ORGANIZATIONAL LEARNING FROM GOAL PERFORMANCE AND ASPIRATIONS: THE IMPACT ON FIRM INTERNATIONAL STRATEGIES AND NATIONAL INNOVATION POLICIES

By

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ABSTRACT

ORGANIZATIONAL LEARNING FROM GOAL PERFORMANCE AND ASPIRATIONS: THE IMPACT ON FIRM INTERNATIONAL STRATEGIES AND NATIONAL INNOVATION POLICIES

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In this three-essay dissertation, I seek to advance the aspiration level learning theory in a variety of organizational decisions in which international business audiences may be interested. In essay 1, I argue that multinational enterprises' (MNEs) aspirations for parent performance may be important for both learning from self-performance and learning from competitors' performance, which in turn influence the likelihood of internalizing and quitting their international joint ventures. The extension of the aspiration level learning theory to interorganizational learning can be considered a novel theoretical attempt and I find some support in a sample of Japanese MNEs. In the remaining two essays, I focus on organizational learning from multiple goals' performance and propose a mechanism of attending to causally related goals that is different from the well-established sequential-attention rule in the literature. I examine the proposed mechanism in MNEs' decisions on divesting foreign subsidiaries in essay 2 and in national governments' decisions on innovation policies in essay 3. I find strong support for the proposed attention mechanism in a sample of Japanese MNEs and a sample of Organization for Economic Co-operation and Development (OECD) countries respectively. Overall, this dissertation makes a number of novel theoretical contributions to the literature on organizational learning. It also broadens our knowledge about when and why MNEs change the

ownership position of their foreign subsidiaries and national governments change their innovation policies.

Copyright by NGAN CHEUNG HUI 2016 This dissertation is dedicated to my parents and sister. Thank you for always supporting me.

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INTRODUCTION

Organizations pursue multiple goals such as profitability, sales, production, inventory, and market share goals (Cyert & March, 1963). Human decision makers, however, are subject to bounded rationality and limited attention capabilities (March & Simon, 1958; Simon, 1947). Accordingly, the aspiration level learning theory proposes a satisficing principle suggesting that organizational decision makers pursue satisfactory goal performance instead of maximizing goal performance (Cyert & March, 1963).¹ That is, organizational decision makers do not explore every possible alternative to maximize goal performance. On the contrary, they tend to maintain the status quo and make changes only if they perceive the goal performance as unsatisfactory. This means that organizational decision makers' attention is problem-oriented.

To determine whether goal performance is satisfactory or not, organizational decision makers employ aspiration levels. Aspiration levels are constructed based on the recent goal performance of the focal organization and/or other similar organizations (Cyert & March, 1963). While aspiration levels are sometimes explicitly stated, they are often implicitly held by decision makers. If goal performance is above aspiration levels (i.e., positive attainment discrepancy), decision makers are satisfied and tend to maintain the status quo. If goal performance is below aspiration levels (i.e., negative attainment discrepancy), on the contrary, unsatisfied decision makers may engage in problemistic search for the causes of and solutions to the performance problems (Cyert & March, 1963; Greve, 2003b; Shinkle, 2012). Such problemistic search is more extensive when attainment discrepancy is more negative (Baum, Rowley, Shipilov, & Chuang, 2005).

Organization and strategy scholars have established the predictive power of the theory in a variety of decision contexts such as R&D investment (e.g., Chen & Miller, 2007; Greve, 2003a), mergers and acquisitions (e.g., Iyer & Miller, 2008; Kim, Finkelstein, & Haleblian, 2015), asset acquisitions (e.g., Desai, 2008; Greve, 2011), and partnership formation (e.g., Baum et al., 2005; Tyler & Caner, 2016). These strategies are found to be consequential for organizational outcomes such as profitability, market share, share values, firm size, survival etc. in other strategy research. Some scholars explicitly examine the impact of learning from goal performance and aspirations on organizational financial outcomes and efficiency. For example, Bowman (1982) and Bromiley (1991) found that firms with negative attainment discrepancy in profitability in general took bad risks that resulted in further decline in profitability. Arrfelt, Wiseman, and Hult (2013), on the other hand, showed that corporate firms tended to overinvest business units with negative attainment discrepancy in profitability and underinvest business units with positive attainment discrepancy in profitability. Given its predictive power and impact, organizational learning from goal performance and aspirations is an important research topic that is worth further investigation (Argote & Greve, 2007; Gavetti, Greve, Levinthal, & Ocasio, 2012; Shinkle, 2012).

In this dissertation, I seek to advance the theory in organizational decision contexts that have received relatively scant attention from behavioral scholars. Firm internationalization is one of them. I therefore study international joint venture (IJV) evolution and foreign divestment in essays 1 and 2 respectively. As the theory was first developed based on observations on business firms, it has not been sufficiently extended to other types of organizations. I therefore examine national government decisions on innovation policies in essay 3.

I also realize the theory has only been applied in learning from self-performance (i.e., the concept of attainment discrepancy). In essay 1, I first examine the impact of negative attainment discrepancy in parent profitability on IJV buyout and exit. Then, I propose that aspiration levels, defined as the minimum level that would be deemed satisfactory (Schneider, 1992; 1053), may be used to evaluate major competitors' performance as well. Such evaluation may help the focal multinational enterprise (MNE) to interpret competitors' subsidiary performance and identify generalizable opportunities and threats, which may in turn influence the likelihood of IJV buyout and exit. Overall, this essay investigates the roles of aspiration levels in learning from self-performance and competitors' performance and the impact of the two types of learning on IJV evolution.

The extant literature also largely focuses on learning from one goal, although organizations pursue multiple goals (Gavetti et al., 2012; Shinkle, 2012). There is a dominant rule of attending to multiple goals in the literature—the sequential-attention rule proposed by Cyert & March (1963) and later validated by Greve (2008). This rule suggests that decision makers attend to a goal at a time and move on to another goal when the previous one's performance is above the aspiration level. The primary assumption here is that goals compete for scarce resources and decision makers' attention. I argue that this rule may not be applicable to the relationship between causally related goals because their relationship may be more complementary than competing. Therefore, I examine the interplay between profitability and sales goals held by MNEs and its impact on foreign divestment in essay 2. I also look into the interplay among national innovation goals, national private R&D goals, and national public R&D goals held by national governments and its impact on national innovation policies in essay 3. The analysis results show that the well-established sequential-attention rule may not be applicable to

the interaction among causally related goals. I theorize another mechanism of attending to causally related goals in essays 2 and 3.

The order of the three essays presented in this dissertation is based on the number of goals examined in each essay. Essay 1 examines one goal (i.e., parent profitability goal), essay 2 examines two goals (i.e., parent profitability and sales goals), and essay 3 examines three goals (i.e., national innovation goals, national private R&D goals, and national public R&D goals). In addition to the purpose of studying organizational learning from goal performance and aspirations, another commonality among the three essays is that they may arouse the interest of international business audiences. IJV buyout and exit and foreign divestment are common and significant strategies conducted by most MNEs. National innovation policies also determine the international competitiveness of firms from a country (Porter, 1990) and the location choices of foreign direct investment made by MNEs (Dunning, 1998; Teece, 1992). Hence, this dissertation may attract the attention and interest of audiences from the fields of organization, strategy, and international business. I now turn to present the three essays. I will make conclusions in the end.

NOTES

NOTES

¹ I adopt the name of "the aspiration level learning theory" from Greve (1998). I realize that other scholars may call the same theory "performance feedback theory" or "the behavioral theory of the firm". The name of "Performance feedback theory" may mislead readers to focus on learning from own performance only. Therefore, this name may not be the best fit for my dissertation in which I extend the theory to inter-organizational learning. The name of "the behavioral theory of the firm" is also too broad and is not specific to learning from goal performance and aspirations. Therefore, I adopt the name of "the aspiration level learning theory" that is specific enough but does not mislead readers. REFERENCES

REFERENCES

- Argote, L. & Greve, H. R. 2007. A behavioral theory of the firm-40 years and counting: Introduction and impact. *Organization Science*, 18(3): 337-349.
- Arrfelt, M., Wiseman, R., & Hult, G. T. M. 2013. Looking backward instead of forward: aspiration-driven influences on the efficiency of the capital allocation process. *Academy* of Management Journal, 56(4): 1081-1103.
- Baum, J. A., Rowley, T. J., Shipilov, A. V., & Chuang, Y.-T. 2005. Dancing with strangers: Aspiration performance and the search for underwriting syndicate partners. *Administrative Science Quarterly*, 50(4): 536-575.

Bowman, E. H. 1982. Risk seeking by troubled firms. *Sloan Management Review*, 23(4): 33-42.

- Bromiley, P. 1991. Testing a Causal Model of Corporate Risk Taking and Performance. *Academy of Management Journal*, 34(1): 37-37.
- Chen, W. R. & Miller, K. D. 2007. Situational and institutional determinants of firms' R&D search intensity. *Strategic Management Journal*, 28(4): 369-381.
- Cyert, R. M., & March, J. G. 1963. *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice-Hall.
- Desai, V. M. 2008. Constrained growth: How experience, legitimacy, and age influence risk taking in organizations. *Organization Science*, 19(4): 594-608.
- Dunning, J. H. 1998. Location and the multinational enterprise: a neglected factor? *Journal of International Business Studies*, 29(1): 45-66.
- Gavetti, G., Greve, H. R., Levinthal, D. A., & Ocasio, W. 2012. The behavioral theory of the firm: Assessment and prospects. *The Academy of Management Annals*, 6(1): 1-40.
- Greve, H. R. 1998. Performance, aspirations, and risky organizational change. *Administrative Science Quarterly*, 43(1): 58-86.
- Greve, H. R. 2003a. A behavioral theory of R&D expenditures and innovations: Evidence from shipbuilding. *Academy of Management Journal*, 46(6): 685-702.

- Greve, H. R. 2003b. *Organizational learning from performance feedback: A behavioral perspective on innovation and change*. Cambridge: Cambridge University Press.
- Greve, H. R. 2008. A behavioral theory of firm growth: Sequential attention to size and performance goals. *Academy of Management Journal*, 51(3): 476-494.
- Greve, H. R. 2011. Positional rigidity: low performance and resource acquisition in large and small firms. *Strategic Management Journal*, 32(1): 103-114.
- Kim, J.-Y. J., Finkelstein, S., & Haleblian, J. J. 2015. All aspirations are not created equal: the differential effects of historical and social aspirations on acquisition behavior. *Academy* of *Management Journal*, 58(5): 1361-1388.
- March, J. G., & Simon, H. 1958. Organizations. New York: Wiley.
- Porter, M. E. 1990. The competitiveness advantage of nations. New York: Free Press.
- Schneider, S. L. 1992. Framing and conflict: Aspiration level contingency, the status quo, and current theories of risky choice. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 18(5): 1040-1057.
- Shinkle, G. A. 2012. Organizational Aspirations, Reference Points, and Goals Building on the Past and Aiming for the Future. *Journal of Management*, 38(1): 415-455.
- Simon, H. A. 1947. Administrative behavior. New York: Free Press.
- Teece, D. J. 1992. Foreign investment and technological development in Silicon Valley. *California Management Review*, 34(2): 88-106.
- Tyler, B. B. & Caner, T. 2016. New product introductions below aspirations, slack and R&D alliances: A behavioral perspective. *Strategic Management Journal*, 37(5): 896-910.

CHAPTER 1

ESSAY 1: INTERNALIZING, QUITTING, OR STAYING IN AN INTERNATIONAL JOINT VENTURE? THE ROLES OF MULTINATIONAL ENTERPRISES' ASPIRATIONS FOR PARENT PERFORMANCE

ABSTRACT

This study extends the aspiration level learning theory to the international joint venture (IJV) literature by testing the roles of Japanese manufacturing multinational enterprises' (MNE) aspirations for parent performance in IJV buyout and exit. Consistent with prior studies, I first focus on organizational learning from own performance feedback. The analysis results show that when parent performance declines below aspiration levels, Japanese MNEs, on average, are more likely to internalize or quit an IJV (as opposed to staying). I next make a novel extension of the theory to inter-organizational learning. I suggest that a larger number of positive subsidiary performances reported by major competitors with parent performance below the focal MNE's aspirations are more likely related to perceived external opportunities, whereas a larger number of negative subsidiary performances reported by major competitors with parent performances above the focal MNE's aspirations are more likely related to perceived external threats. The analysis results reveal that the larger the number of positive subsidiary performances reported by major competitors with parent performance below the focal MNE's aspirations, the lower the likelihood of the focal MNE quitting as opposed to staying in an IJV in the same country. Collectively, I conclude that aspirations for parent performance play nontrivial roles in IJV evolution.

INTRODUCTION

Joint venture is one of the major entry modes adopted by multinational enterprises (MNEs) when they enter foreign markets. However, many international joint ventures (IJVs) have experienced different kinds of instability, ranging from change of bargaining power, renegotiation of contract terms, and termination of the entire venture (Franko, 1971; Hennart, Roehl, & Zietlow, 1999; Kogut, 1988; Reuer & Ariño, 2002; Yan & Zeng, 1999). IJV evolution has thus been drawing substantial scholars' attention in the international business (IB) literature. One research line investigates the determinants of the survival of IJVs, and it conceptualizes and measures the dissolution of IJVs by aggregating all forms of termination (e.g., Barkema, Shenkar, Vermeulen, & Bell, 1997; Hennart & Zeng, 2002). Nevertheless, when an MNE finds that staying in the IJV is no longer an optimal strategic choice, it can opt for either buyout or exit. The former refers to internalizing the IJV into a wholly owned subsidiary by acquiring other partners' ownership stakes, whereas the latter refers to quitting the IJV through selling all equity shares to other organizations or liquidating the IJV. The MNE is likely to have different concerns over the two strategic alternatives that have distinct implications for firm size, structure, strategy, performance, and shareholders' value (Meschi, 2005; Reuer & Miller, 1997; Reuer, 2000, 2002). IJV survival studies that do not distinguish between buyout and exit, therefore, shed little light on when and why a specific MNE decides to initiate buyout or exit.

Several scholars focused on IJV exit only and sought to identify its antecedents (e.g., Dhanaraj & Beamish, 2004; Lu & Beamish, 2006; Lu & Xu, 2006). Relatively, the determinants of IJV buyout are not well understood (Puck, Holtbrügge, & Mohr, 2009). Further, past studies that distinguish between IJV buyout and exit have examined them in piecemeal fashion, and no study, to the best of my knowledge, has examined them together in the same research setting. If both buyout and exit are alternatives considered by a parent that decides not to stay in the IJV, studying them simultaneously in a single research setting can reflect the actual decision making process more precisely.

Addressing this issue, the present study considers both buyout and exit as the alternatives of staying in an IJV. I primarily draw on the aspiration level learning theory (Cyert & March, 1963; Greve, 2003b; Shinkle, 2012) to examine the effects of an MNE's aspirations for parent performance on the likelihood of its internalizing or quitting as compared to staying in an IJV. The aspiration level learning theory suggests that when attainment discrepancy is more negative (i.e., performance is further below aspiration levels), an MNE may make strategic changes (Greve, 1998; Labianca, Fairbank, Andrevski, & Parzen, 2009; Lant & Mezias, 1992). I argue that the value of an IJV to the focal MNE may change following such strategic changes, enhancing the likelihood of the focal MNE internalizing or quitting as opposed to staying in the IJV.

In addition, prior research in this literature largely focused on the concept of attainment discrepancy—the gap between an organization's aspiration levels and its own performance. I, however, suggest that organizational decision makers may make comparison between their own aspiration levels and competitors' performance too. By definition, aspiration levels are "the smallest outcome that would be deemed satisfactory by the decision maker" (Schneider, 1992: 1053). I suggest that they can also serve as reference points for decision makers to categorize competitors into relatively successful ones with satisfactory parent performance and relatively unsuccessful ones with unsatisfactory parent performance, and such categorization can facilitate learning from competitors' *subsidiary* performance in host countries.

More specifically, I argue that a larger number of positive subsidiary performances reported by major competitors with parent performance below the focal MNE's aspirations may signal external opportunities that can be generalized to the focal MNE's IJV in the same country. As a result, the likelihood of the focal MNE internalizing as compared to staying in the IJV may increase, whereas the likelihood of its quitting as compared to staying in the IJV may decrease. On the contrary, a larger number of negative subsidiary performances reported by major competitors with parent performance above the focal MNE's aspirations may signal hostile and challenging environments. Consequently, the likelihood of the focal MNE internalizing as compared to staying in the IJV may decrease, whereas the likelihood of its quitting as the likelihood of its quitting as compared to staying in the IJV may decrease.

I test my predictions about when and why an MNE internalize and quit as opposed to stay in an IJV with data concerning Japanese manufacturing MNEs' IJVs. I seek to make three major theoretical contributions. First, to the IB literature, I develop theory on how an MNE's aspirations for parent performance affect the likelihood of its internalizing or quitting as opposed to staying in an IJV. Such theory is important because we especially know little about when and why an MNE internalizes its IJVs. Theorizing and testing buyout and exit simultaneously also reflects the organizational decision making process more accurately, given that both are available options at the time of terminating an IJV. Second, IB research suggests that MNEs adjust their foreign direct investment (FDI) strategies based on the FDI performance of their major competitors, especially those from the same home country and industry (Hsieh, Tsai, & Chen, 2015; Li, Yang, & Yue, 2007; Lu, 2002). My study extends this research line by theorizing and testing the roles of organizational aspirations in such inter-organizational learning. Third, while past research on the aspiration level learning theory largely focused on the idea of attainment

discrepancy in own performance, I am the first to theorize that an organization may adopt aspiration levels as reference points to evaluate competitors' performance. By suggesting another role of aspiration levels in organizational decision making processes, my novel theory may inspire future research on the impact of organizational aspirations.

LITERATURE REVIEW

IJV Nature

I begin by briefly discussing IJV nature that is relevant to the development of my theory about IJV buyout and exit. I define an IJV as a joint venture with at least one parent firm being headquartered outside the joint venture's country of operation (Geringer & Hebert, 1989). Although I acknowledge that many IB studies focused on joint ventures with at least one MNE and one local partner, I adopt the definition of Geringer and Hebert (1989) because a nontrivial number of overseas joint ventures are owned by MNEs only (Makino & Beamish, 1998).

IJVs feature collaboration due to the presence of multiple parents. Parents share financial capital, human capital, technology, marketing knowhow, and other resources and capabilities throughout the lifecycle of IJVs. The resultant lower level of resource commitment reduces the risk and uncertainty faced by MNEs in international markets where they usually do not have adequate market knowledge and legitimacy (Zaheer, 1995). The complementarity of parents' capabilities and resources also provides each parent with opportunities to achieve outcomes that could not be effectively and efficiently achieved on its own (Buckley & Casson, 1996). For example, MNEs can benefit from local partners' market knowledge and legitimacy, whereas local partners can benefit from MNEs' superior resources such as technological and marketing skills. Sharing ownership, by definition, means that no single partner obtains complete control

over the IJV's strategies and decision making processes (Anderson & Gatignon, 1986; Geringer & Hebert, 1989). Evidence confirms that it may be difficult for a parent to exert effective control over an IJV, even in the case of a majority ownership position (Geringer & Hebert, 1989; Stopford & Wells, 1972). However, sufficient and effective control over an IJV is critical for a parent to coordinate its activities, utilize its resources, and ultimately achieve its goals. Besides, partners share accounting profits and other returns such as patents and trademarks generated by the IJV. In summary, IJVs, particularly compared to wholly owned subsidiaries, are associated with lower risk, uncertainty, control, and potential returns, holding other things constant.

IJV Buyout and Exit

I next briefly review empirical findings concerning the determinants of a specific MNE initiating IJV buyout or exit (as opposed to staying). The purposes of such review, which is not exhaustive, are to facilitate the development of my theory, and to show that my study is unique from past studies and thus able to advance the literature. As mentioned earlier, a large body of the IB literature focuses on the stability or survival of IJVs per se and does not distinguish between buyout and exit in conceptualizing or measuring IJV dissolution. I exclude these studies because they are less relevant to my research question — when and why a *specific* partner initiates the buyout or exit as opposed to staying.

Although IJV buyout has been being a popular strategic phenomenon (Franko, 1971; Hennart et al., 1999; Reuer & Miller, 1997), it is surprising that scant empirical effort has been made thus far to answer when and why a specific MNE internalizes its IJVs (Puck et al., 2009). An exception is the study of Puck et al. (2009) that drew on transaction cost theory and institutional theory. Their findings showed that an MNE was more likely to convert an IJV into a

wholly owned subsidiary when (1) it gained sufficient local knowledge so that the value of local partners' knowledge decreased, (2) uncertainty inherent in host country environments decreased, (3) its internal isomorphic pressure favoring the adoption of wholly owned subsidiaries increased, and (4) the perceived complexity of regulations in the host countries decreased.

There has been relatively more, though still limited, empirical effort addressing when and why a specific MNE quits an IJV. Prior research suggests that host country environments matter. For example, greater institutional distance between the home country and host country may pose greater challenge for an MNE to adapt to the host country environments and hence increase the probability of its quitting an IJV (Gaur & Lu, 2007). The difficulty in managing uncertain and risky host country environments makes partnership strategy also important. Partnering with large local firm may increase the legitimacy of an IJV and reduce the likelihood of an MNE quitting the IJV due to business failure (Lu & Xu, 2006). Using a sample of small- and medium-sized MNEs, however, Lu and Beamish (2006) found that partnering with local firms, as opposed to other MNEs, increased the probability of the focal MNE quitting the IJV. Their argument was that the value of partnering with local firms dissipated once the MNE obtained sufficient local knowledge over time. They instead found that an MNE was less likely to quit an IJV in which there were large partners from the same home country. They argued that large home country partners provided legitimacy and resources to avoid the IJV's failure.

Findings regarding MNEs' host country experience provide further support that IJVs are often strategic tools for MNEs to learn from local partners. Lu and Beamish (2006) and Gaur and Lu (2007) found that greater host country experience increased the likelihood of an MNE quitting an IJV. They explained that it took shorter time for an MNE with greater host country experience to absorb local partner's market knowledge. This reasoning is further supported by

the findings that an MNE's host country experience strengthened the positive relationship between partnering with local firms as opposed to other MNEs and the probability of the focal MNE quitting the IJV (Lu & Beamish, 2006). Besides, prior research shows that a higher level of ownership stake and the resultant higher level of control reduce the likelihood of an MNE quitting an IJV (Dhanaraj & Beamish, 2004; Gaur & Lu, 2007). Such control is important to align the IJV's strategies with the MNE's goals and to resolve conflict with other partners.

Taken together, past research confirms that forming IJVs is a strategy for MNEs to absorb partners' knowledge, resources, and legitimacy, and ultimately to reduce perceived risk and uncertainty of operating in international markets. Once the perceived risk and uncertainty decrease to an acceptable level, MNEs may internalize or quit IJVs. In additional, when MNEs intend to seek greater control (e.g., due to greater internal isomorphism or greater conflicts with partners), they are more likely to internalize or quit IJVs too. Nevertheless, the literature on the determinants of a specific MNE initiating buyout or exit is still far from maturity. In particular, the determinants of IJV buyout are not well understood (Puck et al., 2009). Scholars have also studied IJV buyout and exit in piecemeal fashion rather than considering both as the alternatives of staying in an IJV in a single study. Furthermore, although the roles of organizational aspirations have been extensively theorized and tested in other strategy contexts such as R&D investment (e.g., Greve, 2003a) and acquisitions (e.g., Iyer & Miller, 2008), we do not know much about them in IJV evolution.

THEORY AND HYPOTHESES

Aspiration Levels for Parent Performance and Attainment Discrepancy

An aspiration level is defined as "the smallest outcome that would be deemed satisfactory by the decision maker" (Schneider, 1992: 1053). It may be developed based on the recent outcomes of the focal organization and/or peer organizations. As such, it is likely to vary across organizations and over time. This study focuses on MNEs' aspiration levels for parent performance, which comprises the performances of its headquarters, subsidiaries in the home country, and foreign subsidiaries.

The aspiration level learning theory proposes that instead of adopting a maximization principle, boundedly rational decision makers use aspiration levels as reference points to identify the boundary of success and failure for parent performance (Cyert & March, 1963; Shinkle, 2012). The difference between parent performance and an aspiration level is attainment discrepancy (Lant & Montgomery, 1987; Lant, 1992). When there is positive attainment discrepancy (i.e., parent performance is above an aspiration level), MNE decision makers are satisfied and seek to maintain the status quo. When there is negative attainment discrepancy (i.e., parent performance is below an aspiration level), however, MNE decision makers are unsatisfied with the parent performance and hence render problemistic search for performance solutions (Cyert & March, 1963; Greve, 2003b). Problemistic search becomes more extensive when negative attainment discrepancy is greater (Baum, Rowley, Shipilov, & Chuang, 2005; Shinkle, 2012). Scholars have shown that more negative attainment discrepancy in organizational performance led to greater R&D investment (Greve, 2003a), capital investment (Arrfelt, Wiseman, & Hult, 2013), new FDI (Lin, 2014), partnership formation (Baum et al., 2005),

divestiture (Desai, 2016), etc. In the present study, I argue that more negative attainment discrepancy in parent performance may increase the likelihood of an MNE internalizing or quitting as opposed to staying in an IJV.

There are at least two reasons to expect that an MNE with more negative attainment discrepancy in parent performance may be more likely to internalize an IJV (as compared to staying). First, it is more likely to engage in strategic changes. Prior research has shown that negative attainment discrepancy may signal that the existing firm capabilities and resources are not optimal and therefore, strategic changes are often turnaround strategies resulting from problemistic search (Greve, 2003b; Labianca et al., 2009; Lant & Mezias, 1992). For example, Greve (1998) found that radio stations with more negative attainment discrepancy in audience share were more likely to undertake costly and risky format change. Labianca et al. (2009), on the other hand, found that accredited business schools with more negative attainment discrepancy in revenue per faculty member were more likely to undertake radical changes in areas such as program offerings and faculty quality.

The value of an IJV to the MNE depends on the extent to which the MNE can achieve its goals and objectives through the complementarity between the assets of the IJV and those of the MNE (Buckely & Casson, 1996, 1998; Chi, 2000). If the MNE conducts strategic changes due to negative attainment discrepancy in parent performance, however, the value of the IJV to the MNE may change (Chi, 2000; Franko, 1971; Reuer & Ariño, 2002). Sometimes the IJV can become more financially or strategically important to the MNE with new strategies. For example, an MNE may form an IJV with another firm to develop a new technology that can be applied to some current products. If the focal MNE later initiates strategic changes that make those products become the primary drivers of future organizational performance, the IJV, together with

the technology, will be more financially or strategically important to the MNE. In such case, the MNE may no longer want to share the IJV outcomes with the other firm that could be a major competitor in the future. It may also prefer to maintain a higher level of control over the IJV's operation and strategies because the IJV's failure is more costly to the MNE now (Staw, Sandelands, & Dutton, 1981). These all motivate the MNE to internalize the IJV by acquiring ownership stakes from other partners, provided that the IJV's new value is greater than the acquisition price.

Second, while internalizing an IJV enables an MNE to have greater control and potential returns, it comes with greater risk and uncertainty because the MNE has to make greater resource commitment and assume greater managerial responsibility (Anderson & Gatignon, 1986). Sometimes an MNE may prefer a 'wait-and-see' approach and stay in an IJV until uncertainty is resolved or significant market cues emerge, even though the buyout decision could be currently justified as well (Buckely & Casson, 1998; Kogut, 1991). Research on the aspiration level learning theory reveals that managers of organizations with more negative attainment discrepancy are desperate to improve performance to avoid organizational failure or managerial dismissal. As a result, they are more willing to take risk and commit resources to new strategic actions (Greve, 2003a, 2003b; Miller & Bromiley, 1990). These findings suggest that an MNE with more negative attainment discrepancy in parent performance may be more willing to assume greater risk and uncertainty associated with internalizing an IJV.

Given greater strategic changes and willingness to take risk following more negative attainment discrepancy in an MNE's parent performance, all else being equal, I hypothesize:

Hypothesis 1. The greater the negative attainment discrepancy in the focal MNE's parent performance, the greater the likelihood of that MNE internalizing an IJV (as opposed to staying).

There are also two reasons to expect that an MNE with more negative attainment discrepancy in parent performance may be more likely to quit an IJV (as compared to staying). First, in some cases, an IJV may become less financially or strategically important owing to strategic changes resulting from problemistic search (Chi, 2000; Franko, 1971; Reuer & Ariño, 2002). In the previous IJV example about developing a new technology for some products of an MNE, the IJV value to the MNE may decay if problemistic search of the MNE results in abandoning those products or changing product attributes that require another new technology. In such cases, the MNE may be better off quitting the IJV (as compared to staying).

Second, quitting an IJV is risky in the sense that it is a costly-to-reverse decision (Damaraju, Barney, & Makhija, 2015). The MNE may lose opportunities to benefit from future favorable environments, or from assets developed by the IJV that may turn out to be very valuable. If staying in an IJV does not require additional capital investment, an MNE may prefer to adopt the 'wait-and-see' approach even though the performance or prospect of the IJV is currently poorer than expected (Kogut, 1991). Even if an MNE starts to divest their ownership stakes, it may still prefer staged divestment to complete divestment so that it can reacquire the ownership stakes at lower costs if the performance or prospect of the IJV recovers (Damaraju et al., 2015). However, I argue that these may not apply to an MNE with negative attainment discrepancy in parent performance. Prior research on the aspiration level learning theory has reported evidence that organizations with more negative attainment discrepancy were less tolerant of business units with poor performance or prospect and more determined to engage in

divestiture in order to improve organizational performance in a timely manner (Desai, 2016; Shimizu, 2007). The funds from selling ownership stakes of an IJV are also particularly important for the MNE with negative attainment discrepancy in parent performance to undertake other strategic changes for improving performance. Consequently, I suggest that compared to MNEs with less negative attainment discrepancy in parent performance, an MNE with more negative one is more determined to quit an IJV (as opposed to staying), holding other things constant.

Given greater strategic changes and determination to quit an IJV following more negative attainment discrepancy in an MNE's parent performance, I predict:

Hypothesis 2. The greater the negative attainment discrepancy in the focal MNE's parent performance, the greater the likelihood of that MNE quitting an IJV (as opposed to staying).

Aspiration Levels for Parent Performance and Inter-organizational Learning

As discussed in the literature review section, uncertainty regarding host country markets is one of the reasons why an MNE forms an IJV in the first place (Buckely & Casson, 1998; Li & Li, 2010), and an MNE may internalize or quit an IJV if the uncertainty decreases to an acceptable level (Kogut, 1991; Lu & Beamish, 2006; Puck et al., 2009). IB research suggests that learning from peer organizations can provide further evidence in addition to the information obtained by an MNE regarding the market cues and prospect of the host country market. Such inter-organizational learning can therefore help MNEs to resolve uncertainty, thereby influencing their FDI decisions such as location choice (e.g., Henisz & Delios, 2001), entry mode (e.g., Li et al., 2007; Lu, 2002), and escalation of commitment (e.g., Hsieh et al., 2015). However, scholars

have not been extended inter-organizational learning to IJV buyout or exit. I seek to address this issue. Consistent with the rest of the present study, I emphasize the roles of an MNE's aspirations for parent performance in such inter-organizational learning.

Although the IB literature suggests that an MNE may learn from a variety of peer organizations, I focus on those from the same home country and industry as the reference group for learning because of the following reasons. First, they share more identify dimensions (i.e., country of origin and industry type) and thus face similar institutional pressures in host countries (Li et al., 2007). Second, the home country environments impose constraints or leave an imprint on their strategies and decision making, making them similar to each other. In addition, they are direct competitors in both the home country and host countries and hence tend to regard each other as the reference for inter-organizational learning (Hsieh et al., 2015). As a result, I refer an MNE's major competitors to other MNEs from the same home country and industry in this study. This approach is consistent with many past studies (e.g., Henisz & Delios, 2001; Hsieh et al., 2015; Lu, 2002).

The present study focuses on one type of inter-organizational learning—learning from major competitors' performance, or outcome-based imitation called by Haunschild and Miner (1997). Prior research suggests that organizations may rely on such learning to make sense of uncertain environments and predict their future performance. For instance, peer organizations' positive performance concerning a strategy may signal that the environments are favorable or the strategy is effective, leading the focal organization to expect positive outcomes by taking the same action. Peer organizations' negative performance concerning a strategy, on the contrary, may signal that the environments are hostile or the strategy is ineffective, thereby discouraging the focal organization from implementing the same strategy (Chuang & Baum, 2003; Hsieh et al.,

2015). Scholars have reported the evidence of such learning in a variety of contexts, including strike imitation in French coal mines (Conell & Cohn, 1995) and investment bank choices by U.S. firms (Haunschild & Miner, 1997). Extending outcome-based imitation to the IB context, Lu (2002) demonstrated that major competitors' positive performance regarding an entry mode increased a Japanese MNE's propensity to use the same entry mode in the same host country. Of particular relevance to my study is Hsieh et al.'s (2015) work. They demonstrated that the focal Taiwanese MNE tended to expect subsidiary performance comparable to the majority of its major competitors' in the same host country and use such expectation to justify escalation of commitment. Collectively, prior research on outcome-based learning consistently provided support for the notion that organizations tend to expect outcomes comparable to the majority of their peer organizations', even though this is likely an imperfect and naïve expectation.

Building upon this notion, one would predict that the focal MNE may expect to obtain subsidiary performance comparable to the majority of its major competitors' in the same host country, and it may adjust the expected value or prospect of its IJV based on such prediction, making the IJV more unstable (Chi, 2000; Kogut, 1991). Nonetheless, Hsieh et al. (2015) delivered a more important insight that a subset of major competitors' subsidiary performance might be more related to the prospect of the focal MNE's IJV in the same host country. More specifically, they argued that firm size was an indicator of a firm's resource endowment that determines the chance of success in host countries. If smaller major competitors obtained positive subsidiary performance, an MNE with a larger firm size and greater resource endowment tended to believe that it would obtain the same (or even better) performance in the same market. If larger major competitors obtained negative subsidiary performance, however, an MNE with a smaller firm size and less resource endowment was inclined to believe that it would

only obtain the same (or even worse) performance in the same market. All in all, Hsieh et al. (2015) suggested that categorizing major competitors according to firm size could help the focal MNE to better interpret their subsidiary performance and assess the chance of obtaining comparable subsidiary performance in the same market.

In the present study, I propose an MNE may use another approach to categorize major competitors in making sense of their subsidiary performance. More specifically, I argue that the focal MNE may classify major competitors by their *parent* performance relative to its own aspiration levels. This argument builds upon past research suggesting that firms may categorize competitors into successful and unsuccessful ones in inter-organizational learning processes (e.g., Haunschild & Miner, 1997; Lu, 2002; Srinivasan, Haunschild, & Grewal, 2007). Scholars, however, did not discuss how a firm evaluates competitors' success from a theoretical perspective and therefore employed a variety of definitions and measurements across studies. I fill this gap by drawing on the aspiration level learning theory and suggest that aspiration levels may be reference points for the focal MNE to evaluate major competitors' parent performance.¹

Although no study, to the best of my knowledge, has explicitly suggested that aspiration levels could be the reference points to evaluate other organizations' performance, a case of product quality aspirations may help illustrate the plausibility of my argument. Rhee (2009) suggested that firms maintained aspiration levels for product quality and negative attainment discrepancy in product quality would motivate firms to reduce the defection rate. In the 2014 annual report of Under Armour, the firm stated that:

In order to maintain consistent quality and performance, we pre-approve all products manufactured and sold by our licensees, and our quality assurance team strives to ensure that the products meet the same quality and compliance standards as the products that we sell directly. (Under Armour, 2015: 4)
The quality and compliance standards here appear consistent with the concept of aspiration levels because failing to meet those standards would be deemed unsatisfactory by Under Armour. And, Under Armour applied the same quality and compliance standards to evaluate its own and licensees' production performance. This example provides some evidence that organizations may use their aspiration levels to evaluate their own and other organizations' performance.

Given that an aspiration level is defined as the minimum level that would be deemed satisfactory by the focal MNE (Schneider, 1992), I argue that the focal MNE tends to consider major competitors with parent performance above its aspiration levels relatively successful. It is because their parent performance is perceived satisfactory. Conversely, the focal MNE tends to consider major competitors with parent performance below its aspiration levels relatively unsuccessful in that the below-aspiration parent performance is perceived as a problem signal that may urge for strategic changes (Cyert & March, 1963; Greve, 1998, 2003b).²

Now, I turn to discuss how categorizing major competitors according to aspiration levels may be useful for the focal MNE to assess the prospect of its IJV in the same market. A major competitor's subsidiary performance may be due to external causes such as market conditions and legitimacy in the host country, or internal causes such as capabilities and resources, or both. External opportunities and threats are more generalizable to the focal MNE's IJV and thus more likely to influence its value or prospect. The degree to which the focal MNE attributes major competitors' subsidiary performances to external causes, therefore, may be important for assessing the prospect of its IJV and making decisions on IJV buyout or exit. Here, I adopt Kelley (1971)'s discounting principle concerning social attribution for explaining how MNEs may attribute major competitors' subsidiary performance. This principle suggests that

when there are more potential internal causes, the roles of potential external causes will be judged less by decision makers, vice versa.

Ideally, the focal MNE would also use its aspiration levels to evaluate a major competitor's subsidiary performance and consider it satisfactory or not. However, unconsolidated financial reports of major competitors' subsidiary profitability are seldom available to the focal MNE. Generally, the focal MNE can at most have access to relatively coarse measures, such as whether it is positive or negative, through a third party such as database companies and consulting firms. Without fine-grained measures, the use of aspiration levels to evaluate major competitors' subsidiary performance is difficult and rare. Therefore, I follow past studies (e.g., Hsieh et al., 2015; Lu, 2002) and propose that the focal MNE may be most concerned about whether a major competitor's subsidiary performance is positive or negative.

As a major competitor's all business units are consistently subject to its internal strengths and weaknesses, one would expect such internal factors to deliver a certain level of performance consistency among business units. It follows that internal factors also bring at least some consistency between a subsidiary performance and parent performance, given that the latter is an aggregate of all business units' performance. If a major competitor with parent performance above the focal MNE's aspiration levels reports positive subsidiary performance (i.e., parent and subsidiary performances are relatively consistent), there should be more potential internal factors such as the competitor's superior capabilities and resources for the focal MNE to attribute the positive subsidiary performance. On the other hand, if a major competitor with parent performance below the focal MNE's aspiration levels reports positive subsidiary performance (i.e., parent and subsidiary performances are relatively inconsistent), there should be fewer plausible internal causes. Accordingly, the discounting principle implies that the focal MNE

tends to attribute positive subsidiary performance of the latter rather than that of the former to external opportunities such as growing markets and improved FDI legitimacy (Kelley, 1971). Consistently, strategy scholars also suggest that environmental munificence is more beneficial to firms with inferior internal resources (Sirmon, Hitt, & Ireland, 2007). Undoubtedly, there could be alternative explanations such as luck and different emphases on different markets for a single case of positive subsidiary performance by the latter. However, the cue of external opportunities perceived by the focal MNE should become more salient and reliable when a *larger* number of positive subsidiary performances are simultaneously reported by major competitors with parent performance below the focal MNE's aspiration levels. In such case, the focal MNE may expect its IJV in the same host country to also have positive performance in the future, thereby adjusting the expected value or prospect of its IJV upwards. Consequently, IJV buyout would be more justifiable and appealing, whereas IJV exit would be less (Chi, 2000; Kogut, 1991).³ Formally stated:

Hypothesis 3. The greater the number of positive subsidiary performances reported by major competitors with parent performance below the focal MNE's aspiration levels in a host country, the greater the likelihood of the focal MNE internalizing an IJV (as opposed to staying) in that country.

Hypothesis 4. The greater the number of positive subsidiary performances reported by major competitors with parent performance below the focal MNE's aspiration levels in a host country, the less the likelihood of the focal MNE quitting an IJV (as opposed to staying) in that country.

Similar argument based on the discounting principle can be made for the case of negative subsidiary performance. If a major competitor with parent performance below the focal MNE's aspiration levels suffers negative subsidiary performance (i.e., parent and subsidiary performances are relatively consistent), there should be more potential internal factors such as the competitor's inferior capabilities and resources for the focal MNE to attribute the negative subsidiary performance. On the other hand, if a major competitor with parent performance above the focal MNE's aspiration levels suffers negative subsidiary performance (i.e., parent and subsidiary performances are relatively inconsistent), there should be fewer potential internal causes. The discounting principle implies that the focal MNE tends to attribute negative subsidiary performance of the latter rather than that of the former to external threats such as intensified competition and lack of FDI legitimacy (Kelley, 1971). There could be alternative explanations such as bad luck and different emphases on different markets for the single case of negative subsidiary performance by the latter. The cue of hostile environments perceived by the focal MNE, however, should be more striking when a larger number of negative subsidiary performances are simultaneously reported by major competitors with parent performance above the focal MNE's aspiration levels. It follows that the focal MNE may expect its IJV to suffer in the future, thereby adjusting the expected value or prospect of its IJV downwards. Holding other things constant, IJV buyout would be less justifiable and appealing, whereas IJV exit would be more. Formally stated:

Hypothesis 5. The greater the number of negative subsidiary performances reported by major competitors with parent performance above the focal MNE's aspiration levels in a host country, the less the likelihood of the focal MNE internalizing an IJV (as opposed to staying) in that country.

Hypothesis 6. The greater the number of negative subsidiary performances reported by major competitors with parent performance above the focal MNE's aspiration levels in a host country, the greater the likelihood of the focal MNE quitting an IJV (as opposed to staying) in that country.

Figure 1 summarizes all hypotheses and predicted sign of coefficients.





METHODS

Sample and Data

I tested the hypotheses with data concerning buyout and exit initiated by Japanese manufacturing MNEs with regard to their manufacturing IJV. An IJV referred to a foreign subsidiary in which the Japanese parent maintained less than 95% equity ownership (Franko, 1971; Gaur & Lu, 2007). I identified the sampled IJVs from Kaigai Shinshutsu Kigyou Souran (Japanese Overseas Investments) published annually by Toyo Keizai, Inc.. Toyo Keizai Inc. complied the information by conducting mail and telephone survey with major listed and unlisted Japanese MNEs, and collecting archival data if necessary. The major advantage of Japanese Overseas Investments was that it covered almost all FDI of Japanese MNEs that responded to the survey (Henisz & Delios, 2001).

My dataset was a longitudinal one in which each cell represented a unique IJV-Japanese parent-year combination. In cases of an IJV with more than one Japanese parent, the IJV would appear more than once for a given year in the dataset so that each cell referred to only one Japanese parent. As such, the only Japanese parent in each cell would be 'the focal MNE' stated in the hypotheses. An IJV would remain in the dataset until the Japanese parent undertook buyout or exit. Japanese Overseas Investments provided all data at the IJV level, while I acquired data at the Japanese parent level from Nikkei NEEDS tapes. The data concerning host country environments where the IJV operated came from multiple sources, which will be discussed below. The final sample for analyses consisted of 3,162 cells with complete data regarding 1,055 IJVs and 377 Japanese parents between 1995 and 2008.

Dependent Variable

According to my theory, there were three options available to the focal MNE: buyout, exit, or staying. I used a categorical variable here, with 0 representing staying (the based outcome), 1 representing buyout, and 2 representing exit. IJV buyout took place when the focal MNE increased its equity ownership to 95% or more (Franko, 1971; Gaur & Lu, 2007). IJV exit

took place when the focal MNE discarded all ownership stakes. I identified IJV exit when the IJV was no longer listed as a foreign subsidiary of the focal MNE in Japanese Overseas Investments (Dhanaraj & Beamish, 2004; Lu & Beamish, 2006). This variable was measured in year t+1 (i.e., 1996 to 2009) because I maintained a one-year lag between the independent variables and the dependent variable, which was consistent with prior IJV studies (e.g., Dhanaraj & Beamish, 2002). The final sample consisted of 62 buyout and 161 exit events.

Independent Variables

Attainment discrepancy in parent performance. I first measured parent performance using the focal MNE's return on assets (ROA) in year *t*. I next used two proxies for the aspiration levels for parent performance. One was the historical aspiration level measured as the focal MNE's ROA in year *t-1*. Although some prior studies used multiple years of prior performance for calculating the historical aspiration level, I used one year because Bromiley and Harris (2014) found that using one year produced the best overall fit for three distinct attainment discrepancy models. They speculated that managers did not pay attention to the past beyond the previous year generally. The other proxy was the social aspiration level measured as the median ROA of Japanese MNEs in the same two-digit industry in year *t*.⁴

I calculated attainment discrepancy as the focal MNE's parent performance minus the historical or social aspiration level. Following the tradition of research on the aspiration level learning theory, I implemented a spline function on an attainment discrepancy variable so that I could focus on the effects of negative attainment discrepancy (Greene, 1993). That is, I split each attainment discrepancy variable into two separate variables, *negative attainment discrepancy* and

positive attainment discrepancy. Negative attainment discrepancy equaled 0 when parent performance was above the aspiration level, while *positive attainment discrepancy* equaled 0 when parent performance was below the aspiration level. I tested hypotheses 1 and 2 with *negative attainment discrepancy*, whereas *positive attainment discrepancy* served as a control variable.

Positive subsidiary performances by major competitors with parent performance below the focal MNE's aspiration levels. I defined major competitors as other Japanese MNEs in the same two-digit industry as the focal MNE. I included those with an ROA below the focal MNE's aspiration levels in year *t*.⁵ Regarding subsidiary performance, I used a perceptual assessment rendered by the foreign subsidiary's general manager, and the data came from Japanese Overseas Investments. This measure had three ordinal levels: gain, breakeven, and loss. The classification was an absolute assessment of profitability without reference to other subsidiaries under the same parent (Delios & Beamish, 2001). The validity and reliability of this measure had been confirmed (Delios & Beamish, 2001) and many studies had employed this measure (e.g., Lu, 2002; Lu & Beamish, 2006; Makino & Beamish, 1998). More importantly, as unconsolidated financial reports that listed detailed subsidiary performance were seldom available, Japanese MNEs might also have to rely on coarse measures such as mine for making decision.

To test hypotheses 3 and 4, I computed the total number of 'gain' subsidiaries that were in the same two-digit industry and host country as the focal IJV and owned by major competitors with parent performance below the focal MNE's aspiration levels.⁶ In cases where there was no major competitor performing below the focal MNE's aspiration levels, I assigned 0 to this measure to indicate the absence of the cue of external opportunities.

Negative subsidiary performances by major competitors with parent performance above the focal MNE's aspiration levels. I considered other Japanese MNEs that were in the same two-digit industry and obtained an ROA above the focal MNE's aspiration levels in year t. To test hypotheses 5 and 6, I computed the total number of 'loss' subsidiaries that were in the same two-digit industry and host country as the focal IJV and owned by those major competitors. In cases where there was no major competitor performing above the focal MNE's aspiration levels, I assigned 0 to this measure to indicate the absence of the cue of external threats.

Control Variables

I included a large set of control variables that might influence the likelihood of IJV buyout or exit as opposed to staying based on the literature review.

IJV level controls. Prior research found that an MNE was more likely to quit and less likely to internalize an IJV operating in an unrelated industry (Reuer, 2002). Hence, I included *noncore IJV*, a dummy variable with 1 representing that the IJV was in a different two-digit industry from the focal MNE's primary business and 0 otherwise. Poor IJV performance might trigger structural changes and dissolution of the venture (Chung & Beamish, 2010). I therefore included two dummy variables, *positive IJV performance* and *negative IJV performance*, based on the managerial assessment obtained from Japanese Overseas Investments.⁷ I entered *IJV size*, measured as the logarithm of the number of the IJV's employee, because it might reflect the IJV's strategic or financial importance to the focal MNE. *IJV age*, measured as the number of years since its establishment, might be important because most IJVs were highly unstable in early years (Kogut, 1988). The number of parents in the IJV might be positively related to the likelihood of inter-partner conflict and IJV termination, and such conflict might be even more

intense between an MNE and a local partner (Hennart & Zeng, 2002; Reuer, 2002). Accordingly, I entered the *number of Japanese parents* and *number of local parents* for each IJV. The focal MNE's ability to align the IJV's strategies with its goals and to bargain with other parents should be higher if it assumed a dominant ownership position (Anderson & Gatignon, 1986; Geringer & Hebert, 1989). I therefore included a dummy variable (*majority-owned IJV*), measured as 1 if the focal MNE held more than 50% of equity ownership and 0 otherwise. Last, I included a set of dummy variables (*resource seeking, marketing seeking*, and *knowledge seeking*) representing the strategic purposes of the IJV because they might influence the focal MNE's preference for collaborating with other firms (Stopford & Wells, 1972).

Japanese parent level controls. I controlled for the focal MNE's *R&D intensity* (R&D investment divided by sales) and *advertising intensity* (advertising investment divided by sales) because an MNE with superior intangible assets may prefer a higher ownership position for avoiding opportunistic behavior (Delios & Henisz, 2000). Besides, IJV buyout should require more slack resources due to greater resource commitment and managerial responsibility, whereas IJV exit could release slack resources. I included three slack variables (Bourgeois, 1981). *Absorbed slack*, measured using the ratio of selling, general, and administrative expenses to sales, was a proxy for administrative and managerial resources. *Unabsorbed slack*, measured as the ratio of current assets to current liabilities, represented short term liquidity. *Potential slack*, measured using the ratio of debt to equity as an inverse indicator, represented the potential borrowing ability. I controlled for *parent size*, measured as the logarithm of the focal MNE's number of employee, as it might influence the focal MNE's ability to bargain with other parents. I included *sales growth* (annual %) of the focal MNE because I expected that an MNE with slow sales growth might prefer IJV buyout in the hope of increasing sales revenue. Last, I controlled

for the focal MNE's international experience by including *length of international operation*, measured using the number of years since the first foreign subsidiary's establishment, and *scope of international operation*, measured using the number of host countries in which the focal MNE had established at least one foreign subsidiary.⁸

Host country level controls. I entered a set of variables that might serve as cues of the favorability/hostility of the host country environments where the focal IJV operated. Some of them came from the World Development Indicator, including the logarithm of *population*, per capita GDP (in 2005 US\$, millions), per capita GDP growth (annual %), real interest (%), inflation (%), real exchange rate against Japanese ven, and FDI intensity (total FDI flows divided by GDP). I also included *foreign equity restrictions* (0-10 scale) acquired from the World Economic forum's World Competitiveness Report in which a panel of senior executives were surveyed regarding their perceived legal barriers to equity ownership by foreign firms (Delios & Henisz, 2000). I controlled for the host country's *political stability* by including the POLCON index (0-1) representing the extent to which the political institution structure could deter policymakers from altering the current policies and regulations (Henisz, 2000). Prior research suggests that an MNE tends to opt for a joint venture in a host country with low political stability (Delios & Henisz, 2000). Additionally, I considered distance between Japan and the host country where the IJV operated. Geographic distance was obtained from the CEPII and cultural *distance* was measured as the composite index developed by Kogut and Singh (1988) based on Hofstede's national culture index (Hofstede, 1980). The value of an IJV in terms of sharing risk and uncertainty should be higher in a distant host country (Kogut & Singh, 1988; Puck et al., 2009). However, an MNE may be more likely to have conflicts with local partners from a distant country and thus to initiate exit (Hennart & Zeng, 2002). Last, I included positive subsidiary

performances reported by major competitors with parent performance above the focal MNE's aspiration levels and negative subsidiary performances reported by major competitors with parent performance below the focal MNE's aspiration levels in the analyses, although I expected them to play a less prominent role than my major independent variables. I measured the former using the total number of 'gain' subsidiaries that were in the same two-digit industry and host country as the focal IJV and owned by major competitors with an ROA above the focal MNE's aspiration levels, and the latter using total number of 'loss' subsidiaries that were in the same two-digit industry and host country as the focal MNE's aspiration levels.

Analysis

I used a competing-risk, discrete-time event history analysis to test the hypotheses (Allison, 2010). Event history modeling was appropriate as I was interested in the timing of IJV buyout and exit. My dependent variable consisted of two event types (buyout and exit) and the state of no event (staying), and the occurrence of one event type removed the focal IJV from the risk of the other. Competing risk modeling allowed us to examine buyout and exit simultaneously and treat staying as the comparison group. In a large-sample longitudinal dataset such as mine, there are usually many tied data—events occurring at the same time interval. Tied data require additional statistical treatment because event history modeling assumes each event to occur at a unique time. Given that I obtained the data regarding IJV buyout and exit from the annual editions of Japanese Overseas Investments, I adopted discrete-time method that assumed tied events really occurred at the same time (i.e., fiscal year in my case). Because my competing risk model contained tied data and time-varying covariates, it was particularly appropriate to be estimated as a multinomial logit model using maximum likelihood methods (Allison, 2010).

I next addressed the unobserved heterogeneity across Japanese MNEs in the preferences for IJV buyout and exit by adding Japanese parent-fixed effects. The fixed-effects estimation was able to control for all time-invariant unobserved heterogeneity and thus avoided omitted variable biases. It could also account for the dependence among observations related to the same Japanese MNE (Greene, 1993). However, fixed-effects multinomial logit estimation had not been fully developed in commercial statistical packages (Allison, 2012). A legitimate solution was to break the multinomial logit model into a set of binary logit equations, each corresponding to a comparison between two of the categories of the dependent variable. In each two-category comparison, observations that experienced the other event were excluded (Begg & Gray, 1984). As I was interested in the comparison between buyout and staying and comparison between exit and staying, I ran two binary logit models with conditional fixed-effects (Allison, 2012).⁹

RESULTS

Table 1 provides the summary statistics of all variables used in the main analyses. Table 2 presents six logit models estimating IJV buyout (models 1-3) and exit (models 4-6) as opposed to staying. I first entered control variables only in models 1 and 4, and then all variables in models 2, 3, 5, and 6.

Hypothesis 1 states that more negative attainment discrepancy in the focal MNE's parent performance will increase the likelihood of its internalizing as opposed to staying in an IJV. The coefficient of negative attainment discrepancy is negative and significant at the 10 percent level in model 2 with the historical aspiration level being used, and negative and significant at the 5 percent level in model 3 with the social aspiration level being used. Overall, hypothesis 1 is supported.

						Desc	riptive	e stati	sucs									
	Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12.	13.	14.	15.
1.	IJV buyout (dummy)	0.02	0.13															
2.	IJV exit (dummy)	0.05	0.21	-0.03														
3.	Positive attainment discrepancy																	
	(historical)	0.01	0.03	0.03	0.02													
4.	Negative attainment discrepancy																	
	(historical)	-0.01	0.03	-0.03	-0.02	0.18												
5.	Positive attainment discrepancy																	
	(social)	0.01	0.02	0.01	-0.02	0.16	0.18											
6.	Negative attainment discrepancy																	
_	(social)	-0.02	0.03	-0.03	-0.05	0.12	0.84	0.28										
7.	Positive subsidiary performances by																	
	major competitors with parent																	
	performance below the focal MINE's	4.20	6.74	0.01	0.07	0.12	0.01	0.00	0.12									
0	Aspiration levels (historical)	4.29	6.74	0.01	-0.06	-0.13	-0.01	0.23	0.13									
0.	negative subsidiary performances by																	
	najor competitors with parent performance above the focal MNE's																	
	aspiration levels (historical)	1 16	2.16	0.04	0.01	0.00	0.03	0.16	0.06	0.22								
9	Positive subsidiary performances by	1.10	2.10	0.04	0.01	0.09	0.05	-0.10	-0.00	0.22								
).	major competitors with parent																	
	performance below the focal MNE's																	
	aspiration levels (social)	4.06	5.56	0.02	-0.05	-0.01	0.01	0.04	0.03	0.81	0.48							
10.	Negative subsidiary performances by																	
	major competitors with parent																	
	performance above the focal MNE's																	
	aspiration levels (social)	1.11	1.95	0.01	-0.02	-0.01	0.01	0.00	0.04	0.48	0.80	0.52						
11.	noncore IJV (dummy)	0.22	0.41	-0.03	0.03	0.02	0.00	0.00	0.00	-0.31	-0.25	-0.37	-0.28					
12.	Positive IJV performance (dummy)	0.64	0.48	-0.02	-0.07	0.03	0.00	0.06	0.00	0.02	-0.05	0.01	-0.05	-0.01				
13.	Negative IJV performance (dummy)	0.17	0.38	0.00	0.09	0.00	0.00	-0.09	-0.02	0.00	0.10	0.02	0.06	0.00	-0.60			
14.	IJV size (log)	2.18	0.59	-0.02	-0.02	0.03	-0.04	0.02	-0.03	-0.02	0.04	-0.05	0.05	-0.03	0.18	-0.12		
15.	IJV age	12.70	15.70	-0.03	0.03	-0.01	0.02	-0.01	0.01	-0.08	-0.10	-0.09	-0.11	-0.12	0.06	-0.12	0.20	
16.	Number of Japanese parents	1.90	1.15	0.00	-0.01	-0.02	0.02	0.03	0.01	-0.01	0.00	0.01	-0.01	0.07	-0.05	0.05	0.10	0.02
17.	Number of local parents	0.93	0.80	-0.07	-0.04	0.01	0.00	-0.04	-0.01	0.00	0.01	0.02	0.01	-0.05	0.02	0.01	0.05	0.03
18.	Majority-owned IJV (dummy)	0.36	0.48	0.13	-0.04	0.01	-0.01	0.03	-0.01	0.03	0.03	0.02	0.04	-0.12	-0.07	0.09	-0.01	0.03
19.	Resource seeking (dummy)	0.31	0.46	0.02	-0.03	-0.03	0.01	-0.04	-0.02	0.01	0.07	0.04	0.04	0.02	-0.03	0.01	0.12	-0.01
20.	Market seeking (dummy)	0.66	0.47	-0.02	-0.04	0.01	-0.05	-0.04	-0.02	0.07	0.07	0.08	0.08	-0.10	0.03	-0.02	-0.08	0.06
21.	Knowledge seeking (dummy)	0.16	0.37	-0.01	0.01	-0.02	-0.01	-0.09	-0.03	0.01	-0.03	0.02	-0.04	-0.01	0.01	0.00	-0.11	0.04
22.	A dvortiging intensity	0.02	0.02	-0.02	0.03	-0.05	-0.01	0.01	0.03	0.18	0.07	0.18	0.11	-0.08	-0.01	-0.02	-0.02	0.02
25.	Adventising intensity	0.01	0.01	0.01	0.05	0.04	-0.10	0.08	-0.00	0.05	-0.00	0.02	-0.03	-0.07	-0.04	-0.01	0.02	0.03
24.	Unabsorbed slack	1.61	0.09	0.01	0.03	0.04	-0.14	0.01	-0.11	0.10	-0.03	0.11	-0.02	-0.14	0.01	-0.03	-0.11	0.04
25.	Potential slack	3 20	16.61	-0.02	0.00	-0.03	-0.04	-0.08	-0.06	-0.04	-0.09	-0.02	0.01	-0.03	-0.01	0.03	-0.09	-0.04
20.	Parent size (log)	3 54	0.54	-0.01	0.03	-0.01	0.04	-0.03	0.03	-0.04	-0.01	-0.02	0.04	0.07	0.05	-0.03	0.04	0.01
27.	Sales growth (%)	0.04	0.16	0.00	0.02	0.15	0.00	0.05	0.14	0.02	-0.01	0.03	-0.02	-0.01	0.05	-0.03	0.01	-0.05
29	Length of international operation	31.55	25.25	-0.03	0.02	-0.06	0.06	-0.04	0.07	0.02	-0.01	0.02	-0.01	-0.09	0.00	0.00	0.10	0.53
30	Scope of international operation	6.27	4.02	-0.04	0.00	-0.03	0.02	0.05	0.06	0.04	-0.02	0.03	0.01	0.03	0.10	-0.06	0.16	0.01
31.	Population (log)	8.15	0.69	-0.04	-0.04	-0.02	0.05	0.06	0.06	0.17	0.17	0.14	0.21	0.04	-0.04	0.03	0.06	-0.19
32.	Per capita GDP	10105.31	12859.63	0.03	0.09	-0.03	0.00	-0.04	0.00	0.00	0.00	-0.02	0.04	0.05	-0.02	0.01	-0.18	0.10
33.	Per capita GDP growth (%)	3.69	4.61	-0.02	-0.03	0.03	0.09	0.11	0.05	0.05	-0.04	0.03	-0.03	0.02	0.08	-0.08	-0.02	-0.13
34.	Real interest rate (%)	7.11	9.96	-0.03	0.03	0.01	-0.02	-0.04	-0.03	-0.07	-0.04	-0.06	-0.05	-0.03	-0.08	0.02	0.05	0.20
35.	Inflation rate (%)	3.22	3.92	-0.02	-0.01	-0.01	-0.01	-0.01	0.01	-0.14	-0.12	-0.18	-0.13	-0.03	-0.02	-0.01	0.12	0.08
36.	Real exchange rate against Japanese																	
	yen	0.88	0.16	-0.01	0.04	-0.07	-0.05	0.01	-0.01	0.03	-0.05	0.00	0.01	0.03	0.09	-0.03	-0.12	-0.08
37.	FDI intensity	0.07	0.13	0.03	0.02	0.00	0.03	-0.04	0.00	-0.11	-0.09	-0.11	-0.10	0.02	-0.01	-0.02	-0.14	0.07
38.	Foreign equity restrictions	5.99	1.61	0.03	0.09	0.01	-0.01	-0.06	-0.02	-0.14	-0.09	-0.16	-0.08	0.01	-0.04	0.00	-0.10	0.20

 Table 1

 Descriptive statistics

						1 a			u)									
	Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12.	13.	14.	15.
39.	Political stability	0.51	0.34	0.02	0.05	0.00	-0.04	-0.07	-0.02	-0.11	-0.06	-0.11	-0.06	-0.02	-0.05	0.04	0.00	0.21
40.	Geographic distance	5187.38	3527.71	0.02	0.08	-0.02	-0.02	-0.06	-0.04	-0.11	-0.04	-0.14	-0.02	0.01	-0.10	0.02	0.01	0.20
41.	Cultural distance	2.83	0.81	0.05	-0.03	0.00	0.02	-0.01	0.00	0.08	0.06	0.11	0.05	-0.02	0.05	-0.01	-0.06	-0.10
42.	Positive subsidiary performances by																	
	major competitors with parent																	
	performance above the focal MNE's																	
	aspiration levels (historical)	4.09	6.21	0.03	0.00	0.13	0.04	-0.15	-0.08	0.26	0.69	0.64	0.52	-0.32	0.02	0.04	0.02	-0.09
43.	Negative subsidiary performances by																	
	major competitors with parent																	
	performance below the focal MNE's																	
	aspiration levels (historical)	1.36	2.48	0.01	-0.04	-0.10	0.00	0.16	0.11	0.67	0.34	0.52	0.65	-0.26	-0.06	0.04	0.04	-0.10
44.	Positive subsidiary performances by																	
	major competitors with parent																	
	performance above the focal MNE's																	
	aspiration levels (social)	4.23	5.49	0.02	-0.02	0.01	0.02	0.08	0.04	0.68	0.55	0.71	0.64	-0.38	0.03	0.02	0.04	-0.10
45.	Negative subsidiary performances by																	
	major competitors with parent																	
	performance below the focal MNE's																	
	aspiration levels (social)	1.37	2.20	0.02	-0.03	-0.01	0.02	0.02	0.03	0.53	0.63	0.59	0.62	-0.30	-0.07	0.08	0.04	-0.12

Table 1 (cont'd)

	Variables	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.
17.	Number of local parents	-0.16														
18.	Majority-owned IJV (dummy)	-0.07	-0.25													
19.	Resource seeking (dummy)	0.10	-0.02	0.05												
20.	Market seeking (dummy)	-0.06	0.09	-0.03	0.03											
21.	Knowledge seeking (dummy)	-0.02	0.03	-0.10	-0.02	0.09										
22.	R&D intensity	-0.01	0.04	0.05	-0.03	0.07	-0.07									
23.	Advertising intensity	-0.10	0.05	0.02	-0.05	0.04	-0.03	0.14								
24.	Absorbed slack	-0.11	0.07	0.00	-0.03	0.03	0.00	0.38	0.66							
25.	Unabsorbed slack	-0.07	-0.03	0.02	-0.03	-0.02	-0.04	0.11	0.10	0.14						
26.	Potential slack	0.01	-0.01	0.02	0.06	-0.02	0.07	-0.02	-0.03	-0.03	-0.10					
27.	Parent size (log)	0.05	-0.03	0.03	0.01	0.01	-0.19	0.19	0.11	-0.04	-0.21	0.07				
28.	Sales growth (%)	0.04	-0.06	0.03	-0.04	-0.05	-0.05	-0.06	-0.05	-0.17	0.00	-0.06	0.07			
29.	Length of international operation	-0.02	0.01	0.03	-0.05	0.01	-0.04	0.14	0.04	0.08	-0.12	0.11	0.34	-0.05		
30.	Scope of international operation	0.02	0.00	-0.07	-0.09	0.08	-0.17	0.19	0.05	0.01	-0.14	0.02	0.68	0.16	0.34	
31.	Population (log)	-0.03	0.04	0.02	0.00	-0.06	-0.10	0.04	-0.01	0.07	0.05	0.01	0.00	0.03	0.00	-0.06
32.	Per capita GDP	-0.03	-0.24	0.07	-0.19	0.05	0.16	0.00	-0.05	-0.08	-0.03	-0.01	-0.04	0.02	0.04	0.00
33.	Per capita GDP growth (%)	-0.10	0.01	0.04	-0.07	-0.05	-0.07	0.05	-0.02	0.04	0.06	-0.06	-0.02	0.19	-0.03	-0.03
34.	Real interest rate (%)	0.14	-0.04	0.02	0.07	0.04	0.01	0.00	0.02	0.01	-0.08	0.08	0.02	-0.08	0.10	0.00
35.	Inflation rate (%)	0.06	-0.02	0.00	0.00	-0.04	-0.05	0.01	0.01	-0.04	-0.03	0.01	0.10	-0.01	0.05	0.09
36.	Real exchange rate against Japanese															
	yen	-0.18	-0.05	-0.02	-0.16	-0.01	0.02	0.02	-0.02	0.00	0.05	-0.04	-0.03	0.02	-0.07	0.03
37.	FDI intensity	0.02	-0.16	0.10	-0.05	0.00	0.07	-0.01	-0.03	-0.06	-0.02	-0.02	-0.01	0.05	0.01	0.03
38.	Foreign equity restrictions	0.06	-0.23	0.06	-0.14	0.05	0.12	0.00	-0.02	-0.08	-0.08	0.01	0.00	-0.01	0.08	0.04
39.	Political stability	0.05	-0.03	-0.08	-0.09	0.10	0.12	-0.06	-0.02	-0.11	-0.06	0.00	-0.03	-0.05	0.04	0.00
40.	Geographic distance	0.17	-0.27	0.10	-0.04	-0.01	0.08	-0.02	-0.01	-0.09	-0.10	0.06	0.05	-0.03	0.13	0.04
41.	Cultural distance	-0.02	0.02	0.04	0.10	-0.02	-0.03	-0.03	-0.01	-0.02	0.01	-0.04	-0.07	0.00	-0.10	-0.05
42.	Positive subsidiary performances by															
	major competitors with parent															
	performance above the focal MNE's															
	aspiration levels (historical)	-0.01	-0.01	0.07	0.05	0.03	0.00	0.09	-0.06	-0.01	-0.08	0.01	-0.05	0.07	-0.03	-0.03
43.	Negative subsidiary performances by															
	major competitors with parent															
	performance below the focal MNE's															
	aspiration levels (historical)	0.01	0.01	0.03	0.03	0.07	-0.04	0.11	-0.01	-0.01	0.11	-0.01	-0.01	-0.01	-0.02	0.02
44.	Positive subsidiary performances by															
	major competitors with parent															
	performance above the focal MNE's															
	aspiration levels (social)	-0.01	-0.03	0.08	0.04	0.03	-0.01	0.14	-0.03	0.00	0.04	-0.02	-0.04	0.08	-0.03	-0.02
45.	Negative subsidiary performances by															
	major competitors with parent															
	performance below the focal MNE's															
	aspiration levels (social)	0.02	0.02	0.03	0.06	0.07	-0.03	0.10	-0.04	-0.02	0.05	0.01	-0.02	0.00	-0.03	-0.01
-						,						0.02		0.00		

Table 1 (cont'd)

				Та	ble 1	(cont'	d)									
	Variables	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.
32.	Per capita GDP	-0.30														
33.	Per capita GDP growth (%)	0.50	-0.15													
34.	Real interest rate (%)	-0.03	-0.07	-0.18												
35.	Inflation rate (%)	-0.04	-0.19	-0.27	0.01											
36.	Real exchange rate against Japanese															
	yen	-0.05	0.43	0.09	-0.41	-0.12										
37.	FDI intensity	-0.31	0.34	-0.03	-0.06	-0.07	0.11									
38.	Foreign equity restrictions	-0.43	0.76	-0.27	0.24	0.00	0.11	0.29								
39.	Political stability	-0.57	0.46	-0.55	0.22	0.08	0.07	-0.06	0.57							
40.	Geographic distance	-0.09	0.47	-0.26	0.56	0.19	-0.17	0.17	0.68	0.38						
41.	Cultural distance	-0.21	-0.10	0.02	-0.30	-0.21	0.02	0.32	-0.24	-0.31	-0.32					
42.	Positive subsidiary performances by															
	major competitors with parent															
	performance above the focal MNE's															
	aspiration levels (historical)	0.13	0.02	0.08	-0.08	-0.13	-0.01	-0.09	-0.10	-0.07	-0.08	0.11				
43.	Negative subsidiary performances by															
	major competitors with parent															
	performance below the focal MNE's															
	aspiration levels (historical)	0.21	-0.01	-0.03	-0.06	-0.10	-0.02	-0.10	-0.12	-0.08	-0.05	0.04	0.28			
44.	Positive subsidiary performances by															
	major competitors with parent															
	performance above the focal MNE's															
	aspiration levels (social)	0.20	0.04	0.11	-0.12	-0.14	0.03	-0.12	-0.12	-0.10	-0.08	0.11	0.79	0.60		
45.	Negative subsidiary performances by															
	major competitors with parent															
	performance below the focal MNE's															
	aspiration levels (social)	0.22	-0.05	-0.03	-0.06	-0.11	-0.07	-0.11	-0.15	-0.09	-0.08	0.05	0.53	0.84	0.65	

Note: n = 3,162 IJV-Japanese parent-year observations. Correlations with an absolute value above 0.04 are significant at the 5 percent level.

	De	pendent varial	endent variable:			
	IJV Model 1 Base model	ouyout=1; stay Model 2 Historical aspirations	ing=0 Model 3 Social aspirations	IJV Model 4 Base model	exit=1; stayin Model 5 Historical aspirations	g=0 Model 6 Social aspirations
Major independent variables		10.26+			11 1/*	
Negative attainment discrepancy (instoricar)		(10.73)			(4.52)	
Negative attainment discrepancy (social)			-18.89*			-8.73* (3.48)
Positive subsidiary performances by major competitors with parent performance below the focal MNE's aspiration levels (historical)		0.06 (0.07)	(7.51)		-0.10** (0.04)	(3.40)
Negative subsidiary performances by major competitors with parent performance above the focal MNE's aspiration levels (historical)		0.14 (0.15)			0.11 (0.09)	
Positive subsidiary performances by major competitors with parent performance below the focal MNE's aspiration levels (social)			0.02 (0.08)			-0.10* (0.04)
Negative subsidiary performances by major competitors with parent performance above the focal MNE's aspiration levels (social)			-0.10 (0.19)			0.12 (0.09)
<u>IJV level controls</u>	-0.73	-0 14	0.52	0.38	0.25	0.23
Positive IJV performance (dummy)	(1.67) 0.23	(1.91) 0.33	(1.76) 0.03	(0.38) -0.19	(0.40) -0.26	(0.40) -0.26
Negative IJV performance (dummy)	(0.69) -1.03	(0.72) -1.52	(0.74) -1.46	(0.32) 0.83*	(0.32) 0.82*	(0.32) 0.82*
IJV size (log)	(1.00) 1.14*	(1.16) 1.45*	(1.18) 1.43*	(0.34) -0.20	(0.34) -0.16	(0.34) -0.17
IJV age	(0.57) -0.09 [†]	(0.70) -0.11*	(0.69) -0.09 [†]	(0.24) -0.02	(0.24) -0.02	(0.24) -0.02
Number of Japanese parents	(0.05) -0.07	(0.05) -0.24	(0.05) -0.21	(0.01) -0.40**	(0.01) -0.43**	(0.01) -0.41**
Number of local parents	(0.37) -1.98*	(0.39) -2.43*	(0.39) -2.51*	(0.15) -0.09	(0.15) -0.08	(0.15) -0.09
Maiority-owned IJV (dummy)	(0.92) 4.27**	(1.05) 4.33**	(1.08) 4.34**	(0.18) -0.45	(0.18) -0.51 [†]	(0.18) -0.50 [†]
Resource seeking (dummy)	(1.17)	(1.27)	(1.23)	(0.29) -0.15	(0.29) -0.04	(0.30)
Market seeking (dummy)	(0.77)	(0.86)	(0.91)	(0.32)	(0.33)	(0.33) 0.48 [†]
Vnoviladao sosting (dummy)	(0.79)	(0.90)	(0.92)	(0.25)	(0.26)	(0.25)
Knowledge seeking (dummy)	(1.59)	(1.91)	(1.81)	(0.33)	(0.33)	(0.34)
Japanese parent level controls Positive attainment discrepancy (historical)		9.01			9.55*	
Positive attainment discrepancy (social)		(8.54)	46.76 [†]		(4.23)	2.86
R&D intensity	-10.05	-13.66	(24.36) -49.21	27.85	35.85	(8.91) 27.05
Advertising intensity	(58.09)	(71.37)	(99.14) 360.41*	(22.84)	(24.62)	(23.99)
	(149.29)	(165.40)	(173.06)	(39.81)	(41.37)	(40.79)
Absorbed slack	-4.38 (20.74)	-15.27 (23.53)	-14.23 (24.77)	(8.32)	4.17 (9.02)	4.47 (8.97)
Unabsorbed slack	-0.19 (0.73)	-0.17 (0.78)	-0.00 (0.78)	-0.08 (0.32)	0.12 (0.32)	0.03 (0.32)
Potential slack	0.14 (0.27)	0.06 (0.24)	-0.07 (0.26)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Parent size (log)	-3.36	-1.89	0.35	-3.11*	-2.30	-2.33

Table 2Results of the fixed-effects logit models

Table 2 (cont u)												
		pendent varial	ole: ing=0	Dependent variable:								
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6						
	Base model	Historical	Social	Base model	Historical	Social						
		aspirations	aspirations		aspirations	aspirations						
Sales growth (%)	3.56	4.11	5.90	2.41*	2.25*	2.43*						
5	(2.64)	(3.13)	(3.23)	(1.10)	(1.13)	(1.16)						
Scope of international operation	-1.35**	-1.20*	-1.39*	-0.12	0.01	-0.03						
	(0.50)	(0.54)	(0.60)	(0.25)	(0.26)	(0.26)						
Host country level controls												
Population (log)	-0.54	-1.90	-2.09	-0.17	-0.19	-0.22						
· · · · · · · · · · · · · · · · · · ·	(0.92)	(1.35)	(1.42)	(0.30)	(0.33)	(0.33)						
Per capita GDP	0.00	0.00	0.00	0.00	0.00	0.00						
	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)						
Per capita GDP growth (%)	-0.13	-0.12	-0.13	-0.05	-0.04	-0.05						
rereupin GD1 grown (70)	(0.09)	(0.12)	(0.10)	(0.03)	(0.04)	(0.03)						
P and interest rate $(0/2)$	0.30*	0.10)	0.52*	0.03)	(0.04)	(0.04)						
itear interest fate (70)	-0.39	-0.40	-0.32	(0.01)	(0.02)	(0.02)						
	(0.17)	(0.21)	(0.22)	(0.02)	(0.02)	(0.02)						
Inflation rate (%)	-0.38*	-0.43*	-0.4/*	-0.00	-0.01	-0.00						
	(0.18)	(0.20)	(0.21)	(0.04)	(0.04)	(0.04)						
Real exchange rate against Japanese yen	-6.16*	-6.11*	-5./8*	2.29*	2.30*	1.91*						
	(2.56)	(2.81)	(2.74)	(0.94)	(0.96)	(0.94)						
FDI intensity	-3.37	-4.01†	-4.02†	-1.33	-1.67	-1.47						
	(2.20)	(2.35)	(2.38)	(1.15)	(1.19)	(1.16)						
Foreign equity restrictions	0.21	0.04	-0.16	0.14	0.06	0.07						
	(0.43)	(0.45)	(0.49)	(0.16)	(0.17)	(0.16)						
Political stability	0.71	-0.92	-1.01	0.20	0.09	0.08						
	(1.46)	(1.82)	(1.80)	(0.64)	(0.65)	(0.67)						
Geographic distance	-0.00	0.00	0.00	0.00	0.00	0.00						
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)						
Cultural distance	0.67	0.13	0.09	0.10	0.16	0.13						
	(0.56)	(0.71)	(0.69)	(0.19)	(0.19)	(0.20)						
Positive subsidiary performances by major		0.02	× /		-0.00							
competitors with parent performance above the		(0.06)			(0.04)							
focal MNE's aspiration levels (historical)		((((()))))			(0101)							
Negative subsidiary performances by major		0.12			0.05							
competitors with parent performance below the		(0.12)			(0.09)							
focal MNE's aspiration levels (historical)		(0.17)			(0.09)							
Positive subsidiary performances by major			0.03			-0.00						
competitors with parent performance above the focal MNE's aspiration levels (social)			(0.08)			(0.05)						
Negative subsidiary performances by major			0.30			0.08						
competitors with parent performance below the focal MNE's aspiration levels (social)			(0.20)			(0.08)						
Number of observations	426	426	426	1,401	1,401	1,401						
Log likelihood	-55.27	-51.47	-50.17	-263.44	-253.60	-256.36						
Likelihood ratio chi-square	88.64**	96.45**	99.04**	94.69**	114.37**	108.85**						

Table 2 (cont'd)

Note: Standard errors are in parentheses. $^{\dagger}p < 0.1$; $^{*}p < 0.05$; $^{**}p < 0.01$ (all two-tailed tests).

Hypothesis 2 predicts that more negative attainment discrepancy in the focal MNE's

parent performance will increase the likelihood of quitting as opposed to staying in an IJV. The

coefficient of negative attainment discrepancy is negative and significant at the 5 percent level in model 5 with the historical aspiration level being used and model 6 with the social aspiration level being used. The results strongly support hypothesis 2. I conclude that negative attainment discrepancy in parent performance may increase the IJV instability, either in the form of buyout or exit. My theory provides three reasons, which are change of the IJV's value following problemistic search, greater willingness of the focal MNE to take risk, and greater determination of the focal MNE to divest business units.

Hypothesis 3 predicts that the likelihood of the focal MNE internalizing as opposed to staying in an IJV will increase when there is a greater number of positive subsidiary performance reported by major competitors performing below the focal MNE's aspirations for parent performance. The coefficient of *positive subsidiary performance by major competitors with parent performance below the focal MNE's aspiration levels* is insignificant in models 2 and 3, failing to support the hypothesis. I also did not find evidence that positive subsidiary performance by major competitors performing above the focal MNE's aspirations for parent performance by major competitors performing above the focal MNE's aspirations for parent performance by major competitors performing above the focal MNE's aspirations for parent performance by major competitors performing above the focal MNE's aspirations for parent performance by major competitors performing above the focal MNE's aspirations for parent performance by major competitors performing above the focal MNE's aspirations for parent performance by major competitors performing above the focal MNE's aspirations for parent performance by major competitors performing above the focal MNE's aspirations for parent performance by major competitors performing above the focal MNE's aspirations for parent performance by major competitors performing above the focal MNE's aspirations for parent performance by major competitors performing above the focal MNE's aspirations for parent performance influenced the IJV buyout decision.

Hypothesis 4 predicts that the likelihood of the focal MNE quitting as opposed to staying in an IJV will decrease when there is a greater number of positive subsidiary performance reported by major competitors performing below the focal MNE's aspirations. The coefficients of *positive subsidiary performance by major competitors with parent performance below the focal MNE's aspiration levels* are negative and significant in both models 5 and 6, lending support for the hypothesis. The results also suggest that positive subsidiary performances by major competitors performing above the focal MNE's aspirations do not play a role in the focal MNE's IJV exit decision. This is consistent with my theory that positive subsidiary performance

of relatively unsuccessful major competitors is perceived as more related to external opportunities that may influence the expected value or prospect of the focal MNE's IJV in the same country.

Last, I did not find any evidence that negative subsidiary performance of major competitors performing above the focal MNE's aspirations, as well as that of major competitors performing below the focal MNE's aspirations, may influence the focal MNE's IJV buyout or exit decisions. I will further discuss the results in the discussion section.

DISCUSSION

My study is unique from prior IJV studies in that I distinguish between buyout and exit and study them simultaneously in a single research setting. This approach approximates to the real decision making processes because buyout and exit are all alternatives of staying in an IJV and yet they have distinct implications on firm size, strategy, and performance (Meschi, 2005; Reuer & Miller, 1997; Reuer, 2000, 2002). In fact, my results reveal that buyout is not simply the flip side of exit. I found that some factors such as the length of international experience affected buyout and exit in the same direction, whereas some factors such as the host country currency's real exchange rate against Japanese yen affected buyout and exit in the opposite way. And, some factors only affected either buyout or exit, but not both. Prior research on IJV instability that did not conceptually distinguish between buyout and exit is unable to shed light on when and why a specific parent initiates buyout or exit. Given that we do not know much about the determinants of IJV buyout and exit as opposed to staying (buyout especially), my study provides a basis for future IB studies to address this research gap from a variety of theoretical perspectives. My study specifically theorizes and tests the roles of organizational aspirations for parent performance. Two fundamental results emerge from the empirical analyses. The first one is that negative attainment discrepancy in parent performance increased the likelihood of IJV buyout and exit (as compared to staying) initiated by Japanese MNEs. Negative attainment discrepancy represents a problem and thus triggers organizational changes (Cyert & March, 1963; Greve, 1998; Shinkle, 2012). As the value of an IJV is likely to change along with the parent's evolution (Franko, 1971; Chi, 2000), I expect a greater probability of the occurrence of IJV buyout or exit when the parent undertakes problemistic search. Although past research has extended the aspiration level learning theory to a variety of strategic decisions, international strategy is one of the areas that receive limited attention from scholars (except Lin, 2014). My study fills this gap and advances the knowledge about IJV buyout and exit. Hopefully, the results that support the theory's predictive power in the IJV context can encourage future IB research to explore the role of aspirations in other international strategies.

The second result emerging from my analyses is that aspirations for Japanese MNEs' parent performance played a role in inter-organizational learning. I theorize that an MNE may use its aspiration levels for parent performance to classify major competitors to facilitate learning from their subsidiary performance. Extending aspiration levels to inter-organizational learning is entirely new in the literature in which a firm's aspirations were only linked to attainment discrepancy in its own performance. Nevertheless, I argue that aspiration levels, defined as the minimum levels that would be deemed satisfactory, represent relevant and convenient reference points for the focal organization to evaluate major competitors' performance. As an early investigation into the roles of aspirations in inter-organizational learning, my study provides some insight for future research.

I found that a larger number of positive subsidiary performances reported by major competitors with parent performance below the focal MNE's aspiration levels significantly reduced the likelihood of the focal MNE quitting an IJV in the same country, after controlling for other market cues and the focal IJV's performance. However, a larger number of positive subsidiary performances reported by major competitors with parent performance above the focal MNE's aspiration levels did not exert the same impact. This piece of evidence provides some support for the importance of aspiration levels in inter-organizational learning, especially for identifying a cue of external opportunities to justify the continuous commitment in the existing IJV. However, the same cue did not increase the likelihood of MNEs internalizing the existing IJV. I speculate that the cue, though important, may still not be strong enough for managers to justify buyout that requires significant resource commitment and exposes the MNE to high risk. Future research may explore if outcome-based learning is more influential for strategies that do not require significant and long-term resource commitment.

I also did not find any evidence that negative subsidiary performance of perceived successful or unsuccessful major competitors influenced the likelihood of buyout or exit. The results are consistent with some prior research showing that peers' failure may not deteriorate the focal firm's confidence or expectation (e.g., Chuang & Baum, 2003). A plausible explanation is that managers tend to attribute others' failure to internal weaknesses and believe that their firms can perform better than others (Wagner & Gooding, 1997). Nonetheless, I expect that such bias may be weaker in the case of relatively successful major competitors' negative performance. It is therefore fruitful for future research to examine the interplay of such attribution bias and evaluation of peers' performance based on aspirations in inter-organizational learning.

Another plausible reason is the difficulty to make sense of major competitors' negative subsidiary performance. MNEs may be convinced that relatively successful major competitors' subsidiaries with negative performance still have promising prospect, otherwise relatively successful major competitors would have got rid of them. Indeed, whereas there are many studies reporting evidence that organizations imitate a practice when peers report positive performance, there are relatively few studies showing that organizations avoid a practice when peers report negative performance. This suggests that it may be more difficult to make sense of peers' negative performance than their positive performance. It is interesting for future research to systematically compare learning from peers' positive performance and learning form peers' negative performance.

A major limitation of the present study is that I was unable to control for aspiration levels for IJV performance due to data limitation. Nevertheless, examining the roles of aspiration levels for IJV performance in IJV evolution represents a fruitful future avenue, despite substantial theoretical challenges. The first concern is whether different partners maintain the same aspiration levels for the IJV performance. If other subsidiaries' performance of a partner influences its aspiration level for the IJV performance, for instance, different partners may hold different aspirations for the IJV performance and hence different levels of attainment discrepancy. The second concern is that even if both partners share the same aspiration level, a theory should also explain which partner takes action (e.g., buyout or exit). For example, positive attainment discrepancy in IJV performance that may increase the expected value of the IJV should encourage buyout, but which partner can eventually internalize the IJV? The fact that only one partner can internalize the IJV means that other partners' exit can occur with the positive attainment discrepancy. Likewise, while partners generally prefer to quit an IJV with

negative attainment discrepancy, one may ask if there is a partner that is willing to internalize the IJV (probably at a low price) and implement turnaround strategies.

A related issue is the classification of major competitors' subsidiary performance. As unconsolidated financial reports about subsidiary performance are not publicly available in most cases, I theorize that MNEs are most concerned about whether a major competitor's subsidiary performance is positive or negative, a piece of information that they may be able to obtain from database companies or consulting agencies. But in rare cases, MNEs may be able to obtain detailed financial performance of major competitors' subsidiaries. For example, the database used by Hsieh et al. (2015) provides detailed financial performance of Taiwanese subsidiaries in China (although Hsieh et al. (2015) still categorized subsidiary performance into positive and negative ones in their theoretical development). In such rare cases, I expect that MNEs may use their aspiration levels for subsidiary performance to evaluate major competitors' subsidiary performance. Still, my theory is applicable to more common cases in which MNEs can only rely on coarse measures of major competitors' subsidiary performance for making decisions.

Conclusion

As the first empirical attempt, this study presents some evidence that aspiration levels may play some role in inter-organizational learning. This theoretical extension is novel and yet plausible. I call for more research testing my theory in other types of inter-organizational learning. On the other hand, I show that negative attainment discrepancy in own parent performance is influential in both IJV buyout and exit. Hence, overall speaking, I conclude that MNEs' aspiration levels for parent performance play notable roles in IJV evolution.

NOTES

NOTES

¹ I by no means argue that aspiration levels are the only reference points for organizational decision makers to categorize competitors into successful and unsuccessful ones. I, instead, seek to provide a theoretical perspective for studying this issue.

² It should be noted that because different MNEs may maintain different aspiration levels, a major competitor can be perceived by an MNE as a successful one and by another MNE as an unsuccessful one.

³ Such cue is more relevant for the focal MNE than local partner(s) in the same IJV because the focal MNE comes from the same home country and industry as major competitors and thus tends to be exposed to same external opportunities and threats (Li et al., 2007). On the basis of such cue only, local partner(s) may not adjust the expected value of IJV in the same way as the focal MNE does.

⁴ Japanese Overseas Investments only provided two-digit industry classification for both parent firms and subsidiaries in a number of annual editions, limiting us from calculating social aspirations at a lower aggregate level. Nevertheless, my approach is justifiable because prior research has provided evidence that firms used others in the same two-digit industry as the reference group in a variety of decision contexts (e.g., Li et al., 2007; Mishina, Dykes, Block, & Pollock, 2010; Porac, Wade, & Pollock, 1999).

⁵ I expected that the social aspiration level would be more relevant for categorizing major competitors because it was constructed based on major competitors' average performance.

However, it was still worth testing if the historical and social aspirations were comparable in inter-organizational learning.

⁶ Following prior research (e.g., Arrfelt et al., 2013; Iyer & Miller, 2008), I analyzed historical or social aspirations in separate models. Another reason was that variables calculated based on the historical aspiration level and those calculated based on the social aspiration level were highly correlated (please see table 1).

⁷I was unable to enter aspiration levels for the IJV performance due to the lack of fine-grained measures for IJV performance. This limitation will be further discussed in the discussion section.

⁸ To control for the focal MNE's host country specific experience, I created *length of host country operation* that was measured as the number of years since the focal MNE established the first subsidiary in the host country. However, this variable and *IJV age* were highly correlated (r= 0.90). I decided to drop this variable because including *IJV age* should have already controlled for host country specific experience.

⁹ I did not add year-fixed effects because it would cause the problem of complete separation.
That is, as there was no event occurring in some years, one value of some year dummy variables
(1 in this case) would be associated with only one value of the dependent variable (0 in this case).
The maximum likelihood functions would fail to converge in the presence of complete separation.

I checked if my results are robust with a different analytical method. I broke the multinomial logit model into two binary logit models in order to apply the conditional fixedeffects and control for unobserved heterogeneity. Although this method has been proved legitimate (Allison, 2012; Begg & Gray, 1984), one might still want to know if the results would

be qualitatively the same as those obtained from the multinomial logit model. Fixed-effects binary logit model also has a disadvantage. That is, it would eliminate Japanese MNEs that had not experienced IJV buyout or exit in the studied period of time from the sample as it required the presence of within-subject variation in the dependent variable. As a result, only a part of the 3,162 observations was used in the main analysis, leading to reduced statistical power. I re-ran the analysis by applying a multinomial logit model with the error terms clustered by Japanese MNEs. This method could account for the dependence among observations under the same Japanese MNE. A disadvantage was that it could not control for unobserved heterogeneity. Nevertheless, I found that the results in this multinomial logit model were largely the same as those reported above, except that hypothesis 1 was not supported when the historical aspiration level was used.

REFERENCES

REFERENCES

- Allison, P. D. 2010. Survival analysis using SAS: A practical guide. Cary, NC: SAS Institute.
- Allison, P. D. 2012. Logistic regression using SAS: Theory and application. Cary, NC: SAS Institute.
- Anderson, E. & Gatignon, H. 1986. Modes of foreign entry: A transaction cost analysis and propositions. *Journal of International Business Studies*, 17(3): 1-26.
- Arrfelt, M., Wiseman, R., & Hult, G. T. M. 2013. Looking backward instead of forward: aspiration-driven influences on the efficiency of the capital allocation process. *Academy* of Management Journal, 56(4): 1081-1103.
- Barkema, H. G., Shenkar, O., Vermeulen, F., & Bell, J. H. 1997. Working abroad, working with others: How firms learn to operate international joint ventures. *Academy of Management Journal*, 40(2): 426-442.
- Baum, J. A., Rowley, T. J., Shipilov, A. V., & Chuang, Y.-T. 2005. Dancing with strangers: Aspiration performance and the search for underwriting syndicate partners. *Administrative Science Quarterly*, 50(4): 536-575.
- Begg, C. B. & Gray, R. 1984. Calculation of polychotomous logistic regression parameters using individualized regressions. *Biometrika*, 71(1): 11-18.
- Bourgeois, L. J. 1981. On the measurement of organizational slack. *Academy of Management Review*, 6(1): 29-39.
- Bromiley, P. & Harris, J. D. 2014. A comparison of alternative measures of organizational aspirations. *Strategic Management Journal*, 35(3): 338-357.
- Buckley, P. J. & Casson, M. 1996. An economic model of international joint venture strategy. *Journal of International Business Studies*, 27(5): 849-876.
- Buckley, P. J. & Casson, M. C. 1998. Models of the multinational enterprise. *Journal of International Business Studies*, 28(3): 21-44.

- Chi, T. 2000. Option to acquire or divest a joint venture. *Strategic Management Journal*, 21(6): 665-687.
- Chuang, Y.-T. & Baum, J. A. 2003. It's all in the name: Failure-induced learning by multiunit chains. *Administrative Science Quarterly*, 48(1): 33-59.
- Chung, C. C. & Beamish, P. W. 2010. The trap of continual ownership change in international equity joint ventures. *Organization Science*, 21(5): 995-1015.
- Conell, C. & Cohn, S. 1995. Learning from other people's actions: Environmental variation and diffusion in French coal mining strikes, 1890-1935. *American Journal of Sociology*, 101(2): 366-403.
- Cyert, R. M., & March, J. G. 1963. *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice-Hall.
- Damaraju, N. L., Barney, J. B., & Makhija, A. K. 2015. Real options in divestment alternatives. *Strategic Management Journal*, 36(5): 728-744.
- Delios, A. & Henisz, W. I. 2000. Japanese firms' investment strategies in emerging economies. *Academy of Management Journal*, 43(3): 305-323.
- Delios, A. & Beamish, P. W. 2001. Survival and profitability: The roles of experience and intangible assets in foreign subsidiary performance. *Academy of Management Journal*, 44(5): 1028-1038.
- Desai, V. M. 2016. The behavioral theory of the (governed) firm: Corporate board influences on organizations' responses to performance shortfalls. *Academy of Management Journal*, 59(3), 860-879.
- Dhanaraj, C. & Beamish, P. W. 2004. Effect of equity ownership on the survival of international joint ventures. *Strategic Management Journal*, 25(3): 295-305.
- Franko, L. G. 1971 Joint Venture Survival in Multi-national Corporations. New York: Praeger.
- Gaur, A. S. & Lu, J. W. 2007. Ownership strategies and survival of foreign subsidiaries: Impacts of institutional distance and experience. *Journal of Management*, 33(1): 84-110.
- Geringer, J. M. & Hebert, L. 1989. Control and performance of international joint ventures. *Journal of International Business Studies*, 8(3): 235-254.

Greene, W. H. 1993. *Econometric analysis*. New York: Macmillan

- Greve, H. R. 1998. Performance, aspirations, and risky organizational change. *Administrative Science Quarterly*, 43(1): 58-86.
- Greve, H. R. 2003a. A behavioral theory of R&D expenditures and innovations: Evidence from shipbuilding. *Academy of Management Journal*, 46(6): 685-702.
- Greve, H. R. 2003b. *Organizational learning from performance feedback: A behavioral perspective on innovation and change*. Cambridge: Cambridge University Press.
- Haunschild, P. R. & Miner, A. S. 1997. Modes of interorganizational imitation: The effects of outcome salience and uncertainty. *Administrative Science Quarterly*, 42(3): 472-500.
- Henisz, W. J. 2000. The institutional environment for multinational investment. *Journal of Law, Economics, and Organization*, 16(2): 334-364.
- Henisz, W. J. & Delios, A. 2001. Uncertainty, imitation, and plant location: Japanese multinational corporations, 1990-1996. *Administrative Science Quarterly*, 46(3): 443-475.
- Hennart, J.-F., Roehl, T., & Zietlow, D. S. 1999. 'Trojan horse' or 'workhorse?' The evolution of US-Japanese joint ventures in the United States. *Strategic Management Journal*, 20(1): 15-29.
- Hennart, J.-F. & Zeng, M. 2002. Cross-cultural differences and joint venture longevity. *Journal of International Business Studies*, 33(4): 699-716.
- Hofstede, G. 1980. *Culture's consequences: International differences in work-related values*. Beverly Hills, CA: Sage.
- Hsieh, K.-Y., Tsai, W., & Chen, M.-J. 2015. If they can do it, why not us? Competitors as reference points for justifying escalation of commitment. *Academy of Management Journa*1, 58(1): 38-58.
- Iyer, D. N. & Miller, K. D. 2008. Performance feedback, slack, and the timing of acquisitions. *Academy of Management journal*, 51(4): 808-822.
- Kelley, H. H. 1971. Attribution in social interaction. In E. E. Jones, D. E. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, and B. Weiner (Eds.), *Attribution: Perceiving the causes of behavior*: 1-26. Morristown, NJ: General Learning Press.

- Kogut, B. 1988. A study of the life cycle of joint ventures. *Management International Review*, 28(4): 39-52.
- Kogut, B. & Singh, H. 1988. The effect of national culture on the choice of entry mode. *Journal of International Business Studies*, 19(3): 411-432.
- Kogut, B. 1991. Joint ventures and the option to expand and acquire. *Management Science*, 37(1): 19-33.
- Labianca, G., Fairbank, J. F., Andrevski, G., & Parzen, M. 2009. Striving toward the future: aspiration—performance discrepancies and planned organizational change. *Strategic Organization*, 7(4): 433-466.
- Lant, T. K. & Montgomery, D. B. 1987. Learning from strategic success and failure. *Journal of Business Research*, 15(6): 503-517.
- Lant, T. K. 1992. Aspiration level adaptation: An empirical exploration. *Management science*, 38(5): 623-644.
- Lant, T. K. & Mezias, S. J. 1992. An organizational learning model of convergence and reorientation. *Organization Science*, 3(1): 47-71.
- Li, J., Yang, J. Y., & Yue, D. R. 2007. Identity, community, and audience: How wholly owned foreign subsidiaries gain legitimacy in China. *Academy of Management journal*, 50(1): 175-190.
- Li, J. & Li, Y. 2010. Flexibility versus commitment: MNEs' ownership strategy in China. *Journal of International Business Studies*, 41(9): 1550-1571.
- Lin, W.-T. 2014. How do managers decide on internationalization processes? The role of organizational slack and performance feedback. *Journal of World Business*, 49(3): 396-408.
- Lu, J. W. 2002. Intra-and inter-organizational imitative behavior: Institutional influences on Japanese firms' entry mode choice. *Journal of International Business Studies*, 33(1): 19-37.
- Lu, J. W. & Beamish, P. W. 2006. Partnering strategies and performance of SMEs' international joint ventures. *Journal of Business Venturing*, 21(4): 461-486.

- Lu, J. W. & Xu, D. 2006. Growth and survival of international joint ventures: An externalinternal legitimacy perspective. *Journal of Management*, 32(3): 426-448.
- Makino, S. & Beamish, P. W. 1998. Performance and survival of joint ventures with nonconventional ownership structures. *Journal of International Business Studies*, 29(4): 797-818.
- Meschi, P.-X. 2005. Stock market valuation of joint venture sell-offs. *Journal of International Business Studies*, 36(6): 688-700.
- Miller, K. D. & Bromiley, P. 1990. Strategic risk and corporate performance: An analysis of alternative risk measures. *Academy of Management Journal*, 33(4): 756-779.
- Mishina, Y., Dykes, B. J., Block, E. S., & Pollock, T. G. 2010. Why "good" firms do bad things: The effects of high aspirations, high expectations, and prominence on the incidence of corporate illegality. *Academy of Management Journal*, 53(4): 701-722.
- Porac, J. F., Wade, J. B., & Pollock, T. G. 1999. Industry categories and the politics of the comparable firm in CEO compensation. *Administrative Science Quarterly*, 44(1): 112-144.
- Puck, J. F., Holtbrügge, D., & Mohr, A. T. 2009. Beyond entry mode choice: Explaining the conversion of joint ventures into wholly owned subsidiaries in the People's Republic of China. *Journal of International Business Studies*, 40(3): 388-404.
- Reuer, J. J. & Miller, K. D. 1997. Agency costs and the performance implications of international joint venture internalization. *Strategic Management Journal*, 18(6): 425-438.
- Reuer, J. J. 2000. Parent firm performance across international joint venture life-cycle stages. *Journal of International Business Studies*, 31(1): 1-20.
- Reuer, J. J. 2002. Incremental corporate reconfiguration through international joint venture buyouts and selloffs. MIR: *Management International Review*: 237-260.
- Reuer, J. J. & Ariño, A. 2002. Contractual renegotiations in strategic alliances. *Journal of Management*, 28(1): 47-68.
- Rhee, M. 2009. Does reputation contribute to reducing organizational errors? A learning approach. *Journal of Management Studies*, 46(4): 676-703.

- Schneider, S. L. 1992. Framing and conflict: Aspiration level contingency, the status quo, and current theories of risky choice. Journal of Experimental Psychology: *Learning, Memory, and Cognition*, 18(5): 1040-1057.
- Shimizu, K. 2007. Prospect theory, behavioral theory, and the threat-rigidity thesis: Combinative effects on organizational decisions to divest formerly acquired units. *Academy of Management Journal*, 50(6): 1495-1514.
- Shinkle, G. A. 2012. Organizational Aspirations, Reference Points, and Goals Building on the Past and Aiming for the Future. *Journal of Management*, 38(1): 415-455.
- Sirmon, D. G., Hitt, M. A., & Ireland, R. D. 2007. Managing firm resources in dynamic environments to create value: Looking inside the black box. *Academy of Management Review*, 32(1): 273-292.
- Srinivasan, R., Haunschild, P., & Grewal, R. 2007. Vicarious learning in new product introductions in the early years of a converging market. *Management Science*, 53(1): 16-28.
- Staw, B. M., Sandelands, L. E., & Dutton, J. E. 1981. Threat rigidity effects in organizational behavior: A multilevel analysis. *Administrative Science Quarterly*: 501-524.
- Stopford, J. M. & Wells, L. T. 1972. *Managing the multinational enterprise*. New York: Basic Books.
- Under Armour. 2015. Annual report on Form 10-K. http://files.shareholder.com/downloads/UARM/2246263425x0x880876/7D1585BA-87FA-4E66-93D3-6C17B3A57B1E/10-K pef.pdf
- Wagner, J. & Gooding, R. Z. 1997. Equivocal information and attribution: an investigation of patterns of managerial sensemaking. *Strategic Management Journal*, 18(4): 275-286.
- Yan, A. & Zeng, M. 1999. International joint venture instability: A critique of previous research, a reconceptualization, and directions for future research. *Journal of International Business Studies*, 30(2): 397-414.
- Zaheer, S. 1995. Overcoming the liability of foreignness. *Academy of Management Journal*, 38(2): 341-363.
CHAPTER 2

ESSAY 2: DIVEST OR KEEP A FOREIGN SUBSIDIARY? THE ROLES OF LEARNING FROM PERFORMANCE FEEDBACK OF PARENT PROFITABILITY AND SALES GOALS AND LEARNING FROM SUBSIDIARY OPERATION

ABSTRACT

This study extends the aspiration level learning theory to multinational enterprises' decision on foreign divestment. Unique from prior behavior research, I examine the interaction between two causally related goals, parent profitability and sales goals. I challenge the applicability of the well-established sequential attention rule to such goal relationship, and propose another mechanism regarding how decision makers allocate their attention between the goals. More specifically, I argue that when decision makers perform causal analysis during problemistic search resulting from poor performance in parent profitability, poor performance of parent sales goal, a sub-goal of parent profitability, may be interpreted as a cause of poor parent profit. Parent sales goal may then be activated and catch decision makers' attention. As a result, decision makers may attempt to strengthen sales performance as a means to fix the profitability goal. As foreign divestment may impede the MNE from achieving sales growth, the preference for foreign divestment as a solution to profitability problems may fall in such circumstance. Besides, I examine the interaction between learning from performance feedback and learning from subsidiary operation. I suggest that learning from operation of a foreign subsidiary may increase the strategic importance of that subsidiary for achieving parent profitability and sales goals. I find some support for my predictions in a sample of Japanese multinational enterprises' foreign subsidiaries.

INTRODUCTION

The aspiration level learning theory, rooted in *The Behavioral Theory of The Firm* written by Cyert and March (1963), specifies that organizational decision makers learn from performance feedback of organizational goals and make changes if goal performance is below aspiration levels. Scholars have advanced the theory in a variety of strategic decisions such as R&D investment (e.g., Chen & Miller, 2007; Greve, 2003a), mergers and acquisitions (e.g., Iyer & Miller, 2008; Kim, Finkelstein, & Haleblian, 2015), asset acquisitions (e.g., Desai, 2008; Greve, 2011), and partnership formation (e.g., Baum, Rowley, Shipilov, & Chuang, 2005; Tyler & Caner, 2016). Although the extension of theory to international strategies has long been called for (Hutzschenreuter, Pedersen, & Volberda, 2007), only few attempts have been made (e.g., Jung, 2009; Lin, 2014). More such attempts can not only provide a further test of the external validity of the theory, but also advance our understanding about how firms make internationalization decisions.

Besides, despite the fact that organizations maintain multiple goals (Cyert & March, 1963; Simon, 1964), most empirical studies that drew on the aspiration level learning theory have examined only one goal. Learning from performance feedback of multiple goals is clearly a more complicated process. Examining such learning process, however, is necessary if we hope to explain and predict organizational decisions more precisely. Scholars have therefore called for more empirical effort regarding how organizations learn from performance feedback of multiple goals (e.g., Gavetti, Greve, Levinthal, & Ocasio, 2012; Shinkle, 2012).

This study seeks to address the two abovementioned issues by examining the impact of organizational learning from performance and aspirations of parent profitability and sales goals

on the occurrence of foreign divestment. Cyert and March (1963) listed five major goals pursued by business firms, which are profitability, sales, market share, production, and inventory goals. I focus on profitability and sales goals that usually draw attention from a variety of stakeholders such as shareholders and media. Foreign divestment refers to abandoning a foreign subsidiary by selling it to another organization or liquidating it. As it is a significant firm strategy that may influence firm size, resource allocation, employee morale, firm profitability, and share value (Harrigan, 1981; Singer & Van der Walt, 1987), it is a topic that is worth more researchers' attention (McDermott, 2010).

The aspiration level learning theory suggests that organizations tend to make greater strategic changes and have lower tolerance to business units with poor prospect when the attainment discrepancy in parent profitability is more negative (i.e., parent profit is further below aspiration levels) (Greve, 1998; Labianca, Fairbank, Andrevski, & Parzen, 2009; Lant & Mezias, 1992). I argue that the likelihood of a multinational enterprise (MNE) divesting a foreign subsidiary may increase in such case because the value of the foreign subsidiary may drop following the strategic changes or because the MNE may have lower tolerance to the subsidiary's prospect. When the attainment discrepancy in parent sales is more negative (i.e., parent sales is further below aspiration levels), on the other hand, organizations conduct search for solutions to simulate sales. I argue that the likelihood of an MNE divesting a foreign subsidiary may decrease because foreign divestment may cause the parent sales to decrease or cause the MNE to lose an opportunity to improve sales.

I next theorize the interaction of learning from the two goals' performance. The most accepted rule regarding such interaction in the literature is the sequential-attention mechanism in which decision makers attend to one goal at a time and move on to another goal when the

previous one's performance is above aspiration levels (Cyert & March, 1963). A study of profitability and size goals of insurance firms later provided support for this mechanism (Greve, 2008). This mechanism rests on the assumption that goals compete for limited decision makers' attention and organizational resources, and therefore decision makers have to prioritize goals and attend to goals sequentially based on the priority order.

I challenge the applicability of this mechanism to the interaction between causally related goals such as that between the profitability and sales goals examined in this study. Sales revenue is the major source of a firm's income that contributes to its profitability and thus attainment of sales goal will contribute to that of profitability goal. As such, the former is a sub-goal and the latter is a superordinate goal in a goal hierarchy (Cyert & March, 1963; Lord & Hanges, 1987; Mohr, 1973). Profitability is more related to a firm's survival and hence should be assigned a higher priority (Greve, 2008). I thus suggest that decision makers of MNEs tend to attend to profitability goal first and conduct problemistic search for solutions if there is negative attainment discrepancy in parent profitability (Cyert & March, 1963; Greve, 2003b). During the problemistic search, decision makers perform causal analyses for identifying the causes of profit shortfalls and design solutions tackling the causes (Cyert & March, 1963; Ford, 1985). I contend that one way to identify the causes of profit shortfalls is to examine performance of sub-goals, given their importance to achieving the profitability goal. In such causal attribution process, negative attainment discrepancy in sales goal may catch decision makers' attention and be interpreted it as a cause of the profitability goal's failure. It follows that sales goal is activated and decision makers may attempt to simulate parent sales as a means to improve profit (Ford, 1985; Mohr, 1973). As decision makers' attention currently focuses on strengthening sales revenue, the likelihood of foreign divestment that may impede the MNE from improving sales

revenue may decrease. Collectively, my theory suggests that MNEs may more extensively address a goal (i.e., sales goal) when the performance of another goal (i.e., profitability goal) is below rather than above aspiration levels. This is different from what the dominant sequentialattention rule proposes in the literature.

Last, I investigate the interaction between learning from performance feedback and learning from subsidiary operation, given that scholars have found the interaction between performance learning and experiential learning (e.g., Desai, 2008; Gaba & Joseph, 2013). It is expected that a foreign subsidiary accumulates a larger stock of unique knowledge and resources that are fit for the host country's environments as its age increases (Zaheer & Mosakowski, 1997). And, such knowledge and resources are likely to be more successfully transferred to the headquarter and other subsidiaries over time (Gaur, Delios, & Singh, 2007). I therefore argue that foreign subsidiaries with a greater age may be more strategically important at the time of recovering parent profit and sales. It follows that more negative attainment discrepancy in parent profitability may lead to a greater increase in the likelihood of divesting a younger foreign subsidiary than an older one, whereas more negative attainment discrepancy in parent sales may lead to a greater decrease in the likelihood of divesting an older foreign subsidiary than a younger one.

I test my predictions about when and why an MNE divest a foreign subsidiary with data concerning Japanese manufacturing MNEs' foreign subsidiaries and the results provide a certain level of support for my predictions. Overall, I seek to make three major theoretical contributions. The major one is that I propose another mechanism for allocating attention to multiple goals' performance feedback, which is different from the dominant one in the literature. My mechanism is applicable to causally related goals whose relationship may be more complementary than

competing, given that performance feedback of sub-goals may shed light on the causes of the superordinate goal's failure and strengthening sub-goals can help achieve the superordinate goals. Therefore, the failure of the superordinate goal may channel decision makers' attention to subgoals and motivate decision makers to address the failed sub-goals. The second contribution is that investigating learning from causally related goals can shed light on the direction of problemistic search, a topic that has been under-investigated (Bromiley, Miller, & Rau, 2001; Shinkle, 2012). The aspiration level learning theory is a general search theory that does not specify the direction of problemistic search and what types of changes or solutions will be eventually adopted by below-aspiration organizations. In this study, I show that performance feedback of sales goal may influence the direction of problemistic search triggered by negative attainment discrepancy in profitability goal and the managerial preference for foreign divestment as a solution to the profitability problem. Last, I respond to the call issued by Hutzschenreuter et al. (2007) and advance our understanding about when and why MNEs divest their foreign subsidiaries from a behavioral perspective. By integrating learning from performance feedback at the parent level and learning from past operation at the subsidiary level, I can, to some extent, explain and predict which foreign subsidiary's survival is more vulnerable or immune to negative attainment discrepancy in parent profit and sales performances.

THEORY AND HYPOTHESES

Attainment Discrepancy in Parent Profitability and Foreign Divestment

The aspiration level learning theory builds upon the premises of bounded rationality and limited attention capabilities of human decision makers (March & Simon, 1958; Simon, 1947). Instead of exploring every possible alternative to maximize goal performance, organizational

decision makers apply relatively simple rules to evaluate organizational goals' performance. Specifically, they adopt the satisficing principle and use an aspiration level as the reference point to identify the boundary of success and failure of a goal (Shinkle, 2012). An aspiration level here is defined as "the smallest outcome that would be deemed satisfactory by the decision maker" (Schneider, 1992; 1053). Decision makers develop an aspiration level based on the recent goal performance of the focal organization and/or other similar organizations (Cyert & March, 1963). The difference between goal performance and an aspiration level is attainment discrepancy (Lant & Montgomery, 1987; Lant, 1992). When there is positive attainment discrepancy (i.e., goal performance is above an aspiration level), decision makers are satisfied and tend to maintain the status quo. Negative attainment discrepancy (i.e., goal performance is below an aspiration level), however, signals problems and catches decision makers' attention, thereby triggering problemistic search for improving the goal performance (Cyert & March, 1963). Decision makers also adopt the satisficing principle during problemistic search because limited cognitive resources keep them from knowing all alternatives and all consequences of any one alternative. The search will continue until one or, at most, very few satisfactory and acceptable solutions are identified (Cyert & March, 1963; Simon, 1964).

Profitability is often one of the major goals of organizations such as MNEs (Cyert & March, 1963; Shinkle, 2012). This goal is also the one that has received the most attention from scholars. Past studies have shown that negative attainment discrepancy in organizational profitability may lead to greater R&D investment (e.g., Chen & Miller, 2007; Greve, 2003a), mergers and acquisitions (e.g., Iyer & Miller, 2008; Kim et al., 2015), asset acquisitions (e.g., Desai, 2008; Greve, 2011), and partnership formation (e.g., Baum et al., 2005; Tyler & Caner,

2016). Here, I propose that there are at least two reasons that negative attainment in parent profitability of an MNE may result in a greater chance of divesting a foreign subsidiary.

First, an MNE with more negative attainment discrepancy in profitability is more likely to engage in strategic changes. Prior research has shown that negative attainment discrepancy in profitability may signal that the existing firm capabilities and resources are not optimal and therefore, strategic changes are often turnaround strategies resulting from problemistic search (Greve, 2003b; Labianca et al., 2009; Lant & Mezias, 1992). For example, Greve (1998) found that radio stations with more negative attainment discrepancy in audience share were more likely to undertake costly and risky format change. Labianca et al. (2009), on the other hand, found that accredited business schools with more negative attainment discrepancy in revenue per faculty member were more likely to undertake radical changes in areas such as program offerings and faculty quality. The value of a foreign subsidiary to the MNE may fall following the strategic changes because the assets of the foreign subsidiary may no longer be fit for the MNE's overall strategy and asset base. Consequently, the MNE may be better off to divest the foreign subsidiary.

Second, foreign divestment is a strategy that managers and stakeholders are not always happy to deal with. Given that some assets are difficult to resell, a foreign subsidiary's true value may not be able to be reflected in its selling price. The impact of foreign divestment on firm share price is sometimes negative (Singer & Van der Walt, 1987). Retrieving investment and laying off employees may also give rise to political and moral controversy. Furthermore, stakeholders may consider FDI exit failure, and managers may be forced to admit committing errors and to justify their initial decisions (Singer & Van der Walt, 1987). Managers may therefore be reluctant to engage in FDI exit for the sake of face-saving and career prospects

(Boddewyn, 1979). Nevertheless, prior research has reported evidence that organizations with more negative attainment discrepancy in profitability were less tolerant of business units with poor prospect and more determined to engage in divestiture in order to improve organizational profitability in a timely manner (Desai, 2016; Shimizu, 2007). Hence, I expect that negative attainment discrepancy in profitability provide motivation and determination for the MNE's decision makers to divest foreign subsidiaries. Given greater strategic changes and determination to engage in foreign divestment following more negative attainment discrepancy in an MNE's parent profit, I predict:

Hypothesis 1. *The greater the negative attainment discrepancy in the focal MNE's parent profitability, the greater the likelihood of that MNE divesting a foreign subsidiary.*

Attainment Discrepancy in Parent Sales and Foreign Divestment

Sales revenue is also one of the common goals held by organizations such as MNEs (Cyert & March, 1963; Lant, 1992; Lant & Montgomery, 1987; Mezias, Chen, & Murphy, 2002). I expect that when parent sales performance is below aspiration levels, MNEs may conduct problemistic search for solutions that can improve sales revenue. I also expect that MNEs may reduce actions that may cause sales to decrease in the period of negative attainment discrepancy in sales.

The international business literature suggests that foreign subsidiaries generally serve two major purposes—asset exploitation and asset exploration (Makino, Lau, & Yeh, 2002). Asset-exploitation foreign subsidiaries allow the MNE to transfer its rent-generating resources and capabilities such as technological and marketing capabilities to other countries for the purposes of generating additional sales revenue (Caves, 1971). The transaction costs of transferring such

resources within the firm are usually lower than other modes such as licensing and exporting (Anderson & Gatignon, 1986; Buckley & Casson, 1976). As these asset-exploitation foreign subsidiaries are physically close to the product markets in other countries, they can react to the changes of market conditions more rapidly. Such rapid reaction is critical to the generation of sales revenue. Asset-exploration foreign subsidiaries, on the other hand, allow the MNE to tap strategic resources located in other countries (Dunning, 1998; Meyer, 2015). For example, many MNEs establish foreign subsidiaries in Silicon Valley in order to gain access to talented people, research facilities, knowledge spillover, collaboration with other technological firms, and government support (Teece, 1992). It is reasonable to assume that those strategic resources are critical to the MNE's sales revenue. For instance, technological capabilities enable the MNE to continuously develop and refine its products in the hope of protecting and expanding market share.

As both asset-exploitation and asset-exploration foreign subsidiaries are important sources of an MNE's sales revenue, I expect that foreign divestment will cause the sales revenue to drop, holding other things constant. Foreign divestment also means the loss of opportunities to improve sales revenue by expanding the existing foreign subsidiaries' operation. Furthermore, foreign divestment sometimes may adversely affect the sales revenue of the remaining business units owing to the loss of shared facilities, the loss of synergies between business units, the damage of firm image, the negative impact on employee morale, and the loss of goodwill and loyalty in distribution channels (Harrigan, 1981). As a result, I argue that when the negative attainment discrepancy in parent sales is greater, the MNE is less likely to divest a foreign subsidiary. Formally stated:

Hypothesis 2. The greater the negative attainment discrepancy in the focal MNE's parent sales, the less the likelihood of that MNE divesting a foreign subsidiary.

The Interaction between Parent Profitability and Sales Goals and the Direction of Problemistic Search

Although both parent profitability and sales goals are essential goals pursued by firms (Cyert & March, 1963), it is reasonable to expect that the profitability goal is a more important one because it is more directly related to organizational survival and managers' career (Greve, 2008). Accordingly, decision makers of an MNE are likely to assign a higher priority to parent profitability goal and attend to it prior to parent sales goal.

The theoretical discussion concerning hypothesis 1 suggests that MNEs, *on average*, are more likely to divest their foreign subsidiaries when the attainment discrepancy in parent profitability is more negative. However, the selection of strategies to improve parent profitability and preference for foreign divestment as a solution are likely to be heterogeneous across organizations and over time (Bromiley et al., 2001; Ford, 1985; Shinkle, 2012). The extant literature on the aspiration level learning theory, however, is lack of empirical studies examining the direction of problemistic search and how organizations select specific types of strategies and solutions to cope with goal failure (Bromiley et al., 2001; Shinkle, 2012).

Cyert and March (1963: 121) suggested that the rules of problemistic search "are simple minded in the sense that they reflect simple concepts of casualty". They further proposed that probleistic search took place in the neighborhood of the problem symptom and therefore solutions from problemistic search were likely to address the main causes of the problems. Therefore, one of the major tasks decision makers perform during problemistic search is causal

analysis for identifying the causes of the goal failure. If we aim to explain and predict the direction of problemistic search and the ultimate selection of solutions more precisely, it seems that it is important to understand how organizational decision makers attribute goal failure (Ford, 1985).

Performing causal analysis, nevertheless, is not an easy task, given limited cognitive resources of decision makers and the fact that goal failure usually arise from multiple causes (Ford, 1985; March & Simon, 1958). It is not uncommon that decision makers disagree on the causes of performance problems and the selection of solutions (Bourgeois, 1980; Cyert & March, 1963). Nevertheless, I propose that one way for decision makers to identify the causes of a goal's failure is to learn from performance feedback of sub-goals.

Goals can be causally related. That is, the attainment of a goal can contribute to that of another goal (Cyert & March, 1963; Lord & Hanges, 1987; Mohr, 1973). In such case, the former is a sub-goal and the latter is a superordinate goal in a goal hierarchy. An MNE's profitability equals incomes minus expenses. In most cases, sales revenue accounts for a majority of an MNE's income and therefore the attainment of parent sales goal can contribute to that of parent profitability goal. When parent profitability falls below aspiration levels, the MNE's decision makers perform causal analysis during problemistic search. I argue that performance feedback of sub-goals such as parent sales goal can be valuable information for such causal attribution, given the importance of sub-goals for achieving the parent profitability goal (Ford, 1985). Negative attainment discrepancy in parent sales is likely to signal problems and thus catch decision makers' attention. More importantly, decision makers are likely to interpret the negative attainment discrepancy in the parent sales as a cause of negative attainment discrepancy in the parent profitability (Ford, 1985; Mohr, 1973). It follows that decision makers may consider

fixing the parent sales goal as an effective way to reverse the unsatisfactory performance of the parent profitability. This also means that parent sales goal is activated and catches the attention of decision makers during the problemistic search resulting from negative attainment discrepancy in parent profitability. Hypothesis 1 suggests negative attainment discrepancy in parent profitability may increase the likelihood of divesting of a foreign subsidiary. On the other hand, hypothesis 2 states negative attainment discrepancy in parent sales may decrease the likelihood of divesting of a foreign subsidiary. Based on my theory of the interaction between the two goals, I expect that the preference for foreign divestment as a solution to the failure of parent profitability goal may decrease when parent sales goal is activated during the problemistic search resulting from the failure of parent profitability goal. Instead, decision makers may seek other solutions to stimulate sales as a means to improve the parent profit. Taken together, I argue that the effects of negative attainment discrepancy in parent profitability on the likelihood of divesting of a foreign subsidiary should be weaker when there is more negative attainment discrepancy in parent sales.¹ Formally stated:

Hypothesis 3. The effects of negative attainment discrepancy in the focal MNE's parent profitability on the likelihood of that MNE divesting a foreign subsidiary are weaker when negative attainment discrepancy in parent sales is greater.

The Interaction between Learning from Performance Feedback and Learning from Subsidiary Operation

In addition to learning from performance feedback of organizational goals, experiential learning is a central concept in *The Behavioral Theory of The Firm* (Argote & Greve, 2007; Cyert & March, 1963). Taking both types of learning into account can provide a more

comprehensive behavioral explanation for the occurrence of foreign divestment. In fact, some studies also show that the two types of learning may jointly influence organizational decisions (e.g., Desai, 2008; Gaba & Joseph, 2013). Here, I consider the interaction between learning from performance feedback and learning from subsidiary operation.

Prior subsidiary operation is an important source of knowledge about the impact of culture, policies and regulations, and business norms and practices in a host country on the specific foreign subsidiary's strategy and other outcomes (Johanson & Vahlne, 1977, 1990). I expect that this type of knowledge will increase as a foreign subsidiary's age increases, holding other things constant. In addition, a foreign subsidiary tends to rely on resources and capabilities transferred from the parent firm when it is young. However, the subsidiary develops more unique knowledge and resources through operation and interaction with stakeholders in the host country as it becomes more mature (Zaheer & Mosakowski, 1997). These unique knowledge and resources can also be strategically important for the parent firm and other subsidiaries, and thus shared within the firm (Dunning, 1998; Gaur et al., 2007; Makino et al., 2002; Teece, 1992). All in all, I expect that as a foreign subsidiary's age (and hence experiential learning) increases, the foreign subsidiary is likely to develop more knowledge about how to cope with the host country's environments and unique resources and capabilities that are valuable to the whole firm. As a result, I argue that older foreign subsidiaries with more operation experience may be more strategically important than younger ones for achieving parent profitability and sales goals, holding other things constant (Gaba & Joseph, 2013). It follows that an MNE should be more likely to rely on older foreign subsidiaries than younger ones to fix the performance problems of parent profitability and sales goals. This also means that it is less likely to divest older foreign

subsidiaries than younger ones when there is negative attainment discrepancy in parent profitability or sales. I therefore develop the following hypotheses:

Hypothesis 4. The effects of negative attainment discrepancy in the focal MNE's parent profitability on the likelihood of that MNE divesting a foreign subsidiary are weaker when the age of that foreign subsidiary is greater.

Hypothesis 5. The effects of negative attainment discrepancy in the focal MNE's parent sales on the likelihood of that MNE divesting a foreign subsidiary are stronger when the age of that foreign subsidiary is greater.

Figure 2 summarizes all hypotheses and predicted sign of coefficients.



Figure 2 Conceptual figure

METHODS

Sample and Data

I tested the hypotheses with the data concerning manufacturing foreign subsidiaries owned by Japanese manufacturing MNEs. I identified the sampled foreign subsidiaries from Kaigai Shinshutsu Kigyou Souran (Japanese Overseas Investments) published annually by Toyo Keizai, Inc.. Toyo Keizai Inc. complied the information by conducting mail and telephone survey with major listed and unlisted Japanese MNEs, and collecting archival data if necessary. The major advantage of Japanese Overseas Investments was that it covered almost all foreign subsidiaries of Japanese MNEs that responded to the survey (Henisz & Delios, 2001).

My dataset was a longitudinal one in which each cell represented a unique subsidiaryparent-year combination. In cases of a foreign subsidiary with more than one Japanese parent, the foreign subsidiary would appear more than once for a given year in the dataset so that each cell referred to only one Japanese parent. Accordingly, the only Japanese parent in each cell would be 'the focal MNE' stated in the hypotheses. Japanese Overseas Investments provided all data at the subsidiary level, while I acquired data at the Japanese parent level from Nikkei NEEDS tapes. The data concerning host country environments in which the foreign subsidiary was located came from multiple sources (please see below). After removing observations with missing data, the final sample for analysis consisted of 3,639 cells regarding 1,196 foreign subsidiaries and 233 Japanese parents between 1998 and 2007. I chose this particular 10-year time window that did not include the Asian financial crisis in 1997 and the global financial tsunami in 2008 because MNEs' normal decision-making concerning internationalization might be severely intervened during those two financial crises.

Dependent Variable

I used a binary variable, with 1 representing that the focal MNE divested the focal foreign subsidiary, and 0 representing that the focal MNE kept the focal foreign subsidiary. I identified the divestment event when the focal foreign subsidiary was no longer listed as a subsidiary of the focal MNE in Japanese Overseas Investments (Delios & Beamish, 2001; Dhanaraj & Beamish, 2004; Lu & Beamish, 2006). This variable was measured in year t+1 (i.e., 1999 to 2008) because I maintained a one-year lag between the independent variables and the dependent variable, which was consistent with prior international business studies (e.g., Delios & Beamish, 2001; Dhanaraj & Beamish, 2004). There were 156 foreign divestment events in the final sample.

Independent Variables

Attainment discrepancy in parent profitability. Attainment discrepancy in parent profitability equaled the focal MNE's parent profitability minus the aspiration level. To maintain the comparability with prior studies (e.g, Chen & Miller, 2007; Greve, 2003a, 2003b, 2011; Desai, 2008; Iyer & Miller, 2008; Mishina, Dykes, Block, & Pollock, 2010), I measured parent profitability using the focal MNE's return on assets (ROA) in year *t*. I used two proxies for the aspiration levels for parent performance. One was the historical aspiration level measured as the focal MNE's ROA in year *t-1*. Although some prior studies used multiple years of prior performance for calculating the historical aspiration level, I used the previous year's one because Bromiley & Harris (2014) found that using one year produced the best overall fit for three distinct attainment discrepancy models. They speculated that managers might not pay attention to the past beyond the previous year. The other proxy was the social aspiration level measured as the median ROA of Japanese MNEs in the same two-digit industry in year *t.*² It should be noted

that attainment discrepancy variables calculated based on the historical aspiration level and those calculated based on the social aspiration level were included in separate models because they are highly correlated (Chen & Miller, 2007; Iyer & Miller, 2008).

Following the tradition of research on the aspiration level learning theory, I implemented a spline function on an attainment discrepancy variable so that I could focus on the effects of negative attainment discrepancy (Greene, 1993). That is, I split each attainment discrepancy variable into two separate variables, *negative attainment discrepancy in parent profitability* and *positive attainment discrepancy in parent profitability*. *Negative attainment discrepancy in parent profitability* and *positive attainment discrepancy in parent profitability*. *Negative attainment discrepancy in parent profitability* and *positive attainment discrepancy in parent profitability* equaled 0 when parent profitability was above the aspiration level and equaled parent profitability minus the aspiration level when parent profitability equaled 0 when parent profitability minus the aspiration level and equaled parent profitability minus the aspiration level when parent profitability was above the aspiration level. I tested hypothesis 1 with *negative attainment discrepancy in parent profitability*, whereas *positive attainment discrepancy in parent profitability*, whereas *positive attainment discrepancy in parent profitability* and equaled parent profitability are aspirated by the aspiration level. I tested hypothesis 1 with *negative attainment discrepancy in parent profitability*, whereas *positive attainment discrepancy in parent profitability*.

Attainment discrepancy in parent sales. This variable equaled the focal MNE's sales revenue minus the aspiration level in year *t*. Again, I used two proxies for the aspiration levels. One was the historical aspiration level measured using the focal MNE's sales revenue in year *t*-1, and the other one was the social aspiration level measured as the median sales revenue of Japanese MNEs in the same two-digit industry in year *t*. By applying a spline function to each attainment discrepancy variable, I obtained *negative attainment discrepancy in parent sales* and *positive attainment discrepancy in parent sales*. I used the former to test hypothesis 2 and the latter as a control variable. I tested hypothesis 3 with the interaction term between the value of

negative attainment discrepancy in parent profitability and that of negative attainment discrepancy in parent sales.

Foreign subsidiary's age. I measured this variable as the difference between the focal foreign subsidiary's year of formation and the year of observation (Gaur et al., 2007). I tested hypothesis 4 with the interaction term between the value of *foreign subsidiary's age* and that of *negative attainment discrepancy in parent profitability*, and hypothesis 5 with the interaction term between the value of *negative attainment discrepancy in parent profitability*, and hypothesis 5 with the interaction term between the value of *negative attainment discrepancy in parent profitability*, and that of *negative attainment discrepancy in parent sales*.

Control Variables

Subsidiary level controls. I first controlled for the profitability of the focal foreign subsidiary. I used a perceptual assessment provided by the foreign subsidiary's general manager, and the data came from Japanese Overseas Investments. This measure had three ordinal levels: gain, breakeven, and loss. The classification was an absolute assessment of profitability without reference to other subsidiaries under the same parent (Delios & Beamish, 2001). The validity and reliability of this measure had been confirmed (Delios & Beamish, 2001) and many studies had employed this measure (e.g., Lu & Beamish, 2006; Makino & Beamish, 1998). As such, I included two dummy variables, *positive subsidiary profitability* and *negative subsidiary profitability*.³ Prior research found that an MNE was more likely to divest a foreign subsidiary in an unrelated industry (Berry, 2013). Accordingly, I included *noncore foreign subsidiary*, a dummy variable with 1 representing that the subsidiary was in a different two-digit industry from the focal MNE's primary business and 0 otherwise. I controlled for *foreign subsidiary size*, measured as the logarithm of the number of the subsidiary's employee, because it might reflect

the subsidiary's strategic or financial importance to the focal MNE. The focal MNE's ownership stake in the subsidiary might influence its ability to exert control over the subsidiary (Anderson & Gatignon, 1986). I therefore included two dummy variables, *wholly-owned subsidiary* measured as 1 if the focal MNE held 95% or more of equity ownership and 0 otherwise, and *majority-owned joint venture* measured as 1 if the focal MNE held more than 50% but less than 95% of equity ownership and 0 otherwise (Franko, 1971; Makino & Beamish, 1998). I also entered *the number of Japanese partners* and *number of local partners* for each foreign subsidiary because conflict among partners might be one of the reasons for foreign divestment. The conflict might also be more intense between a Japanese MNE and local partners (Hennart & Zeng, 2002). Last, I included a set of dummy variables (*natural resource and labor seeking, marketing seeking*, and *knowledge seeking*) representing the strategic purposes of the focal foreign subsidiary.

Japanese parent level controls. I controlled for the focal MNE's *R&D intensity* (R&D investment divided by sales) and *advertising intensity* (advertising investment divided by sales) as the proxies of intangible assets that were important for the focal foreign subsidiary to compete (Delios & Beamish, 2001). I also controlled for *parent size*, measured as the logarithm of the focal MNE's number of employee, to account for the focal MNE's market power. Slack resources should be important for supporting the operation of foreign subsidiaries. I included three slack variables (Bourgeois, 1981). *Absorbed slack*, measured using the ratio of selling, general, and administrative expenses to sales, was a proxy for administrative and managerial resources. *Unabsorbed slack*, measured as the ratio of current liabilities, represented short term liquidity. *Potential slack*, measured using the ratio of debt to equity as an inverse indicator, represented the potential borrowing ability. I also controlled for *host country*

experience at the parent level by including the logarithm of one plus the sum of subsidiary years of operational experience in the host country in which the focal foreign subsidiary was located and *other country experience* at the parent level by computing the logarithm of one plus the sum of subsidiary years of operational experience in other host countries (Henisz & Delios, 2001). I accounted for *foreign divestment experience* by including the three-year (years *t-2, t-1,* and *t*) moving average of the number of foreign divestment. Last, I entered the *number of foreign subsidiaries* owned by the focal MNE in year *t* because I expected that individual foreign divestment might have greater impact on the operation and strategy of an MNE with a smaller number of foreign subsidiaries.

Host country level controls. I included the logarithm of *population, per capita GDP* (in 2005 US\$, millions), *per capita GDP growth* (annual %), *real exchange rate against Japanese yen*, and *inward FDI intensity* (inward FDI flows divided by the host country's GDP). I acquired the data about the above variables from the World Development Indicator. I also controlled for the host country's *corruption level* by entering the corruption perception index (0 = most corrupt, 10 = least corrupt) developed by Transparency International. Furthermore, I took into account the distance between Japan and the host country where the focal foreign subsidiary operated. *Geographic distance* was obtained from the CEPII and *cultural distance* was measured as the composite index developed by Kogut and Singh (1988) based on Hofstede's national culture index (Hofstede, 1980). I also obtained *economic distance* and *administrative distance* from Berry, Guillén, and Zhou (2010). Last, I controlled for the host country's *political uncertainty* by including the POLCON index (0 = most uncertain, 1 = least uncertain) representing the extent to which the political institution structure could deter policymakers from altering the current policies and regulations (Henisz, 2000).

Analysis

I used Cox proportional hazards models to test the hypotheses as I was interested in the timing of foreign divestment and Cox models could effectively handle right-censored observations (i.e., those related to subsidiaries that had not been divested in the studied period) (Berry, 2013). Cox models also did not require us to make priori assumption about the baseline hazard function because they could allow for a variety of possible underlying hazard functions. An important issue to address here was tied data—events occurring at the same time interval. Tied data required additional statistical treatment because Cox models assumed each event to occur at a unique time. Given that I obtained the data regarding foreign divestment from the annual editions of Japanese Overseas Investments, I adopted discrete-time method that assumed tied events really occurred at the same time (i.e., fiscal year in my case) (Allison, 2010). I also controlled for the unobserved heterogeneity across Japanese MNEs in the preferences for foreign divestment by adding parent-fixed effects. In essence, I used the method of stratification to allow each MNE to have different baseline hazard functions while constraining the coefficients to be the same across MNEs (Allison, 2010). This method could control for all time-invariant unobserved heterogeneity across MNEs and thus avoided omitted variable biases. Last, I entered a set of year dummy variables to control for macro-environmental changes over time.

RESULTS

Table 3 presents the summary statistics of all variables used in the analyses. Table 4 presents the results of the Cox models. I first entered control variables only in model 1 and added independent variables in models 2 and 3 for testing hypotheses 1 and 2. Last, I added interaction variables in models 4 to 11 for testing the last three hypotheses.

Hypothesis 1 states that the likelihood of the focal MNE divesting a foreign subsidiary may increase with greater negative attainment discrepancy in parent profitability. The coefficients of *negative attainment discrepancy in parent profitability* are insignificant in models 2 and 3, failing to support hypothesis 1. However, some interaction terms are significant, meaning that the relationship requires more nuanced interpretation later.

Hypothesis 2 predicts that the likelihood of the focal MNE divesting a foreign subsidiary may decrease with greater negative attainment discrepancy in parent sales. The coefficient of *negative attainment discrepancy in parent sales* is positive and significant at the 5 percent level in model 2 that uses the historical aspiration level, but insignificant in model 3 that uses the social aspiration level. I therefore found support for hypothesis 2 only when the historical aspiration level was employed. Likewise, the relationship requires more nuanced interpretation later because some interaction variables are significant.

	Descriptive statistics																
	Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12.	13.	14.
1.	Divestment (binary)	0.04	0.20														
2.	Positive attainment discrepancy in parent																
	profitability (historical)	0.01	0.03	-0.01													
3	Negative attainment discrepancy in																
	parent profitability (historical)	-0.01	0.03	-0.04	0.23												
4	Positive attainment discrepancy in parent																
	profitability (social)	0.02	0.02	-0.05	0.12	0.22											
5.	Negative attainment discrepancy in																
	parent profitability (social)	-0.01	0.03	-0.04	0.11	0.76	0.31										
6	Positive attainment discrepancy in parent																
0.	sales (historical)	19924 01	5421946	-0.01	0.05	0.11	0.12	0.10									
7	Negative attainment discrepancy in	17721.01	0.219.10	0.01	0.00	0.11	0.12	0.10									
<i>,</i> .	narent sales (historical)	-8146 44	24370 24	0.01	0.06	0.24	0.09	0.16	0.12								
8	Positive attainment discrepancy in parent	0110.11	21370.21	0.01	0.00	0.21	0.07	0.10	0.12								
0.	sales (social)	260799.63	724419 30	0.00	0.00	-0.03	-0.09	-0.05	0.42	-0.52							
9	Negative attainment discrepancy in	200799.05	724417.50	0.00	0.00	0.05	0.07	0.00	0.12	0.52							
2.	narent sales (social)	-24237.07	83436 35	0.03	-0.03	-0.03	0.02	-0.01	0.07	-0.08	0.11						
10	Foreign subsidiary's age	12 58	11 73	-0.02	-0.05	0.02	-0.02	0.03	-0.06	-0.00	0.02	0.02					
11	Positive subsidiary profitability (binary)	0.64	0.48	-0.02	0.01	0.02	0.02	0.05	0.00	0.04	0.02	0.02	0.07				
12	Negative subsidiary profitability (binary)	0.17	0.38	0.07	0.01	-0.03	-0.06	-0.04	-0.05	-0.01	-0.01	0.02	-0.07	-0.60			
13	Noncore foreign subsidiary (binary)	0.25	0.43	0.07	0.01	-0.05	0.02	0.00	0.05	-0.01	0.05	0.02	-0.12	0.00	0.00		
13.	Foreign subsidiary size	2.25	0.45	0.02	0.00	-0.01	0.02	0.00	0.05	-0.02	0.03	0.03	0.12	0.00	0.00	0.04	
14.	Whally, averad avhaidiant (hinam)	2.23	0.01	-0.00	0.04	-0.01	0.01	-0.03	0.10	-0.08	0.14	0.03	0.17	0.10	-0.10	-0.04	0.01
15.	Majority owned joint vonture (binery)	0.20	0.44	0.00	0.00	-0.02	0.09	-0.01	-0.03	0.01	-0.07	0.02	0.02	-0.01	0.01	-0.01	0.01
10.	Number of Japanese pertners	0.20	1.07	-0.03	-0.01	-0.01	-0.02	0.00	0.01	0.03	-0.01	-0.04	0.03	-0.04	0.00	-0.09	0.00
17.	Number of local partners	1.04	0.74	-0.02	-0.02	0.01	-0.02	0.02	0.12	-0.08	0.14	0.04	0.01	-0.03	0.02	0.07	0.00
18.	Number of local partners	0.58	0.74	-0.03	0.02	0.02	-0.07	0.00	-0.03	-0.02	0.01	-0.03	0.05	0.02	-0.02	-0.05	0.03
19.	(hing ma)	0.45	0.50	0.00	0.01	0.00	0.00	0.02	0.00	0.01	0.01	0.02	0.00	0.01	0.02	0.00	0.15
20	(binary) Markating a salaing (binama)	0.45	0.50	-0.06	-0.01	0.00	-0.06	-0.03	-0.00	-0.01	-0.01	0.02	0.08	-0.01	-0.02	0.00	0.15
20.	Marketing seeking (binary)	0.74	0.44	-0.00	0.02	0.05	0.05	0.07	-0.10	0.04	-0.05	-0.08	0.14	0.04	-0.02	-0.04	-0.04
21.	Knowledge seeking (binary)	0.23	0.42	0.03	-0.03	0.01	-0.08	0.02	-0.08	0.01	-0.03	-0.03	0.14	0.00	-0.01	0.01	-0.08
22.	R&D intensity	0.02	0.02	0.04	-0.05	-0.03	0.01	-0.03	-0.04	-0.16	0.21	-0.02	0.04	-0.03	0.00	-0.03	-0.02
23.	Advertising intensity	0.01	0.01	-0.03	0.07	-0.03	0.09	-0.01	-0.03	-0.06	0.11	0.10	0.07	-0.01	-0.03	-0.05	0.00
24.	Parent size	3.80	0.49	0.01	-0.02	0.01	0.01	0.03	0.40	-0.30	0.57	0.23	-0.01	0.08	0.01	0.12	0.39
25.	Absorbed slack	0.20	0.09	0.00	0.06	-0.07	0.04	-0.07	-0.21	-0.01	0.01	0.10	0.10	-0.01	-0.02	-0.12	-0.17
26.	Unabsorbed slack	1.57	0.83	-0.04	-0.06	0.00	0.41	0.14	-0.09	0.08	-0.13	-0.02	0.02	0.03	-0.08	-0.02	-0.09
27.	Potential slack	3.80	19.37	0.02	-0.01	-0.07	-0.09	-0.10	-0.04	-0.10	0.01	0.04	0.06	-0.04	0.05	-0.02	0.02
28.	Host country experience at the parent													0.07			
20	level (log)	1.48	0.41	0.02	-0.03	0.03	-0.07	0.01	0.14	-0.11	0.27	0.09	0.21	0.06	-0.02	-0.01	0.16
29.	Other country experience at the parent																
	level (log)	0.87	0.41	0.02	0.00	0.00	0.01	0.01	0.10	-0.13	0.15	0.13	-0.11	0.03	-0.01	0.09	0.02
30.	Foreign divestment experience	0.73	1.16	0.04	-0.01	0.01	-0.15	-0.05	0.13	-0.43	0.61	0.11	0.05	0.01	-0.01	0.05	0.12
31.	Number of foreign subsidiaries	11.90	10.48	0.02	-0.04	0.05	0.04	0.09	0.42	-0.44	0.66	0.14	-0.05	0.06	-0.02	0.09	0.14
32.	Population (log)	8.16	0.65	-0.06	-0.01	0.06	0.00	0.06	0.05	0.05	0.01	-0.02	-0.19	0.00	0.04	0.02	0.07
33.	Per capita GDP	11684.84	13332.92	0.08	-0.02	-0.02	0.03	-0.01	0.01	0.01	0.00	-0.03	0.12	-0.05	0.05	0.03	-0.16
34.	Per capita GDP growth (%)	3.23	4.50	-0.04	0.03	0.14	0.06	0.05	0.11	0.18	0.01	-0.02	-0.14	0.11	-0.09	0.02	0.00
35.	Real exchange rate against Japanese yen	1.03	0.16	-0.01	-0.02	-0.05	-0.03	-0.02	-0.06	-0.13	0.03	-0.01	-0.05	-0.01	0.03	0.02	0.08
36.	Inward FDI intensity	3.54	5.86	0.05	0.00	0.01	-0.02	-0.01	0.00	0.02	-0.01	0.00	0.02	0.03	-0.04	0.00	-0.06
37.	Corruption level	5.10	2.24	-0.10	0.02	0.04	-0.04	0.02	0.02	0.01	0.00	-0.01	-0.14	0.03	-0.02	-0.02	0.19
38.	Geographic distance	6101.41	3510.72	0.06	-0.01	-0.01	0.00	-0.01	0.01	-0.01	0.02	0.00	0.26	-0.08	0.05	0.01	-0.08
39.	Cultural distance	2.80	0.85	0.00	0.00	-0.02	-0.05	-0.03	-0.02	0.00	-0.01	0.00	-0.07	0.01	-0.01	-0.04	0.06

Table 3

_	Table 3 (cont'd)																
	Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12.	13.	14.
40.	Economic distance	17.38	13.87	-0.04	0.00	-0.04	-0.05	-0.03	-0.03	-0.02	-0.03	0.01	-0.03	0.03	-0.06	-0.05	0.10
41.	Administrative distance	17.66	14.69	-0.04	0.01	0.02	-0.03	0.01	0.01	-0.01	0.00	0.00	0.14	-0.04	0.04	-0.05	0.10
42.	Polcon	0.46	0.33	-0.08	0.00	0.06	-0.01	0.03	0.06	0.04	0.02	0.00	-0.25	0.07	-0.03	-0.01	0.12

	Variables	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.
16.	Majority-owned joint venture (binary)	-0.29													
17.	Number of Japanese partners	-0.30	0.05												
18.	Number of local partners	-0.42	0.08	0.19											
19.	Natural resource and labor seeking	0.00	0.11	0.13	0.14										
20.	Marketing seeking	-0.04	0.10	0.09	0.22	0.15									
21.	Knowledge seeking	0.06	0.01	0.05	-0.01	0.01	0.17								
22.	R&D intensity	-0.09	0.05	0.02	0.03	-0.04	0.02	-0.01							
23.	Advertising intensity	0.02	-0.03	-0.08	-0.01	-0.10	0.00	0.04	0.16						
24.	Parent size	0.04	-0.05	0.10	-0.10	-0.01	-0.15	-0.13	0.11	0.06					
25.	Absorbed slack	0.04	-0.02	-0.15	0.01	-0.08	0.01	0.06	0.37	0.67	-0.14				
26.	Unabsorbed slack	0.06	-0.01	-0.07	-0.06	-0.06	0.09	0.03	0.12	0.11	-0.22	0.17			
27.	Potential slack	-0.02	0.05	0.01	0.03	0.06	-0.02	0.05	-0.03	-0.04	0.03	-0.03	-0.12		
28.	Host country experience (log)	-0.06	-0.10	0.08	-0.10	-0.03	-0.05	0.03	0.09	0.10	0.31	0.09	-0.11	0.03	
29.	Other country experience (log)	0.06	0.03	-0.02	0.04	-0.04	-0.07	-0.13	0.06	0.05	0.36	-0.01	-0.07	0.03	-0.55
30.	Foreign divestment experience	0.01	-0.01	0.06	-0.01	0.02	-0.08	0.01	0.16	0.12	0.44	0.07	-0.19	0.02	0.31
31.	Number of foreign subsidiaries	-0.11	-0.04	0.17	0.01	-0.03	-0.04	-0.11	0.12	0.00	0.62	-0.10	-0.17	0.00	0.29
32.	Population (log)	-0.17	0.03	0.01	0.11	-0.01	0.01	-0.06	0.03	-0.02	0.01	0.00	-0.01	0.02	0.24
33.	Per capita GDP	0.22	-0.20	-0.23	-0.37	-0.35	-0.06	0.21	0.05	0.03	-0.04	0.06	0.06	-0.04	0.25
34.	Per capita GDP growth (%)	-0.03	0.04	-0.06	0.01	0.01	0.02	-0.06	0.03	-0.01	0.04	0.00	0.00	-0.09	0.12
35.	Real exchange rate against Japanese yen	0.01	-0.03	0.07	-0.05	0.02	-0.07	-0.01	0.04	0.03	0.03	0.04	-0.01	0.06	0.04
36.	Inward FDI intensity	0.09	-0.01	-0.01	-0.09	-0.02	0.02	0.05	0.00	-0.02	-0.01	0.00	-0.01	-0.02	0.02
37.	Corruption level	-0.28	0.18	0.24	0.40	0.31	0.07	-0.18	-0.04	-0.05	0.02	-0.09	-0.05	0.05	-0.18
38.	Geographic distance	0.17	-0.11	-0.03	-0.32	-0.22	-0.05	0.16	0.04	0.04	0.02	0.02	0.01	0.03	0.15
39.	Cultural distance	0.03	0.03	-0.04	0.01	0.16	0.01	-0.06	-0.02	-0.03	-0.02	-0.02	-0.05	-0.03	0.05
40.	Economic distance	-0.05	0.15	0.13	0.17	0.32	0.02	-0.11	-0.06	-0.04	-0.01	-0.07	-0.06	0.01	-0.19
41.	Administrative distance	-0.08	0.09	0.07	0.11	0.10	0.03	-0.02	0.03	-0.04	0.02	-0.05	-0.05	0.06	-0.15
42.	Polcon	-0.16	0.16	0.07	0.20	0.19	-0.01	-0.16	0.00	-0.03	0.07	0.00	-0.05	0.03	0.03

	Variables	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.
30.	Foreign divestment experience	0.19													
31.	Number of foreign subsidiaries	0.27	0.56												
32.	Population (log)	-0.26	0.01	0.01											
33.	Per capita GDP	-0.23	-0.01	-0.05	-0.16										
34.	Per capita GDP growth (%)	-0.07	0.00	0.01	0.44	-0.16									
35.	Real exchange rate against Japanese yen	-0.06	0.03	0.04	0.10	0.03	-0.09								
36.	Inward FDI intensity	-0.01	-0.02	-0.01	-0.29	0.10	0.02	-0.04							
37.	Corruption level	0.13	-0.01	0.05	0.36	-0.89	0.13	0.00	-0.21						
38.	Geographic distance	-0.08	0.01	0.00	-0.13	0.62	-0.26	0.04	0.07	-0.57					
39.	Cultural distance	-0.06	0.03	-0.03	-0.16	-0.11	0.00	0.01	0.11	-0.05	-0.35				
40.	Economic distance	0.16	0.01	0.01	-0.34	-0.60	-0.11	0.01	0.20	0.39	-0.49	0.59			
41.	Administrative distance	0.16	-0.01	0.03	-0.08	-0.20	-0.27	-0.12	-0.19	0.32	0.08	0.03	0.16		
42.	Polcon	0.00	0.03	0.04	0.61	-0.64	0.49	0.01	-0.09	0.61	-0.55	0.18	0.28	0.09	

Note: n = 3,639 Subsidiary-parent-year observations. Correlations with an absolute value above 0.03 are significant at the 5 percent level.

	Model 1 Base model	Model 2 Historical aspirations	Model 3 Social aspirations	Model 4 Historical aspirations	Model 5 Social aspirations	Model 6 Historical aspirations	Model 7 Social aspirations	Model 8 Historical aspirations	Model 9 Social aspirations	Model 10 Historical aspirations	Model 11 Social aspirations
Major independent variables											
Positive attainment discrepancy in parent		5.20	-12.75	4.99	-13.25	6.05	-12.56	6.44	-12.72	5.61	-12.86
profitability		(5.11)	(13.22)	(5.16)	(13.21)	(5.10)	(13.19)	(5.12)	(13.27)	(5.17)	(13.27)
Negative attainment discrepancy in parent		-5.51	2.80	-12.53*	1.59	-12.13*	-0.99	-7.14	2.95	-11.73 [†]	-1.33
profitability (Hypothesis 1)		(4.80)	(4.44)	(5.39)	(4.68)	(5.84)	(5.63)	(4.79)	(4.47)	(6.15)	(5.64)
Positive attainment discrepancy in parent		0.00	-0.00	0.00	-0.00	0.00	-0.00	0.00	-0.00	0.00	-0.00
sales		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Negative attainment discrepancy in parent		0.00*	0.00	0.00	0.00	0.00*	0.00	0.00	0.00	-0.00	0.00
sales (Hypothesis 2)		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Foreign subsidiary's age	0.00	0.00	-0.00	0.00	-0.00	0.01	0.00	0.01	-0.00	0.01	0.00
	(0.01)	(0.12)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Interaction variables										4	
Negative attainment discrepancy in parent				-0.00*	-0.00					-0.00 ⁺	-0.00
profitability x Negative attainment				(0.00)	(0.00)					(0.00)	(0.00)
discrepancy in parent sales (Hypothesis 3)											
Negative attainment discrepancy in parent						0.51*	0.28			-0.06	0.26
profitability x Foreign subsidiary's age						(0.27)	(0.27)			(0.37)	(0.28)
(Hypothesis 4)										o o o*	
Negative attainment discrepancy in parent								0.00*	-0.00	0.00	-0.00
sales x Foreign subsidiary's age								(0.00)	(0.00)	(0.00)	(0.00)
(Hypothesis 5)											
Subsidiary level controls	0.00	0.00	0.00+	0.644	0.44	0.654	0.654	0.004	0.00+	0.40*	0.654
Positive subsidiary profitability (binary)	-0.63*	-0.63*	-0.63*	-0.64*	-0.64*	-0.65*	-0.65*	-0.68*	-0.63*	-0.68*	-0.65*
	(0.27)	(0.27)	(0.27)	(0.27)	(0.27)	(0.27)	(0.27)	(0.27)	(0.27)	(0.27)	(0.27)
Negative subsidiary profitability (binary)	0.35	0.38	0.36	0.43	0.36	0.41	0.36	0.38	0.36	0.41	0.36
	(0.30)	(0.30)	(0.30)	(0.30)	(0.30)	(0.30)	(0.30)	(0.30)	(0.30)	(0.30)	(0.30)
Noncore foreign subsidiary (binary)	0.60	0.59	0.59	0.60	0.59	0.61	0.59	0.59	0.59	0.60	0.60
F · · · · · ·	(0.31)	(0.32)	(0.32)	(0.32)	(0.32)	(0.32)	(0.32)	(0.32)	(0.32)	(0.32)	(0.32)
Foreign subsidiary size	-0.59**	-0.58**	-0.59**	-0.57**	-0.59**	-0.58**	-0.59**	-0.59**	-0.60**	-0.58**	-0.59**
	(0.19)	(0.19)	(0.19)	(0.19)	(0.19)	(0.19)	(0.19)	(0.20)	(0.19)	(0.20)	(0.19)
Wholly-owned subsidiary (binary)	-0.55	-0.47	-0.56	-0.52	-0.57	-0.52	-0.58	-0.45	-0.56	-0.49	-0.59
	(0.32)	(0.32)	(0.32)	(0.32)	(0.32)	(0.32)	(0.32)	(0.32)	(0.32)	(0.32)	(0.32)
Majority-owned joint venture (binary)	-0.67	-0.66	-0.70	-0.70	-0.71	-0.70	-0.71	-0.66	-0.69	-0.69	-0.71
	(0.36)	(0.36)	(0.36)	(0.36)	(0.36)	(0.37)	(0.36)	(0.36)	(0.36)	(0.37)	(0.37)
Number of Japanese partners	-0.05	-0.03	-0.05	-0.04	-0.05	-0.04	-0.05	-0.03	-0.05	-0.04	-0.05
	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)
Number of local partners	0.20	0.21	0.20	0.19	0.20	0.19	0.20	0.20	0.20	0.20	0.19
	(0.17)	(0.18)	(0.17)	(0.18)	(0.17)	(0.17)	(0.17)	(0.18)	(0.17)	(0.18)	(0.17)
Natural resource and labor seeking (binary)	-0.47	-0.47	-0.45	-0.49	-0.45	-0.48	-0.45	-0.48 ⁺	-0.45	-0.49 [*]	-0.45
	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)
Marketing seeking (binary)	-0.61*	-0.62*	-0.59*	-0.59*	-0.59*	-0.59*	-0.57*	-0.63*	-0.59*	-0.61*	-0.57*
	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)

 Table 4

 Results of the fixed-effects Cox proportional hazards models

	Model 1 Base model	Model 2 Historical aspirations	Model 3 Social aspirations	Model 4 Historical aspirations	Model 5 Social aspirations	Model 6 Historical aspirations	Model 7 Social aspirations	Model 8 Historical aspirations	Model 9 Social aspirations	Model 10 Historical aspirations	Model 11 Social aspirations
Knowledge seeking (binary)	0.58*	0.57*	0.58*	0.60*	0.59*	0.60*	0.60*	0.63*	0.59*	0.64*	0.61*
	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)	(0.28)
Parent level controls											
R&D intensity	-6.36	2.30	-3.03	6.24	-4.67	6.28	-1.06	6.40	-3.07	7.52	-2.33
Advertising intensity	(21.55)	(22.26)	(21.57)	(22.51)	(21.69)	(22.35)	(21.58)	(22.28)	(21.62)	(22.53)	(21.85)
	81.47	43.77	73.77	43.24	80.00	55.04	84.19	67.29	71.85	59.08	84.93
	(101.79)	(102.83)	(103.89)	(104.49)	(103.97)	(102.67)	(103.40)	(103.08)	(104.04)	(104.10)	(103.60)
Parent size	-7.30**	-8.64** (2.44)	-6.57** (2.44)	-9.49** (2.49)	-6.92** (2.51)	-9.28** (2.48)	-6.95** (2.47)	-9.19** (2.45)	-6.58** (2.44)	-9.53** (2.49)	-7.16**
Absorbed slack	7.29 (8.62)	9.58 (9.56)	7.53 (9.58)	12.24 (9.67)	9.90 (10.23)	12.80 (9.66)	8.79 (9.61)	11.65 (9.51)	7.70 (9.61)	12.45 (9.66)	10.42 (10.22)
Unabsorbed slack	-0.58	-0.56	-0.39	-0.53	-0.42	-0.49	-0.36	-0.47	-0.40	-0.48	-0.40
	(0.37)	(0.37)	(0.40)	(0.37)	(0.41)	(0.37)	(0.40)	(0.38)	(0.40)	(0.38)	(0.41)
Potential slack	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Host country experience (log)	27.90**	30.87**	30.62**	32.17**	31.50**	31.52**	30.83**	31.16**	30.50**	31.85**	31.25**
	(8.14)	(8.56)	(8.49)	(8.82)	(8.64)	(8.63)	(8.49)	(8.58)	(8.49)	(8.77)	(8.61)
Other country experience (log)	27.78**	30.77**	30.48**	32.08**	31.37**	31.40**	30.69**	30.99**	30.37**	31.70**	31.11**
	(8.15)	(8.58)	(8.51)	(8.83)	(8.65)	(8.65)	(8.50)	(8.59)	(8.51)	(8.78)	(8.63)
Foreign divestment experience	-0.43*	-0.38 [†]	-0.47*	-0.39 [†]	-0.48*	-0.36 [†]	-0.47*	-0.37 [†]	-0.47*	-0.38 [†]	-0.47*
	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)
Number of foreign subsidiaries	0.04	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.05	0.04
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Host country level controls	0.15	0.16	0.15	0.10	<u></u>	0.00		0.10	0.16	0.00	0.14
Population (log)	-0.15	-0.16	-0.15	-0.10	-0.14	-0.09	-0.11	-0.12	-0.16	-0.09	-0.14
	(0.40)	(0.41)	(0.40)	(0.41)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)
Per capita GDP	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Real exchange rate against Japanese ven	-0.03 (0.04) -0.63	-0.03 (0.04) -0.70	-0.03 (0.04)	-0.03 (0.04)	-0.03 (0.04)	-0.03 (0.04) -0.71	-0.03 (0.04) -0.59	-0.03 (0.04) -0.66	-0.03 (0.04) -0.61	-0.03 (0.04) -0.60	-0.03 (0.04) -0.59
Inward FDI intensity	(1.07)	(1.08) 0.04*	(1.08)	(1.08)	(1.09)	(1.09)	(1.09)	(1.12)	(1.09)	(1.11)	(1.09)
Corruption level	(0.01)	(0.02)	(0.01) -0.17	(0.02) -0.16	(0.01)	(0.02)	(0.01) -0.18	(0.02) -0.18	(0.01)	(0.02)	(0.02)
Geographic distance	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)
	-0.00	0.00	-0.00	0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Cultural distance	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
	-0.05	-0.03	-0.06	-0.09	-0.07	-0.10	-0.09	-0.13	-0.06	-0.15	-0.10
Economic distance	(0.16)	(0.16)	(0.16)	(0.16)	(0.16)	(0.17)	(0.16)	(0.17)	(0.16)	(0.17)	(0.16)
	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)

Table 4 (cont'd)

				(
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
	Base model	Historical	Social								
		aspirations									
Administrative distance	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Polcon	-0.71	-0.66	-0.69	-0.66	-0.67	-0.73	-0.73	-0.65	-0.65	-0.66	-0.66
	(8.85)	(0.86)	(0.85)	(0.86)	(0.85)	(0.85)	(0.85)	(0.86)	(0.86)	(0.86)	(0.86)
Log likelihood	-317.16	-312.71	-315.77	-309.62	-315.51	-310.97	-315.23	-309.30	-315.66	-307.45	-314.96
Likelihood ratio chi-square	148.58**	157.49**	151.37	163.66**	151.88**	160.95**	152.45**	164.30**	151.59**	168.01**	152.98**

Table 4 (cont'd)

Note: n = 3,639 Subsidiary-parent-year observations. Coefficients instead of hazard ratios are reported. Standard errors are in parentheses. Year-fixed effects are not reported.

 $^{\dagger}p < 0.1$; *p < 0.05; **p < 0.01 (all two-tailed tests).

I now turn the discussion to the hypothesized interaction effects. Hypothesis 3 predicts that the effects stated in hypothesis 1 may be weaker when negative attainment discrepancy in parent sales is greater because sales goal is activated during the problemistic search regarding the failure of parent profitability goal and foreign divestment may deter the focal MNE from pursuing sales growth. The interaction term between negative attainment discrepancy in parent profitability and negative attainment discrepancy in parent sales is significant at the 5 percent level in model 4 and at the 10 percent level in model 10 (full model), with both of the models using the historical aspiration level. The interpretation of interaction in non-linear models such as Cox models is more difficult and therefore some scholars proposed advanced statistical techniques for assisting the interpretation (e.g., Hoetker, 2007; Zelner, 2009). Nevertheless, Greene (2010) later suggested that the significance level of the interaction term and the use of interaction plots together provide sufficient evidence for hypothesis testing. Accordingly, I plotted the interaction pattern in figure 3 using the coefficients in model 4 to examine if it is consistent with hypothesis 3.⁴ In figure 3, as negative attainment discrepancy in parent profitability is greater, the likelihood of divesting a foreign subsidiary increases when attainment discrepancy in parent sales is 0. Such likelihood, on the contrary, decreases when attainment discrepancy in parent sales is highly negative. This pattern is consistent with hypothesis 3, and also explains why the main effect of negative attainment discrepancy in parent profitability on foreign divestment stated in hypothesis 1, that is conditional on the level of negative attainment discrepancy in parent sales, is insignificant. The coefficients of the interaction term are not significant in models 5 and 11 in which the social aspiration levels were used. Overall, hypothesis 3 is supported when using the historical aspiration levels. Negative attainment

discrepancy in sales is an enhancer of negative attainment discrepancy in profitability according

to Podsakoff, MacKenzie, and Fetter (1993).

Figure 3 Interaction effect between parent profitability goal and parent sales goal on the likelihood of divesting a foreign subsidiary (from table 4, model 4 using the historical aspiration levels)



Hypothesis 4 states that the effects of negative attainment discrepancy in parent profitability are greater on divesting a younger subsidiary than an older subsidiary. The coefficient of the interaction term between *negative attainment discrepancy in parent profitability* and *foreign subsidiary's age* is significant at the 10 percent level in model 6 but insignificant in models 7, 10, and 11. Overall, I failed to find sufficiently strong evidence supporting hypothesis 4 no matter whether the historical or social aspiration level was used.

Hypothesis 5 predicts that MNEs tend to keep older foreign subsidiaries than younger ones to cope with negative attainment discrepancy in parent sales. The interaction term between *negative attainment discrepancy in parent sales* and *foreign subsidiary's age* is significant at the 5 percent level in model 8 and at the 10 percent level in model 10 (full model), with both of the models using the historical aspiration level. I plotted the interaction pattern in figure 4 based on the coefficients in model 8 to examine if it is consistent with hypothesis 5.⁵ As we can observe, when attainment discrepancy in parent sales is more negative, the likelihood of divesting an old foreign subsidiary decreases to a greater extent than that of divesting a young foreign subsidiary. This pattern is consistent with hypothesis 5. Besides, the coefficients of the interaction term are insignificant in all models concerning the social aspiration levels. Taken together, hypothesis 5 is supported when the historical aspiration levels are used. Subsidiary age is an enhancer of negative attainment discrepancy in sales (Podsakoff et al., 1993).

Figure 4 Interaction effect between parent sales goal and foreign subsidiary age on the likelihood of divesting a foreign subsidiary (from table 4, model 8 using the historical aspiration levels)



DISCUSSION

This study extends the aspiration level learning theory to foreign divestment decision, one of the most common and significant firm internationalization decisions (Boddewyn, 1979; McDermott, 2010). Specifically, I investigate the roles of MNEs' aspirations for parent profitability and sales and their interaction. My study is unique from most behavioral studies in that I examine the interaction between two causally related goals. To the best of my knowledge, prior behavior studies have not examined such kind of organizational goal relationship.

I tested my theory with the data concerning Japanese manufacturing MNEs' decisions on keeping or divesting their manufacturing foreign subsidiaries and found support for a number of hypotheses when using the historical aspiration levels. Two fundamental results emerge from my analyses. First, I found that MNEs engaged in foreign divestment as a solution to negative attainment discrepancy in parent profitability when negative attainment discrepancy in parent sales was less negative. However, foreign divestment was no longer the solution as negative attainment discrepancy in parent sales became highly negative. Second, MNEs were less likely to divest foreign subsidiaries, especially old ones, when its parent sales declined below the aspiration levels. The overall findings suggest that both learning from performance feedback and learning from past operation are important in foreign divestment decisions.

Collectively, this study makes a number of contributions to the literatures on the aspiration level learning theory and international business. The major contribution of my study is I develop a theory about the interaction between two causally related goals. I propose that a sub-goal is activated when the superordinate goal's performance falls below the aspiration levels because negative performance feedback of the sub-goal may signal a cause of the superordinate

goal's failure and thus catch the attention of organizational decision makers in the causal analysis process (Ford, 1985; Mohr, 1973). Decision makers may in turn make changes to improve the sub-goal's performance as a means to fix the superordinate goal's performance. As such, the relationship between the causally related goals is complementary rather than competing. The evidence of the interaction between parent profitability and sales goals held by Japanese manufacturing MNEs provide some support for my theory. The mechanism of allocating attention proposed in this study is thus different from the dominant sequential-attention rule suggesting that decision makers address another goal only when they achieve the goal on hand (Cyert & March, 1963; Greve, 2008). I argue that my theory is more applicable to the interaction between causally unrelated goals. I encourage scholars to test and establish the external validity of my theory in other decision contexts.

The second contribution is also related to the interaction of causally related goals. The aspiration level learning theory is a general search theory that does not specify what specific types of solutions and changes are ultimately selected by below-aspiration organizations (Bromiley et al., 2001; Shinkle, 2012). However, it is reasonable to expect that different firms may have different solution preferences. In my study, I show that Japanese MNEs undertook foreign divestment as a solution to performance problems of parent profitability when the attainment discrepancy in parent sales was less negative. Such preference for foreign divestment as the solution disappeared when there was a highly negative attainment discrepancy in parent sales. Therefore, my theory suggests that performance feedback of sub-goals can help explain for the heterogeneity in the direction of problemistic search and selection of solutions to performance problems across organizations and over time. I encourage scholars to further study

the determinants of the direction of problemistic search and selection of solution because different solutions are likely to have different impact on the odd of turnaround and other organizational outcomes (Gavetti, 2012).

Another reason for this topic to be important is related to the non-significant findings in the literature regarding the main effects of negative attainment discrepancy in goal performance on organizations change (in the specific way predetermined by researchers) (e.g., Audia & Greve, 2006; Desai, 2016; Greve, 2011; Iyer & Miller, 2008). Researchers in general study one type of organizational change at a time. However, I show the preference for a type of change is likely to vary across organizations and over time, depending on the level of attainment discrepancy in another goal performance. This suggests the need to theoretically or statistically account for performance feedback of sub-goals in future research on the aspiration level learning theory, otherwise the main effects of negative attainment discrepancy in goal performance on the focal organizational change predetermined by researchers may not be uncovered.

Furthermore, my study contributes to the international business literature by advancing our knowledge about the determinants of foreign divestment from a behavioral perspective. Foreign divestment is an important research topic in international business (McDermott, 2010). Prior studies that drew on behavioral perspectives largely focused on learning from past operation (Hutzschenreuter et al., 2007). For example, Delios and Beamish (2001) and Li (1995) argued that host-country experience could reduce the probability of foreign divestment resulting from business failure. However, learning from performance feedback, despite its popularity in other organizational research areas, has been insufficiently investigated in the international business literature. I theorize and find that learning from performance feedback of parent profitability and sales goals is also important for the occurrence of foreign divestment.

Additionally, such learning may interact with learning from past subsidiary operation in determining the likelihood of divesting a specific foreign subsidiary. Future research should further examine how the interaction between two types of learning influences other firm internationalization decisions.

There are still a number of ways to extend my study. First, scholars may advance my theory to the next level by incorporating more than two goals. Obviously, a superordinate goal can relate to more than two sub-goals. A sub-goal can also be a means to achieve multiple superordinate goals. It is also likely to have more than two levels in a goal hierarchy (Mohr, 1973; Simon, 1964). Although there will be many theoretical and methodological challenges to consider such complicated goal hierarchy and relationship, it represents the complex reality and thus should be a fruitful research area.

Second, I only consider the goals and aspiration levels at the parent level. MNEs and subsidiaries may maintain goals and aspirations at the subsidiary level, although this is not the theoretical focus of the present study. The rare availability of detailed financial data at the subsidiary level also poses challenges for researchers to explore subsidiary goals. Nevertheless, the interaction between parent goals and subsidiary goals should be fruitful research areas, given the literature on the power dynamics and conflicts between the parent firm and their subsidiaries (e.g., Gaba & Joseph, 2013; Prahalad & Doz, 1981). For instance, it would be interesting to investigate how the parent firm motivates and coordinates its subsidiaries to fix the negative attainment discrepancy in its goal performance (at the parent level) and how subsidiaries resist the control of the parent when their goals (at the subsidiary level) are endangered.

In addition, one may want to investigate the organizational outcomes of learning from performance feedback, given that the extant literature largely focuses on the determinants of organizational decisions. Limited evidence suggests that learning from performance feedback may result in poor decisions and outcomes (e.g., Arrfelt, Wiseman, & Hult, 2013; Bowman, 1982). In my foreign divestment context, one may claim that foreign divestment should be made entirely based on the economic prospect of a foreign subsidiary rather than, for example, whether the parent achieves its sales goal or not. Nevertheless, the aspiration level learning theory highlights the cognitive limits of human decision makers and the importance of pursuing multiple organizational goals in order to satisfy the demand of stakeholders and avoid political strife within the firm (Cyert & March, 1963). But, it is still worth investigating whether organizations are really better-off (or worse-off) with such learning from performance feedback.

Last, a major advantage of quantitative research such as the present study is the relatively large sample size. Additionally, I was able to establish a panel dataset that allowed lagged independent variables. A drawback, however, is that I was only able to present evidence of outcomes deducted by the theory, but not evidence of processes. Although it requires tremendous time and effort to communicate with firms and therefore the sample size is usually small, qualitative research such as interviews and detailed examination of organizational documents is able to depict the processes and mechanisms in detail. It is also particularly useful in develop new and complicated theory, for example, goal relationship among more than two goals. I therefore call for qualitative research to complement my study.
NOTES

NOTES

¹ It should be noted that I am not denying that foreign divestment that could reduce expenses (more than the loss of sales revenue) is a solution to profitability problem when there is negative attainment discrepancy in parent sales. I instead argue that the preference for foreign divestment may be influenced by how decision makers interpret the causes of negative attainment discrepancy in parent profitability. When they interpret negative attainment discrepancy in parent sales is a cause of negative attainment discrepancy in parent profitability and hence parent sales goal is activated, the preference for foreign divestment may decrease because foreign divestment may impede the MNE from achieving sales growth.

² Japanese Overseas Investments only provided two-digit industry classification for both parent firms and subsidiaries in a number of annual editions, limiting me from calculating social aspirations at a lower aggregate level. Nevertheless, prior research has provided evidence that firms used others in the same two-digit industry as the reference group in a variety of decision contexts (e.g., Mishina et al., 2010; Porac, Wade, & Pollock, 1999).

³ I was unable to enter aspiration levels for the subsidiary profitability due to the lack of finegrained measures for IJV performance. This limitation will be further discussed in the discussion section.

⁴ In this interaction figure, a less negative value of *negative attainment discrepancy in parent profitability* and *negative attainment discrepancy in parent sales* is set at 0 because one standard deviation above the mean is a positive value, which does not make sense in the case of negative attainment discrepancy. A highly negative value is set at one standard deviation below the mean.

Other control variables are set at their mean (for continuous variables) or mode value (for binary variables).

⁵ In figure 4, a less negative value of *negative attainment discrepancy in parent sales* is set at 0 because one standard deviation above the mean is a positive value, which does not make sense in the case of negative attainment discrepancy. A highly negative value is set at one standard deviation below the mean. A young foreign subsidiary is set at one standard deviation below the mean age whereas an old subsidiary is set at standard deviation above the mean age. Other control variables are set at their mean (for continuous variables) or mode value (for binary variables).

REFERENCES

REFERENCES

Allison, P. D. 2010. Survival analysis using SAS: A practical guide. Cary, NC: SAS Institute.

- Anderson, E. & Gatignon, H. 1986. Modes of foreign entry: A transaction cost analysis and propositions. *Journal of International Business Studies*, 17(3): 1-26.
- Argote, L. & Greve, H. R. 2007. A behavioral theory of the firm-40 years and counting: Introduction and impact. *Organization Science*, 18(3): 337-349.
- Arrfelt, M., Wiseman, R., & Hult, G. T. M. 2013. Looking backward instead of forward: aspiration-driven influences on the efficiency of the capital allocation process. *Academy* of Management Journal, 56(4): 1081-1103.
- Audia, P. G. & Greve, H. R. 2006. Less likely to fail: Low performance, firm size, and factory expansion in the shipbuilding industry. *Management Science*, 52(1): 83-94.
- Baum, J. A., Rowley, T. J., Shipilov, A. V., & Chuang, Y.-T. 2005. Dancing with strangers: Aspiration performance and the search for underwriting syndicate partners. *Administrative Science Quarterly*, 50(4): 536-575.
- Berry, H., Guillén, M. F., & Zhou, N. 2010. An institutional approach to cross-national distance. *Journal of International Business Studies*, 41(9): 1460-1480.
- Berry, H. 2013. When do firms divest foreign operations? Organization Science, 24(1): 246-261.
- Boddewyn, J. J. 1979. Foreign divestment: magnitude and factors. *Journal of International Business Studies*, 10(1): 21-27.
- Bourgeois, L. J. 1980. Performance and consensus. *Strategic Management Journal*, 1(3): 227-248.
- Bourgeois, L. J. 1981. On the measurement of organizational slack. *Academy of Management Review*, 6(1): 29-39.
- Bowman, E. H. 1982. Risk seeking by troubled firms. *Sloan Management Review*, 23(4): 33-42.

- Bromiley, P., Miller, K. D., & Rau, D. 2001. Risk in strategic management research. *The Blackwell Handbook of Strategic Management*: 259-288.
- Bromiley, P. & Harris, J. D. 2014. A comparison of alternative measures of organizational aspirations. *Strategic Management Journal*, 35(3): 338-357.
- Buckley, P. J. and Casson, M. 1976. *The future of the multinational enterprise*: New York: Holmes & Meier
- Caves, R. E. 1971. International corporations: The industrial economics of foreign investment. *Economica*, 38(149): 1-27.
- Chen, W. R. & Miller, K. D. 2007. Situational and institutional determinants of firms' R&D search intensity. *Strategic Management Journal*, 28(4): 369-381.
- Cyert, R. M., & March, J. G. 1963. *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice-Hall.
- Delios, A. & Beamish, P. W. 2001. Survival and profitability: The roles of experience and intangible assets in foreign subsidiary performance. *Academy of Management Journal*, 44(5): 1028-1038.
- Desai, V. M. 2008. Constrained growth: How experience, legitimacy, and age influence risk taking in organizations. *Organization Science*, 19(4): 594-608.
- Desai, V. M. 2016. The behavioral theory of the (governed) firm: Corporate board influences on organizations' responses to performance shortfalls. *Academy of Management Journal*, 59(3), 860-879.
- Dhanaraj, C. & Beamish, P. W. 2004. Effect of equity ownership on the survival of international joint ventures. *Strategic Management Journal*, 25(3): 295-305.
- Dunning, J. H. 1998. Location and the multinational enterprise: a neglected factor? *Journal of International Business Studies*, 29(1): 45-66.
- Ford, J. D. 1985. The effects of causal attributions on decision makers' responses to performance downturns. *Academy of Management Review*, 10(4): 770-786.
- Franko, L. G. 1971 Joint Venture Survival in Multi- national Corporations. New York: Praeger.

- Gaba, V. & Joseph, J. 2013. Corporate structure and performance feedback: Aspirations and adaptation in M-form firms. *Organization Science*, 24(4): 1102-1119.
- Gaur, A. S., Delios, A., & Singh, K. 2007. Institutional environments, staffing strategies, and subsidiary performance. *Journal of Management*, 33(4): 611-636.
- Gavetti, G. 2012. PERSPECTIVE—Toward a behavioral theory of strategy. *Organization Science*, 23(1): 267-285.
- Gavetti, G., Greve, H. R., Levinthal, D. A., & Ocasio, W. 2012. The behavioral theory of the firm: Assessment and prospects. *The Academy of Management Annals*, 6(1): 1-40.
- Greene, W. H. 1993. *Econometric analysis*. New York: Macmillan
- Greene, W. 2010. Testing hypotheses about interaction terms in nonlinear models. *Economics Letters*, 107(2): 291-296.
- Greve, H. R. 1998. Performance, aspirations, and risky organizational change. *Administrative Science Quarterly*, 43(1): 58-86
- Greve, H. R. 2003a. A behavioral theory of R&D expenditures and innovations: Evidence from shipbuilding. *Academy of Management Journal*, 46(6): 685-702.
- Greve, H. R. 2003b. *Organizational learning from performance feedback: A behavioral perspective on innovation and change*. Cambridge: Cambridge University Press.
- Greve, H. R. 2008. A behavioral theory of firm growth: Sequential attention to size and performance goals. *Academy of Management Journal*, 51(3): 476-494.
- Greve, H. R. 2011. Positional rigidity: low performance and resource acquisition in large and small firms. *Strategic Management Journal*, 32(1): 103-114.
- Harrigan, K. R. 1981. Deterrents to divestiture. *Academy of Management Journal*, 24(2): 306-323.
- Henisz, W. J. 2000. The institutional environment for multinational investment. *Journal of Law, Economics, and Organization*, 16(2): 334-364.
- Henisz, W. J. & Delios, A. 2001. Uncertainty, Imitation, and Plant Location: Japanese Multinational Corporations, 1990-1996. *Administrative Science Quarterly*, 46(3): 443-475.

- Hennart, J.-F. & Zeng, M. 2002. Cross-cultural differences and joint venture longevity. *Journal of International Business Studies*, 33(4): 699-716.
- Hoetker, G. 2007. The use of logit and probit models in strategic management research: Critical issues. *Strategic Management Journal*, 28(4): 331-343.
- Hofstede, G. 1980. *Culture's consequences: International differences in work-related values*. Beverly Hills, CA: Sage.
- Hutzschenreuter, T., Pedersen, T., & Volberda, H. W. 2007. The role of path dependency and managerial intentionality: a perspective on international business research. *Journal of International Business Studies*, 38(7): 1055-1068.
- Iyer, D. N. & Miller, K. D. 2008. Performance feedback, slack, and the timing of acquisitions. *Academy of Management Journal*, 51(4): 808-822.
- Johanson, J. & Vahlne, J. E. 1977. The internationalization process of the firm-a model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies*, 8(1): 23-32.
- Johanson, J. & Vahlne, J.-E. 1990. The mechanism of internationalisation. *International Marketing Review*, 7(4):11-24.
- Jung, A. P. J. C. 2009. How firm performance affects internationalization. *Management International Review*, 49(6): 709-732.
- Kim, J.-Y. J., Finkelstein, S., & Haleblian, J. J. 2015. All aspirations are not created equal: the differential effects of historical and social aspirations on acquisition behavior. *Academy* of Management Journal, 58(5): 1361-1388.
- Kogut, B. & Singh, H. 1988. The effect of national culture on the choice of entry mode. *Journal of International Business Studies*, 19(3): 411-432.
- Labianca, G., Fairbank, J. F., Andrevski, G., & Parzen, M. 2009. Striving toward the future: aspiration—performance discrepancies and planned organizational change. *Strategic Organization*, 7(4): 433-466.
- Lant, T. K. & Montgomery, D. B. 1987. Learning from strategic success and failure. *Journal of Business Research*, 15(6): 503-517.

- Lant, T. K. 1992. Aspiration level adaptation: An empirical exploration. *Management Science*, 38(5): 623-644.
- Lant, T. K. & Mezias, S. J. 1992. An organizational learning model of convergence and reorientation. *Organization Science*, 3(1): 47-71.
- Li, J. 1995. Foreign entry and survival: Effects of strategic choices on performance in international markets. *Strategic Management Journal*, 16(5): 333-351.
- Lin, W.-T. 2014. How do managers decide on internationalization processes? The role of organizational slack and performance feedback. *Journal of World Business*, 49(3): 396-408.
- Lord, R. G. & Hanges, P. J. 1987. A control system model of organizational motivation: Theoretical development and applied implications. *Behavioral Science*, 32(3): 161-178.
- Lu, J. W. & Beamish, P. W. 2006. Partnering strategies and performance of SMEs' international joint ventures. *Journal of Business Venturing*, 21(4): 461-486.
- Makino, S. & Beamish, P. W. 1998. Performance and survival of joint ventures with nonconventional ownership structures. *Journal of International Business Studies*, 29(4): 797-818.
- Makino, S., Lau, C.-M., & Yeh, R.-S. 2002. Asset-exploitation versus asset-seeking: Implications for location choice of foreign direct investment from newly industrialized economies. *Journal of International Business Studies*, 33(3): 403-421.

March, J. G., & Simon, H. 1958. Organizations. New York: Wiley.

- McDermott, M. C. 2010. Foreign divestment: The neglected area of international business? *International Studies of Management & Organization*, 40(4): 37-53.
- Meyer, K. E. 2015. What is "strategic asset seeking FDI"? *The Multinational Business Review*, 23(1): 57-66.
- Mezias, S. J., Chen, Y.-R., & Murphy, P. R. 2002. Aspiration-level adaptation in an American financial services organization: A field study. *Management Science*, 48(10): 1285-1300.
- Mishina, Y., Dykes, B. J., Block, E. S., & Pollock, T. G. 2010. Why "good" firms do bad things: The effects of high aspirations, high expectations, and prominence on the incidence of corporate illegality. *Academy of Management Journal*, 53(4): 701-722.

- Mohr, L. B. 1973. The concept of organizational goal. *American Political Science Review*, 67(02): 470-481.
- Podsakoff, P. M., MacKenzie, S. B., & Fetter, R. 1993. Substitutes for leadership and the management of professionals. *The Leadership Quarterly*, 4(1): 1-44.
- Porac, J. F., Wade, J. B., & Pollock, T. G. 1999. Industry categories and the politics of the comparable firm in CEO compensation. *Administrative Science Quarterly*, 44(1): 112-144.
- Prahalad, C. K., & Doz, Y. L. 1981. An approach to strategic control in MNCs. *Sloan Management Review*, 22(4): 5-13.
- Schneider, S. L. 1992. Framing and conflict: Aspiration level contingency, the status quo, and current theories of risky choice. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 18(5): 1040-1057.
- Shimizu, K. 2007. Prospect theory, behavioral theory, and the threat-rigidity thesis: Combinative effects on organizational decisions to divest formerly acquired units. *Academy of Management Journal*, 50(6): 1495-1514.
- Shinkle, G. A. 2012. Organizational Aspirations, Reference Points, and Goals Building on the Past and Aiming for the Future. *Journal of Management*, 38(1): 415-455.
- Simon, H. A. 1947. Administrative behavior. New York: Free Press.
- Simon, H. A. 1964. On the concept of organizational goal. *Administrative Science Quarterly*. 9(1): 1-22.
- Singer, A. E. & Van der Walt, N. 1987. Corporate conscience and foreign divestment decisions. *Journal of Business Ethics*, 6(7): 543-552.
- Teece, D. J. 1992. Foreign investment and technological development in Silicon Valley. *California Management Review*, 34(2): 88-106.
- Tyler, B. B. & Caner, T. 2016. New product introductions below aspirations, slack and R&D alliances: A behavioral perspective. *Strategic Management Journal*, 37(5): 896-910.
- Zaheer, S. & Mosakowski, E. 1997. The dynamics of the liability of foreignness: A global study of survival in financial services. *Strategic Management Journal*, 18(6): 439-463.

Zelner, B. A. 2009. Using simulation to interpret results from logit, probit, and other nonlinear models. *Strategic Management Journal*, 30(12): 1335-1348

CHAPTER 3

ESSAY 3: PERFORMANCE FEEDBACK OF CAUSALLY RELATED GOALS: IMPLICATIONS FOR DIRECTION OF PROBLEMISTIC SEARCH

ABSTRACT

The well-established rule of sequential attention specifies that organizational decision makers will attend to another goal if the goal on hand is achieved. I posit that this mechanism may not be applicable to the interplay of causally related goals. Rooted in a robust theoretical foundation and data from the Organization for Economic Co-operation and Development (OECD), my analysis shows that national private R&D goal and national public R&D goal may not catch policymakers' attention until national innovation goal falls below the aspiration level, which is contrary to what the sequential attention rule suggests. More specifically, to cope with performance shortfalls in national innovation, policymakers take measures to stimulate private R&D investment when national private R&D goal also fails, whereas they opt for public R&D investment when national public R&D goal and national public R&D goal guides the selection of solutions to the failed national innovation goal. Broadly, this study advances the aspiration level learning theory by shedding light on the direction of problemistic search, a topic that has not been adequately investigated in the literature.

INTRODUCTION

The aspiration level learning theory postulates that organizational decision makers, who are boundedly rational, learn from performance feedback of goals with a satisficing principle (Cyert & March, 1963; March & Simon, 1958; Shinkle, 2012). They use an aspiration level as the reference point to identify the boundary of success and failure for an organizational goal. When goal performance is above the aspiration level, decision makers are satisfied and tend to maintain the status quo. When goal performance is below the aspiration level, on the contrary, decision makers are unsatisfied and engage in problemistic search for solutions, leading to organizational changes and risk taking (Greve, 2003b; Kacperczyk, Beckman, & Moliterno, 2015).

Despite scant empirical investigation, a number of scholars recognize that learning from performance feedback is more complicated in the presence of multiple goals (Connolly, Conlon, & Deutsch, 1980; Cyert & March, 1963; Gavetti, Greve, Levinthal, & Ocasio, 2012; Greve, 2008; Lindblom, 1959; Simon, 1964). Given that goals compete for scarce resources and decision makers' attention (March & Simon, 1958; Simon, 1947), Cyert and March (1963) proposed a sequential-attention mechanism in which decision makers attend to a goal at a time and move on to another goal when the previous one's performance is above the aspiration level. Greve (2008) later found support for this mechanism in his study of performance and size goals of insurance firms.

Nevertheless, some goals are causally related. That is, the attainment of a goal contributes to that of another goal (Cyert & March, 1963; Lord & Hanges, 1987; Mohr, 1973). In such case, the former is a sub-goal and the latter is a superordinate goal in a goal hierarchy. To the best of my knowledge, prior studies have not examined how organizational decision makers learn from

and react to performance feedback of causally related goals. I argue that the sequential-attention mechanism may not be applicable to this type of goal relationship because performance feedback of a sub-goal has implications on the direction of problemistic search for solutions to the failed superordinate goal. More specifically, some conceptual studies suggest that organizational decision makers tend to perform causal analyses to identify the causes of goal failure and design solutions addressing the causes during problemistic search (Cyert & March, 1963; Ford, 1985). I contend that one way to identify the causes of the superordinate goal's failure is to examine performance of sub-goals, given their importance to achieving the superordinate goal. In such causal attribution process, below-aspiration sub-goals may catch decision makers' attention and be interpreted as causes of the superordinate goal's failure. It follows that below-aspiration sub-goals are activated and decision makers may attempt to address those sub-goals as a means to improve the superordinate goal's performance (Mohr, 1973).

In this study, I investigate how policymakers in national governments learn from and respond to performance feedback of three causally related goals, namely national innovation goal, national private R&D goal, and national public R&D goal, and make changes in innovation policies based on such learning. The first one is the superordinate goal and the other two are sub-goals in a goal hierarchy because both national private and public R&D investments are critical drivers of national innovation (Eaton & Kortum, 1996; Furman, Porter, & Stern, 2002; Furman & Hayes, 2004; Hu & Mathews, 2005, 2008). The evidence from the Organization for Economic Co-operation and Development (OECD) countries reveals that national private R&D goal and national public R&D goal may not catch policymakers' attention until national innovation goal declines below the aspiration level and that policymakers may use performance feedback of the two sub-goals to guide the direction of problemistic search for solutions to the failed national

innovation goal. These results suggest that decision makers may pay attention to other goals (or sub-goals) even though the goal on hand is still underachieved.

My study seeks to make four major theoretical contributions. First, I challenge the generalizability of the well-established rule of sequential attention in the context of causally related goals. My results that sub-goals are activated when the superordinate goal is underachieved indicate another plausible rule of allocating attention. Second, the aspiration level learning theory is a general search theory that does not specify the direction of problemistic search and what types of changes or solutions will be eventually adopted by below-aspiration organizations (Bromiley, Miller, & Rau, 2001; Shinkle, 2012). Prior empirical research has also not systematically examined how below-aspiration organizations select solutions. By focusing on learning from causally related goals, I show that performance feedback of sub-goals may influence the direction of problemistic search and the selection of solutions to the failed superordinate goal. Third, while most past studies focused on goals of business firms, I provide evidence for the external validity of the aspiration level learning theory in national governments' goals. Last, I contribute to the national innovation literature by providing behavioral explanations for the changes in innovation policy instruments. I will discuss the contributions in detail in the discussion section

THEORY AND HYPOTHESES

National Innovation Goal

National innovation is a critical driver of the economic growth and living standard of a country in the long-term (Helpman, 1992; Romer, 1990; Solow, 1970). The major theoretical underpinning is that national innovation fosters a country's productivity through combining raw materials in a sophisticated way, modifying production procedures and instructions, and

improving the quality of finished goods. Eaton and Kortum (1996) found that the level of total R&D spending, a major input of national innovation, was positively related to a country's income level in a sample of OECD countries. Landes (1969), an economic historian, also delineated the importance of new technologies in the industrial revolution to the increase in incomes in developed countries.

Additionally, national innovation contributes to a country's competitive advantage that enables its business firms to remain competitive in international markets (Porter, 1990; Rugman, Oh, & Lim, 2012). In international markets where multinational firms usually suffer from the liability of foreignness and lack legitimacy and local market knowledge (Zaheer, 1995), innovation capabilities become especially important for them to compete by offering differentiated and superior products (Porter, 1990). Research indicates that the home country is the most important source for multinational firms to develop their innovation capabilities (McGahan & Victer, 2009; Porter, 1990). For example, the strong national innovation capacity of the United States has been allowing American firms to be profitable in international markets (Rugman et al., 2012).

Aside from economic benefits, national innovation can provide new solutions for social problems such as those related to environmental protection, public health, defense, and security (Borrás & Edquist, 2013). The discussion on the values of national innovation here is definitely not exhaustive, but it should be comprehensive enough to argue that at least some national governments pursue national innovation goal (Mytelka & Smith, 2002). Evidence across nations tends to support this argument. The United States' President Bush signed *The America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Act* (America COMPETES) in 2007 with the goal of keeping the United States as the most

innovative nation in the world. Gupta et al. (2013) reported that South Korea's government set ambitious targets of the number of patents and scientific publications for public research institutes and universities. China also set ambitious targets of the number of patent application at the country-level in its five-year plan for 2011-2015 (Harris, 2012). Mexico, on the other hand, launched *the Special Program on Science and Technology* from 2001 to 2006 to enhance national innovative capability (Gonzalez-Brambila, Veloso, and Lever, 2007). In the following sections, I develop a performance feedback model that applies to national governments with national innovation goal.

Learning from Performance Feedback of National Innovation Goal

The aspiration level learning theory builds upon the premises of bounded rationality and limited attention capabilities of human decision makers (March & Simon, 1958; Simon, 1947). Instead of exploring every possible alternative to maximize goal performance, organizational decision makers apply relatively simple rules to evaluate organizational goals' performance. Specifically, they adopt the satisficing principle and use an aspiration level as the reference point to identify the boundary of success and failure of a goal (Shinkle, 2012). An aspiration level here is defined as "the smallest outcome that would be deemed satisfactory by the decision maker" (Schneider, 1992; 1053). Decision makers develop an aspiration level based on the recent goal performance of the focal organization and/or other similar organizations (Cyert & March, 1963). The difference between goal performance and an aspiration level is attainment discrepancy (Lant & Montgomery, 1987; Lant, 1992). When there is positive attainment discrepancy (i.e., goal performance is above an aspiration level), decision makers are satisfied and tend to avoid changes. Negative attainment discrepancy (i.e., goal performance is below an aspiration level), in contrast, signals problems and catches decision makers' attention, thereby triggering problemistic

search for solutions (Cyert & March, 1963). Decision makers also adopt the satisficing principle during problemistic search because limited cognitive resources keep them from knowing all alternatives and all consequences of any one alternative. The search will continue until one or, at most, very few satisfactory and acceptable solutions are identified (Cyert & March, 1963; Simon, 1964). Past research indicates that solutions often involve organizational changes and risk-taking (Bromiley, 1991; Greve, 1998, 2003b; Kacperczyk et al., 2015).

The aspiration level learning theory was first developed and has been extensively applied in the decision context of business firms (Cyert & March, 1963; Gavetti et al., 2012; Greve, 2003b; Shinkle, 2012). While most studies in this research stream focused on profitability goals, a few exceptions examined innovation goals (e.g., Tyler & Caner, 2016), product quality goals (e.g., Rhee, 2009), and size goals (Greve, 2008). More recently, a number of scholars established the external validity of the theory in the context of public organizations such as state-funded schools (e.g., Nielsen, 2014) and public hospitals (e.g., Salge, 2011, 2012).

Limited extension of the aspiration level learning theory to national governments' decisions has been made so far (except Anderson & McKeown, 1987; Rose, 1991). However, Cyert and March (1963: 285) stated that "if we view the concepts alone, it is clear that they are not intrinsically unique to the firm. The processes they stipulate are general decision processes". Consistent with this view, scholars acknowledge that national governments' decisions are subject to bounded rationality and limited attention capabilities of policymakers, and thus the satisficing principle applies in this decision context as well (Jones, 2003; Jones & Baumgartner, 2005; Rose, 1991; Simon, 1995). In particular, Anderson and McKeown's (1987) theorized that policymakers in national governments developed aspiration levels for relative share of world capabilities and learnt from performance feedback to decide whether to initiate wars. The findings were largely consistent with their performance feedback model.

Here, I extend the theory to the context of national innovation goal. Given its importance as discussed above, policymakers are likely to direct their attention to the national innovation goal when there is negative attainment discrepancy (Anderson & McKeown, 1987; Rose, 1991). The goal failure represents a problem because it may cost policymakers and their parties political support from constituencies that value national innovation. Consequently, policymakers are likely to engage in problemistic search for solutions.

Past research shows that stimulating R&D investment, a critical input in a national innovation system, is a promising solution to unsatisfactory performance of national innovation (Eaton & Kortum, 1996; Furman et al., 2002; Furman & Hayes, 2004; Hu & Mathews, 2005, 2008). R&D investment comes from two major sources, namely the private and public sectors. Research shows that private R&D investment consistently outperforms public R&D investment in generating measurable innovation outputs such as patents and trademarks (Furman et al., 2002; Griliches, 1995; Hu & Mathews, 2005, 2008). Perhaps it is because private R&D investment carries greater personal risk and therefore promotes greater efficiency (Griliches, 1995). In addition, attracting private R&D investment does not escalate the burden of public finance as much as expanding public R&D investment does. Nevertheless, a number of policy instruments for promoting private R&D investment require amendment of existing regulations and laws, and thus are likely to be subject to bureaucracy and politics. For example, the proposal for a directive to allow software to be patentable across the European Union in 2002 was rejected in the European Parliament owing to resistance from constituencies with vested interests such as the open source community (Borrás & Edquist, 2013).

On the other hand, raising public R&D investment does not require major modification of existing legislations and regulations, which allows national governments to address performance shortfalls in national innovation performance with less delay. Public R&D investment can be in the forms of funding for public research institutes and laboratories, funding for universities, and subsidies and contracts offered to R&D-performing firms in the private sector. It is the fundamental funding source of R&D projects that have substantial social returns but cannot be economically justified by private returns (David, Hall, & Toole, 2000; Feldman & Kelley, 2006). An example of such projects is basic research that intends to obtain new knowledge without specific commercial products or processes in mind. Basic research can be extremely valuable to society at large. It may introduce new instrumentation and methodologies that in turn create a new field of science such as artificial intelligence or computational physics (Salter & Martin, 2001). Nonetheless, public R&D investment also plays a nontrivial role in the commercialization of innovation (Crow & Bozeman, 1987; Jaffe & Lerner, 2001).

Prior research suggests that both private R&D and public R&D investments are necessary for driving national innovation. Private R&D investment is necessary in that it is efficient and does not create burden on national governments' limited budgets. Public R&D investment is necessary in that it is the major funding source of important R&D projects that have substantial social value and yet little private value. Therefore, private R&D and public R&D investment are likely channeled to different types of R&D projects (David et al., 2000; Feldman & Kelley, 2006). I expect that both measures to promote private R&D investment and expansion in public R&D investment, on average, can be the outcomes of problemtistic search conducted by policymakers in national governments in conjunction with negative attainment discrepancy in national innovation performance. The aspiration level learning theory also suggests that more

negative attainment discrepancy (i.e., goal performance declines further below an aspiration level) amplifies the extent of problemistic search and organizational changes (Greve, 1998, 2003a). Accordingly, my prediction is:

Hypothesis 1a. The greater the negative attainment discrepancy in national innovation performance, the greater the extent to which policymakers take measures to stimulate private R&D investment.

Hypothesis 1b. The greater the negative attainment discrepancy in national innovation performance, the greater the extent to which policymakers increase public R&D investment.

Learning from Performance Feedback of Sub-goals and the Direction of Problemistic Search

The above discussion suggests that national governments, *on average*, will increase public R&D investment and take measures to stimulate private R&D investment to solve performance problems of national innovation goal. However, the selection of strategies and solutions to improve national innovation performance is likely to be heterogeneous across national governments and over time (Borrás & Edquist, 2013; Ford, 1985). The extant literature on the aspiration level learning theory is lack of empirical studies examining how organizations select specific types of strategies and solutions to cope with performance problems (Bromiley et al., 2001; Shinkle, 2012).

Cyert and March (1963: 121) suggested that the rules of problemistic search "are simple minded in the sense that they reflect simple concepts of casualty". They further proposed that problemistic search took place in the neighborhood of the problem symptom and therefore solutions from problemistic search were likely to address the main causes of the problems.

Drawing an analogy, Borrás and Edquist (2013: 1514) said that "if our car engine stops, we need to know why it has stopped before we can fix it". It is therefore important to understand how organizational decision makers attribute goal failure if we aim to explain and predict the direction of problemistic search and the ultimate selection of solutions more precisely (Ford, 1985).

Performing causal analysis is not an easy task, given limited cognitive resources of decision makers and the fact that performance problems usually arise from multiple causes (Ford, 1985; March & Simon, 1958). It is not uncommon that decision makers disagree on the causes of performance problems and the selection of solutions (Bourgeois, 1980; Cyert & March, 1963). In the rest of this section, I first introduce the goal structure for causally related goals and then propose that decision makers can use performance feedback of sub-goals in identifying the causes of and solutions for unsatisfactory performance of the superordinate goal.

Organizations maintain a variety of goals (Cyert & March, 1963; March & Simon, 1958; Simon, 1964). One of the reasons is that different constituencies evaluate the performance and effectiveness of the focal organization using different criteria (Bourgeois, 1980; Connolly et al., 1980; Lindblom, 1959). Some goals compete with each other for scarce resources and decision makers' attention. In such case, decision makers may develop goal priority and apply the sequential-attention rule as a quasi-resolution of conflict. More specifically, they address the most important goal until it is attained. They in turn shift their attention to the next important goal and so on (Cyert & March, 1963; Greve, 2008).

Nevertheless, organizations may apply "local rationality" by breaking a goal into a set of sub-goals (Cyert & March, 1963: 117). These goals are causally connected in that achieving a goal is a means to achieve another goal. The former is thus a sub-goal and the latter is a

superordinate goal in a goal hierarchy (Bateman, O'Neill, & Kenworthy-U'Ren, 2002; Mohr, 1973). Superordinate goals are often more important, abstract, and long-term. Sub-goals, in contrast, are less important, more specific, and more short-term (Bateman et al., 2002; Lord & Hanges, 1987). A purpose of applying such local rationality is that sub-goals can serve as specific instructions for guiding different organizational members to pursue superordinate goals (Cyert & March, 1963). This is particularly useful in the case of decentralization and division of labor. For example, the goal of a highway department to increase traffic from and to a city is a sub-goal of the city government with the superordinate goal to increase commercial activity in the city (Mohr, 1973). The sub-goal here is specific enough to guide and evaluate the highway department's strategies and behavior. Obviously, the city government is likely to impose other sub-goals on other organizational members to achieve the goal to increase commercial activity in the city. An example may be a lower crime rate for the police department.

When the performance of a superordinate goal falls below the aspiration level, organizational decision makers want to understand why, although it is usually a difficult task as mentioned earlier. I argue that performance feedback of sub-goals can be valuable information for such causal attribution (Ford, 1985). Decision makers may inspect the performance of subgoals and determine if it is satisfactory or not (Cyert & March, 1963; Simon, 1995). Sub-goals with positive attainment discrepancy are not likely to result in the negative attainment discrepancy in the superordinate goal and to attract decision makers' attention. Sub-goals with negative attainment discrepancy, on the contrary, are likely to signal problems and hence to catch the attention of decision makers. Given that the sub-goals are important means for achieving the superordinate goal, decision makers are likely to interpret the negative attainment discrepancy in the sub-goals as a main cause of performance shortfalls in the superordinate goal (Ford, 1985;

Mohr, 1973). It follows that those below-aspiration sub-goals may be activated because decision makers may consider fixing them an effective way to reverse the unsatisfactory performance of the superordinate goal.

In the present research context, national governments are likely to possess sub-goals for national private R&D and national public R&D investments (Borrás & Edquist, 2013; OECD, 2011). As mentioned earlier, good performance on these two sub-goals is *necessary* to achieve national innovation goal (Furman et al., 2002; Griliches, 1995; Hu & Mathews, 2005, 2008), which is at a higher level of the goal hierarchy. A well-known example is the European 2020 target specifying that 3% of European Union's GDP should be invested in R&D by 2020 (1% from public funding and 2% from the private sector).¹

Based on my theory developed earlier, when both national innovation performance and national private R&D investment fall below their aspiration levels, policymakers are likely to attribute the performance shortfalls in the national innovation goal to the shortfalls in private R&D investment. Because solutions are likely to be targeted at the source of the problems (Cyert & March, 1963; Ford, 1985), national private R&D goal is activated as policymakers tend to take measures to stimulate private R&D investment to cope with the negative attainment discrepancy in national innovation goal.² I thus derive the following hypothesis:

Hypothesis 2a. The effects of negative attainment discrepancy in national innovation on the extent to which policymakers take measures to stimulate private R&D investment will be stronger when negative attainment discrepancy in national private R&D investment is greater.

Likewise, when both national innovation performance and public R&D investment decline below their aspiration levels, policymakers are likely to attribute the poor performance

on national innovation goal to the insufficiency in public R&D investment, thereby increasing subsequent public R&D investment to cope with the negative attainment discrepancy in national innovation goal.

Hypothesis 2b. The effects of negative attainment discrepancy in national innovation on the extent to which policymakers increase public R&D investment will be stronger when negative attainment discrepancy in public R&D investment is greater.

Last, I expect that regardless of performance feedback of national innovation, the shortfalls in national private R&D or public R&D goal performance will catch the attention of policymakers and trigger problemistic search. It is partly because constituencies that value private R&D and pubic R&D investments may also exert pressure to policymakers to fix the negative attainment discrepancies in these two sub-goals. Therefore, according to the aspiration level learning theory, when national private R&D investment declines below the aspiration level, policymakers may render problemistic search and take measures to stimulate private R&D investment to a greater extent. Likewise, when national public R&D investment declines below the aspiration level, policymakers may increase public R&D funding to a greater extent in order to eliminate the negative attainment discrepancy. Formally stated:

Hypothesis 3a. The greater the negative attainment discrepancy in national private R&D investment, the greater the extent to which policymakers take measures to stimulate private R&D investment.

Hypothesis 3b. The greater the negative attainment discrepancy in public R&D investment, the greater the extent to which policymakers increase public R&D investment. Figure 5 summarizes all hypotheses and predicted sign of coefficients.

Figure 5 Conceptual figure



METHODS

Empirical Context and Data

I tested the hypotheses with an initial sample consisting of 34 OECD countries from 1985 to 2010.³ The OECD highlights the importance of national innovation to economic growth and welfare (Mytelka & Smith, 2002). For example, the OECD released a document—*Technical Change and Economic Policy* claiming that national innovation was a solution to the economic crisis in 1970s (OECD, 1980). Becoming a member of the OECD indeed is a result of a rigorous review process for the willingness and ability of the candidate country to assume the obligations

of membership. Of particular relevance is that the candidate country's policies on science and technology should satisfy the core principles maintained by the Committee for Scientific and Technological Policy, such as promoting advances in scientific and technological knowledge, promoting policies which encourage and protect innovation while supporting the diffusion and access to knowledge, and developing policies and good practices as regards the accessibility, use and management of research data. The OECD Directorate for Science, Technology and Industry (DSTI) also provides policy advice for member countries from time to time. It is therefore reasonable to assume that OECD countries possess national innovation goal. Besides, the DSTI reports consistent and reliable data about innovation activities of its members periodically. Periodic and reliable performance feedback of national innovation is essential for effective learning and problemistic search (Borrás & Edquist, 2013; Lord & Hanges, 1987).

Dependent Variables

Measures to stimulate private R&D investment. I considered two policy measures here: *enforcement of intellectual property rights* and *legal environments favoring technology*. I obtained the data from annual surveys conducted by IMD world competitiveness reports that had been used extensively by prior studies (e.g., Furman et al., 2002; Furman & Hayes, 2004; Hu & Mathews, 2005, 2008). In 2012, 4,210 senior business executives from 59 countries were surveyed. *Enforcement of intellectual property rights* was measured using the two-year moving average of survey response (on a 0–10 scale) to the statement "intellectual property rights are adequately enforced" in the focal country in years t+1 and t+2 with both years weighted equally. I measured *legal environments favoring technology* using the two-year moving average of survey response (on a 0–10 scale) to the statement and application of technology are supported by the legal environment" in the focal country in years t+1 and t+2 with both years

weighted equally. It has been argued that strong protection of intellectual property and favorable legal environments for technological development should increase the incentives of business firms to invest in R&D by allowing them to appropriate the rents of innovation efficiently (Borrás & Edquist, 2013; Varsakelis, 2001).

Public R&D investment. This variable was measured as the two-year moving average of R&D investment funded by the focal national government divided by the country's GDP in years t+1 and t+2 with both years weighted equally. The recipients of public R&D investments included government, higher education, business, and non-profit sectors. I obtained this variable from the OECD Main Science and Technology Indicators (MSTI).⁴

Explanatory and Control Variables

Attainment discrepancy in national innovation performance. Although there may be no perfect way to measure national innovation performance, Acs, Anselin, and Varga (2002) suggested that the number of patents is a fairly reliable proxy.⁵ Three types of patents are reported by the OECD and used by many prior studies — United States Patent and Trademark Office (USPTO) patents, European Patent Office (EPO) patents, and Triadic patents (i.e., patents that are simultaneously filed at the USPTO, EPO, and the Japanese Patent Office) (e.g., Furman, Porter, and Stern, 2002; Bottazzi and Peri, 2003; Hu and Mathews, 2005; de Rassenfosse and de la Potterie, 2009; Krammer, 2009; Buesa, Heijs, and Baumert, 2010; Castellacci and Natera, 2013). That the OECD reports the three types of patents may indicate that the OECD acknowledges the importance and appropriateness of the three types of patents as indicators of national innovation performance, and that decision makers and constituencies in member countries are likely to use them to evaluate national innovation performance (Borrás & Edquist, 2013; de Rassenfosse and de la Potterie, 2009). I opted for Triadic patents in this study because it

does not suffer home bias as USPTO and EPO patents do.⁶ In addition, due to the high costs in time and money involved in patent application processes and the rigorous review in granting processes in both of the three patent offices, most triadic patents are likely related to commercially significant and new-to-the-world innovation that are particularly important for the long-term economic growth and other social concerns (de Rassenfosse and de la Potterie, 2009). Accordingly, I measured national innovation performance using the number of Triadic patents granted to applicants from the focal country in year *t* (based on the priority date).

The aspiration level learning theory specifies that organizations take historical and/or social performance into account when developing the aspiration level, which is not publicly stated in most cases (Cyert & March, 1963). In their study of the impact of national governments' aspirations for the relative share of world capabilities on the intention to initiate a war, Anderson and McKeown (1987) found that using the focal government's performance in the previous year as the aspiration level made the best prediction of the outcomes. However, they did not take social performance into account. In my research context, OECD countries may consider other members as the reference group and compete with each other in national innovation performance (Furman & Hayes, 2004). I therefore adopted the switching model proposed by Bromiley (1991) and further validated by Bromiley and Harris (2014). The switching model proposes that for organizations performing below the average of their peers, they are likely to set the aspiration level to the average performance. This idea is consistent with the fact that some countries have been catching up with others' performance in national innovation (Furman & Hayes, 2004; Harris, 2012). For organizations performing above the average of their peers, on the other hand, they are likely to set the aspiration level based on their historical performance with some (mostly upward) adjustment. The formulas for calculating the aspiration level are:

National innovation aspiration_{*i*,*t*} = Peer national innovation _{*i*,*t*-1} if national innovation_{*i*,*t*-1} < Peer national innovation _{*i*,*t*-1}

or

National innovation aspiration_{i,t} = a * national innovation_{i,t-1} if national innovation_{i, t-1} > Peer Performance_{i,t-1}

Here, *Peer national innovation* was measured as the median number of Triadic patents across all OECD countries, *i* indicates the focal country, *t* is time, and *a* is an adjustment factor for the historical performance. Bromiley (1991) used 1.05 for *a* in a sample of business firms. This value may not be applicable to my study examining national governments' decisions. I reestimated *a* by searching values from 1.01 to 1.20 (by increments of 0.01) and used the one giving the highest model fit overall (i.e., within R-square in my fixed-effects models). This procedure produced a value of 1.13 for *a*.

Attainment discrepancy in national innovation was measured as the number of Triadic patents of the focal national government in year *t* minus the aspiration level calculated based on the above switching model. I implemented a spline function on this variable so that I could focus on the effects of negative attainment discrepancy (Greene, 1993). Specifically, I split the variable into two separate variables, *positive attainment discrepancy in national innovation performance* and *negative attainment discrepancy in national innovation performance. Positive attainment discrepancy in national innovation performance* equals 0 when the number of Triadic patents is below the aspiration level and equals the number of Triadic patents minus the aspiration level when the number of Triadic patents is above the aspiration level. *Negative attainment*

discrepancy in national innovation performance equals 0 when the number of Triadic patents is above the aspiration level and equals the number of Triadic patents minus the aspiration level when the number of Triadic patents is below the aspiration level. *Negative attainment discrepancy in national innovation performance* was a major independent variable for testing the hypotheses, whereas *positive attainment discrepancy in national innovation performance* served as a control variable. I obtained data regarding national innovation performance and its aspiration levels from the OECD MSTI.

Attainment discrepancy in national private R&D investment. I measured national private R&D investment as the total R&D investment funded by the business sector in the focal country divided by the focal country's GDP in year *t*. Similar to the case of national innovation performance, I used the switching model to estimate the aspiration level for private R&D investment:

National Private R&D Aspiration_{i,t} = Peer National Private R&D_{i,t-1} if National Private R&D_{i,t-1} < Peer National Private R&D_{i,t-1}

or

National Private R&D Aspiration_{i,t} = a * National Private R&D_{i,t-1} if National Private R&D_{i,t-1} > Peer National Private R&D_{i,t-1}

Peer National Private R&D here was measured as the median national private R&D investment across all OECD countries, i indicates the focal country, t is time, and the overall model fit was the highest when a was 1.00.

Attainment discrepancy in national private R&D investment was equal to national R&D investment funded by the business sector divided by the focal country's GDP minus the aspiration level obtained in the switching model in year *t*. I applied a spline function on this variable to obtain *positive attainment discrepancy in national private R&D investment* and *negative attainment discrepancy in national private R&D investment*. I used the latter to test hypothesis 3a and the interaction variable between the latter and *negative attainment discrepancy in national private R&D investment discrepancy in national innovation performance to test hypothesis 2a. I acquired the data concerning private R&D investment from the OECD MSTI.*

Attainment discrepancy in public R&D investment. I measured public R&D investment (as an independent variable) using R&D investment funded by the focal national government divided by the focal country's GDP in year *t*. I used the following switching model to estimate the aspiration level for public R&D investment:

Public R&D Aspiration_{i,t} = Peer Public R&D_{i,t-1} if Public R&D_{i,t-1}
$$\leq$$
 Peer Public R&D_{i,t-1}

or

Public R&D Aspiration_{i,t} = $a * Public R & D_{i,t-1}$ if Public R&D_{i,t-1} > Peer Public R&D_{i,t-1}

Peer Public R&D was measured as the median Public R&D investment across all OECD countries, *i* indicates the focal country, *t* is time, and the overall model fit was the highest when *a* was 1.00.

Attainment discrepancy in public R&D investment was equal to R&D investment funded by the focal national government divided by the focal country's GDP minus the aspiration level obtained in the switching model in year *t*. I again applied a spline function on this variable to obtain *positive attainment discrepancy in public R&D investment* and *negative attainment discrepancy in public R&D investment*. I used the latter to test hypothesis 3b and the interaction variable between the latter and *negative attainment discrepancy in national innovation performance* to test hypothesis 3b.

Control variables. I controlled for a number of country-level economic characteristics. I included *per capita GDP* (in 2005 U.S. dollars), *net inflows of foreign direct investment* (divided by the focal country's GDP), and *net outflows of foreign direct investment* (divided by the focal country's GDP). I considered the financial status of the focal country by including the *reserves* (i.e., the sum of holdings of monetary gold, special drawing rights, reserves of IMF members held by the IMF, and holdings of foreign exchange under the control of monetary authorities divided by the focal country's GDP). I also included the percentage of *total employment in industry* to account for the economic structure of the focal country. I measured country size using the logarithm of *population* of the focal country. As the availability of researchers and educated labor is important for national innovation, I entered *tertiary enrolment rate* (% of the total population), and the *number of researchers* (per thousand labor force). Except the data of *number of researchers* from the OECD MSTI, I obtained the data regarding the above control variables from World Bank Indicators.

In addition, I took political factors into account. Government ideology may influence the importance of national innovation goal and the preference for different policy instruments (Borrás & Edquist, 2013). I considered orientation with respect to economic policy of the largest political party in the focal country. It can be in one of the following categories according to the QoG OECD dataset (Teorell et al., 2016): (1) conservative, Christian democratic, or right-wing, (2) communist, socialist, social democratic, or left-wing, (3) centrist (e.g. party advocates

strengthening private enterprise in a social-liberal context), and (4) none of the above. I therefore entered three dummy variables, *right-wing, left-wing,* and *centrist* in the models. Political structure with stronger checks and balances may reduce policy flexibility and yet increase government's creditability by limiting arbitrary changes (Henisz, 2002). Here, I adopted the *POLCON* index developed by Henisz (2002). This index is an internationally comparable measure ranging 0 to 1, with a higher value referring to stronger checks and balances. Last, past research suggests that national governments may deliberately change policies in an election year to gain support from constituencies in the election (Nordhaus, 1975). I thus included *election year*. It was a binary variable, which took 1 if there was either a parliamentary or presidential election in year t+1, and 0 otherwise. The data were from the Global Database on Elections and Democracy developed by the International Institute for Democracy and Electoral Assistance. All control variables except *election year* were measured in year *t*.

Estimation Method

In my panel dataset, the unit of analysis was country-year. I entered country-fixed-effects, which was a highly conservative estimation method that only considered within-country variations. In essence, dummy variables for all countries but one were added to regression models. An advantage of the fixed-effects analysis was that it accounted for dependence among yearly observations of the same country. Another advantage was that it controlled for all time-invariant unobserved heterogeneity, thus avoiding omitted variable biases (Greene, 1993). I also entered dummy variables for all years but one to control for changes in macro environments over time. Last, I used robust standard errors in case there was heteroskedasticity or within-panel serial correlation in the idiosyncratic error term.

RESULTS

Table 5 reports descriptive statistics and correlations for the main variables. Table 6 presents the regression results predicting *enforcement of intellectual property rights* (models 1-3), *legal environments favoring technology* (models 4-6), and *public R&D investment* (models 7-9). I entered control variables, major explanatory variables, and interaction variables sequentially.

Hypothesis 1a states the extent to which policymakers take measures to stimulate private R&D investment will be greater when negative attainment discrepancy in national innovation performance is greater. The coefficient of *negative attainment discrepancy in national innovation performance* is negative and significant at the 5 percent level in model 2, but insignificant in model 5. Hypothesis 1 is thus supported when we consider enforcement of intellectual property rights as the measure to stimulate private R&D investment. Nevertheless, this relationship requires a more nuanced interpretation later because the corresponding interaction variables are significant at the 5 percent level.

Hypothesis 1b predicts that the extent to which policymakers raise public R&D investment will be greater when negative attainment discrepancy in national innovation performance is greater. In the model 8, the coefficient of *negative attainment discrepancy in national innovation performance* is insignificant, failing to support hypothesis 1b. Likewise, the corresponding significant interaction term indicate that this relationship requires a more nuanced interpretation. I now turn the discussion to the interaction effects.

Descriptive Statistics														
	Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11
1.	Enforcement of intellectual property													
	rights	6.49	1.40	1.00	0.81	0.19	-0.02	-0.24	0.20	0.70	-0.15	0.18	0.81	0.12
2.	Legal environments favoring													
	technology	6.28	1.01	0.81	1.00	0.21	0.02	-0.22	0.22	0.64	-0.10	0.15	0.74	0.14
3.	Public R&D investment	0.01	0.00	0.19	0.21	1.00	0.08	-0.12	0.18	0.49	0.28	0.79	-0.02	-0.12
4.	Positive attainment discrepancy in													
	national innovation performance	8.77	40.72	-0.02	0.02	0.08	1.00	0.12	0.07	0.16	-0.03	0.09	0.00	-0.10
5.	Negative attainment discrepancy in													
	national innovation performance	-368.62	657.80	-0.24	-0.22	-0.12	0.12	1.00	-0.06	-0.20	0.03	-0.11	-0.26	0.16
6.	Positive attainment discrepancy in													
	national private R&D investment	0.00	0.00	0.20	0.22	0.18	0.07	-0.06	1.00	0.28	0.06	0.16	0.15	0.12
7.	Negative attainment discrepancy in													
	national private R&D investment	0.00	0.00	0.70	0.64	0.49	0.16	-0.20	0.28	1.00	-0.06	0.44	0.58	0.04
8.	Positive attainment discrepancy in													
	public R&D investment	0.00	0.00	-0.15	-0.10	0.28	-0.03	0.03	0.06	-0.06	1.00	0.27	-0.18	-0.04
9.	Negative attainment discrepancy in													
	public R&D investment	0.00	0.00	0.18	0.15	0.79	0.09	-0.11	0.16	0.44	0.27	1.00	-0.02	-0.21
10.	Per capita GDP	25292.71	13571.48	0.81	0.74	-0.02	0.00	-0.26	0.15	0.58	-0.18	-0.02	1.00	0.15
11.	Net inflows of foreign direct													
	investment	4.83	6.84	0.12	0.14	-0.12	-0.10	0.16	0.12	0.04	-0.04	-0.21	0.15	1.00
12.	Net outflows of foreign direct													
	investment	4.34	7.44	0.27	0.26	-0.09	-0.07	0.11	0.21	0.15	-0.08	-0.10	0.36	0.81
13.	Reserves	0.10	0.08	-0.45	-0.33	0.26	0.12	0.01	0.00	-0.12	0.17	0.17	-0.62	-0.02
14.	Total employment in industry (%)	28.30	5.19	-0.33	-0.38	0.12	-0.07	0.18	-0.06	-0.18	0.12	0.09	-0.46	0.07
15.	Population (log)	7.45	0.54	-0.07	-0.21	0.05	0.08	-0.48	-0.01	0.01	-0.08	0.13	-0.04	-0.43
16.	Tertiary enrolment rate (%)	54.52	19.91	0.34	0.42	0.41	0.19	-0.12	0.14	0.40	0.07	0.33	0.44	0.02
17.	Number of researchers	5.68	3.20	0.66	0.72	0.33	0.08	-0.21	0.22	0.66	-0.03	0.33	0.70	0.01
18.	Right-wing (binary)	0.34	0.48	0.01	-0.03	-0.21	-0.05	-0.21	0.04	0.08	-0.09	-0.16	0.15	-0.09
19.	Left-wing (binary)	0.45	0.50	0.09	-0.06	0.20	-0.09	0.08	-0.05	-0.05	0.05	0.28	-0.14	0.03
20.	Centrist (binary)	0.14	0.34	0.10	0.23	0.03	0.25	0.14	0.09	0.16	-0.02	-0.15	0.24	0.13
21.	POLCON	0.45	0.10	0.25	0.25	-0.05	0.04	0.02	0.07	0.31	-0.02	-0.02	0.26	0.12
22.	Election year (binary)	0.34	0.48	0.04	0.04	0.05	-0.03	-0.06	0.13	0.02	0.01	0.07	0.02	-0.07

Table 5 Descriptive Statistic
	Table 5 (cont'd)											
		12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.
12.	Net outflows of foreign direct											
	investment	1.00	-0.24	-0.13	-0.32	0.18	0.19	-0.03	0.02	0.12	0.13	-0.06
13.	Reserves	-0.24	1.00	0.57	-0.21	-0.11	-0.23	-0.16	0.01	0.00	0.02	0.01
14.	Total employment in industry (%)	-0.13	0.57	1.00	-0.42	-0.32	-0.30	-0.13	0.09	-0.12	0.09	0.00
15.	Population (log)	-0.32	-0.21	-0.42	1.00	-0.05	-0.13	0.27	-0.03	-0.29	-0.32	-0.03
16.	Tertiary enrolment rate (%)	0.18	-0.11	-0.32	-0.05	1.00	0.66	-0.13	-0.08	0.41	0.09	0.04
17.	Number of researchers	0.19	-0.23	-0.30	-0.13	0.66	1.00	0.03	-0.12	0.30	0.38	0.05
18.	Right-wing (binary)	-0.03	-0.16	-0.13	0.27	-0.13	0.03	1.00	-0.65	-0.28	0.30	0.03
19.	Left-wing (binary)	0.02	0.01	0.09	-0.03	-0.08	-0.12	-0.65	1.00	-0.36	-0.30	0.04
20.	Centrist (binary)	0.12	0.00	-0.12	-0.29	0.41	0.30	-0.28	-0.36	1.00	0.04	-0.04
21.	POLCON	0.13	0.02	0.09	-0.32	0.09	0.38	0.30	-0.30	0.04	1.00	0.03
22.	Election year (binary)	-0.06	0.01	0.00	-0.03	0.04	0.05	0.03	0.04	-0.04	0.03	1.00

Note: Correlations with an absolute value above 0.14 are significant at the 5 percent level (all two-tailed tests).

Results of Fixed-effects Regressions												
	Ι	Dependent variabl	e:	Ι	Dependent variable	e:		Dependent variable:				
	Enforcement of intellectual property rights			Legal envi	ronments favoring	g technology	Public R&D investment					
Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9			
Positive attainment		-0.00	-0.00		0.00	0.00		-0 00**	-0.00**			
discrepancy in national innovation performance		(0.00)	(0.00)		(0.00)	(0.00)		(0.00)	(0.00)			
Negative attainment discrepancy in national innovation performance (Hypotheses 1a & 1b)		-0.00* (0.00)	-0.00† (0.00)		-0.00 (0.00)	-0.00 (0.00)		0.00 (0.00)	0.00** (0.00)			
Positive attainment discrepancy in national private R&D investment		7293410.00 (18300000.00)	7445713.00 (18400000.00)		3020000.00 (27600000.00)	30500000.00 (27600000.00)		-16084.24 (27508.10)	-14368.50 (26585.14)			
Negative attainment discrepancy in national private R&D investment (Hypothesis 3a)		73100000.00 (44600000.00)	121000000.00* (46100000.00)		8900000.00 (66200000.00)	143000000.00* (66700000.00)		78405.35 (88263.98)	83031.00 (85029.64)			
Positive attainment discrepancy in public R&D investment		-68.60** (23.31)	-72.06** (22.74)		-14.14 (19.55)	-17.38 (20.66)		0.01 (0.06)	0.01 (0.06)			
Negative attainment discrepancy in public R&D investment (Hypothesis 3b)		136.32* (60.12)	138.12* (61.03)		-45.21 (97.41)	-41.61 (98.11)		0.64** (0.13)	0.74** (0.11)			
Negative attainment discrepancy in national innovation performance X Negative attainment discrepancy in national private $B \& D$ investment			148603.20** (30050.74)			161032.60* (62624.62.00)						
(Hypothesis 2a)												

 Table 6

 Results of Fixed-effects Regressions

				Table o (col	it a)					
	Dependent variable:				Dependent variable	e:	Dependent variable:			
	Enforcement of intellectual property rights			Legal environm	ents favoring tech	nology	Public R&D investment			
Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	
Other control variables										
Per capita GDP	0.00	0.00†	0.00*	0.00	0.00	0.00	-0.00	0.00	0.00	
-	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	
Net inflows of foreign	0.00	0.00	0.00	0.00	0.01†	0.01†	-0.00	-0.00	-0.00	
direct investment	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	
Net outflows of foreign	0.00	0.00	0.00	-0.00	-0.01	-0.01	-0.00	-0.00	-0.00	
direct investment	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	
Reserves	1.72†	1.47	1.38	1.27	0.88	0.76	-0.00	-0.00	-0.00	
	(0.97)	(1.26)	(1.22)	(1.21)	(1.46)	(1.44)	(0.00)	(0.00)	(0.00)	
Total employment in	-0.03†	-0.04†	-0.04†	-0.02	-0.01	-0.01	0.00	0.00†	0.00†	
industry (%)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.00)	(0.00)	(0.00)	
Population (log)	-5.94†	-8.84*	-8.98*	0.44	0.64	0.64	-0.01	-0.01	-0.00	
1 (2)	(3.26)	(3.39)	(3.51)	(3.20)	(4.95)	(5.03)	(0.01)	(0.01)	(0.01)	
Tertiary enrolment rate (%)	0.00	0.01†	0.00	-0.01†	-0.01*	-0.01*	0.00†	0.00**	0.00*	
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	
Number of researchers	0.07*	-0.02	-0.02	0.15*	0.10†	0.11†	0.00**	0.00*	0.00*	
	(0.03)	(0.05)	(0.05)	(0.06)	(0.05)	(0.06)	(0.00)	(0.00)	(0.00)	
Right-wing (binary)	-0.34*	-0.40*	-0.41*	-0.45*	-0.47*	-0.49*	-0.00	-0.00	-0.00	
8 8 9	(0.16)	(0.15)	(0.15)	(0.16)	(0.20)	(0.20)	(0.00)	(0.00)	(0.00)	
Left-wing (binary)	-0.31†	-0.38*	-0.39*	-0.44*	-0.45*	-0.46†	-0.00	-0.00	-0.00	
	(0.17)	(0.18)	(0.18)	(0.19)	(0.22)	(0.22)	(0.00)	(0.00)	(0.00)	
Centrist (binary)	-0.23	-0.33	-0.36†	-0.52	-0.76†	-0.80*	-0.00	-0.00	-0.00	
	(0.20)	(0.20)	(0.21)	(0.37)	(0.38)	(0.37)	(0.00)	(0.00)	(0.00)	
POLCON	-0.62	-0.34	-0.30	-0.23	-0.07	0.01	-0.00	-0.00	-0.00	
	(0.42)	(0.71)	(0.71)	(0.44)	(0.58)	(0.58)	(0.00)	(0.00)	(0.00)	
Election year (binary)	0.01	-0.01	0.00	0.04	0.03	0.04	-0.00	-0.00	-0.00	
• • • • • • • • • • • • • • • • • • • •	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.00)	(0.00)	(0.00)	
Observations	375	283	283	342	257	257	365	340	340	
Number of countries	31	25	25	31	25	25	27	24	24	
R-square (within)	0.56	0.60	0.60	0.44	0.47	0.49	0.44	0.58	0.60	

Table 6 (cont'd)

Note: Standard errors are in parentheses. Country- and year-fixed-effects are included but not reported.

 $\dagger p < 0.10$; * p < 0.05; ** p < 0.01 (all two-tailed test).

Hypothesis 2a states that the preference for taking measures to stimulate private R&D investment as solutions to poor national innovation performance increases when the negative attainment discrepancy in national private R&D investment is greater. The coefficient of the interaction term is significant at the 5 percent level in model 3 concerning enforcement of intellectual property rights. I plotted this interaction pattern in figure 6 to examine if it is consistent with hypothesis 2a.⁷ As we can observe, the relationship is more negative for national governments with more negative attainment discrepancy in national private R&D investment. I also performed simple slope analysis for the interaction effects (Cohen, Cohen, West, & Aiken, 2013). When the attainment discrepancy in national private R&D investment is highly negative, the simple slope has a significantly negative value (b = -0.00072, t = -5.38, p < 0.05). When the attainment discrepancy in national private R&D investment is highly negative yet marginally significant value (b = -0.00093, t = -1.81, p < 0.10). The pattern is largely consistent with hypothesis 2a.

Figure 6 Interaction effect between national innovation goal and national private R&D goal on enforcement of intellectual property rights (from table 6, model 3)



Likewise, the coefficient of the interaction term is significant at the 5 percent level in model 6 predicting legal environments supporting development and application of technology. I plotted this interaction pattern in figure 7, and found that the relationship is more negative for national governments with more negative attainment discrepancy in national private R&D investment. In the simple slope analysis, when the attainment discrepancy in national private R&D investment is highly negative, the simple slope has a significantly negative value (b = -0.00074, t = -3.03, p < 0.05). When the attainment discrepancy in national private R&D investment is 0, however, the simple slope has a negative yet insignificant value (b = -0.000067, t = -1.00, n.s.). The pattern provides further support for hypothesis 2a. Overall, I found strong support for hypothesis 2a. Negative attainment discrepancy in national private R&D investment is a neutralizer of negative attainment discrepancy in national private R&D investment discrepancy in national private R&D investment is a neutralizer of negative attainment discrepancy in national private R&D investment is A neutralizer of negative attainment discrepancy in national private R&D investment is A neutralizer of negative attainment discrepancy in national private R&D investment is A neutralizer of negative attainment discrepancy in national private R&D investment is A neutralizer of negative attainment discrepancy in national private R&D investment is A neutralizer of negative attainment discrepancy in national private R&D investment is A neutralizer of negative attainment discrepancy in national innovation performance according to Podsakoff, MacKenzie, and Fetter (1993).

Figure 7 Interaction effect between national innovation goal and national private R&D goal on legal environments supporting development and application of technology (from table 6, model 6)



Hypothesis 2b states that the preference for increasing public R&D investment as a solution to poor national innovation performance increases when the negative attainment discrepancy in public R&D investment is greater. In model 9, the coefficient of the interaction term is significant at the 5 percent level. I plotted the interaction pattern in figure 8 and found that the relationship is negative for national governments with highly negative attainment discrepancy in public R&D investment, but become positive when the attainment discrepancy in public R&D investment is no longer negative. I also performed simple slope analysis for the interaction effects. When the attainment discrepancy in public R&D investment is highly negative, the simple slope a significant and negative value (b = -0.00000042, t = -2.17, p < 0.05). When the attainment discrepancy in public R&D investment is 0, however, the simple slope has a significant and positive value (b = 0.00000048, t = 3.78, p < 0.05). It suggests that increasing public R&D investment is a solution to the shortfalls in national innovation goals only when the national public R&D goal is under-achieved, lending support for hypothesis 2b. Negative attainment discrepancy in national public R&D investment is an enhancer of negative attainment discrepancy in national innovation performance according to Podsakoff et al. (1993).

Figure 8 Interaction effect between national innovation goal and national public R&D goal on public R&D investment (from table 6, model 9)



Hypothesis 3a proposes that when negative attainment discrepancy in national private R&D investment is greater, policymakers will take measures to stimulate private R&D investment. In both model 2 regarding enforcement of intellectual property rights and model 5 regarding legal environments supporting development and application of technology, the main effects of *negative attainment discrepancy in national private R&D investment* are insignificant. Hypothesis 3a is not supported.

Hypothesis 3b predicts that when negative attainment discrepancy in public R&D investment is greater, policymakers will raise public R&D investment. Contrary to the prediction, the coefficient of *negative attainment discrepancy in public R&D investment* is positive and significant. This means that policymakers decreased public R&D investment when attainment discrepancy in public R&D investment was more negative. Hypothesis 3b is not supported.

DISCUSSION

In this study, I examine organizational learning from performance feedback of goals that are causally related. I posit that organizational decision makers may attend to sub-goals particularly when the superordinate goal fails, which is contrary to the sequential-attention rule that decision makers attend to another goal particularly when the goal on hand is achieved. The sequential-attention rule stresses competition among goals for limited resources and decision makers' attention and thus may be more applicable to goals that require entirely different strategies to address. When goals are causally connected, however, their relationship may be more complementary than competing, given that performance feedback of sub-goals may shed light on the causes of the superordinate goal's failure and hence guide the direction of problemistic search for the superordinate goal.

The overall findings provide support for my prediction in the context in which national innovation goal is the superordinate goal, and national private R&D goal and national public R&D goal are sub-goals. Specifically, when national innovation goal and national private R&D goal fail simultaneously, I find that policymakers attempt to tackle the performance problem of national innovation by strengthening enforcement of intellectual property rights and providing a friendlier legal environment for developing and applying technology. However, the preference for such measures decreases if the attainment discrepancy in national private R&D investment to address national innovation goal. Such preference decreases when the attainment discrepancy in public R&D investment to address national innovation goal. Such preference decreases when the attainment discrepancy in public R&D investment becomes less negative. These findings may be useful for business firms and entrepreneurs to plan the timing and location of their R&D activities.

Another finding emerging here is that unsatisfactory performance of the sub-goals alone is not sufficient to draw policymakers' attention and to trigger problemistic search. It implies that policymakers do not assign sufficiently high priority to the national private R&D goal and national public R&D goal. It is reasonable to expect that policymakers place a higher priority on national innovation goal than these two goals because national innovation is an output of a country's national innovation system whereas private R&D and public R&D investments are inputs (Furman et al., 2002; Mytelka & Smith, 2002). Although it is well established that shortfalls in these two goals may cause national innovation performance to decline in the future, my results appear to be consistent with the viewpoint of Jones and Baumgartner (2005: 334) that "decisions are always "catching up" to reality" rather than addressing future problems. Given that private R&D and public R&D investments are necessary for driving national innovation

capabilities in the future, policymakers and constituencies should raise the priority of these two goals and cope with their negative attainment discrepancy even though the current national innovation performance meets the aspiration level.

My theory and findings extend the literature on the aspiration level learning theory in a number of ways. First, my theory proposes another rule of allocating attention for dealing with causally related goals. The findings show that organizational decision makers may not attend to sub-goals until the corresponding superordinate goal falls below the aspiration level, which is contrary to the prediction of the sequential-attention mechanism. I argue that it is because decision makers investigate performance feedback of sub-goals for performing causal attribution and guiding the direction of problemistic search concerning the superordinate goal. I believe that my theory is more applicable to the interaction between causally related goals, whereas the well-established sequential-attention rule in the literature is more relevant for causally disconnected goals. I encourage further tests of the external validity of my theory.

Second, as the aspiration level learning theory is a general search theory that does not specify what specific types of solutions and changes are ultimately selected by below-aspiration organizations (Bromiley et al., 2001; Shinkle, 2012), considering organizational learning from performance feedback of causally related goals can advance our understanding on the direction of problemistic search and help explain and predict organizational behavior more precisely. In fact, my findings that organizations opt for different directions of problemistic search under different conditions may partly explain the insignificant findings in the literature regarding the main effects of negative attainment discrepancy in goal performance on organizations change (in the specific way predetermined by researchers) (e.g., Audia & Greve, 2006; Desai, 2016; Iyer & Miller, 2008). Researchers in general study one type of organizational change only. However, as

I show in this study, policymakers facing performance problems on national innovation goal may adopt different solutions, depending on the achievement level of the national private R&D goal and national public R&D goal. If I studied only one type of solution (e.g., measures for promoting private R&D investment or expansion of public R&D investment), I might not be able to discover the expected effects of negative attainment discrepancy in national innovation performance on this type of solution by exploring the interaction effects. I therefore advise that researchers incorporate the performance feedback of sub-goals in theoretical development or statistical control, otherwise the proposed main effects of negative attainment discrepancy on the specific organizational change may not be uncovered.

Third, past studies primarily examined performance feedback of financial goals held by business firms (e.g., Bromiley, 1991; Bromiley & Harris, 2014; Greve, 2003a, 2003b; Kacperczyk et al., 2015). My theory and findings provide support for the predictive power of the theory in the decision context of national governments. In particular, I theorize that policymakers pay attention to and develop aspiration levels for national innovation goal, national private R&D goal, and national public R&D goal. I hope my study would encourage more extension of the theory in other types of decision contexts.

My study also extends the literature on national innovation by providing behavioral explanations for the changes in innovation policy instruments. Prior research has extensively discussed either the benefits of national innovation (e.g., Helpman, 1992; Romer, 1990; Solow, 1970) or the importance of different policy instruments for national innovation (e.g., Furman, et al., 2002, 2004; Borrás & Edquist, 2013). However, there is relatively lack of empirical studies examining what drives policymakers to undertake changes to improve national innovation performance. My study shows that policymakers respond to the discrepancies between national

innovation performance and the aspiration level. The greater the performance shortfalls in national innovation, the greater the extent of policy changes for stimulating national innovation. A policy implication here is that constituencies that value national innovation (e.g., business firms, economists, scientists, and the OECD) can employ a variety of strategies to raise the aspiration level held by policymakers and create negative attainment discrepancy deliberately (Greve, 2008; Nielsen, 2014). An example is to lobby international organizations such as European Union and the OECD to impose a coercive aspiration level (Salge, 2011) on national governments. The 3% target for GDP spent on R&D imposed by European Union could be a coercive aspiration level if member countries had to stick to it and did not arbitrarily adjust it.

Finally, readers need to be cautious when interpreting and applying my findings for a few reasons. Some national governments may not possess national innovation goals due to insufficiency of capabilities and resources. Furthermore, the priority of national innovation goal, national private R&D goal, and national public R&D goal may change over time. It sometimes may be too low to catch decision makers' attention. In such cases, my specific findings may be less applicable. However, my theory regarding organizational learning from performance feedback of causally related goals should be applicable to other important goals held by decision makers in national governments. Likewise, my theory should be applicable to other types of organizations such as business firms and public organizations. I encourage further extension of my theory to different organizational decision contexts.

Besides, as a first step to explore organizational learning from performance feedback of causally related goals, my study considered one superordinate goal and two sub-goals only. Obviously, a superordinate goal can relate to more than two sub-goals. A sub-goal can also be a means to achieve multiple superordinate goals. It is also likely to have more than two levels in a

goal hierarchy (Bateman et al., 2002; Mohr, 1973; Simon, 1964). Taking such complicated goal hierarchies into account requires more sophisticated theoretical development and empirical analyses, but it represents the complex reality and thus should be a fruitful research area.

Last, quantitative research such as the present study is only able to present evidence of outcomes deducted by the theory, but not evidence of processes. I call for qualitative research such as interviews and detailed examination of organizational documents to broaden our knowledge about organizational learning from performance feedback by depicting the processes and mechanisms in detail.

NOTES

NOTES

¹ It should be noted that members of European Union took the 3% target as a reference only and developed a new target for R&D intensity in their own territory.

² Although increasing public R&D investment may attract private R&D investment in the longterm by broadening the knowledge base of the nation, its impact on private R&D investment may be negative in the short-term. This is the crowding-out problem widely discussed in the literature (for a review, see David et al., 2000). Therefore, policymakers are unlikely to rely on public R&D investment to stimulate private R&D investment in the short-term.

³ Some countries joined the OECD after 1987. They were included in the sample since they became a member of the OECD. I excluded observations with missing data in the analyses. Please refer to table 6 for the final sample size used in different models in the analyses.

⁴ I used two-year moving average for measuring dependent variables to allow sufficient time for policy changes and budget requests to be drafted, approved, and implemented.

⁵ I acknowledge the shortcomings of using the number of patents such as the difference in the value across patents and the fact that some innovation is not patentable or not patented. However, the number of patents is probably the only publicly available and consistent measure of national innovation performance (Griliches, 1994). Policymakers are thus likely to use the number of patents in decision-making despite its imperfection, which is supported by many government and media reports (e.g., Gupta et al., 2013; Harris, 2012).

⁶ Home bias means that firms or research institutes tend to file more patent applications in their home country than other countries.

⁷ In all interaction figures, a less negative value of *negative attainment discrepancy in national innovation performance, negative attainment discrepancy in private R&D investment, negative attainment discrepancy in public R&D investment* is set at 0 because one standard deviation above the mean is a positive value, which does not make sense in the case of performance shortfalls. A highly negative value is set at one standard deviation below the mean. Other control variables are set at their mean (for continuous variables) or mode value (for binary variables). REFERENCES

REFERENCES

- Acs, Z. J., Anselin, L., & Varga, A. 2002. Patents and innovation counts as measures of regional production of new knowledge. *Research Policy*, 31(7): 1069-1085.
- Anderson, P. A. & McKeown, T. J. 1987. Changing aspirations, limited attention, and war. *World Politics*, 40(1): 1-29.
- Audia, P. G. & Greve, H. R. 2006. Less likely to fail: Low performance, firm size, and factory expansion in the shipbuilding industry. *Management Science*, 52(1): 83-94.
- Bateman, T. S., O'Neill, H., & Kenworthy-U'Ren, A. 2002. A hierarchical taxonomy of top managers' goals. *Journal of Applied Psychology*, 87(6): 1134.
- Borrás, S. & Edquist, C. 2013. The choice of innovation policy instruments. *Technological Forecasting and Social Change*, 80(8): 1513-1522.
- Bottazzi, L. & Peri, G. 2003. Innovation and spillovers in regions: Evidence from European patent data. *European Economic Review*, 47(4): 687-710.
- Bourgeois, L. J. 1980. Performance and consensus. *Strategic Management Journal*, 1(3): 227-248.
- Bromiley, P. 1991. Testing a Causal Model of Corporate Risk Taking and Performance. *Academy* of *Management Journal*, 34(1): 37-37.
- Bromiley, P., Miller, K. D., & Rau, D. 2001. Risk in strategic management research. *The Blackwell Handbook of Strategic Management*: 259-288.
- Bromiley, P. & Harris, J. D. 2014. A comparison of alternative measures of organizational aspirations. *Strategic Management Journal*, 35(3): 338-357.
- Buesa, M., Heijs, J., & Baumert, T. 2010. The determinants of regional innovation in Europe: a combined factorial and regression knowledge production function approach. *Research Policy*, 39(6): 722-735.

- Castellacci, F. & Natera, J. M. 2013. The dynamics of national innovation systems: A panel cointegration analysis of the coevolution between innovative capability and absorptive capacity. *Research Policy*, 42(3): 579-594.
- Cohen, J., Cohen, P., West, S. G. & Aiken, L. S. 2013. *Applied multiple regression/correlation analysis for the behavioral sciences*. New York: Routledge.
- Connolly, T., Conlon, E. J., & Deutsch, S. J. 1980. Organizational effectiveness: A multipleconstituency approach. *Academy of Management Review*, 5(2): 211-218.
- Crow, M. & Bozeman, B. 1987. R&D laboratory classification and public policy: The effects of environmental context on laboratory behavior. *Research Policy*, 16(5): 229-258.
- Cyert, R. M., & March, J. G. 1963. *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice-Hall.
- David, P. A., Hall, B. H., & Toole, A. A. 2000. Is public R&D a complement or substitute for private R&D? A review of the econometric evidence. *Research Policy*, 29(4): 497-529.
- de Rassenfosse, G. & de la Potterie, B. v. P. 2009. A policy insight into the R&D-patent relationship. *Research Policy*, 38(5): 779-792.
- Eaton, J. & Kortum, S. 1996. Trade in ideas Patenting and productivity in the OECD. *Journal of International Economics*, 40(3): 251-278.
- Feldman, M. P. & Kelley, M. R. 2006. The ex-ante assessment of knowledge spillovers: Government R&D policy, economic incentives and private firm behavior. *Research Policy*, 35(10): 1509-1521.
- Ford, J. D. 1985. The effects of causal attributions on decision makers' responses to performance downturns. *Academy of Management Review*, 10(4): 770-786.
- Furman, J. L., Porter, M. E., & Stern, S. 2002. The determinants of national innovative capacity. *Research Policy*, 31(6): 899-933.
- Furman, J. L. & Hayes, R. 2004. Catching up or standing still?: National innovative productivity among 'follower'countries, 1978–1999. *Research Policy*, 33(9): 1329-1354.
- Gavetti, G., Greve, H. R., Levinthal, D. A., & Ocasio, W. 2012. The behavioral theory of the firm: Assessment and prospects. *The Academy of Management Annals*, 6(1): 1-40.

- Gonzalez-Brambila, C., Veloso, F., & Lever, J. 2007. Mexico's Innovation Cha-cha. *Issues in Science and Technology*, 24(1): 51-58.
- Greene, W. H. 1993. Econometric analysis. New York: Macmillan
- Greve, H. R. 1998. Performance, aspirations, and risky organizational change. *Administrative Science Quarterly*, 43(1): 58-86.
- Greve, H. R. 2003a. A behavioral theory of R&D expenditures and innovations: Evidence from shipbuilding. *Academy of Management Journal*, 46(6): 685-702.
- Greve, H. R. 2003b. *Organizational learning from performance feedback: A behavioral perspective on innovation and change*. Cambridge: Cambridge University Press.
- Greve, H. R. 2008. A behavioral theory of firm growth: Sequential attention to size and performance goals. *Academy of Management Journal*, 51(3): 476-494.
- Griliches, Z. 1994. Productivity, R&D, and the data constraint. *The American Economic Review*, 84(1): 1-23.
- Gupta, N., Healey, D. W., Stein, A. M., & Shipp, S. S. 2013. Innovation Policies of South Korea. *Institute for Defense Analysis*. D-4984.
- Harris, S. 2012. Chinese Innovation Takes Country to Top of Patent Lists. *Research Information*. http://www.researchinformation.info/features/feature.php?feature_id=359
- Helpman, E. 1992. Endogenous macroeconomic growth theory. *European Economic Review*, 36(2): 237-267.
- Henisz, W. J. 2002. The institutional environment for infrastructure investment. *Industrial and Corporate Change*, 11(2): 355-389.
- Hu, M.-C. & Mathews, J. A. 2005. National innovative capacity in East Asia. *Research Policy*, 34(9): 1322-1349.
- Hu, M.-C. & Mathews, J. A. 2008. China's national innovative capacity. *Research Policy*, 37(9): 1465-1479.
- Jaffe, A. B. & Lerner, J. 2001. Reinventing public R&D: Patent policy and the commercialization of national laboratory technologies. *Rand Journal of Economics*, 32(1): 167-198.

- Jones, B. D. 2003. Bounded rationality and political science: Lessons from public administration and public policy. *Journal of Public Administration Research and Theory*, 13(4): 395-412.
- Jones, B. D. & Baumgartner, F. R. 2005. A model of choice for public policy. *Journal of Public Administration Research and Theory*, 15(3): 325-351.
- Kacperczyk, A., Beckman, C. M., & Moliterno, T. P. 2015. Disentangling Risk and Change Internal and External Social Comparison in the Mutual Fund Industry. *Administrative Science Quarterly*, 60(2): 228-262.
- Krammer, S. M. 2009. Drivers of national innovation in transition: Evidence from a panel of Eastern European countries. *Research Policy*, 38(5): 845-860.
- Landes, D. S. 1969. *The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present*. London: Cambridge University Press.
- Lant, T. K. & Montgomery, D. B. 1987. Learning from strategic success and failure. *Journal of Business Research*, 15(6): 503-517.
- Lant, T. K. 1992. Aspiration level adaptation: An empirical exploration. *Management science*, 38(5): 623-644.
- Lindblom, C. E. 1959. The science of" muddling through". *Public Administration Review*: 79-88.
- Lord, R. G. & Hanges, P. J. 1987. A control system model of organizational motivation: Theoretical development and applied implications. *Behavioral Science*, 32(3): 161-178.
- March, J. G., & Simon, H. 1958. Organizations. New York: Wiley.
- McGahan, A. M. & Victer, R. 2009. How much does home country matter to corporate profitability&quest. *Journal of International Business Studies*, 41(1): 142-165.
- Mohr, L. B. 1973. The concept of organizational goal. *American Political Science Review*, 67(02): 470-481.
- Mytelka, L. K. & Smith, K. 2002. Policy learning and innovation theory: an interactive and coevolving process. *Research Policy*, 31(8): 1467-1479.

Nielsen, P. A. 2014. Learning from performance feedback: performance information, aspiration levels, and managerial priorities. *Public Administration*, 92(1): 142-160.

Nordhaus, W. D. 1975. The political business cycle. The Review of Economic Studies: 169-190.

- OECD. 1980. Technical Change and Economic Policy. Paris: OECD.
- OECD. 2011. Science, Technology and Industry Scoreboard 2011. OECD Publishing. http://dx.doi.org/10.1787/sti_scoreboard-2011-en
- Podsakoff, P. M., MacKenzie, S. B., & Fetter, R. 1993. Substitutes for leadership and the management of professionals. *The Leadership Quarterly*, 4(1): 1-44.
- Porter, M. E. 1990. The competitiveness advantage of nations. New York: Free Press.
- Rhee, M. 2009. Does reputation contribute to reducing organizational errors? A learning approach. *Journal of Management Studies*, 46(4): 676-703.
- Romer, P. M. 1990. Endogenous technological change. *Journal of Political Economy*, 98(5): 71-102.
- Rose, R. 1991. What is lesson-drawing? Journal of Public Policy, 11(1): 3-30.
- Rugman, A. M., Oh, C. H., & Lim, D. S. 2012. The regional and global competitiveness of multinational firms. *Journal of the Academy of Marketing Science*, 40(2): 218-235.
- Salge, T. O. 2011. A behavioral model of innovative search: Evidence from public hospital services. Journal of Public *Administration Research and Theory*, 21(1): 181-210.
- Salge, T. O. 2012. The temporal trajectories of innovative search: insights from public hospital services. *Research Policy*, 41(4): 720-733.
- Salter, A. J. & Martin, B. R. 2001. The economic benefits of publicly funded basic research: a critical review. *Research Policy*, 30(3): 509-532.
- Schneider, S. L. 1992. Framing and conflict: Aspiration level contingency, the status quo, and current theories of risky choice. Journal of Experimental Psychology: *Learning, Memory, and Cognition*, 18(5): 1040-1057.

- Shinkle, G. A. 2012. Organizational Aspirations, Reference Points, and Goals Building on the Past and Aiming for the Future. *Journal of Management*, 38(1): 415-455.
- Simon, H. A. 1947. Administrative behavior. New York: Free Press.
- Simon, H. A. 1964. On the concept of organizational goal. *Administrative Science Quarterly*. 9(1): 1-22.
- Simon, H. A. 1995. Rationality in political behavior. *Political Psychology*, 16(1): 45-61.

Solow, R.M., 1970. Growth theory: An exposition. Oxford: Clarendon Press.

- Teorell, J., Kumlin, S., Dahlberg, S., Holmberg, S., Rothstein, B., Khomenko, A., & Svensson, R. 2016. *The Quality of Government OECD Dataset*, version Jan16. University of Gothenburg: The Quality of Government Institute, http://www.qog.pol.gu.se doi:10.18157/QoGOECDJan16
- Tyler, B. B. & Caner, T. 2016. New product introductions below aspirations, slack and R&D alliances: A behavioral perspective. *Strategic Management Journal*, 37(5): 896-910.
- Varsakelis, N. C. 2001. The impact of patent protection, economy openness and national culture on R&D investment: a cross-country empirical investigation. *Research Policy*, 30(7): 1059-1068.
- Zaheer, S. 1995. Overcoming the liability of foreignness. *Academy of Management Journal*, 38(2): 341-3

CONCLUSION

To refresh readers' memory, I first summarize the three essays' major findings. In essay 1, I find that negative attainment discrepancy in parent profitability increases the likelihood of the focal MNE internalizing and quitting (as compared to staying in) an IJV. One of the reasons is that the value of an IJV may change following strategic changes resulting from negative attainment discrepancy in parent profitability. Regarding the roles of aspiration levels in inter-organizational learning, the results show that a larger number of positive subsidiary profitability reported by major competitors with parent performance below the focal MNE's aspiration levels decreases the likelihood of that MNE quitting as opposed to staying in an IJV. However, a larger number of positive subsidiary profitability reported by major competitors with parent performance below not exert the same effects. I argue that the focal MNE may perceive a large number of positive subsidiary profitability reported by major competitors with parent performance below the focal MNE as effects. I argue that the focal MNE may perceive a large number of positive subsidiary profitability reported by major competitors with parent performance below the focal MNE's aspiration levels as external opportunities.

In essay 2, I find that as negative attainment discrepancy in parent profitability is greater, the likelihood of the focal MNE divesting a foreign subsidiary increases only if attainment discrepancy in parent sales is less negative. However, foreign divestment is no longer a solution for poor profitability as attainment discrepancy in parent sales becomes highly negative. I argue that the poor performance of sales goal catches the attention of decision makers who seek to know the causes of poor profitability during problemistic search. They then may interpret the poor sales as a cause of poor profitability and attempt to strengthen sales as a means to reverse poor profitability. Because foreign divestment may adversely affect sales growth, the preference for foreign divestment as a solution to poor profitability in such case may decrease. The results

also show that MNEs are less likely to divest foreign subsidiaries, especially old ones, when its parent sales declined below the aspiration levels. This suggests learning from past operation may increase the strategic importance of a foreign subsidiary in improving sales performance.

In essay 3, I find that as negative attainment discrepancy in national innovation performance is greater, policymakers take measures to stimulate private R&D investment if there is sufficiently negative attainment discrepancy in national private R&D investment. In contrast, expansion in public R&D investment is considered as a solution to poor national innovation performance only if the attainment discrepancy in public R&D investment is sufficiently negative. The findings of essay 3, therefore, provide further support for my theory about how decision makers attend to causally related goals and use performance feedback of sub-goals to guide the direction of problemistic search and select the solutions for the failed superordinate goal.

Overall speaking, the three essays demonstrate that learning from goal performance and aspirations is influential in MNEs' decisions on IJV evolution and foreign divestment and national governments' decisions on innovation policies. What are particularly novel here are the findings regarding the roles of aspiration levels in inter-organizational learning and how decision makers learn from performance feedback of causally related goals. I hope these novel and important findings open new research avenues.

I have already discussed in detail the specific theoretical implications, limitations, and potential areas for future research of each essay in their discussion section so that I do not repeat here. Instead, I would like to emphasize the importance of research on organizational learning from goal performance and aspirations again. Despite the popularity of such learning in top

journals for many years, researchers have pointed out that there are still many issues that are not well understood (see Argote & Greve, 2007; Gavetti et al., 2012; Shinkle, 2012 for details). It is because such learning is very complicated and yet consequential. This dissertation explores a few of new areas and provides initial evidence. It is clear that more research is needed. I hope this dissertation achieves its ultimate goals—to enhance our understanding about organizational learning and inspire future research. REFERENCES

REFERENCES

- Argote, L. & Greve, H. R. 2007. A behavioral theory of the firm-40 years and counting: Introduction and impact. *Organization Science*, 18(3): 337-349.
- Gavetti, G., Greve, H. R., Levinthal, D. A., & Ocasio, W. 2012. The behavioral theory of the firm: Assessment and prospects. *The Academy of Management Annals*, 6(1): 1-40.
- Shinkle, G. A. 2012. Organizational Aspirations, Reference Points, and Goals Building on the Past and Aiming for the Future. *Journal of Management*, 38(1): 415-455.