logic, from the psychology literature (Tversky, 1977), that suggests that in making international decisions managers rely on the part of their knowledge that is most similar to the situation at hand. Therefore, we believe that although these two measures are based on the same assumption, as we explicated above, they can substitute for each other. Each has its own merits and, in fact, they complement each other in explaining the ownership strategies of MNEs.

Hypothesis 5: The average and minimum distance measures complement (rather than substitute for) each other in explaining an MNE's choice of ownership mode.

Method

Data and Sample

To test our hypotheses, we used a sample of Japanese MNEs' foreign direct investments from 1991 to 2009. Our choice of dataset for this study was based on two factors. Firstly, the distinction between original home country and evolved home-base is central to our study. Utilizing a dataset with a single (original) home country — in this case, Japan — is suitable, as it controls for the effect of variation in home country, given our study's design. As we focus on the evolution of MNEs and our measures are dyadic and based on (1) home and host countries, and (2) MNE's evolved home-bases and host countries, it is important to reduce some sources of variation that are not essential for testing our hypotheses. Home country is one location among other foreign locations in an MNE's evolved home-base. Controlling for the variation in the home country allows for a more accurate analysis of variation in foreign locations as the MNE evolves in the global landscape. Secondly, we observe a burgeoning trend of headquarters disaggregation (e.g. Baaij & Slangen, 2013; Desai, 2009) among MNEs, and the movement of elements of the HQ such as particular executive management teams to foreign locations, such as having a chief operations officer based in China, a chief design officer in Milan, and a chief information officer in Singapore (Desai, 2009, p 1278). Japanese MNEs, however, have historically been known to adopt a global strategy model whereby economies of scale with less subsidiary autonomy prevail (Bartlett & Ghoshal, 1989; Harzing,

2000). Except for some recent changes in some Japanese MNEs to have regional HQs (e.g. Canon Corporation, 2012), Japanese MNEs have mostly had their HQs in Japan. Therefore, it is a proper setting as it controls for the HQ disaggregation effect.

For subsidiary- and parent-level data, respectively, we used the Kaigai Shinshutsu Kigyo Souran-kuni database on Japanese foreign direct investment globally, and the NEEDS database. Additionally, data from the World Bank's Worldwide Governance Indicators and the United Nations was used. We excluded from our sample subsidiaries with fewer than 20 employees and with ownership levels of less than 5%. Many subsidiaries with fewer than 20 employees are often just sales offices that contribute much less to knowledge creation and transfer within MNEs (Beamish & Inkpen, 1998). Japanese ownership levels of less than 5% are assumed to be portfolio investments (Dhanaraj & Beamish, 2004). As for the MNEs in the sample, we used the definition provided by (Stopford & Wells, 1972) and therefore excluded firms with subsidiaries in fewer than five countries from our sample.

Dependent and independent variables

Our dependent variable is based on the ownership strategy of MNEs in focal subsidiaries. It is the choice between having a WOS versus shared ownership, as in a JV. We coded the dependent variable as 1 for ownership levels of more than 80% and 0 otherwise. This is based on the previous findings that subsidiaries with 80–100% ownership by the parent company can be categorized as WOSs (Dhanaraj & Beamish, 2004).

We have three independent variables based on the economic development of the original home country of the MNE (here, Japan), economic conditions of countries that are already included in the evolved home-base of the MNE, and the economic situation of the focal host country. Firstly, the (original) home to host country economic distance measure was measured based on the difference between the economic development of the home country (i.e. Japan) and any focal host country at time t . We followed Berry et al. (2010) and used gross domestic product (GDP) for the economic dimension.

Secondly, to operationalize the average distance from the MNE's evolved home-base to the host country (*AvgHB_Dist*), as we explained before in formula (1), we used the average GDP of all countries of the subsidiaries that were included in the MNE's evolved home-base

at time t . Then we used the difference between this average and the GDP of a focal host country to create our measure. This measure is thus time-varying. Finally, for the distance from the most similar location in the MNE's evolved home-base (*MinHB_Dist*) to the focal host country, we used the minimum difference in GDP of the countries in the MNE's evolved home-base with that of the focal host country. This measure changes over time as the MNE evolves in the global space.ⁱⁱⁱ

Control variables: The list of our control variables, their level of analysis, our rationale for including the variables in our models, their operationalization and the source of data to create these variables are in Table 10.^{iv}

Analysis

The data structure in our study incorporates observations of subsidiaries of MNEs over time. Since the data is organized into a panel structure and our dependent variable is binary, we used panel data analysis using the *xtlogit* command in Stata 13.1 to estimate our model. We ran the Hausman specification test first (Cameron & Trivedi, 2010; Hausman, 1978). The result of this test indicates that we can reject the null hypothesis that the unobserved subsidiary-level effects are not correlated with the other covariates (Hausman, 1978). This implies that we should use the fixed effect estimator as opposed to a random effects estimator. The reported results are thus based on the longitudinal fixed effect logit estimation.^v Fixed effect estimation strategy has the benefit of removing any unexplained heterogeneity due to non-time-varying, yet unobserved variables.

Using a fixed effect logit model (also known as a conditional logit model) is aligned with our theory as well. Our argument of suggesting an alternative distance measure is based on the assumption that MNEs' global domains evolve. The evolution of the MNE is a result of changes in its portfolio of locations or learning and knowledge accumulation in the current locations. The fixed effect logit estimation strategy controls for non-time-varying attributes (even if they are not observed or measured) and runs the analysis only based on time-varying variables. Therefore, it is the proper estimation strategy both empirically and theoretically.

Table 10 - Control Variables and Their Rationale

No.	Level of analysis	Control variable	Rationale	Operationalization	Source of data
1	Subsidiary	Age (log)	The higher the age of MNE subsidiaries, the more knowledge is accumulated	Focal year minus the foundation year (log)	Toyo Keizai
2		Size (log)	In general, larger subsidiaries are more salient/visible. Thus, they are more effective in the MNE's stock of knowledge	Number of employees (log)	Toyo Keizai
3		Expatriate ratio	The effect of expatriates in knowledge transfer across subsidiaries (Fang et al., 2010)	Number of expatriates divided by number of employees	Toyo Keizai
4		Embeddedness in Japan	The MNE may follow Japanese norms of ownership in foreign subsidiaries	Number of Japanese parents	Toyo Keizai
5		Lagged subsidiary performance	Influences the learning effect of subsidiary operations in the MNE's evolved home-base	Previous year's subsidiary performance	Toyo Keizai
6	MNE	MNE's total international experience	Indicates the depth of the MNE's international experience	Total sum of the experience (age) in all the subsidiaries in the focal year	Toyo Keizai
7		MNE's number of subsidiaries	Indicates breadth of the MNE's international experience	Number of subsidiaries of the MNE in each year	Toyo Keizai
8		MNE multinationality (Nachum et al., 2008)	The extent to which the MNE's home evolves from the original home to its evolved home-base	Foreign sales/Total sales	Toyo Keizai & NEEDS
9	Industry	Service versus manufacturing industry	Due to differences in their value proposition business models, service and manufacturing industries may utilize different ownership strategies in their foreign subsidiaries (Brouthers & Brouthers, 2003)	Dummy variable (Service = 1; Manufacturing = 0)	Toyo Keizai
10	Host-country institutions	Political stability	Institutional political volatility increases uncertainty and may make the MNE more conservative in its foreign market commitments	Political stability measure from the data source	World Bank (World Governance Indices)
11		Economic growth	High economic growth of the host country may require different ownership strategies	GDP growth in percentage	United Nations data
12		Local currency exchange rate	Temporal effects (e.g. changes in national economies and trade balances) (Klein & Rosengren, 1994)	Historical annual data of Japanese/local currency exchange rate (per USD)	World Bank

Results

Table 11 reports correlations and descriptive statistics of our variables. We observe that some correlation figures are moderately high (e.g. -0.46, 0.58) but the only figure that is close to 0.7 is the correlation between the MNE's number of subsidiaries and the MNE's total international experience (0.68). Thus, we ran a diagnostic test to check collinearity. All the variance inflation factors were below 4.02 and the average VIF was 1.78, which indicated that multicollinearity was not an issue (Hair, Anderson, Tatham, & Black, 1998). Also, the correlation figures between our independent variables are worthy of attention. There is little correlation between *MinHB_Dist* and the other two variables (i.e. *AvgHB_Dist* and international home to host country distance), which confirms that this measure is distinct. The correlation between *AvgHB_Dist* and international home to host country distance, however, is rather high (-0.86). One explanation is that MNEs' expansion trajectories consist of both footprints that progressively narrow the gap between their evolved home-base locations to focal host countries, as well as those that add to this distance (Hutzschenreuter et al., 2014; Hutzschenreuter & Voll, 2008). Thus, these two types may cancel each other out in the average distance measures. We considered this high correlation and did not include these two distance measures simultaneously in any of our models.

Table 12 presents logit regression results for firms' ownership strategies from 1991 to 2009 and includes six models. All our models include 961 observations for 155 unique firms resulting in an average of 6.2 observation-years for each firm. Model 1, our base model, only includes our control variables. Models 2 to 4 report results for the addition of our three distance measures, respectively, to the base model. In Models 5 and 6, we jointly include pairs of distance measures that we believe are both conceptually and empirically distinct. Hence, they have the potential to complement each other.

Table 11 - Correlations and Descriptive Statistics

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1- Subsidiary age (log)	2.40	0.73	1.00														
2- Subsidiary size (log)	5.05	1.21	0.06	1.00													
3- Subsidiary expatriate ratio	0.04	0.07	0.11*	-0.39*	1.00												
4- Subsidiary no. of Japanese parents	1.47	1.01	-0.04*	0.09*	-0.09*	1.00											
5- Subsidiary performance (1 year lagged)	1.48	0.75	-0.24*	-0.05*	-0.01	0.02*	1.00										
6- MNE total international experience	4.97	0.97	0.23*	0.05*	0.03*	0.06*	-0.07*	1.00									
7- MNE number of subsidiaries	23.37	38.81	0.04*	0.01	0.01	0.15*	0.0006	0.68*	1.00								
8- MNE multinationality level	5777.2	12551.32	0.06*	0.06*	0.02*	0.05*	0.07	0.42*	0.59*	1.00							
9- Service/manufacturing dummy variable	0.34	0.47	0.19*	-0.40*	0.36*	-0.08*	-0.08*	0.15*	0.05*	0.20*	1.00						
10- Political stability of the host country	0.09	0.81	0.19*	-0.20*	0.22*	-0.10*	-0.03*	0.002	0.02	0.03*	0.20*	1.00					
11- Economic growth	4.51	4.34	-0.23*	0.03*	-0.07*	-0.04*	0.01	-0.05*	-0.03*	-0.04*	-0.09*	-0.13*	1.00				
12- Local currency exchange rate (per USD)	902.39	2869.08	-0.05*	0.09*	-0.10*	0.05*	0.04*	0.01	-0.004	-0.02*	-0.06*	-0.46*	-0.05*	1.00			
13- Home country—host country similarity in GDP	1.86	3.86	-0.01*	0.06*	-0.22*	0.13*	-0.04*	0.02*	0.01	0.26*	-0.08*	-0.25*	0.10*	0.19*	1.00		
14- MNE—host country similarity in GDP (based on MNE's locations portfolio)	0.18	3.54	0.11*	-0.03*	0.18*	-0.10*	0.04*	-0.001	-0.01	-0.01*	0.06*	0.23*	-0.06*	-0.16*	-0.86*	1.00	
15- MNE—host country similarity in GDP (based on MNE's most similare locations to host country)	4.37	1.21	0.14*	0.02*	0.13*	0.004	-0.03*	0.41*	0.34*	0.19*	0.11*	0.18*	-0.18*	-0.05*	-0.36*	0.34*	1.00

* Two tailed correlations significant at 0.05 level (based on the complete sample of 10,955 observations)

Table 12 - Results of Logit Regression for Firms' Ownership Strategy Decisions

Control variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Subsidiary level	<i>(Base model)</i>					
Subsidiary age (log)	-3.08 (1.53)*	-3.03 (1.53) *	-3.60 (1.57)*	-3.09 (1.53)*	-3.04 (1.55)*	-3.65 (1.59)*
Subsidiary size (log)	-1.05 (0.43)*	-1.03 (0.44)*	-1.04 (0.46)*	-1.05 (0.45)*	-1.04 (0.45)*	-1.03 (0.46)*
Subsidiary expatriate ratio	-2.47 (9.78)	-1.54 (9.96)	-5.30 (9.84)	-2.57 (9.80)	-1.64 (9.96)	-5.31 (9.85)
Subsidiary no. of Japanese parents	-2.10 (0.37)***	-2.11 (0.37)***	-2.11 (0.37)***	-2.10 (0.37)***	-2.11 (0.37)***	-2.11 (0.37)***
Subsidiary performance (1 year lagged)	-0.18 (0.21)	-0.18 (0.21)	-0.16 (0.21)	-0.17 (0.21)	-0.18 (0.21)	-0.16 (0.21)
MNE level						
MNE's total international experience	-7.59 (2.60)**	-7.41 (2.85)**	-8.37 (2.61)***	-7.58 (2.60)**	-7.34 (2.61)**	-8.43 (2.61)***
MNE's number of subsidiaries	-0.11 (0.04)*	-0.10 (0.04)*	-0.11 (0.05)*	-0.11 (0.4)*	-0.10 (0.04)*	-0.11 (0.05)*
MNE's multinationality level	-3.33 (0.91)***	-3.26 (0.90)***	-3.63 (0.97)***	-3.33 (0.92)***	-3.27 (0.90)***	-3.63 (0.96)***
Industry						
Service/manufacturing dummy	-0.77 (4.42)	-0.63 (4.65)	-0.97 (4.39)	-0.78 (4.37)	-0.62 (4.56)	-0.95 (4.57)
Host-country institutions						
Political stability of the host country	-1.31 (0.46)	-1.27 (0.46)**	-1.33 (0.47)**	-1.33 (0.48)**	-1.31 (0.48)**	-1.26 (0.48)**
Economic growth	0.04 (0.03)	0.04 (0.03)	0.04 (0.03)	0.38 (0.03)	0.04 (0.03)	0.04 (0.03)
Local currency exchange rate (per USD)	0.59 (1.37)	-0.14 (0.21)	-0.70 (1.39)	-0.61 (1.38)	-0.54 (1.37)	-0.63 (1.40)
Economic distance (main effects)						
International distance (<i>Intl_Dist</i>)		-0.14 (0.21)			-0.16 (0.23)	
Average MNE home-base to host country (<i>AvgHB_Dist</i>)			-0.32 (0.15)*			-0.34 (0.16)*
Distance from the most similar location in the MNE's home-base location portfolio (<i>MinHB_Dist</i>)				-0.06 (0.43)	-0.18 (0.45)	0.24 (0.44)
Number of observations	961	961	961	961	961	961
Number of subsidiaries	155	155	155	155	155	155
Average observation per subsidiary	6.2	6.2	6.2	6.2	6.2	6.2
Log likelihood	-179.45	-179.24	-177.22	-179.45	-179.17	-177.07
Increase in McFadden's Pseudo-Rsquared (vs. base model)	-	0.11%	1.24%	0.006%	1.57%	1.32%
BIC	455.05	461.50	457.45	461.89	468.22	464.03

$p < 0.1$; $p < 0.05$; $p < 0.01$; $p < 0.001$

Hypothesis 1 suggests that home to host country economic distance (i.e. the country dyad-level economic distance) is negatively associated with the likelihood of deciding to have a WOS. The result in Model 2 does not show a significant coefficient for international distance. The sign of the coefficient, however, confirms the direction we predicted in this hypothesis. Overall, thus, our first hypothesis is not supported.

Our second hypothesis posits that the average home-base distance of an MNE to a focal host country (*AvgHB_Dist*) is negatively associated with the likelihood of having a WOS as the ownership strategy. The coefficient of *AvgHB_Dist* in Model 3 is negative and significant ($p < 0.05$), which supports Hypothesis 2.

Model 4 adds the hypothesized relationship regarding the distance between the most similar location in an MNE's evolved home-base (*MinHB_Dist*) to a focal host location. Hypothesis 3 predicts a negative relationship between *MinHB_Dist* and the likelihood of selecting a WOS versus a JV. Although the direction of this relationship is confirmed with the sign of the coefficient, this hypothesis is not supported.

In Hypothesis 4, we theorized that the predictive power of firm-level distance measures (i.e. *AvgHB_Dist* and *MinHB_Dist*) is higher than that of country-level distance measures. The predictive power of explanatory variables in ordinary least squares regression is usually assessed through the amount of variance they can explain (measured through the added level of R-squared, compared to the base model, due to the addition of the focal variable). In our study, however, we have a non-linear logit model, as our dependent variable is binary. Other model fit indicators such as McFadden's Pseudo-Rsquared, Bayesian information criterion (BIC), and Akaike information criterion (AIC) are often used for binary outcome models (Cameron & Trivedi, 2010, p 471). BIC and AIC are similar in that they both reward models with higher log likelihoods and penalize those with more parameters included. Thus, we use McFadden's Pseudo-Rsquared together with BIC to discuss model fits and identify the measures with higher predictive power.

The increases in McFadden's Pseudo-Rsquared presented in Table 12, compared to the base model, indicate that Model 5 has the highest increase, followed by Models 6 and 3. Since the results in Model 5 were not significant, we need to base our conclusion on joint

consideration of both significance and model fit. As such, it is evident from the results in Table 12 that Model 6 followed by Model 3 have the most ideal situation. Secondly, the lower a model's BIC, the higher its model fit (Stata, 2013a). We also need to consider that lower BICs result from a combination of rewards due to improved model fitness penalized by an increase in the number of parameters in the model. So, all else being equal, higher BICs can be expected for Models 5 and 6 compared to Models 1 to 4, as they have at least one additional parameter included. Overall, therefore, Models 3 and 6 have the most ideal model fitness. To conclude, considering both McFadden's Pseudo-Rsquared and BIC results, we find that Model 6 followed by Model 3 have the highest predictive power. Hypothesis 4 is thus supported.

Hypothesis 5 suggests that our two firm-level distance measures, *AvgHB_Dist* and *MinHB_Dist*, complement each other in predicting the ownership strategy of MNEs. Aside from statistical analysis, we discussed previously that since the two measures have low correlations and are each justified for a different theoretical rationale, we included both of them simultaneously in Model 6. We also found, as explained earlier, that Model 6 has the highest model fit among all the models. Therefore, we conclude that the complementary effect of these two measures results in this high level of predictive power. Thus, Hypothesis 5 is supported.

Robustness Checks

We ran our models on subsamples of firms at different stages of internationalization. This distinction matters because as we suggested earlier, extant country-level distance measures work well before firms internationalize. After they internationalize, and at different stages of international expansion, however, their sources of knowledge expand beyond just what they have learnt at home. The results show that different distance measures have different predictive powers depending on the stage of internationalization of the MNE. For smaller MNEs with fewer than 10 subsidiaries, international distance has a higher predictive power vis-à-vis *AvgHB_Dist* and *MinHB_Dist* distance measures. This confirms the assumption we made while developing these measures, that the evolved home-base will be the primary source of an MNE's knowledge, instead of home country, as it expands globally.

Discussion

This study focuses on the knowledge base that the MNE utilizes for its international expansion and activities in global geographic markets. In their international decisions, MNEs rely on knowledge sources both in their original home markets and their foreign locations of activity, which collectively comprise MNEs' evolved home-bases (Eghbali-Zarch, 2013; Zhou & Guillén, 2015). As Desai (2009) posits, "The notion of a firm with a unique national identity is fading" (p. 1284). Focusing specifically on MNEs' knowledge bases of economic conditions of focal host markets, we argue that after the initial stages of internationalization, MNEs rely on a combination of knowledge sources, located both at home *and* in their foreign subsidiaries, thus requiring us to revisit the concept of international home to host country distance. We base our arguments on the presumption that MNEs evolve over time. They are emergent and unfinished. This assumption helps us conceive how the processes that lead to MNEs' actions and decisions interact with changes in their international space.

We suggest that basing the assessment of the knowledge gaps required for overcoming MNEs' liability of foreignness on MNEs' *evolved home-bases* rather than *home countries* will better align the distance measure with the decision-making mechanisms of managers. It will also result in firm-level heterogeneity that is suitable for studies of a firm's strategies, with firms and their repertoire of knowledge as the unit of analysis, rather than pairs of countries as a focal unit of analysis. This heterogeneity is similar to the heterogeneity that resulted in the introduction of the resource-based view of strategy (Barney, 1991) compared to theories of strategy that were rooted in industrial organization (Porter, 1981). We tested our arguments on a sample of Japanese global FDI and found that this shift in the level of analysis results in improved predictive power of the suggested firm-level distance measures.

Our original motivation for this study was to implement recent advances in international business scholarship, build on literatures from the knowledge-based view of MNEs (Kogut & Zander, 1993; Monteiro et al., 2008) and economic geography (e.g. Beugelsdijk et al., 2010), and extend our theoretical understanding of the extant concept of distance. Most studies of international distance make the assumption that a firm sources its knowledge mainly from its home country, an assumption that has seen the original home country and any focal host country used as benchmarks for conceptualization and

measurement of the construct. A consequence of this assumption is conceiving of all firms originating from the same home country as if they were equally endowed with the same level and type of knowledge and resources regardless of their scale and scope of internationalization. Additionally, studies in economic geography have found that the simple dichotomy between home and host country is not sufficient (Iammarino & McCann, 2013). In this study, we question (Alvesson & Sandberg, 2011) this assumption. We develop firm-level distance measures that encompass not only the knowledge of the firm of its home country, but also its learnings from foreign locations.

For firm-level measures, we develop two distinct yet complementary measures. Firstly, we develop *AvgHB_Dist*, an aggregate measure that incorporates the knowledge accumulated from locations within a firm's evolved home-base. Some of these locations may reduce a firm's knowledge gap, while some may add to it (Hutzschenreuter et al., 2014; Hutzschenreuter & Voll, 2008). Secondly, *MinHB_Dist* targets the most salient and relevant locations in an MNE's evolved home-base. Thus, we endogenize distance, rather than treating it as an immutable external factor, in the internationalization and decision-making processes of the MNE.

While based on sound theoretical logic, minimum home-base distance was not found to be a robust firm-level distance measure in our study. Although its complementary effect with *AvgHB_Dist* helped Model 6 to have the best predictive power among all models, it did not appear significant in any of the models. We believe that future studies can test this measure on other samples, contexts, and outcome variables.

It is important to delineate the contributions in our study versus the extant state of the literature. Firstly, our approach to the concept of distance incorporates learning sources of MNEs both at home and abroad. Independent consideration of these sources of knowledge is not a novel contribution in and of itself. MNEs' learnings at home has been the basis for assumptions in IB for the extant concept of international distance. Numerous studies have also considered the effect of firms' international experience (e.g. Lihong & Delios, 2008). Our contribution, however, lies in the approach that encompasses both of these sources at the same time by developing the two firm-level distance measures. Secondly, in regard to the dynamics of MNEs' international expansion and knowledge acquisition, we develop two multilevel

constructs. One construct is based on the average knowledge of all subsidiaries of the MNE, and the other is based on the most salient and relevant subsidiary with regard to the focal host country and the decision at hand. The average distance construct has been used in *empirical* analyses in a few studies in IB (Baaij & Slangen, 2013; Dai et al., 2013; Nachum & Song, 2011; Zhou & Guillén, 2015) and in neighbouring disciplines (Funk, 2014; Sorenson & Audia, 2000). Our study develops this construct *theoretically* using multilevel construct development literature (Bliese, 2000; Klein & Kozlowski, 2000). It also assesses the superiority of the measure vis-à-vis extant measures *empirically*. The second multilevel distance construct that we develop using similarity-based logic (Tversky, 1977) is novel. Interestingly, Tversky (1977) used the context of countries as his study subjects to develop the theory of similarity, which is now a classic model in psychology. Our study borrows from this theory and develops a similarity-based distance measure in IB.

Although our approach is mainly tailored towards academic scholarship in IB, it has implications for managers in practice too. The concept of international distance has a long tradition of being used in practice and education. It is considered to be an influential factor for IB decisions and strategies such as market selection and entry and ownership mode choices. It reflects the knowledge gap and liability of foreignness (Zaheer, 1995) that firms may face in entering and operating in a foreign market. Frameworks such as CAGE (Ghemawat, 2001) are predominantly used for disentangling different dimensions of distance. The benchmark for all the assessments, however, has been the firm's original home country. However, following previous similar studies (e.g. Zhou & Guillén, 2015) our study suggests that managers need to consider their evolved home-base, rather than their original home country.

Limitations and Future Research

Our study is not without limitations. Firstly, in our empirical illustration and testing of hypotheses, for the sake of brevity and practicality, we focused on only economic distance, one of the four dimensions of distance introduced by Ghemawat (2001). Other dimensions of distance can thus be used in future studies to answer relevant research questions. Secondly, although we advocate moving beyond a home country–host country dyadic benchmark for the concept of distance, we nevertheless assume that national borders embody the building blocks

of MNEs' knowledge bases. Thus, we use the existing indexes at the national level to create an MNE-level measure. Despite the limitation that this assumption entails, particularly in situations where we observe higher within-country heterogeneity, taking countries or states as the basic unit of analysis has advantages. By considering country borders, we incorporate the political system and the so-called border effect, which has been argued to be independent of the distance effect (Beugelsdijk & Mudambi, 2013). As such, we control for the border effect through the research's design. Further, in empirical terms, most data used in IB research is available for countries. Our study develops a procedure to create a multilevel construct that utilizes the national-level measures. In particular, using countries bounded within national boundaries provides the possibility of comparing the predictive power of our new approach (that endogenizes MNEs into the concept and measurement of distance) with the extant measures of international distance. This is particularly important as national borders have been traditionally a primary geographic unit of analysis in MNE studies (Dunning, 1993; Hymer, 1960; Zaheer, 1995). Additionally, national-level measures such as culture are highly important to our understanding of MNEs (Leung, Bhagat, Buchan, Erez, & Gibson, 2005; Ronen & Shenkar, 2013). National borders and nation-states contribute to the homogenization of cultural elements (Gould & Grein, 2009).

Although we use countries as a basic unit of analysis to develop our constructs, future research can use our procedure and develop MNE-level distance constructs based on other units of analysis. For example, subnational regions (Chan, Makino, & Isobe, 2010; Lorenzen & Mudambi, 2013; Ma, Tong, & Fitza, 2013), extra-national regions (Rugman & Verbeke, 2004), and cultural clusters (Ronen & Shenkar, 2013) can potentially be used as alternative units of analysis. A combination of different units of analysis can also lead to future research in the form of multilevel studies.

A third limitation of our study is related to how variance in MNEs' strategies (Bartlett & Ghoshal, 1989), particularly the relative importance of headquarters versus subsidiaries and the level of autonomy of subsidiaries (Wang, Luo, Lu, Sun, & Maksimov, 2014), impacts our argument. In our empirical setting, we used a sample of Japanese MNEs. Despite some recent changes in the management practices of Japanese MNEs (e.g. Canon Corporation, 2012), they have traditionally utilized a global strategy (Bartlett & Ghoshal, 1989). Other MNE strategies,

such as multi-domestic, international, and transnational strategies (Bartlett & Ghoshal, 1989), may impact MNEs' knowledge transfer and learning. Future studies can utilize other settings with different MNE strategies and levels of subsidiary autonomy.

Fourthly, we based our assessment of the distance measures we developed on how well they can explain the ownership strategy of MNEs. We categorized ownership strategy into WOS and partnership choices using an 80% cut-off point, following findings by Dhanaraj and Beamish (2004). Future research can (1) use a continuous measure of ownership to make this assessment and (2) utilize other international strategy choices such as entry mode (acquisition versus greenfield) and partner choice (local partner, a partner from the original home country, or a third-country partner).

Finally, our empirical setting, Japanese MNEs' FDI, represents advanced economy MNEs (AMNEs). In the emerging markets literature, it has been suggested that AMNEs have different motives and strategies for international expansion than emerging economy MNEs (EMNEs) (Ramamurti & Singh, 2010). In fact, one important motive for EMNEs in entering more advanced countries is to acquire knowledge and technology, as their home country is not well endowed as a source of knowledge and technology (Almeida, 1996). Therefore, the distinction between original home country and evolved home-base may play a crucial role for these firms. Extant distance measures and concepts based on the original home country to host country measure thus seem inadequate in explaining the stunning success of EMNEs in the global marketplace. Future studies on EMNEs can benefit from our suggested approach to the measurement and conceptualization of distance.

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Appendices

Appendix A - Summary of Research on Distance and Its Level of Analysis and Measurement

Study	Distance dimension under study	Description and/or main contribution	Level of	
			analysis	measurement
Dow and Karunaratna (2006)	Psychic distance (national culture, language, education level, industrial development, political system, religion, time zone, colonial ties)	The composite measure of Hofstede's cultural measures is not a significant predictor of trade intensity between countries	Country pairs	Country pairs
Baaij and Slangen (2013)	Geographic distance	The effect of HQ disaggregation on <ul style="list-style-type: none"> • HQ's decisions about subsidiaries • Different HQ–subsidiary geographic distances 	MNE to subsidiary	N/A (the study is not empirical)
Shenkar (2001)	Cultural distance	<ul style="list-style-type: none"> • Presents a critical view and the challenges of assumptions around the construct • Suggests that national-level CD should be supplemented by a cognitive measure (e.g. executives' perception of CD) 	Country pairs	N/A (the study is not empirical)
Shenkar (2012)	Cultural distance	<ul style="list-style-type: none"> • Suggests the use of friction in lieu of distance • Acknowledges the measurement challenges of this suggestion • Suggests to let [the practice of] international business lead the way 	Country pairs	N/A (the study is not empirical)
Nachum et al. (2008)	Geographic distance	<ul style="list-style-type: none"> • Suggests the concept of proximity to the spatial distribution (or network) of knowledge, markets, and resources around the globe • Measures proximity by aggregating the (weighted) bilateral distance between countries 	Country to network dyad	Country to network dyads
Nachum and Zaheer (2005)	Geographic distance	<ul style="list-style-type: none"> • Argues that the effect of the cost of distance depends on investment motivations • The sensitivity of different investment motivations to the cost of distance varies 	Country pairs	N/A (not included in the hypotheses)

Appendix A (Contd.) - Summary of Research on Distance and Its Level of Analysis and Measurement

Study	Distance dimension under study	Description and/or main contribution	Level of	
			analysis	measurement
Zaheer et al. (2012)	Distance in general (comments apply to all dimensions)	<ul style="list-style-type: none"> • Extends Shenkar's (2001) arguments on cultural distance to other distance measures • Suggests allowing for the influence of firm-level characteristics, which can result in varying consequences for different MNEs • Suggests considering the <i>processes</i> and <i>mechanisms</i> through which the distance construct can be applied as an explanatory factor • Suggests considering the endogeneity of distance to the perceiver (i.e. the firm) • Elucidates problems of distance measures as "loss of dimensionality, assumptions of symmetry, subjectivity, and overall, inadequate conceptualization of the mechanism" (p. 21) • Maintains that the oversimplification of distance can be a great danger and may diminish its effectiveness 	Country pairs/ MNE level/ firm level	N/A (the study is not empirical)
Campbell, Eden, and Miller (2012)	Cultural, administrative, geographic, and economic distance	<ul style="list-style-type: none"> • Firms with less distance between their (original) home and their affiliates' host countries demonstrate less engagement in corporate social responsibility (CSR) • Host country's CSR reputation negatively moderates this effect 	Home and host countries	Home and host countries
O'Grady and Lane (1996)	Psychic distance	<ul style="list-style-type: none"> • There is a linkage between the sequence of market entry and performance. Expanding to psychically proximate markets seems easier, as more proximate markets are assumed to be better understood • The psychic distance paradox maintains that operations in psychically close countries may not necessarily be easy to manage, as assumptions of similarity can prevent managers from learning and exploring 	Country pairs	Country pairs

Appendix A (Contd.) - Summary of Research on Distance and Its Level of Analysis and Measurement

Study	Distance dimension under study	Description and/or main contribution	Level of	
			analysis	measurement
Hutzschenreuter and Voll (2008)	Cultural distance	<ul style="list-style-type: none"> • International expansion path and pace matters to a firm's performance, particularly in terms of the cultural distance of the foreign country portfolio compared to the home market • Higher pace and irregularity of "<i>added cultural distance</i>" will lead to less profitability 	Foreign location portfolio	Foreign location portfolio
Dellestrand and Kappen (2012)	Geographic	<ul style="list-style-type: none"> • Distance matters in MNE HQs' resource allocations to subsidiaries • The role of HQs' support in subsidiary evolution 	Pairs of foreign subsidiaries of the MNE	Pairs of foreign subsidiaries of the MNE
Berry et al. (2010)	Nine dimensions (economic, financial, political, administrative, cultural, demographic, knowledge, global connectedness, and geographic distance)	Disaggregates the construct of distance by proposing a set of nine multidimensional measures as dimensions of distance	Country pairs	Country pairs
Boeh and Beamish (2012)	Geographic distance	Assuming that distant locations involve costly frictions, the study develops a travel time construct. It finds that dyad travel time (and not geographic distance) significantly predicts firm governance and location choice	HQ's country to subsidiary country	HQ's country to subsidiary country
Tihanyi, Griffith, and Russell (2005)	Cultural distance	<ul style="list-style-type: none"> • Meta-analysis for the effect of cultural distance on entry mode, international diversification, and MNE performance • Finds that the relationships are not significant by themselves. However, high technology industry membership, investments in developed countries, and international diversification are significant moderators to the aforementioned main effects 	Country pairs	Country pairs

Appendix A (Contd.) - Summary of Research on Distance and Its Level of Analysis and Measurement

Study	Distance dimension under study	Description and/or main contribution	Level of	
			analysis	measurement
Ellis (2008)	Psychic distance	<ul style="list-style-type: none"> • Challenges the presumption that foreign operations conform to a simple pattern of increasing psychic distance to markets • Finds that (1) psychic distance moderates the relationship between foreign market size and entry sequence and (2) psychic distance is asymmetrical among sellers and buyers 	Country pairs	Country pairs
Ellis (2007)	Not specified (the distance to markets is used)	A firm's dependency on diverse and distant foreign markets hinders the development of market orientation (i.e. understanding customers' needs)	Home country to foreign markets	Managers' estimates of the proportion of their customers abroad are used as a proxy
Salomon and Zheyang (2012)	Institutional distance (cultural, economic, political, and regulatory dimensions)	Foreign firms pursue local isomorphism to mitigate the liability of foreignness	Home and host countries	Home and host countries
Reus and Lamont (2009)	Cultural distance	Suggests that cultural distance is a double-edged sword for international acquisition performance — it constrains communication and impedes the development of integration capabilities, on the one hand. On the other hand, it enriches acquisition performance by leveraging learning from cultural diversity	Home and host countries	Home and host countries

Appendix A (Contd.) - Summary of Research on Distance and Its Level of Analysis and Measurement

Study	Distance dimension under study	Description and/or main contribution	Level of	
			analysis	measurement
Evans and Mavondo (2002)	Psychic distance	Attempts to develop a comprehensive measure of psychic distance and finds that the aggregate measure of the construct can significantly predict organizational performance, but suggests that disaggregated standalone dimensions have higher predictive power	Home and host countries	Home and host countries
Brouthers and Brouthers (2001)	Cultural distance	<ul style="list-style-type: none"> • Studies the effect of psychic distance on international entry mode selection • Uses the moderation effect of investment risk to resolve the psychic distance paradox 	Home and host countries	Home and host countries
Morosini, Shane, and Singh (1998)	Cultural distance	Finds a positive association between national cultural distance and international acquisition performance	Home and host countries	Home and host countries
Tsang and Yip (2007)	Economic distance	<ul style="list-style-type: none"> • Hazard rates of FDI are lower in countries that are more developed than the home country, compared to those in countries with similar economic development • Hazard rates of acquisitions are higher than those of greenfield investments in more developed countries and vice versa in less developed countries 	Home and host countries	Home and host countries
Shenkar, Luo, and Yeheskel (2008)	Distance versus friction	Suggests the substitution of the cultural distance metaphor, as an artificially constructed difference, with cultural friction in international management	Home and host countries	N/A (the study is not empirical)
Xu and Shenkar (2002)	Institutional distance	<ul style="list-style-type: none"> • Deconstructs institutional distance between home and host countries into regulative, normative, and cognitive dimensions to explain the international strategies of MNEs • Suggests that MNEs' strategies (e.g. global strategy with high level of integration versus multi-domestic strategy with high local subsidiary autonomy and adaptation) and choice locations with high and low institutional distances from home are interdependent 	Home and host countries	N/A (the study is not empirical)

Appendix A (Contd.) - Summary of Research on Distance and Its Level of Analysis and Measurement

Study	Distance dimension under study	Description and/or main contribution	Level of	
			analysis	measurement
Ragozzino and Reuer (2011)	Geographic distance	Examining the acquisition of firms after their IPO, they suggest that certain characteristics of firms (e.g. VC support, underpricing of issued shares, and investment bank reputation) send informative signals to remote acquirers and reduce the adverse effects of distance	HQs to HQs dyad locations	HQs to HQs dyad locations
Lee, Shenkar, and Li (2008)	Cultural distance	<ul style="list-style-type: none"> • Attempts to decouple firm effects from environmental effects by examining firm preferences for higher control levels in cooperative arrangements in their investments in home markets (inward FDI) in partnership with foreign firms and outward (to foreign markets) FDI in foreign environments • Finds that the effect of cultural distance is greater in inward investments than outward investments 	Home and host countries	Home and host countries
Hutzschenreuter, Voll, and Verbeke (2011)	Cultural distance	<ul style="list-style-type: none"> • Using Penrose effect, it compares firms with a constant international expansion pace with those with an initial rapid expansion followed by a slower expansion pace • It suggests that added cultural distance (Hutzschenreuter & Voll, 2008) as well as the high cultural diversity of local contexts of MNE subsidiaries can explain the diverging patterns of international expansion 	Foreign location portfolio	Foreign location portfolio
Schwens, Eiche, and Kabst (2011)	(Informal) institutional distance	Examines informal institutional distance and formal institutional risk as moderators of the relationship between frequently examined decision criteria and entry modes of small and medium-sized enterprises	Home and host countries	Home and host countries
Estrin, Baghdasaryan, and Meyer (2009)	Institutional and human resource (HR) distance	Explores the complementary role of institutional and HR distances on firms' entry strategies	Home and host countries	Home and host countries
Asmussen and Goerzen (2013)	Cultural, institutional, and regional (geographic)	<ul style="list-style-type: none"> • Identifies regional inflection points and suggests the importance of the interregional liability of foreignness (LOF) • Three dimensions are suggested for interregional LOF: cultural, institutional, and regional 	Regions	Regions

Appendix B - Stata Program, MNEHostProx (*version 1.0 2014*)

(to create the minimum distance measure)

(This program, accompanied by instructions on how to set up the dataset structure, will be made available for public use through a website at the dissemination stage of our research)

```

set trace on

capture program drop MNEHostProx

program define MNEHostProx
version 1.0 2014

*write a command that makes D a temporary matrix--> search

*matrix dissim D= Log_GDP_Current_USD

local i=1990

while `i'<=2009 {

tempvar MNE_Yr_MaxProx_hostCountry_temp

svmat double D, names(MNE_Yr_Prox_)

quietly egen `MNE_Yr_MaxProx_hostCountry_temp'=rowmax(MNE_Yr_Prox_*) if Year=`i'

display "Year is now `i'"

replace MNE_Yr_MaxProx_hostCountry=MNE_Yr_MaxProx_hostCountry_temp if Year=`i'

display "Yearprime is now `i'"

drop MNE_Yr_MaxProx_hostCountry_temp

drop MNE_Yr_Prox_*

matrix drop D

}

end

```

Endnotes

ⁱ CAGE distance dimensions include cultural, administrative, geographic, and economic differences between home and host country.

ⁱⁱ Studies included in this review are any study in the Journal of International Business Studies, Strategic Management Journal, Academy of Management Journal, Academy of Management Review, and Journal of Management Studies with the word “distance” included in their title. Studies that were not meant to directly assess the effects of distance were excluded.

ⁱⁱⁱ Unlike in the case of the average measure of distance, Stata commands do not facilitate the creation of a minimum distance measure because subsidiaries of MNEs evolve over time and the minimum distance at time t might be different than at time $t+1$. As such, we wrote the program in Stata 13.0 to create the command. As it is presented in Appendix B, we used ‘while’ as a loop programming command in Stata 13 (Stata, 2013b) for this purpose.

^{iv} We coded the service industry, as a base category, into 1 and the rest into 0. Industry sectors such as the hotel business, information services, consultancy, market research, transportation services, insurance, finance, banking, and restaurants, among others, were considered as in the service industry, as per the Toyo Keizai dataset manual. All other industry sectors were considered non-service and were coded as 0.

^v As our data structure is multilevel, we attempted a multilevel logistic estimation strategy using a melogit command in Stata 13.0, but the models did not converge. This non-convergence, we suspect, could be due to the relatively limited number of observations in some groups and certain variables and thus a low level of within-group variance. As confirmed by Soleimani, Schneper, and Newburry (2014, p 1000), this is not uncommon in other studies that have dealt with national institutions data.

Chapter 5 - CONCLUSIONS

Stability and change are both essential to firms and multinational enterprises (MNEs) as they learn and adapt to their environments. Striking the balance between stability and change (Van de Ven & Poole, 1995) has been the subject of a multitude of studies. To examine the interplay between the two organizational states in the context of MNEs, this dissertation analyzed the antecedents and consequences of stability and change. The *antecedents* that lead an MNE to adhere to status-quo decisions may keep it in a state of stability. Organizational phenomena, such as routines at the individual level and capabilities and decision rules at the strategic level, are examples of such antecedents.

The evolution and interplay of firms between states of stability and change may also have *consequences*. As MNEs evolve in the international space, they learn from their successes and failures and those learning lessons accumulate in their knowledge bases. Their knowledge bases can evolve from learning lessons solely based on home-country experience to the collection of learning lessons acquired in their home countries and all of their foreign subsidiaries. Such a shift impacts the mindset of an MNE's managers. To make future decisions, they now rely on the whole knowledge base of the MNE — sources either from the original home country or the home country plus foreign subsidiaries. This evolution and its interaction with how the liability of foreignness changes has been the primary focus in the literature. Very recently, however, we have seen the introduction of the concept of evolved home-base (Eghbali-Zarch, 2013; Zhou & Guillén, 2015). This dissertation builds on this recent body of studies to reconceptualise international distance an important phenomenon in international business research.

To address the antecedents and consequences of MNEs' evolution, this dissertation asked three research questions: (1) What is the impact of a routinized approach to resource allocation among subsidiaries of an MNE? (2) How is this approach affected by varying degrees of the repetitiveness of decisions? (3) How does the change in the knowledge base of a firm, as it internationalizes and expands further to turn into an MNE, influence its perceived spatial distance to a focal host country? These research questions were addressed throughout the dissertation in a three-essay format.

Essay 1 (Chapter 2) focused on the antecedents of interplay between stability and change to address the first two research questions. By studying recursive, high-stakes strategic resource allocation decisions, this essay aimed to disentangle the time and space dimensions of the deployment of capabilities. In particular, it examined the stability patterns in MNEs and their subsidiaries as a result of the application of capabilities manifested as simple organizational rules. The study developed two complementary core constructs, namely *temporal persistence* and *spatial consistency*. This essay also focused on two primary dimensions of international strategy: expatriate assignment and equity ownership-level decisions, respectively representing *repetitive* and *quasi-repetitive* decisions. Using these two types of decisions, this essay considered the role of the degree of repetitiveness in the stability and dynamism of decisions and their influence on firm performance.

The findings of the first essay indicated a positive effect on performance for MNEs' spatial consistency across subsidiaries for expatriation (as a repetitive decision), and a negative effect for spatial consistency on equity ownership (as a quasi-repetitive decision). We also observe a positive effect on performance for temporal persistence in expatriation. These findings offer the potential for improving a firm's performance, if it develops decision-making capabilities manifested in decision rules. However, firms need to be wary of the types of decisions that are suitable for the development of decision rules. One important factor is their degree of repetitiveness.

Essay 2 (Chapter 3) drew from the international business and economic geography literatures on location and space to investigate the effect of the spatial evolution of MNEs on decision factors that influence their international strategies. In particular, the decision factor that this essay focused on was international distance. The second and third essays of this dissertation mainly focused on reconceptualizing distance by examining its underlying assumptions and benchmarks for measurement. The second essay focused mainly on establishing the need for a different approach to assess an MNE's distance from a focal host country and provided an empirical illustration of how this novel approach could be utilized in firm-level international business studies. Since the firm-level measures rely on locations of MNEs' subsidiaries, they can potentially evolve as a result of MNEs' evolution in the global space.

Two firm-level measures were theoretically developed in Essays 2 and 3. First, a weighted average distance measure had been already used in prior studies in international business (Baaij & Slangen, 2013; Dai, Eden, & Beamish, 2013; Nachum & Song, 2011; Zhou & Guillén, 2015) in operationalization of concepts such as the liability of foreignness. The distance of the MNE to a focal host country was measured through a weighted average of distance of all locations in the MNE's evolved home-base to the focal subsidiary. The weighted average approach was a kind of aggregation across two levels of analysis (i.e. the MNE and the subsidiary level) that requires theoretical justification. Prior studies have not discussed the theoretical rationale for aggregation, nor had they discussed the levels of analysis of the construct and their interrelationship. Essays 2 and 3 in this dissertation filled this gap by building upon multilevel construct development literature (Hitt, Beamish, Jackson, & Mathieu, 2007; Klein & Kozlowski, 2000). They highlighted the mechanisms and processes through which lower level entities (i.e. subsidiaries) contribute to higher level constructs (i.e. at the MNE level). In the case of the weighted average distance measure, it was assumed that bottom-up emergence processes are *composition*. Here, the assumption is that subsidiaries contributions to the MNE knowledge-base are similar both in *type* and *amount*.

Second, Essays 2 and 3 introduced a novel minimum average distance measure and develop it theoretically as a multi-level construct. Here, unlike the weighted average distance measure, not all subsidiaries of an MNE contribute similarly (in *type* and *amount* of knowledge) to an MNE's knowledge-base. While certain subsidiaries may be disengaged and isolated (Monteiro, Arvidsson, & Birkinshaw, 2008), others are more salient and relevant depending on the decision and the focal host country for which the decision is being made. Therefore, the distance between the most similar location in the MNE's evolved home-base to the focal host country is used. This is based on the assumption that bottom-up emergence processes are *fuzzy compilation* (Klein & Kozlowski, 2000). The average and minimum distance measures were argued to complement each other (rather than substituting for each other).

Essay 3 (Chapter 4) continued the attempt to reconceptualize the concept of distance by bringing in MNE dynamics and evolution. Learning and knowledge-based perspectives

(Kogut & Zander, 1993; Monteiro et al., 2008) and insights from economic geography (Beugelsdijk, McCann, & Mudambi, 2010; Iammarino & McCann, 2013) were incorporated. Similar to Essay 2, it questioned a major assumption in extant approaches to conceptualize distance: that the home country is the main source of knowledge in MNEs' international decisions and activities. It instead argued that as firms internationalize, their sources of knowledge expand to their evolved home-bases (e.g. Zhou & Guillén, 2015), which includes both their original home countries and all foreign locations. Essay 3 then developed two related and complementary MNE-level distance constructs.

Due to the nature of these constructs, which encompass subsidiary levels (lower level) and MNE levels (higher level) of analyses, Essay 3 drew from the multilevel construct development literature (Klein & Kozlowski, 2000). This essay assumed that the process of knowledge creation and accumulation is a bottom-up process, called the emergence process in the multilevel construct literature. The two developed constructs are based on two emergence types (composition and compilation), each with its own assumptions about the amount and type of knowledge contribution by subsidiaries to MNEs' knowledge bases. Finally, to assess the superiority of the new measures vis-à-vis the extant home to host country distance measure, Essay 3 focused on the economic dimension of distance and MNEs' ownership decisions. It used the predictive power of the measures in explaining the ownership strategies of MNEs as a litmus test. The findings of Essay 3 indicate the superiority of the MNE-level approach versus the previous country-level approach.

A summary of the hypothesized relationships in this dissertation is presented in Figure 4. It illustrates the statistically significant results for all the hypotheses as well as the construct with the highest predictive power.

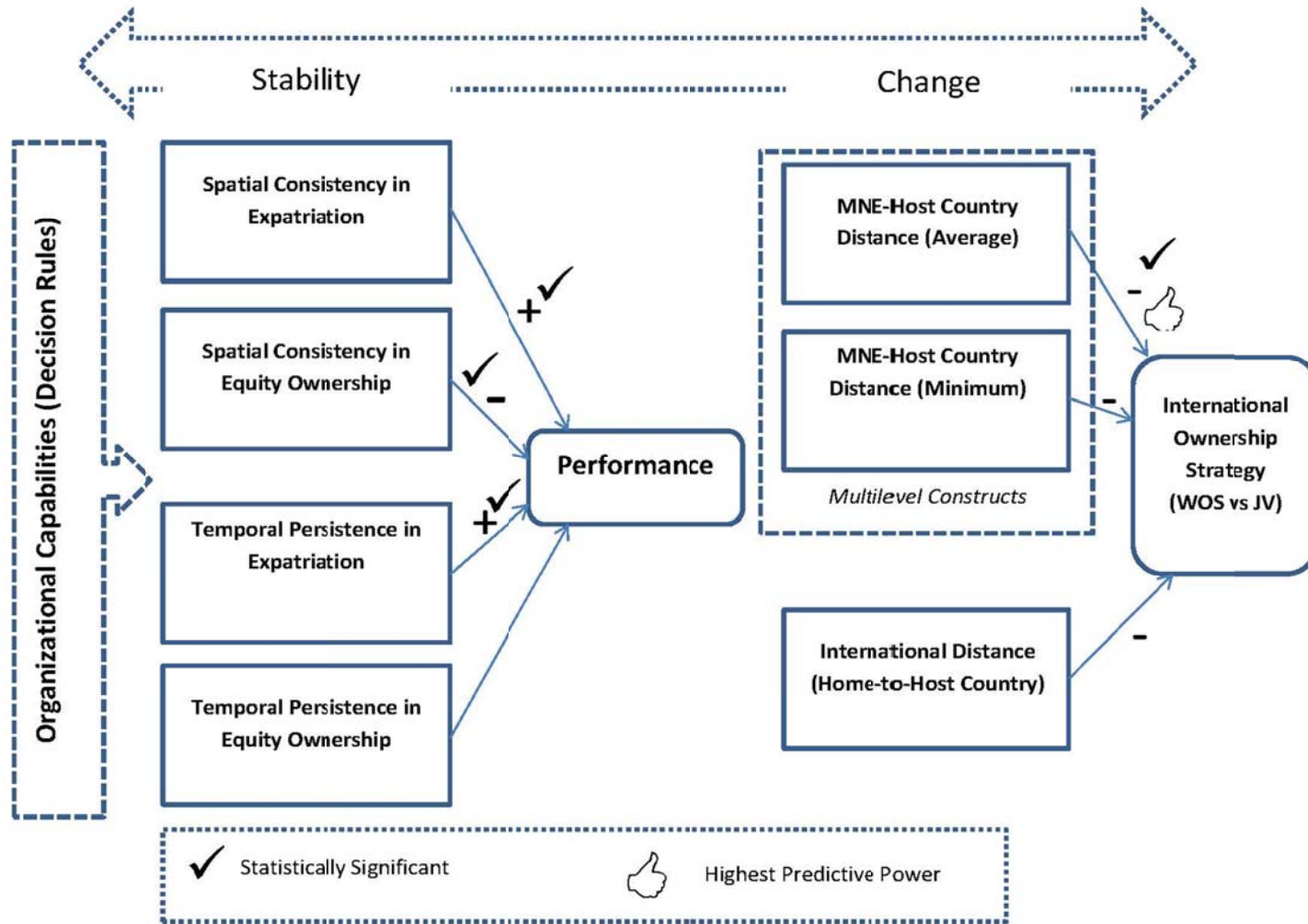


Figure 4 - Summary of Dissertation Hypotheses and Findings

Contributions

Aside from the detailed contributions highlighted in each of the three essays throughout Chapters 2 to 4, the overarching contributions of this dissertation as a whole is summarized along three categories: theoretical, empirical, and methodological. Taken together, these contributions shed light on ways to improve strategizing and better manage the stability and evolution of MNEs in the global space.

Theoretical contributions: From a theoretical perspective, this dissertation extends research in the fields of strategy as simple rules and heuristics (Bingham & Eisenhardt, 2011; Eisenhardt & Sull, 2001), and in international business (Ghemawat, 2001; Zaheer, Schomaker, & Nachum, 2012). First, it has made the first attempt, to the best of our knowledge, to study the application of decision rules in the context of MNEs with activities spread across space and over time. It also links the literature on the use of decision rules in strategy to the importance of the degree of repetitiveness in the dynamic capabilities literature (Winter, 2003). It maintains that the deployment of decision rules in MNEs' expatriation decisions can be beneficial in cases that result in spatial consistency in expatriate allocation (i.e. having the same ratio of expatriates to the number of employees across all subsidiaries). It also suggests that consistent deployment of decision rules in equity ownership decisions across MNEs' subsidiaries can be harmful.

Secondly, this dissertation makes the first attempt to theorize two (multilevel) distance constructs at the MNE level. The theoretical contribution is important in two ways. It makes the construct of distance more akin to the mechanisms through which it impacts managerial decisions in international business. It is built upon recent advances in the literature on distance (Zaheer et al., 2012) and home region (Banalieva & Dhanaraj, 2013) or evolved home-base (Eghbali-Zarch, 2013; Zhou & Guillén, 2015). Further, it results in MNE-level heterogeneity in studies that use distance in their theory and empirical method. Here, distance to a certain foreign location would vary for the firms and MNEs originating from the same home country.

Empirical contributions: This dissertation has helped to resolve some theoretically puzzling relationships by treating them as empirical enquiries. First, Essay 1 suggested that as a result of the deployment of decision rules in repetitive decisions, stability may be attained. It operationalized stability along the time dimension through the development of a construct called *temporal persistence*. The effect of the temporal persistence of MNEs in allocating resources to their subsidiaries, be they repetitively allocated resources such as expatriates or quasi-repetitively allocated resources such as equity, was suggested to be a theoretical puzzle. As such, the relationships were treated through two pairs of competing hypotheses, for each of expatriation and ownership strategies. Empirical findings indicate that temporal persistence in the allocation of repetitive resources such as expatriates helps.

The second empirical contribution of this dissertation pertains to the MNE-level distance constructs that were developed in Essays 2 and 3. Essay 3 in particular argued that the question regarding the superiority of the MNE-level distance constructs vis-à-vis the extant international distance measure was an empirical question. As such, a comparative analysis was presented to assess the predictive validity of the developed constructs. The empirical findings, based on both predictive power (assessed through model fit) and statistical significance, were in favour of the novel MNE-level constructs this dissertation developed.

Methodological contributions: As for the methodological contribution, Essay 1 in this dissertation deployed a novel approach for harnessing the empirical complexity of the spatiotemporal phenomenon it studied: operationalizing the measurement of stability over *time* and *space* dimensions. In the case of MNEs' international activities in particular, the importance of the location and geography of MNEs' activities led to significant results for the space dimension. Analysis of stability over time was similarly important. To analyze these effects independently, it was important to acquire an approach that helped in parsing out the two effects. As such, Essay 1 developed two constructs: *spatial consistency* and *temporal persistence*. Methodologically, this approach can be deployed for studying similar phenomena that have both time and space dimensions.

Limitations and Future Research

Aside from the detailed limitations and directions for future research that were laid out in each of the three essays, this dissertation faces some broader limitations. First, all three essays are based on econometric analyses of a large sample. As such, we had to make some assumptions in order to test my hypotheses. For example, Essay 1 assumed that if a revealed stable pattern of action (Mintzberg, 1978) was observed, it was an indication of the deployment of decision rules that formed a strategy consistent across space and persistent over time. This assumption can be confirmed through future qualitative studies, particularly by interviewing managers.

Second, the introduction of new distance constructs has limitations that open up avenues for future research. The developed measures can be assessed in other contexts such as a different sample or dimension of distance (other than economic distance), and can be assessed for other international strategy elements such as market and partner selection, among others. In fact, the new distance measures this dissertation developed can spark a range of new conversations in IB and be followed up by studies that build upon the contributions of this dissertation.

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Majid Eghbali-Zarch

EDUCATION

- | | | |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| 1- | Ivey Business School (Western University; Formerly: The University of Western Ontario), London, Canada; Ph.D. (<i>International Strategy</i>). | 2015
(Thesis defense date: 15 June 2015) |
| 2- | Sharif University of Technology (Graduate School of Management and Economics), Tehran, Iran. <i>Master of Business Administration (MBA)</i> . | 2008 |
| 3- | Iran University of Science and Technology (IUST), Tehran, Iran. Master of Science in Transportation Engineering . | 1998 |
| 4- | Iran University of Science and Technology (IUST), Tehran, Iran. Bachelor of Science in Civil Engineering . | 1995 |

ACADEMIC APPOINTMENTS

Assistant Professor; Faculty of Business Administration, Memorial University of Newfoundland. Since July 2014

TEACHING EXPERIENCE

- Lecturer;** International Business (IBUS 3100), Schulich School of Business, York University. *Rating: 6.4/7.0*
 • *I re-designed the course from a lecture format to a hybrid format of both Cases and lectures.* Winter 2013
- Guest Lecturer;** Venturing in International Firms, Ivey Business School (*Teaching the Tavaço Co. Case*). Fall 2011 & winter 2012
- Sessional Instructor;** taught 19 courses each made up of 14 classes in three different universities in Iran. 1997-2009

RESEARCH AND PUBLICATION

Refereed Conference Proceedings and Presentations:

- 1- **Eghbali-Zarch, M.** & Beamish, Paul W. (*Essay 1 of my Dissertation*). *Spatial Consistency and Temporal Persistence in MNEs' Repetitive Strategic Resource Allocation Decisions*.
 - Accepted for presentation in the Academy of management conference, Vancouver, 2015; and Academy of International Business Conference, India, 2015.
- 2- **Eghbali-Zarch, M.** & Beamish, Paul W. (*Essay 2 of my Dissertation*). *MNE Dynamics, Distance and the Role of Space and Place in the Organization of MNE's Locations*.
 - Earlier version presented in AJBS and AIB(2013); Winner of Palgrave Macmillan best paper award in AJBS(2013);
 - Accepted for presentation in the Academy of International Business Conference, India, 2015.
- 3- **Eghbali-Zarch, M. (2013)**. *MNE Dynamics, Distance and the Role of Space and Place in the Organization of MNE's Locations: Evidence from Japanese MNEs*. The Association of Japanese Business Studies (AJBS) 26th annual conference, Istanbul, Turkey (**Winner of Palgrave Macmillan Best Paper Award**).
 - I also presented the paper in **AIB-2013 Conference** under the **Special Session for AJBS Best Paper Finalists**.
- 4- **Eghbali-Zarch, M. (2012)**. *'Non-Verbatim' Transfer of Routines Across Borders: The Interplay of Institutional Context and Routine Complexity*. Academy of International Business Conference, Washington DC, USA.
- 5- **Eghbali-Zarch, M. (2010, 2012)**. *The Effect of Past Experience on the Frequency of Future International Acquisitions*. AIB 2012 & ASAC 2010 Conference Proceedings.

Published Case Studies:

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Published in

- Beamish, P. (2012), Cases in Strategic Management. McGraw-Hill Ryerson, 10th edition, P. 413- 425.
- Wang, T. & Schotter, A. (2013), Private Business; in Legal-Business Case Series. The Economy & Management Publishing House, Beijing (in Chinese).

Work In Progress

- 1- **Eghbali-Zarch, M.** & Beamish, Paul W. (*Essay 3 of my Dissertation*). *Distance lies in the eyes of the beholder: The effect of MNE dynamics and evolved home-bases.*
 - *Draft completed. Thesis to be defended on 5 June 2015.*
- 2- **Eghbali-Zarch, M.** *'Non-Verbatim' Transfer of Routines Across Borders: The Interplay of Institutional Context and Routine Complexity.*
 - Presented in AIB(2012); To be submitted to *Organization Science*.
- 3- **Eghbali-Zarch, M.** *The shadow of the past or future? A theory of project joint ventures as temporary organizations.*
 - Data source: SDC Platinum dataset; Data analysis stage.
- 4- **Eghbali-Zarch, M.** (*How much*) *do cities matter in international business?*
 - The proposal for this paper has been accepted for discussion in JIBS paper development workshop in the Academy of International Business Conference, India (June 2015).
 - Data analysis stage.

PROFESSIONAL EXPERIENCE

- 1- Founder, Managing Director and Chair of the board; Tarh-E-Isatis Engineering Consultants Co., 2003-2009, *Tehran, IRAN.*
- 2- Construction and Procurement Manager; Three privately owned and developed residential buildings, *Tehran, IRAN, 2003-2009.*
- 3- Traffic and Transportation Engineer; *Yazd Municipality, IRAN, 1998-2003.*

Services:

- 1- *Reviewer* – ASAC, AIB, AOM (2011-2015).
- 2- *Session Chair* - AIB (2013), AOM (2012), ASAC (2011-2013).
- 3- *Society of Graduate Student Councillor* (2012), Western University; Representing Ivey PhD students.
- 4- *Graduate Education Council member* (2012), Western University; Graduate Student member representing Western University Graduate Students.

Awards:

- 1- *Winner of the Competition for Dean's Strategic Research Grant towards Teaching Remission; Faculty of Business Administration, Memorial University; 2015-2016*
- 2- *Plan for Excellence, PhD; UWO Fellowship; 2009-2012.*
- 3- *International Student Relocation, UWO Bursaries; 2012.*
- 4- *Full Scholarship, Iran University of Science and Technology, 1990 – 1998.*
- 5- *Ranked in Top 0.1% in the MBA Entrance Exam among 15,000 Participants, 2005; Iran.*
- 6- *Ranked in Top 0.1% in the National Universities Entrance Exam among 450,000 Participants, 1999; Iran.*

Affiliations and Memberships:

- 1- Academy of International Business.
- 2- Academy of Management.
- 3- Administrative Science Association of Canada.
- 4- Engaging Emerging Market Research Center (*Ivey Business School*).
- 5- Professional Civil Engineer (*Certified for Design, Supervision, and Construction*), Tehran, Iran; *Since 2000.*

Other:

- 1- **Sports:** Hockey, Soccer, Swimming.
- 2- **Languages:** English (fluent); Persian (native); French (basic); Arabic (intermediate).

References: Available upon request.