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| Author(s) | Hui Kent, Ngan-Cheung School of Management, Xiamen University<br>Gong Yuanyuan, Discovery Program for Global Learners, Okayama University<br>Cui Qi, Department of Organization and Human Resources, Renmin University<br>Jiang Naipeng, Tourism Department, Fudan University |
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# Foreign investment or divestment as a near-term solution to performance shortfalls? The moderating role of vicarious learning

**Abstract** Most studies on problemistic search do not pay sufficient attention to how below-aspiration organizations decide what types of strategic actions to use to cope with performance shortfalls. In this study, we examine the preferences of multinational corporations (MNCs) for selecting foreign investment or divestment as a near-term solution to performance shortfalls. We first argue that foreign divestment is generally a more preferred performance solution. Drawing on the literature on vicarious learning, we further argue that MNCs are more likely to engage in foreign investment or foreign divestment to combat large performance shortfalls if peers recently and actively undertook the same type of strategic action. Moreover, they are less likely to undertake the other type of strategic action simultaneously because they adopt the satisficing principle and time constraints deter them from implementing multiple types of strategic action substantially. The analysis of the data about Japanese manufacturing MNCs reveals that vicarious learning influences MNCs' selection preferences in certain conditions, thereby extending the literature on problemistic search.

**Keywords** Problemistic search · Vicarious learning · Selection preference · Turnaround · Foreign investment and divestment

How do organizations respond to poor performance? It is not rare for organizations to have poor performances and seek retrenchment and turnaround (Bruton, Ahlstrom, & Wan, 2003). However, while some organizations can successfully achieve a turnaround and renew growth (Ahlstrom, 2010; Olson & Van Bever, 2008), many more continue to suffer and eventually experience bankruptcy or dissolution (Kim & Miner, 2007). As organizational failure tends to threaten the interests of various stakeholders, it is important to understand the ways in which organizations address poor performance and return to profitability (Greve, 2003a; Ford, 1985; Lohrke, Ahlstrom, & Bruton, 2012).

As the behavioral theory of the firm (BTOF) holds, organizations are compelled to engage in problemistic search for suitable solutions when their performance falls below an aspiration level (Cyert & March, 1963). Problemistic search as a common response to performance shortfalls is often associated with increased strategic actions in the hope of turnaround (Greve, 2003a; Posen, Keil, Kim, & Meissner, 2018; Shinkle, 2012). Extant literature has linked numerous types of strategic actions to problemistic search, such as R&D investment (e.g., Chen & Miller, 2007; Greve, 2003a), market expansion (e.g., Lin, 2014), capacity expansion (e.g., Desai, 2008), corporate lobbying (e.g., Rudy & Johnson, 2016), partnership formation (e.g., Baum, Rowley, Shipilov, & Chuang, 2005), and mergers and acquisitions (e.g., Iyer & Miller, 2008; Zhang & Greve, 2019). Most studies, however, focus only on one type of strategic action and propose a link between that particular type of strategic action and performance shortfalls. Although these studies advance our understanding of whether a specific type of strategic action has been used by organizations to address performance shortfalls, they fail to explain how organizations select among *different types* of strategic action in problemistic search (Kotiloglu, Chen, & Lechler, 2019; Posen et al., 2018; Shinkle, 2012).

Indeed, the selection preferences in problemistic search are likely to vary across organizations and time, which suggests that a particular type of strategic action may not always be a response to performance shortfalls (Augier & March, 2008; Kuusela, Keil, & Maula, 2017; Kotiloglu et al., 2019; Posen et al., 2018). In addition, the BTOF states that organizational decision makers adopt the satisficing principle in problemistic search, that is, they stop searching once they identify a satisfactory solution (Simon, 1947, 1955; March & Simon, 1958). This implies only one type of strategic action may be taken by an organization to cope with performance shortfalls at a time. Nevertheless, the BTOF per se does not specify what types of strategic action an organization will adopt in problemistic search (Bromiley, Miller, & Rau, 2001). It is important to understand how organizations filter through alternatives in undertaking a problemistic search (Liu, Maslach, Desai, & Madsen, 2015; Posen et al., 2018).

To date, only a very small number of studies have started to focus on more than one type of strategic action and identified factors that may influence the selection preferences in problemistic search, such as slack (Kuusela et al., 2017) and business group membership (Vissa, Greve, & Chen, 2010). Our study advances this emerging research line by focusing on two types of strategic actions frequently undertaken by multinational corporations (MNCs), namely foreign investment and foreign divestment. Specifically, our study seeks to answer the research question of when and why foreign investment and foreign divestment are more (or less thereof) likely to be selected by MNCs as a near-term solution to large performance shortfalls.

We first argue that foreign divestment, on average, is more preferred by MNCs to cope with large performance shortfalls because it is less subject to the availability of external investment opportunities, the availability of financial resources, and the scrutiny of stakeholders. Drawing on the vicarious learning literature, we further add that if peers recently undertook a

particular type of strategic action to a greater extent, the tendency of a below-aspiration MNC to select the same type of strategic action as a near-term performance solution will increase. In addition, given the satisficing principle and time constraints (Cyert & March, 1963; Simon, 1955), different types of strategic actions tend to be substitutes as a near-term solution, that is, choosing one would reduce the tendency of choosing other ones. Therefore, if peers recently undertook a particular type of strategic action to a greater extent, the tendency of a below-aspiration MNC to select the other type of strategic action as a near-term performance solution will decrease.

We test our theory using data concerning foreign investment and divestment of Japanese MNCs from 1997 to 2016. We study Japanese MNCs because Japanese firms are a leading source of foreign direct investment (FDI) around the world. Moreover, Hurry (1993) noted that Japanese MNCs engaged in foreign investment and divestment in the period of poor performance, suggesting that they may well represent organizations that consider these two types of strategic actions in problemistic search.

This study makes three contributions. First, it extends our understanding of how organizations select near-term performance solutions in problemistic search. Our analysis supports that MNCs generally prefer foreign divestment as a near-term performance solution. However, peers' foreign investment increases the tendency of MNCs to select foreign investment but reduces their tendency to select foreign divestment to cope with large performance shortfalls, indicating that vicarious learning influences the selection preferences in problemistic search. Second, this study further advances our understanding of problemistic search by showing the substitution relationship between different types of strategic action as a near-term solution. Specifically, we find that a condition that strengthens the preference for undertaking foreign

investment to address performance shortfalls simultaneously decreases the preference for undertaking foreign divestment. Last but not least, this study contributes empirically by extending our understanding of the antecedents of foreign investment by reconciling the inconsistent findings regarding the relationship between performance shortfalls and foreign investment. Some scholars have found a positive relationship (e.g., Lin, 2014), and others a negative one (e.g., Jiang & Holburn, 2018; Jung & Bansal, 2009). However, we found that the relationship is nuanced and conditional on peers' foreign investment. Specifically, we found that larger performance shortfalls may lead to a greater extent of foreign investment only when peers recently and actively undertook foreign investment.

## Theoretical background and hypotheses

### Problemistic search

March and colleagues (Cyert & March, 1963; March & Simon, 1958) held that the BTOF stresses the role of cognitive limitations in organizational decision making. They posited that organizational decision makers, in general, avoid long-term planning and utilize shortcuts such as bounded rationality to make decisions (Cyert & March, 1963; March & Simon, 1958). They learn from short-term performance feedback to determine whether the current strategies and practices of their organization are effective. Specifically, they seek to maintain the status quo when organizational performance is satisfactory and make changes when it is unsatisfactory (Cyert & March, 1963; Greve, 1998, 2003a).

Decision makers deem organizational performance unsatisfactory when it is below an aspiration level, which is developed based on the historical performance of the focal organization and/or the performance of peer organizations (Lant, 1992; Shinkle, 2012). The BTOF specifies

that below-aspiration organizations will conduct problemistic searches for solutions to the performance shortfalls (Cyert & March, 1963). Due to bounded rationality and limited resources (Simon, 1947; March & Simon, 1958), however, decision makers are generally unwilling and likely unable to identify the "best" solution because it is too costly and difficult to identify all possible alternatives and know the outcomes of each alternative. Instead, decision makers adopt the satisficing principle so that they stop searching once they identify a satisfactory performance solution (Cyert & March, 1963; Simon, 1955). When performance shortfalls are small, problemistic search tends to be local in nature and associated with small and incremental changes. In contrast, when performance shortfalls are large, problemistic search tends to be distant and associated with significant and more radical changes (Baum & Dahlin, 2007; Kacperczyk, Beckman, & Moliterno, 2015; Kim & Rhee, 2017; Labianca, Fairbank, Andrevski, & Parzen, 2009). Although problemistic search is often simple-minded and biased (Augier & March, 2008; Cyert & March, 1963), past studies find that it can help improve performance (Audia, Locke, & Smith, 2000; Bromiley, 1991; Miller & Leiblein 1996; Wiseman & Bromiley, 1996), which makes it an integral part of an organization's adaptation system (Greve, 2010).

**Selection preferences in problemistic search**

Drawing on the idea of problemistic search, a slew of scholars submit that organizations with larger performance shortfalls tend to take strategic actions to a greater extent in the hope of turnaround (Greve, 2003b; Shinkle, 2012). Although the BTOF per se does not specify what types of strategic action an organization will eventually adopt in problemistic search (Bromiley et al., 2001), the most common research practice in the literature is to focus on a particular type of strategic action and propose a positive relationship between this particular type of strategic action and performance shortfalls (Posen et al., 2018).

A major limitation of prior studies using this research approach, however, is that they fail to consider the selection preferences in problemistic search.[1] While they show that a particular type of strategic action has been adopted by organizations to deal with large performance shortfalls, we do not understand that given many possible solutions that could be identified in problemistic search, why organizations prefer this particular type of strategic action (Kotiloglu et al., 2019; Posen et al., 2018; Shinkle, 2012). Addressing this limitation is important because scholars realize that the selection preferences in problemistic search vary across organizations and time (Augier & March, 2008; Kuusela et al., 2017; Kotiloglu et al., 2019; Posen et al., 2018), which implies that a certain type of strategic action may not *always* be selected by organizations to address performance shortfalls. For example, although some scholars find that foreign investment is made by MNCs to address performance shortfalls (Lin, 2014), others fail to reach the same conclusion (Jiang & Holburn, 2018; Jung & Bansal, 2009). These inconsistent findings could be reconciled if we account for the selection preferences in problemistic search and explain *when* foreign investment is a preferred performance solution. In other words, taking the selection preferences in problemistic search into account can help us better understand the nuanced relationship between performance shortfalls and a specific type of strategic action. In fact, many scholars have also urged to investigate how organizations decide what types of strategic action to use to deal with performance shortfalls (Bromiley et al., 2001; Liu et al., 2015; Posen et al., 2018; Shinkle, 2012).

To date, only a few studies have begun addressing the selection preferences in problemistic search by focusing on more than one type of strategic action and identifying factors influencing the choice between different types of strategic actions. For example, Vissa and

[1] Some studies refer to selection preferences in problemistic search as direction of search (e.g., Bromiley et al., 2001; Kuusela et al., 2017).

colleagues (2010) found that in the face of large performance shortfalls, firms with business group membership tend to increase marketing investment, whereas firms that are not business group affiliates tend to increase R&D investment. They reasoned that the transfer of successful marketing practices within a business group enhances the members' confidence in using marketing strategies to tackle large performance shortfalls. In contrast, without such a transfer of successful marketing practices, organizations tend to consider R&D investment a better performance solution. In another study, Kuusela et al. (2017) suggested that because large performance shortfalls may lead to resource constraints, organizations generally use resource-freeing strategic actions such as divestment and avoid resource-consuming strategic actions such as acquisitions to deal with large performance shortfalls.[2] However, the availability of abundant financial slack will change such selection preferences by increasing the chance of using resource-consuming strategic actions and reducing the chance of using resource-freeing strategic actions to cope with large performance shortfalls.

Rather than examining the selection preferences for different types of strategic action in problemistic search, a few studies focus on the selection preferences for different alternatives of the same type of strategic action. For example, Zhang and Greve (2019) showed that the experience of the board of directors of a firm with performance shortfalls influences the choice of target firms in acquisitions. Eggers and Suh (2019) and Maslach (2016) showed that the experience in the domain of performance failure affects the choice between explorative and exploitative innovation in response to large performance shortfalls. Although these studies can also shed light on the selection preferences in problemistic search (i.e., the choice between different alternatives of the same type of strategic action here), they still fail to explain why the

[2] It should be noted that the proposition of Kuusela et al. (2017) that large performance shortfalls reduce merger and acquisitions is contrary to that of other scholars (e.g., Iyer & Miller, 2008; Zhang & Greve, 2019).

particular type of strategic action they study is selected by below-aspiration organizations in the first place.

In this study, we look into MNCs' preferences for selecting two major types of strategic actions, namely foreign investment and foreign divestment, as a near-term performance solution. Foreign investment is defined as the establishment of a new foreign subsidiary, whereas foreign divestment is defined as the abandonment of an existing foreign subsidiary (Boddewyn, 1983, 1985). Foreign investment and divestment are often undertaken by MNCs, and both of them have the potential to be a performance solution.

On the one hand, making foreign investment enables an MNC to further tap into the location-specific advantages of foreign countries (Dunning, 1998). An MNC can increase revenues and lower costs by making new foreign investment for market expansion and for access to cheap production factors respectively. Making foreign investment into countries with superior resources such as high-skilled labor and advanced technology can also enhance organizational learning and the development of new capabilities that support performance turnaround. In addition, foreign investment tends to increase firm size, which allows an MNC to achieve greater market power and economies of scale that are critical for international competition (Hymer, 1976). Last but not least, making foreign investment into new countries can increase economies of scope and improve the ability of multimarket competition (Yu & Cannella, 2013).

On the other hand, divesting a foreign subsidiary that is suffering from poor performances can immediately improve an MNC's overall performance (Kuusela et al., 2017). Moreover, foreign divestment can free managerial time and financial resources, which allows a below-aspiration MNC to focus on a smaller set of more profitable businesses (Markides, 1992) and build a buffer against environmental changes (Hamilton & Chow, 1993). Foreign divestment

can also reduce redundancy in foreign subsidiaries' activities and improve the overall efficiency of the MNC (Tan & Sousa, 2018). While foreign divestment has not been directly linked with performance shortfalls, some studies have shown that divestment in the domestic market is undertaken by below-aspiration firms (e.g., Desai, 2016; Shimizu, 2007).

Based on the above discussion, we expect that both foreign investment and foreign divestment could be used to address performance shortfalls by MNCs (Bruton, Ahlstrom, & Wan, 2001). Therefore, we expect that when performance shortfalls are larger, MNCs, on average, would engage in foreign investment and foreign divestment to a greater extent in the near-term future. Formally stated:

**Hypothesis 1** Performance shortfalls are positively related to foreign investment in the near-term future.

**Hypothesis 2** Performance shortfalls are positively related to foreign divestment in the near-term future.

Another key concern is which type of strategic action (foreign investment or foreign divestment) is a more preferred near-term solution. We argue that MNCs, on average, may prefer foreign divestment to foreign investment as a near-term solution to large performance shortfalls for three reasons. First, foreign investment requires the presence of external opportunities that can be identified. In other words, if there is no promising opportunity in the market at the time of problemistic search or problemistic search cannot successfully identify any promising opportunities, MNCs cannot select foreign investment as a performance solution. In contrast, foreign divestment requires the examination of existing foreign subsidiaries and identification of

those that are losing money or having negative present values, which should be a much more controllable task. Second, when performance is largely below aspiration levels, MNCs may experience severe constraints in financial resources (Kuusela et al., 2017). Even if they currently do not face financial constraints, poor performance may increase the costs and difficulties of raising new capital in the market. Therefore, some below-aspiration MNCs may be unwilling or unable to engage in foreign investment that could consume substantial financial resources. Third, firms with large performance shortfalls often face tight supervision and scrutiny from stakeholders such as the board and banks because firm survival is vulnerable to additional mistakes and failures at that time (Desai, 2016; Hambrick & Finkelstein, 1987). As foreign investment generally consumes greater financial resources than foreign divestment does, the failure of foreign investment may be more likely to jeopardize firm survival compared to the failure of foreign divestment. This further implies that foreign investment will be under stronger scrutiny from stakeholders and managers need to better justify foreign investment. In fact, several studies also report that firms may prefer divestment to investment to deal with large performance shortfalls (John, Lang, & Netter, 1992; Kuusela et al., 2017). Therefore, we hypothesize:

**Hypothesis 3** Compared to foreign investment, foreign divestment is a more preferred near-term solution to large performance shortfalls.

**The moderating role of vicarious learning**

As organization theorists suggest, organizations may also incorporate peers' experience, behaviors, and outcomes into their own decision making (Huber, 1991; Levitt & March, 1988).

In some cases, organizations even imitate peers' strategic actions (Abrahamson & Rosenkopf, 1993; Haunschild & Miner, 1997; Lieberman & Asaba, 2006). There are several potential reasons for imitation. For example, organizations often lack complete information for making decisions under the conditions of uncertainty. If they believe peers have superior information or decision making capability, they may also believe imitation can economize search costs and produce positive outcomes (Lieberman & Asaba, 2006). Another well-documented reason is that following a widely adopted strategy or practice may grant the focal organization legitimacy, which is essential for its survival (Deephouse, 1999; DiMaggio & Powell, 1983; Haveman, 1993). In addition, referencing peers when proposing a new strategy may increase the face validity in the eyes of stakeholders and thus reduce resistance to change (Hsieh, Tsai, & Chen, 2015). For any reason, it is generally expected that the focal organization is more likely to adopt a strategic action if the strategic action is more frequently adopted by peers (Abrahamson & Rosenkopf, 1993; Haunschild & Miner, 1997). Haunschild and Miner (1997: 472) refer to this phenomenon as "frequency-based imitation". Empirically, frequency-based imitation has been found to occur in the context of a variety of strategic actions, including foreign investment (Fernhaber & Li, 2010; Knickerbocker, 1973) and foreign divestment (Soule, Swaminathan, & Tihanyi, 2014; Xia, Tan, & Tan, 2008).

In the present study, we first argue that in the face of large performance shortfalls, the preference for selecting a type of strategic action (i.e., foreign investment or foreign divestment) in problemistic search would increase if peers recently and actively take the same type of strategic action. Research shows that the decision weight of vicarious learning tends to be strengthened when uncertainty increases (Haunschild & Miner, 1997) or when self-experience is insufficient and unreliable (Schwab, 2007). Many organizations may lack sufficient self-

experience of coping with large performance shortfalls (Kim & Miner, 2007). Large performance shortfalls also indicate a deficiency in current knowledge and thus reduce managerial confidence in drawing on self-experience. Consistently, Baum and Dahlin (2007) revealed that vicarious learning contributes to the subsequent performance improvement of firms with large performance shortfalls to a greater extent than self-experience does. We thus expect MNCs with large performance shortfalls to face substantial uncertainty and lack reliable own knowledge to draw on in problemistic search, thereby increasing their tendency to imitate peers' recent strategic actions.

In addition, large performance shortfalls are often associated with distant search and radical changes (Kacperczyk et al., 2015; Kim & Rhee, 2017; Labianca et al., 2009). In such distant search, organizations are more likely to look for new solutions outside their organizational boundary and pay greater attention to peers' recent strategic actions (Baum & Dahlin, 2007; Park, 2007). This is particularly the case when the performance shortfalls are related to social aspirations because the focal organization needs to find out why its performance is far below its peers' or what peers did recently so that their performance is better. In this case, the below-aspiration organization tends to consider peers' recent strategic actions viable, and imitating their strategic actions may close the performance gap (Souder & Bromiley, 2012). Consistently, using dyad-level data in the U.S. food processing industry, Park (2007) found that firms with large performance shortfalls are more likely to converge toward peers' strategic positions.

Because organizational decision makers have limited attention, cognitive accessibility, which is defined as the ease of information recall, may also explain the selection preferences in problemistic search (Rhee, Ocasio, & Kim, 2019). Generally speaking, decision makers tend to

select a type of strategic action with a high level of cognitive accessibility in problemistic search. For example, Rhee et al. (2019) found that firms are more likely to use R&D investment as a performance solution when a greater number of business group members operate in R&D intensive industries. They reasoned that R&D investment is often made by business group decision makers, thus being highly cognitively accessible in problemistic search. Applying this logic, we expect if peers recently and actively undertake foreign investment/divestment, foreign investment/divestment will become more cognitively accessible to MNCs with large performance shortfalls, enhancing its chance of being attended to and selected as a performance solution.

Nevertheless, as mentioned earlier, firms with large performance shortfalls often face tight supervision and scrutiny from stakeholders (Desai, 2016; Hambrick & Finkelstein, 1987). This means that managers need to do a better job in convincing the stakeholders to approve proposed strategic actions by presenting additional arguments and evidence. Imitating peers' strategic actions can increase legitimacy, which is particularly important when organizational survival is at risk. It is also considered a low-risk choice to follow rather than deviate from peers (Abrahamson & Rosenkopf, 1993; Lieberman & Asaba, 2006). We thus expect imitating peers' strategic actions is particularly acceptable to the stakeholders at the time of large performance shortfalls (Hsieh et al., 2015). Taken together, we contend that MNCs are more likely to initiate foreign investment/divestment to address large performance shortfalls if peers recently and actively initiate the same type of strategic action. Formally stated:

**Hypothesis 4** When peers recently and actively undertake foreign investment, the positive effect of performance shortfalls on foreign investment is stronger.

**Hypothesis 5** When peers recently and actively undertake foreign divestment, the positive effect of performance shortfalls on foreign divestment is stronger.

Subject to limited attention and bounded rationality, decision makers are often not presented with a well specified choice set and do not have "complete knowledge and anticipation of the consequences that will follow on each choice" (Simon, 1947: 81). Given its costs, the extent and scope of problemistic search are also not unlimited. The BTOF proposes the satisficing principle, which states that problemistic search would stop once below-aspiration organizations identify one satisfactory solution that is believed to be able to cope with the performance shortfalls (Cyert & March, 1963; Gavetti, Greve, & Levinthal, & Ocasio, 2012; Gavetti, Levinthal, & Ocasio, 2007; Simon, 1955). A number of studies also show that in many cases only one solution is chosen by decision makers at a time to solve a problem (Caplin, Dean, & Martin, 2011; Mazzolini, 1981; Mintzberg, Raisinghani, & Theoret, 1976; Steinbruner, 1974).

Moreover, we focus on MNCs' near-term solutions to large performance shortfalls in this study. That is, if performance shortfalls are present at time t, MNCs adopt near-term solutions at time t+1. Studying near-term solutions is important because decision makers need to solve large performance shortfalls as early as possible due to strong pressure from stakeholders such as shareholders and analysts. If the performance problem persists, managers may be replaced, and their organization may face the risk of being acquired and the risk of liquidation (Greve, 2010). Given the time constraints for identifying and implementing near-term solutions, however, it is unlikely for below-aspiration organizations to implement many types of strategic action simultaneously. This is particularly true for foreign investment and foreign divestment as they need substantial time to plan and implement. On the one hand, foreign investment entails

decisions about the location, entry mode, recruitment, operations, competitions, management, marketing, and so on. On the other hand, foreign divestment entails decisions about which subsidiary to divest, liquidation, resource reallocation, layoff, and sell-offs. Foreign investment and divestment tend to be more complicated than many domestic strategic actions in the sense that managers need to deal with economic, political, social, and cultural differences. Managers also need to consider the impact of foreign investment or divestment on the whole subsidiary network as subsidiaries may be highly interdependent (Andersson & Forsgren, 2000; O'Donnell, 2000). Therefore, both foreign investment and foreign divestment are highly complicated strategic actions that require substantial managerial attention and time to implement (Boddewyn, 1983, 1985). Once MNCs select one type of strategic action (foreign investment or foreign divestment) as a near-term solution to large performance shortfalls, they may not have adequate managerial resources and time to adopt the other type of strategic action substantially.

Based on the above discussion, we argue that there may be a substitution relationship between foreign investment and foreign divestment as a near-term solution. That is, increasing the extent of one type of strategic action may decrease the extent of the other one. It is because once below-aspiration MNCs identify a type of strategic action as a near-term performance solution, the satisficing principle suggests that they stop searching for other solutions. Moreover, time constraints may deter below-aspiration MNCs from implementing foreign investment and divestment simultaneously in the period following performance shortfalls.[3] Hypotheses 1 and 2 state that when peers undertake foreign investment (divestment) actively, the preference for

[3] The proposed substitution relationship exists in time t+1 only if the performance shortfalls are present at time t. At time t+2 or later, the substitution relationship may not persist for two reasons. First, if the chosen type of strategic action cannot solve the performance problem and bring the performance back to the aspiration level, MNCs may adopt the other type of strategic action. Second, it is more likely to adopt multiple types of strategic action at time t+2 or later due to more sufficient time. Our analyses confirm that the substitution relationship does not persist at time t+2 or later.

selecting foreign investment (divestment) in problemistic search will increase. Combining such an idea with the proposed substitution relationship between foreign investment and foreign divestment as a near-term solution, we expect the preference for selecting foreign divestment (investment) will simultaneously decrease. Formally stated:

**Hypothesis 6** When peers recently and actively undertake foreign divestment, the positive effect of performance shortfalls on foreign investment is weaker.

**Hypothesis 7** When peers recently and actively undertake foreign investment, the positive effect of performance shortfalls on foreign divestment is weaker.

## Methods

### Data

We tested the hypotheses with a dataset concerning Japanese manufacturing MNCs' foreign investment and divestment from 1997 to 2016. Japanese manufacturing MNCs refer to Japanese manufacturing firms with at least one foreign subsidiary at a given time. Japan is one of the leading sources of foreign direct investment around the world. Hurry (1993) noted that some Japanese MNCs engaged in foreign investment and divestment in the period of poor performance, suggesting that they might select these two types of strategic action in problemistic search. The analysis was at the parent-firm level because the decisions of foreign investment and divestment are often led by parents (Ghertman, 1988). We identified a sample of Japanese manufacturing MNCs from Toyo Keizai's annual compendiums of foreign investment, namely *Japanese Overseas Investments*. Toyo Keizai Inc. developed *Japanese Overseas Investments* by conducting mail and telephone surveys with major listed and unlisted Japanese parent firms and

collecting their archival data. *Japanese Overseas Investments* document the information of all foreign subsidiaries of those parent firms in detail (Henisz & Delios, 2001), and the data have been employed by a large number of international business studies (e.g., Chan & Makino, 2007; Henisz & Delios, 2001; Hui, Hult, & Ketchen, 2020; Makino & Beamish, 1998). While *Japanese Overseas Investments* provide the data regarding the foreign activities of Japanese MNCs, *SPEEDA*, which is developed by Uzabase Inc., provides the data for other variables.

**Measures**

**Foreign investment** This variable was a count variable measured as the number of new foreign subsidiaries established by the focal MNC in year t. The range of this variable was between 0 and 66. The sampled MNCs made 6,324 foreign investments in total from 1997 to 2016.

**Foreign divestment** This variable was a count variable measured as the number of foreign subsidiaries abandoned by the focal MNC in year t. The range of this variable was between 0 and 52. The sampled MNCs made 6,264 foreign divestments in total from 1997 to 2016.

**Performance shortfalls** We focused on profitability as organizational performance (Greve, 2003a). Specifically, we measured performance using return on assets (ROA, expressed in percentage) of the focal MNC in year t-1 (Greve, 2003b; Shinkle, 2012). Following prior BTOF studies (e.g., Chen &Miller, 2007; Iyer & Miller, 2008), we used two aspiration levels for performance and entered each of them into separate models. The first one was the historical aspiration level measured as ROA of the focal MNC in year t-2 (a year prior to when performance was measured). The second one was the social aspiration level measured using the mean level of ROA of all other Japanese MNCs in the same industry in year t-1.

We then followed the standard practice in the BTOF literature to implement a spline function on the difference between performance and an aspiration level (Greve, 2003a).

Specifically, we split the difference between performance and an aspiration level into two separate variables, namely *performance shortfalls* and *performance surplus*. *Performance shortfalls* equaled 0 when performance was above the aspiration level and equaled the absolute difference between performance and the aspiration level when performance is below the aspiration level. *Performance surplus* equaled 0 when performance was below the aspiration level and equaled the absolute difference between performance and the aspiration level when performance was above the aspiration level. *Performance shortfalls* was a major independent variable for testing the hypotheses, whereas *performance surplus* served as a control variable.

**Peers' recent foreign investment** This variable was measured as the total number of new foreign subsidiaries established by other Japanese MNCs in the same industry in the past three years (i.e., years t-1, t-2, and t-3).

**Peers' recent foreign divestment** This variable was measured as the total number of foreign subsidiaries abandoned by other Japanese MNCs in the same industry in the past three years (i.e., years t-1, t-2, and t-3) in the countries in which the focal MNC had foreign subsidiary(s) in operation. We used *performance shortfalls*, *peers' recent foreign investment*, and *peers' recent foreign divestment* to create interaction variables for testing our hypotheses.

**Control variables** We entered a set of control variables to reduce the concerns of alternative explanations and omitted variable bias. We first included *R&D intensity*, measured as R&D expenditures divided by sales, as a proxy of the focal MNC's intangible assets that may influence foreign investment (Buckley & Casson, 1976) and divestment (Delios & Beamish, 2001). Prior research suggests that firms with greater international experience tend to be more competitive in the global market (Johanson & Vahlne, 1977). We thus included the *length of international operation* of the focal MNC, which was measured as the logarithm of the number of years since

the establishment of the first foreign subsidiary. As slack resources may influence the choice between investment and divestment in problemistic search (Kuusela et al., 2017), we included *financial slack*, measured as the ratio of debt to equity as an inverse indicator (Greve, 2003b). Firm size has been argued to influence firm responses to performance shortfalls (Audia & Greve, 2006), so we measured firm size using the logarithm of the *sales*. We also included the annual *sales growth* (%) of the focal MNC to account for the changes in firm size. Last, we included the *number of industries* participated in by the focal MNC in foreign countries to capture the scope of businesses in the global market. All control variables were measured in year t-1.

**Analytical model**

Given that the dependent variables were count variables, we adopted negative binomial regression that could better overcome the over-dispersion problems as compared to Poisson regression. As it was a panel dataset, we accounted for the dependence among observations of the same MNC by entering firm-level fixed-effects. It should be noted that the fixed-effect method required within-firm variation in the dependent variables. This means MNCs that had not undertaken any foreign investment (divestment) in the studied period were dropped in the regressions predicting foreign investment (divestment). We also added year fixed-effects by entering a set of year dummies to control for macro environmental changes over time. Table 1 reports the descriptive statistics and correlations of the variables in our models.

(Insert Table 1 about here)

**Results**

Tables 2 and 3 present the results of models predicting foreign investment and foreign divestment respectively. To enhance the readability of the tables, *peers' recent foreign investment* and *peers' recent foreign divestment* were divided by 100 before we conducted the regression

analyses. Following the common practice of prior BTOF studies (e.g., Audia & Greve, 2006; Baum & Dahlin, 2006; Lin, 2014; Iyer & Miller, 2008; Xu et al., 2019), we considered the historical aspiration level and the social aspiration level in separate models. In each of the tables, we first entered all independent and control variables, and then added an interaction variable concerning a hypothesis at a time. Last, we reported the full models that comprise all independent and interaction variables.

(Insert Tables 2 and 3 about here)

We first discuss the analysis results for predicting foreign investment with hypotheses 1, 4, and 6. In Table 2, the main effect of *performance shortfalls* is not significant in both models 1 and 2, indicating that foreign investment may not be a common near-term solution adopted by MNCs to cope with large performance shortfalls. Hypothesis 1 is thus not supported. However, the relationship between performance shortfalls and foreign investment requires a more nuanced interpretation because some of the interaction variables are significant at the 5 percent level in other models. Hypothesis 4 suggests that the positive relationship is stronger when peers recently undertake foreign investment to a greater extent. Based on the significance of the coefficient of the interaction between *performance shortfalls* and *peers' recent foreign investment*, this hypothesis is strongly supported in the models of social aspirations (models 4 and 8), but weakly supported in the models of historical aspirations (supported in model 3 but not in model 7).

To help interpret the results, we followed the suggestion of several scholars to examine marginal effects (e.g., Wiersema & Bowen, 2009). Specifically, we calculated the marginal effect of *performance shortfalls* on *foreign investment* at different levels of *peers' recent foreign investment* based on the results of model 4.[4] When *peers' recent foreign investment* is 80 (around

[4] We held other variables at their mean level when calculating marginal effects.

one standard deviation below the mean), the marginal effect of *performance shortfalls* is -0.026 ($p < 0.05$), suggesting that MNCs with larger performance shortfalls actually reduce foreign investment if peers undertake a small number of foreign investments. However, we found that the marginal effect of *performance shortfalls* starts to be significantly positive (0.029, $p < 0.05$) when peers undertake 555 foreign investments (around two standard deviations above the mean).[5] The difference in the marginal effects at the different levels of *peers' recent foreign investment* is also significant (chi-square=6.95, $p < 0.01$). We therefore conclude that foreign investment is a near-term solution to large performance shortfalls only when peers undertake a sufficiently large number of foreign investments. Figure 1 visually shows these results.

(Insert Figure 1 about here)

Hypothesis 6 predicts that the positive relationship between performance shortfalls and foreign investment is weaker when peers recently undertake foreign divestment to a greater extent. This hypothesis is not supported, given the insignificant coefficient of the interaction term between *performance shortfalls* and *peers' recent foreign divestment* in all concerned models in Table 2. We conclude that peers' foreign divestment does not influence the preference for choosing foreign investment in problemistic search.

We now turn to the analysis results for predicting foreign divestment in Table 3. The main effect of *performance shortfalls* is positive and significant in both models 1 and 2, indicating that foreign divestment, on average, is a near-term solution adopted by MNCs to combat large performance shortfalls. Hypothesis 2 is therefore supported. As we above find that the main

[5] We discussed the marginal effect of *performance shortfalls* at the level of 555 (around two standard deviations above the mean) because it is not significantly positive at any level below 555 (e.g., 400 [around one standard deviation above the mean]) and thus not meaningful practically.

effect of *performance shortfalls* on *foreign investment* is insignificant, foreign divestment is thus a more preferred near-term performance solution to MNCs. Hypothesis 3 is also supported.

Again, we need to consider the moderating effect of peers' activities as some of the interaction variables are statistically significant in other models in Table 3. Hypothesis 5 states that the positive relationship between *performance shortfalls* and *peers' recent foreign divestment* is stronger if peers actively engage in foreign divestment. However, there is no support for this hypothesis as the coefficient of the interaction term between *performance shortfalls* and *peers' recent foreign divestment* is insignificant in all relevant models. These results imply that MNCs may not take peers' foreign divestment into account in problemistic search.

Hypothesis 7 predicts a weaker positive relationship between *performance shortfalls* and *peers' recent foreign divestment* if peers actively undertake foreign investment. This hypothesis is supported in the models of social aspirations (models 6 and 8) but not in the models of historical aspirations (models 5 and 7). We calculated the marginal effect of *performance shortfalls* on *foreign divestment* at the different levels of *peers' recent foreign investment* based on the results of model 6. When *peers' recent foreign investment* is 80 (around one standard deviation below the mean), the marginal effect of *performance shortfalls* is 0.051 ($p < 0.001$). The positive marginal effect is weaker but still significant (0.038, $p < 0.001$) when *peers' recent foreign investment* is 250 (around the mean level). When *peers' recent foreign investment* is 555 (around two standard deviations above the mean), a level at which MNCs start to use foreign investment to cope with performance shortfalls, the marginal effect of *performance shortfalls* on *foreign divestment* becomes insignificant (0.014, n.s.). We thus conclude that foreign divestment is no longer a near-term solution to social performance shortfalls when peers undertake a

sufficiently large number of foreign investments. Figure 2 visually shows these results. As a reminder, social performance shortfalls refer to the gap between firm performance and social aspiration when the former is below the latter.

(Insert Figure 2 about here)

**Robustness checks and additional analyses**

We ran several robustness checks to ensure the reliability of the above results. First, the variance inflation factor (VIF) of two control variables, *length of international operation* and *sales*, exceeds the commonly accepted standard of 10. After removing these two variables and running the regressions, however, we found that the results were the same qualitatively, indicating that multicollinearity may not be a serious concern. Second, because MNCs sometimes may have coordinated foreign investment and foreign divestment before experiencing performance shortfalls, we may need to control for the number of foreign investment (divestment) taken by the focal MNC in year t in the models that predict foreign divestment (investment). Nevertheless, we found that the results are still consistent with those in the main analyses. Third, we tested models that include the major independent variables only and exclude all control variables. The results concerning the hypotheses again remained unchanged qualitatively. This suggests little concern that the results are due to model specifications manipulated for p-hacking (Meyer, Van Witteloostuijn, & Beugelsdijk, 2017).

We next tested if the results remained consistent if alternative measures of the key independent variables were used. Regarding organizational aspirations, we note that some researchers apply a switching model that combines the historical and social aspirations (e.g., Bromiley & Harris, 2014). Specifically, this model assumes that when organizations perform

below the industry average, organizations use social aspirations to assess performance shortfalls. By contrast, when organizations perform above the industry average, they make the comparison between historical aspirations and performance. Following this switching model, we recalculated the aspiration level and performance shortfalls, but we still obtained results similar to those of using social aspirations in the main analysis. Regarding *peers' recent foreign investment* and *peers' recent foreign divestment*, we considered the frequency in the past three years in the main analysis. The results are qualitatively the same if we considered the frequency in the past two years or in the past year only. Using the frequency in the past three years, however, produces a better model fit.

Moreover, some scholars suggest that organizations may be more likely to learn from and imitate successful peers' strategies as these peers' strategies may be considered more effective. However, they also suggest that organizations may be more likely to learn from and imitate similar peers' strategies as these peers' strategies may be more applicable to the learning organizations (Haunschild & Miner, 1997). Accordingly, we distinguished between successful and unsuccessful peers in additional analyses. Specifically, *peers' recent foreign investment* was split into two variables concerning successful peers (those with performances above the industry average) and unsuccessful peers (those with performances below the industry average) respectively. The same practice was also applied to *peers' recent foreign divestment*. The hypotheses were tested again with these new variables. The analyses show that unsuccessful peers' recent foreign investments strengthen the chance of the focal MNC selecting foreign investment and reduce its chance of selecting foreign divestment as a near-term performance solution. By contrast, successful peers' recent foreign investments do not influence the selection preference of the focal MNC in problemistic search. These findings indicate that MNCs pay

greater attention to similar peers (i.e., those also with performance shortfalls) in problemistic search for near-term solutions.

Finally, one may argue that the proposed substitution relationship between foreign investment and foreign divestment as a near-term performance solution may not apply to large MNCs because they may have abundant resources for planning and implementing multiple types of strategic action within a short period. We checked this possibility by considering the three-way interaction among *performance shortfalls*, *sales*, and *peers' recent foreign divestment* in the models that predict *foreign investment* and the three-way interaction among *performance shortfalls*, *sales*, and *peers' recent foreign investment* in the models that predict *foreign divestment*. The analyses show that these three-way interactions are not statistically significant, suggesting that the proposed substitution relationship applies to both large and small MNCs. It appears that while large MNCs have greater resources, they may still apply the satisficing principle and/or be subject to time constraints when selecting near-term performance solutions.

**Discussion**

Most studies that look into the relationship between performance shortfalls and a particular type of strategic action have failed to account for the preferences of below-aspiration organizations for selecting various types of strategic action in problemistic search. To address this research gap, this study sought to answer when foreign investment and foreign divestment are more likely to be adopted by MNCs as a near-term performance solution. We tested our hypotheses with a sample of Japanese manufacturing MNCs. The analyses provide evidence that vicarious learning influences the selection preferences in problemistic search in certain conditions. We found that peers' recent foreign investment increases the chance of MNCs to initiate foreign investment as

social performance shortfalls enlarge. Specifically, although foreign investment, on average, may not be a common performance solution, MNCs rely on it to cope with large social performance shortfalls when peers undertake a sufficiently large number of foreign investments. Meanwhile, those MNCs no longer adopt foreign divestment, which is a more common near-term performance solution, to cope with large social performance shortfalls.

Contrary to our expectation, there is no evidence that MNCs take peers' foreign divestment into account in problemistic search, which may suggest that our theorizing about the role of vicarious learning in problemistic search does not apply to all types of strategic action. We speculate that as foreign divestment is already a common performance solution of MNCs, MNCs may not need to learn from peers for the use of foreign divestment. On the contrary, as foreign investment is a less common performance solution, MNCs may need to draw inference from peers' recent decisions such as location choices and entry modes before they consider foreign investment an appropriate performance solution. To test if our theory is right, or to test its generalizability, we encourage future research to apply it to other types of strategic action.

It should be noted that we obtained support for our hypotheses in the models of social aspirations, but not in the models of historical aspirations. While we followed the standard practice in the literature to treat social and historical aspirations as comparable in the analysis, our theorizing about vicarious learning may be more relevant for social aspirations. Some researchers have pointed out the differences between social and historical aspirations in their strategic implications (e.g., Baum et al., 2005; Kim, Finkelstein, & Haleblian, 2015). For example, historical performance shortfalls may result from high historical aspirations developed based on past success, and such past success may increase the tendency to rely on existing knowledge and reduce the tendency to learn from peers in problemistic search. Therefore, our

theorizing about the role of vicarious learning in problemistic search may be more applicable to social performance shortfalls.

In addition, we found that unsuccessful peers are more likely than successful ones to influence the selection preferences of the focal MNC in problemistic search. This finding is contrary to the conventional wisdom that organizations tend to imitate successful peers, and also contrary to our theorizing that the focal MNC may seek to learn what successful peers did to achieve good performances in problemistic search. However, this finding is consistent with another conventional belief that organizations tend to imitate similar peers. The focal firm is similar to unsuccessful peers in the sense that they also experience social performance shortfalls. We surmise that the focal firm may attempt to learn what unsuccessful peers did to catch up with successful peers in problemistic search. In contrast, since successful peers may be dissimilar (e.g., they may have higher status and face less scrutiny from stakeholders), what successful peers did may not suitable for the focal MNC that is experiencing large performance shortfalls.

**Contributions**

In their recent review of the literature on problemistic search, Posen et al (2019: 225) stated: "Current theorizing is largely unable to explain the direction of search and change in response to performance shortfalls." Different organizations, or even the same organization under different occasions, may have different preferences (and face varying internal dynamics) in selecting different types of strategic action to deal with large performance shortfalls (Augier & March, 2008; Kuusela et al., 2017; Kotiloglu et al., 2019; Posen et al., 2018). Therefore, the relationship between performance shortfalls and a particular type of strategic action is more nuanced rather than straightforward (Wang, Ahlstrom, Nair, & Hang, 2008). We argue that the inconsistent findings of prior studies regarding the effects of performance shortfalls on certain types of

strategic action, including merger & acquisitions (Iyer & Miller, 2008; Kuusela et al., 2017), R&D investment (Chen & Miller, 2007; Greve, 2003b; Xu et al., 2019), and foreign investment (Jiang & Holburn, 2018; Jung & Bansal, 2009; Lin, 2014), might partly result from the lack of consideration of the selection preferences in problemistic search.

In response to some researchers' call for a better understanding of how organizations filter through alternatives in problemistic search (Liu et al., 2015; Posen et al., 2019), this study makes three theoretical contributions. First, it enriches the emerging literature on the selection preferences in problemistic search by examining the role of vicarious learning, which has not been considered sufficiently. While prior studies in this research line have examined the roles of slack (Kuusela et al., 2017) and business group membership (Vissa et al., 2010), we provide evidence that vicarious learning also influences the preferences for selecting different types of strategic action as a near-term solution in problemistic search. Incorporating vicarious learning into selection preferences enriches the theoretical perspective through which firms' problemistic search behaviors can be meaningfully studied.

Second, our study is also distinct from prior studies on the selection preferences in problemistic search in that we theorize about the substitution relationship between different types of strategic action as a near-term solution. That is, we suggest that conditions increasing the preference for a type of strategic action would also reduce the preference for other types of strategic action as a near-term solution. Our findings also provide support for the assertion of the BTOF that organizations generally adopt one solution in problemistic search at a time (Cyert & March, 1963). Bringing the substitution relationship between different types of strategic action in problemistic search to our attention can guide future research on organizational responses to performance shortfalls.

Third, our findings contribute to the international business research by shedding light on the big question of why firms engage in foreign investment (Buckley, 2002). Our findings reconcile the inconsistent findings of prior studies on the impact of performance shortfalls on foreign investment (Jiang & Holburn, 2018; Jung & Bansal, 2009; Lin, 2014). Our findings suggest a reason for the inconsistent findings; that is, prior studies did not sufficiently consider peers' recent foreign investment in their theorizing and analytical models. After considering the moderating effects of peers' recent foreign investment, we show that foreign investment is not a common near-term performance solution of MNCs. MNCs adopt it to cope with large performance shortfalls only when peers undertake a sufficiently large number of foreign investments. Therefore, we conclude that performance shortfalls can be a determinant of foreign investment only under certain conditions. Interestingly, we find that performance shortfalls also lead to foreign divestment until peers undertake a sufficiently large number of foreign investments. Taken together, performance shortfalls can both increase and decrease the extent of firm internationalization, depending on the extent of peers' recent foreign investment activities.

This study also has practical implications. First, competitors' foreign investment may enable them to not only exploit existing competitive advantages but also develop new ones (Dunning, 1998, 2009). Thus, firms need to react to competitors' new foreign investment timely to maintain competitive parity. Our findings that peers' foreign investment increases the chance of a firm making foreign investment to deal with its social performance shortfalls can help firms predict competitors' strategic moves and plan their strategic responses in advance. Second, when a firm experiences large performance shortfalls, it may face legitimacy problems as its strategies and practices may be proved inappropriate and ineffective. If it seeks to regain legitimacy, following successful peers' strategies can be a good option (Haunschild & Miner, 1997).

However, we show that the focal firm instead follows unsuccessful peers' practices which are less legitimate than successful peers' ones. Would this even lower the focal firm's legitimacy? This is worth thinking about by managers and researchers alike (Bruton et al., 2008).

**Limitations and future research**

This study has a few limitations. First, similar to other quantitative studies, we develop our theorizing based on the literature and logical reasoning. We also rely on the data on Japanese MNCs to test our hypotheses. Japanese MNCs have internationalized for many decades and thus accumulated abundant international experience. Their preferences for performance solutions may be different from late entrants in the global markets, such as MNCs from emerging economies. Meanwhile, we only consider the selection preferences for different types of strategic action, but not the selection preferences for different alternatives of the same type of strategic action. For example, once MNCs decide to follow peers and use foreign investment to cope with performance shortfalls, would they also follow peers' location choices and entry modes?

Accordingly, we encourage future research to use qualitative methods to provide more direct and detailed evidence on the process in which organizations develop their selection preferences in problemistic search. Researchers can also examine samples of global late entrants to see if these MNCs will have different selection preferences in problemistic search as compared to Japanese MNCs. In addition to increasing the external validity of our conclusions, future research can complement our study by addressing the selection preferences for different alternatives of foreign investment/divestment in problemistic search. Last but not least, we believe it is valuable for future research to explore additional factors influencing the selection preferences in problemistic search and apply it to key questions of firm turnaround and growth (Bruton et al., 2003; Tomizawa, Zhao, Bassellier, & Ahlstrom, 2020).

## Conclusion

When and why are foreign investment and divestment more (or less) likely to be selected by below-aspiration MNCs to cope with performance shortfalls? In a sample of Japanese manufacturing MNCs, our analyses show that foreign divestment is generally a more preferred near-term performance solution. However, foreign investment is more likely and foreign divestment is less likely to be selected to cope with social performance shortfalls (i.e., the gap between performance and social aspiration) when peers undertake a sufficiently large number of foreign investments. We reason that in the face of large social performance shortfalls, MNCs face substantial uncertainty and there may not be existing routines or clear solutions to the shortfalls, so they may need to search for solutions externally and also learn from peers' recent activities. In addition, when a firm's peers undertake a greater number of foreign investments, foreign investment becomes more cognitively accessible to the managers and more acceptable to the stakeholders. Consequently, MNCs are more likely to adopt foreign investment to deal with large social performance shortfalls. Due to the satisficing principle (Cyert & March, 1963; Simon, 1955) and time constraints, MNCs are less likely to undertake foreign divestment simultaneously once they plan to use foreign investment as a near-term performance solution. Taken together, we show that vicarious learning influences the selection preferences in problemistic search in certain conditions. Thus, this study helps to further our understanding of how firms deal with performance shortfalls in seeking a turnaround and return to growth.

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**Table 1** Descriptive statistics and correlations

| | Variables | Mean | S.d. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Foreign investment | 0.409 | 1.714 | 1 | | | | | | | | | | | | |
| 2. | Foreign divestment | 0.399 | 1.548 | 0.225 | 1 | | | | | | | | | | | |
| 3. | Performance shortfalls (historical) | 1.261 | 3.041 | -0.026 | 0.004 | 1 | | | | | | | | | | |
| 4. | Performance surplus (historical) | 1.332 | 3.193 | -0.029 | 0.001 | -0.173 | 1 | | | | | | | | | |
| 5. | Performance shortfalls (social) | 1.371 | 3.268 | -0.026 | 0.010 | 0.708 | -0.057 | 1 | | | | | | | | |
| 6. | Performance surplus (social) | 1.438 | 2.405 | -0.010 | -0.019 | -0.123 | 0.262 | -0.251 | 1 | | | | | | | |
| 7. | Peers' recent foreign investment | 231.456 | 168.959 | 0.047 | 0.042 | -0.027 | 0.002 | -0.003 | 0.012 | 1 | | | | | | |
| 8. | Peers' recent foreign divestment | 94.915 | 99.740 | 0.084 | 0.182 | 0.015 | 0.027 | -0.009 | 0.077 | 0.566 | 1 | | | | | |
| 9. | R&D intensity | 0.032 | 0.056 | 0.046 | 0.038 | 0.049 | 0.030 | 0.122 | 0.036 | 0.138 | 0.158 | 1 | | | | |
| 10. | Length of international operation | 1.455 | 0.283 | 0.172 | 0.204 | -0.040 | -0.030 | -0.066 | -0.001 | -0.030 | 0.289 | 0.031 | 1 | | | |
| 11. | Financial slack | 1.640 | 16.132 | -0.002 | 0.014 | 0.015 | 0.018 | 0.027 | -0.027 | -0.020 | -0.006 | -0.013 | 0.001 | 1 | | |
| 12. | Sales | 2.833 | 0.677 | 0.270 | 0.325 | -0.097 | -0.077 | -0.147 | 0.000 | -0.021 | 0.320 | -0.008 | 0.565 | 0.027 | 1 | |
| 13. | Sales growth | 2.987 | 18.900 | 0.018 | 0.013 | -0.242 | 0.180 | -0.142 | 0.158 | 0.017 | 0.021 | -0.035 | -0.025 | -0.004 | 0.043 | 1 |
| 14. | Number of industries | 3.172 | 2.759 | 0.299 | 0.447 | -0.041 | -0.038 | -0.059 | -0.022 | -0.021 | 0.259 | 0.052 | 0.458 | 0.026 | 0.677 | -0.007 |

N=15,449. Correlations with an absolute value above 0.016 are significant at the 5 percent level.

**Table 2** Results of fixed-effects negative binomial regression of foreign investment.

| Variables | Model 1 historical aspiration | Model 2 social aspiration | Model 3 historical aspiration | Model 4 social aspiration | Model 5 historical aspiration | Model 6 social aspiration | Model 7 historical aspiration | Model 8 social aspiration |
|---|---|---|---|---|---|---|---|---|
| Performance shortfalls **(Hypothesis 1)** | -0.006 (0.009) | -0.006 (0.009) | -0.029† (0.015) | -0.036* (0.015) | -0.018 (0.013) | -0.019 (0.012) | -0.029† (0.015) | -0.036* (0.015) |
| Performance surplus | -0.031** (0.010) | -0.023* (0.011) | -0.031** (0.010) | -0.023* (0.011) | -0.031** (0.010) | -0.023* (0.011) | -0.031** (0.010) | -0.023* (0.011) |
| Peers' recent foreign investment | 0.161*** (0.023) | 0.169*** (0.023) | 0.154*** (0.023) | 0.160*** (0.023) | 0.163*** (0.023) | 0.171*** (0.023) | 0.154*** (0.023) | 0.159*** (0.023) |
| Peers' recent foreign divestment | -0.290*** (0.037) | -0.297*** (0.037) | -0.289*** (0.037) | -0.299*** (0.037) | -0.300*** (0.037) | -0.310*** (0.038) | -0.290*** (0.038) | -0.298*** (0.038) |
| R&D intensity | 0.491 (0.351) | 0.478 (0.339) | 0.451 (0.353) | 0.422 (0.367) | 0.463 (0.354) | 0.473 (0.353) | 0.450 (0.354) | 0.420 (0.367) |
| Length of international operation | 0.051 (0.082) | 0.053 (0.082) | 0.051 (0.082) | 0.058 (0.082) | 0.051 (0.082) | 0.057 (0.082) | 0.051 (0.082) | 0.057 (0.082) |
| Financial slack | -0.001* (0.001) | -0.001* (0.001) | -0.001* (0.001) | -0.001* (0.001) | -0.001* (0.001) | -0.001* (0.001) | -0.001* (0.001) | -0.001* (0.001) |
| Sales | 0.201* (0.083) | 0.210* (0.083) | 0.196* (0.083) | 0.205* (0.083) | 0.200* (0.083) | 0.209* (0.083) | 0.200* (0.083) | 0.205* (0.083) |
| Sales growth | 0.003* (0.001) | 0.002* (0.001) | 0.002* (0.001) | 0.002* (0.001) | 0.003* (0.001) | 0.002* (0.001) | 0.002* (0.001) | 0.002* (0.001) |
| Number of industries | -0.000 (0.009) | -0.001 (0.009) | -0.000 (0.009) | -0.001 (0.009) | -0.000 (0.009) | -0.001 (0.009) | -0.000 (0.009) | -0.001 (0.009) |
| | | | | | | | | |
| Performance shortfalls x Peers' recent foreign investment **(Hypothesis 4)** | | | 0.009** (0.004) | 0.012** (0.004) | | | 0.009 (0.006) | 0.012* (0.006) |
| Performance shortfalls x Peers' recent foreign divestment **(Hypothesis 6)** | | | | | 0.009 (0.006) | 0.009 (0.006) | 0.001 (0.008) | -0.001 (0.008) |
| | | | | | | | | |
| | | | | | | | | |
| Observations | 11,215 | 11,190 | 11,215 | 11,190 | 11,215 | 11,190 | 11,215 | 11,190 |
| Log likelihood | -7,302.65 | -7,291.35 | -7,300.71 | -7,288.16 | -7,301.74 | -7,290.15 | -7,300.70 | -7,288.15 |
| Wald chi-square | 338.25*** | 333.36*** | 341.71*** | 338.74*** | 340.30*** | 335.66*** | 341.78*** | 338.66** |

Note: Standard errors are in parentheses. Constant and year dummies are omitted. *Peers' recent foreign investment* and *peers' recent foreign divestment* were divided by 100 before we conducted the regression analyses.

†p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001 (all two-tailed tests).

**Table 3** Results of fixed-effects negative binomial regression of foreign divestment.

| Variables | Model 1 historical aspiration | Model 2 social aspiration | Model 3 historical aspiration | Model 4 social aspiration | Model 5 historical aspiration | Model 6 social aspiration | Model 7 historical aspiration | Model 8 social aspiration |
|---|---|---|---|---|---|---|---|---|
| Performance shortfalls **(Hypothesis 2)** | 0.032*** (0.007) | 0.038*** (0.006) | 0.031** (0.010) | 0.043*** (0.009) | 0.041*** (0.011) | 0.058*** (0.011) | 0.040** (0.011) | 0.057*** (0.011) |
| Performance surplus | 0.013* (0.007) | -0.033** (0.011) | 0.013* (0.007) | -0.033** (0.011) | 0.013* (0.007) | -0.033** (0.011) | 0.013* (0.007) | -0.034** (0.011) |
| Peers' recent foreign investment | -0.080*** (0.022) | -0.081*** (0.023) | -0.079*** (0.022) | -0.082*** (0.023) | -0.076*** (0.023) | -0.073*** (0.023) | -0.071** (0.023) | -0.068** (0.024) |
| Peers' recent foreign divestment | 0.175*** (0.033) | 0.174*** (0.033) | 0.175*** (0.033) | 0.178*** (0.033) | 0.175*** (0.033) | 0.174*** (0.033) | 0.169*** (0.033) | 0.168*** (0.034) |
| R&D intensity | -1.505 (0.968) | -1.211 (1.038) | -1.510 (0.969) | -1.178 (1.039) | -1.494 (0.969) | -1.111 (1.041) | -1.551 (0.974) | -1.141 (1.042) |
| Length of international operation | 0.014 (0.091) | -0.001 (0.091) | 0.014 (0.091) | -0.002 (0.091) | 0.012 (0.091) | -0.005 (0.091) | 0.012 (0.091) | -0.005 (0.091) |
| Financial slack | 0.004* (0.002) | 0.003 (0.002) | 0.004* (0.002) | 0.003 (0.002) | 0.004* (0.002) | 0.003 (0.002) | 0.004* (0.002) | 0.003 (0.002) |
| Sales | -0.198* (0.085) | -0.234** (0.085) | -0.198* (0.085) | -0.235** (0.085) | -0.197* (0.085) | -0.234** (0.085) | -0.195* (0.084) | -0.232** (0.085) |
| Sales growth | 0.002* (0.001) | 0.004*** (0.001) | 0.002* (0.001) | 0.004*** (0.001) | 0.002* (0.001) | 0.004*** (0.001) | 0.002* (0.001) | 0.004*** (0.001) |
| Number of industries | 0.125*** (0.008) | 0.122*** (0.008) | 0.125*** (0.008) | 0.122*** (0.008) | 0.125*** (0.008) | 0.123*** (0.008) | 0.125*** (0.008) | 0.123*** (0.008) |
| | | | | | | | | |
| Performance shortfalls x Peers' recent foreign divestment **(Hypothesis 5)** | | | 0.0004 (0.004) | -0.003 (0.004) | | | 0.006 (0.006) | 0.004 (0.005) |
| Performance shortfalls x Peers' recent foreign investment **(Hypothesis 7)** | | | | | -0.004 (0.004) | -0.008* (0.004) | -0.007 (0.005) | -0.011* (0.005) |
| | | | | | | | | |
| | | | | | | | | |
| Observations | 11,942 | 11,891 | 11,942 | 11,891 | 11,942 | 11,891 | 11,942 | 11,891 |
| Log likelihood | -7,308.92 | -7,272.97 | -7,308.91 | -7,272.70 | -7,308.45 | -7,270.77 | -7,307.92 | -7,270.41 |
| Wald chi-square | 406.09*** | 450.45*** | 406.25*** | 449.17*** | 406.93*** | 454.56*** | 409.60*** | 458.23** |

Note: Standard errors are in parentheses. Constant and year dummies are omitted. *Peers' recent foreign investment* and *peers' recent foreign divestment* were divided by 100 before we conducted the regression analyses.

†p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001 (all two-tailed tests).

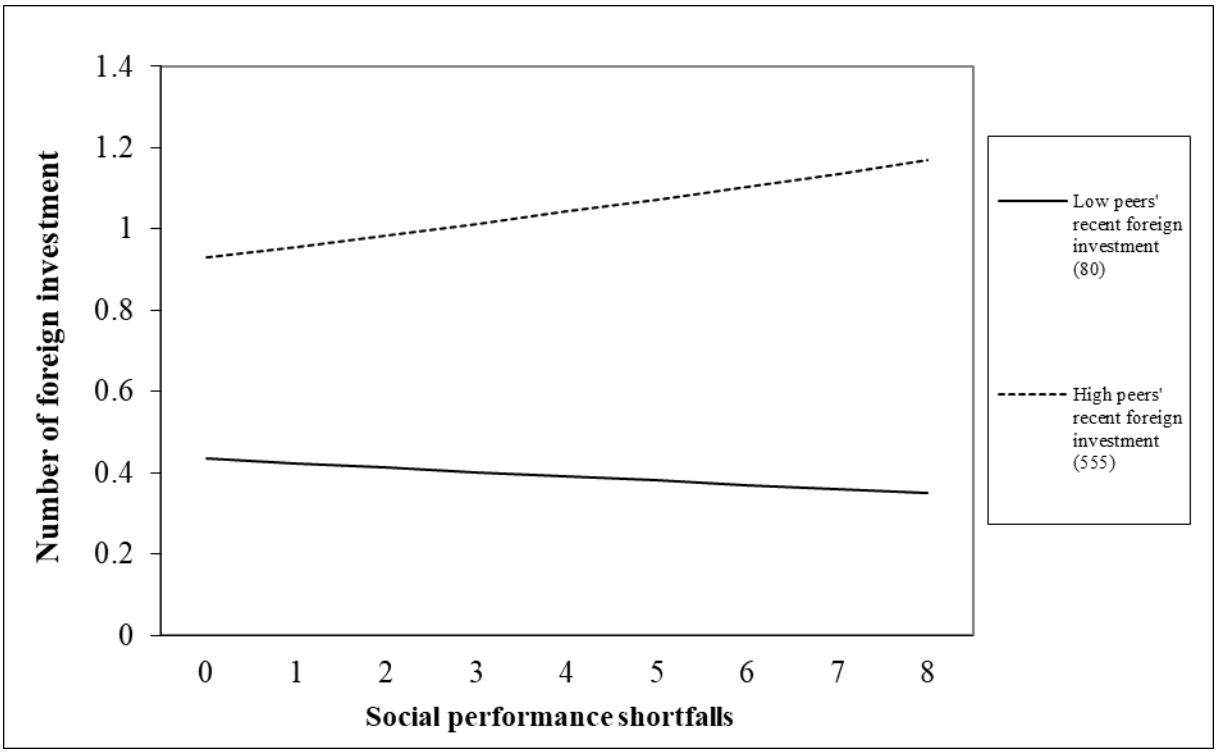


**Figure 1** The moderating role of peers' recent foreign investment on the effect of social performance shortfalls on foreign investment.

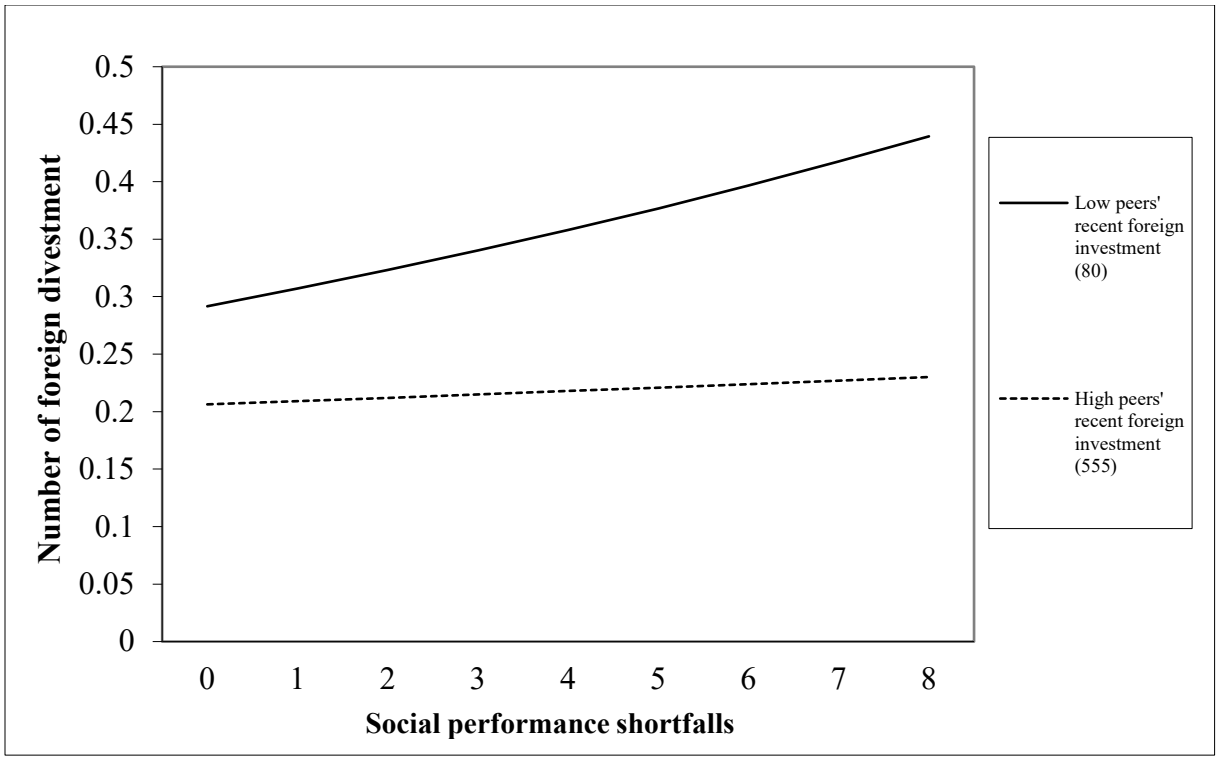


**Figure 2** The moderating role of peers' recent foreign investment on the effect of social performance shortfalls on foreign divestment.