

## Do Foreign Greenfields Outperform Foreign Acquisitions or Vice Versa? An Institutional Perspective

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ERIM REPORT SERIES <i>RESEARCH IN MANAGEMENT</i>	
ERIM Report Series reference number	ERS-2008-009-ORG
Publication	March 2008
Number of pages	48
Persistent paper URL	<a href="http://hdl.handle.net/1765/11558">http://hdl.handle.net/1765/11558</a>
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REPORT SERIES  
*RESEARCH IN MANAGEMENT*

ABSTRACT AND KEYWORDS	
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Free Keywords	<p>acquisitions, foreign entry, greenfields, institutional theory, subsidiary integration, subsidiary performance</p>
Availability	<p>The ERIM Report Series is distributed through the following platforms:</p> <p>Academic Repository at Erasmus University (DEAR), <a href="#">DEAR ERIM Series Portal</a></p> <p>Social Science Research Network (SSRN), <a href="#">SSRN ERIM Series Webpage</a></p> <p>Research Papers in Economics (REPEC), <a href="#">REPEC ERIM Series Webpage</a></p>
Classifications	<p>The electronic versions of the papers in the ERIM report Series contain bibliographic metadata by the following classification systems:</p> <p>Library of Congress Classification, (LCC) <a href="#">LCC Webpage</a></p> <p>Journal of Economic Literature, (JEL), <a href="#">JEL Webpage</a></p> <p>ACM Computing Classification System <a href="#">CCS Webpage</a></p> <p>Inspec Classification scheme (ICS), <a href="#">ICS Webpage</a></p>

**DO FOREIGN GREENFIELDS OUTPERFORM FOREIGN ACQUISITIONS OR VICE  
VERSA? AN INSTITUTIONAL PERSPECTIVE**

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**Accepted for publication in the *Journal of Management Studies***

**Acknowledgements**

An earlier version of this paper was nominated for the Best Paper Award of the International Management division at the 2006 annual meeting of the Academy of Management in Atlanta. We thank Alex Eapen, seminar participants at the CRECIS colloquium “Analyzing Strategic Change in Organizations: Innovative Methods for Management”, associate editor Andrew Delios, and three anonymous reviewers for helpful comments.

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## ABSTRACT

Prior studies of the comparative performance of greenfields and acquisitions have advanced competing arguments, with some arguing that greenfields should outperform acquisitions because acquisitions are costlier to integrate, and others that acquisitions should outperform greenfields because greenfields suffer from a liability of newness. Moreover, while the costs of integration and the liability of newness are at their greatest during a subsidiary's first years, prior studies have tested their competing arguments on samples containing older subsidiaries. We extend these prior studies by (1) developing an institutional theory-based framework that simultaneously considers the costs of integration and the liability of newness, (2) recognizing that both types of costs vary with the level of subsidiary integration, and (3) focusing on the stage of their life during which subsidiaries predominantly incur these costs. To measure subsidiary performance, we ask managers of Dutch multinationals how their *ex ante* performance expectations compare to the subsidiary's *ex post* performance during its first two years. Analyzing a sample of 191 foreign subsidiaries and controlling for entry mode self-selection and other factors, we find that acquisitions outperform greenfields at low and intermediate levels of subsidiary integration, but that greenfields outperform acquisitions at higher integration levels.

**Key words:** acquisitions, foreign entry, greenfields, institutional theory, subsidiary integration, subsidiary performance

## INTRODUCTION

Foreign entry mode decisions are an important research topic in the international management (IM) literature (Brouthers and Hennart, 2007; Herrmann and Datta, 2006). One of these decisions is the choice by multinational enterprises (MNEs) between greenfield and acquisition entry, the so-called establishment mode choice (Cho and Padmanabhan, 1995). While many studies have examined the determinants of this choice, relatively few have examined the comparative performance of greenfield and acquired subsidiaries (for reviews, see Datta et al., 2002; Shimizu et al., 2004), and those that have done so have advanced competing arguments. Some have argued that greenfields should perform better than acquisitions because the latter are costlier to integrate (Hennart et al., 1998; Woodcock et al., 1994), while others have argued that greenfields should perform worse because they suffer from a liability of newness whereas acquisitions do not (Pennings et al., 1994). However, none of these performance studies has considered the costs of integration and the liability of newness *simultaneously*, and none of them has taken into account that the magnitude of these two types of costs may vary across subsidiaries, depending on the extent to which a subsidiary is integrated into the corporate network of its MNE parent. Moreover, while prior studies have focused on the costs of integration and the liability of newness, costs that predominantly arise during the first couple of years after a subsidiary has been established or acquired (Jemison and Sitkin, 1986; Zaheer and Mosakowski, 1997), these studies have included in their samples many older subsidiaries that were clearly past the stage during which such costs arise. Lastly, many studies have not adequately controlled for other factors influencing subsidiary performance, including establishment mode self-selection (Shaver, 1998). Given these limitations, it is hardly surprising that prior studies have obtained mixed empirical results, with some finding that greenfields outperform acquisitions (Li, 1995; Woodcock et al., 1994), others finding the reverse (Pennings et al., 1994), and still others that

they perform equally well (Shaver, 1998; Tsang and Yip, 2007). We therefore think that the time is ripe for a closer examination of the comparative performance of greenfield and acquired subsidiaries.

In this paper we use the IM extension of institutional theory (Kostova and Zaheer, 1999; Rosenzweig and Singh, 1991) to argue that the level of subsidiary integration, defined as the extent to which an MNE parent limits a subsidiary's ability to make independent decisions, determines both the liability of newness faced by greenfield subsidiaries and the integration costs incurred by greenfield and acquired subsidiaries, and hence determines their comparative performance during their first years. Our starting point is that foreign subsidiaries tend to conform to their environment, leading them to incur substantial conformity costs. Specifically, we argue that subsidiaries have to respond to both internal conformity pressures from their MNE parents and external conformity pressures from the host countries in which they operate (Kostova and Zaheer, 1999; Rosenzweig and Singh, 1991). We thus distinguish between internal conformity costs, i.e. the costs that subsidiaries incur because they have to adapt to their MNE parents, and external conformity costs, i.e. the costs that subsidiaries incur because they have to adapt to their host environment. We argue that the internal conformity costs of both greenfields and acquisitions increase with the level of subsidiary integration, but that the internal conformity costs of acquisitions increase faster because acquisitions are more difficult to integrate. We also argue that greenfields, unlike acquisitions, incur substantial external conformity costs because they suffer from a liability of newness, and that these costs decrease with the extent to which greenfield subsidiaries are integrated by their MNE parents. We combine these insights into hypotheses on the relationship between the level of subsidiary integration and the performance of subsidiaries during the first two years after they were established or acquired. To measure this performance, we asked managers of Dutch MNEs to compare their *ex ante* performance

expectations to the subsidiary's *ex post* performance during its first two years. Analyzing a sample of 191 foreign subsidiaries, we find that acquisitions outperform greenfields at low and intermediate levels of subsidiary integration, but that the situation is reversed at higher integration levels.

Our paper makes several contributions to prior research on the comparative performance of greenfields and acquisitions. First, while institutional theory has previously been used to explain the choice between joint ventures and wholly-owned subsidiaries and their comparative performance (Chung and Beamish, 2005; Davis et al., 2000; Lu, 2002; Meyer and Nguyen, 2005; Yiu and Makino, 2002), we are the first to apply this theory to the comparative performance of greenfields and acquisitions. Second, prior studies of this comparative performance have focused on either the costs of integration or the liability of newness, and have assumed these costs to be the same for all subsidiaries. We consider both costs simultaneously, and take into account that their magnitude depends on the extent to which a subsidiary is integrated by its parent, resulting in an integrative framework that better explains the performance of greenfield and acquired subsidiaries. Third, in contrast to previous studies, we focus on the performance of subsidiaries during their first years, since the costs of integration and the liability of newness predominantly arise during this time period. We also control for other factors influencing subsidiary performance, including establishment mode self-selection.

## **LITERATURE REVIEW**

There is no theoretical agreement in the literature on whether greenfield subsidiaries perform better or worse than acquired ones. Some studies have argued that greenfields should perform better than acquisitions because acquisitions come with existing and possibly duplicate assets, and with an established workforce with a different culture, and are hence costlier to integrate and control than greenfields (Hennart et al., 1998; Li, 1995; Woodcock et al., 1994). Others, on the

other hand, have argued that greenfields should perform worse than acquisitions because greenfields are new firms and hence suffer from a liability of newness (Pennings et al., 1994; Stinchcombe, 1965). Greenfield subsidiaries are unproven combinations of inputs and lack relationships with local stakeholders. Consequently, they are likely to perform relatively poorly after their inception (Burgelman, 1985; Caves, 1996). Acquisitions, on the other hand, are going concerns with an established network, and hence do not suffer from a liability of newness (Caves, 1996). As a result, they are more likely to perform satisfactorily than greenfields (Pennings et al., 1994).

Besides advancing competing theoretical arguments, prior studies have tested the validity of these arguments in sub-optimal ways. Woodcock et al. (1994) analyzed the 1991 financial performance of Japanese greenfield and acquired subsidiaries that were more than two years old at that time. Nitsch et al. (1996) performed a similar analysis for the years 1992 and 1994. However, a solid test of the argument that greenfields outperform acquisitions because acquisitions are costlier to integrate, or of the reverse view that acquisitions outperform greenfields because greenfields suffer from a liability of newness, requires a focus on the performance of subsidiaries over their first years. The reason is that the costs of integration and the liability of newness are at their greatest during this time period, and usually diminish quickly afterwards (Buono and Bowditch, 1989; Jemison and Sitkin, 1986; Zaheer and Mosakowski, 1997). The older the subsidiary, the lower the extent to which its current performance will reflect the costs of integration and/or the liability of newness. Similarly, several studies used the exit rates of greenfield and acquired subsidiaries as a proxy for the comparative performance of these subsidiaries, but included in their samples exits of subsidiaries that had been operational for a long time (Li and Guisinger, 1991; Pennings et al., 1994; Li, 1995; Tsang and Yip, 2007). Li and Guisinger (1991), for instance, looked at the number of foreign subsidiaries that exited the US



between 1978 and 1987, subsidiaries that may have been established or acquired long before 1978. In Pennings et al. (1994) the median longevity of greenfields was 12.6 years, while that of acquisitions was even higher at 17.6 years, indicating that many subsidiaries are quite old when they exit. Exits of old subsidiaries are unlikely to be caused by integration-related and/or liability of newness-related difficulties, since these difficulties predominantly arise during a subsidiary's first years. Hence, performance indicators based on subsidiary exits do not accurately reflect the magnitude of the integration costs and the liability of newness incurred by foreign subsidiaries. Moreover, several studies that analyzed subsidiary exit rates defined exits as liquidations and sell-offs (Pennings et al., 1994; Li, 1995; Shaver, 1998). Classifying sell-offs as exits, and hence as failures, to determine the comparative performance of greenfields and acquisitions is problematic for two reasons. First, the fact that a subsidiary is sold by its MNE parent, whether early or late, does not necessarily indicate that the subsidiary performed poorly, since parents will sell well-performing subsidiaries when they receive a good offer for them (Hennart et al., 2002). Second, keeping all other factors (including their performance) constant, acquired subsidiaries are more likely to be sold than greenfield subsidiaries. The reason is that acquired subsidiaries have already been separated from their owner before, and are hence easier to separate from their current parent than greenfield subsidiaries (Hennart et al., 1998, 2002). Hence, the fact that the exit rate of greenfield subsidiaries is higher than that of acquired ones does not necessarily indicate that greenfields perform worse than acquisitions.

Another limitation of prior studies is that several of them performed bivariate tests, and hence did not control for other factors influencing a subsidiary's performance besides its establishment mode (Li and Guisinger, 1991; Nitsch et al., 1996; Woodcock et al., 1994). Moreover, while all known other studies did control for such factors as the parent's international and host-country experience, the subsidiary's size, the relatedness of its products to those of its parent, and the

cultural distance to the host country, these studies did not, with the sole exception of Shaver (1998), control for the fact that the choice between greenfield and acquisition is endogenous and self-selected rather than exogenous and random. Given these different methodological limitations, it is hardly surprising that prior studies have obtained contradictory empirical results, with some finding that greenfields outperform acquisitions (Li, 1995; Woodcock et al., 1994), others finding the reverse (Pennings et al., 1994), and still others that they perform equally well (Shaver, 1998; Tsang and Yip, 2007).

Since prior studies have advanced competing theoretical arguments and have tested these arguments with sub-optimal research designs, we think that it is time for a closer examination of the comparative performance of greenfield and acquired subsidiaries. Below we use the IM contribution to institutional theory to extend and integrate the competing theoretical arguments put forward by previous research, and to generate new predictions on the performance of greenfield and acquired subsidiaries. We subsequently test these predictions on a sample of newly-established greenfield and acquired subsidiaries, while carefully controlling for other factors influencing subsidiary performance.

## **THEORY**

### **Institutional Theory**

Institutional theory argues that firms tend to conform to the rules and norms prevailing in their environment in order to gain or retain legitimacy and to increase their chances of survival (Child and Tsai, 2005; Deephouse and Carter, 2005; DiMaggio and Powell, 1983; Oliver, 1997). Traditional institutional theorists have examined whether and how groups of domestic organizations change their structures, decisions, and behaviors due to pressures from their external institutional environment (e.g., Holm, 1995; Meyer et al., 1987; Oliver, 1991; Rowan, 1982; Tolbert and Zucker, 1983). Rosenzweig and Singh (1991) were the first to apply

institutional theory to MNEs. They observed that MNEs consist of subsidiaries operating in different local environments, and that each subsidiary experiences external conformity pressures from its respective environment. These pressures are caused by the fact that subsidiaries need to conform to local regulations, business practices, and consumer preferences, among others. Moreover, as Rosenzweig and Singh argue, subsidiaries not only experience external conformity pressures from their environment, but also internal ones from their MNE parents. The latter pressures stem from the fact that MNE parents may want to exercise tight control over specific subsidiaries. MNE parents will push their subsidiaries to conform to these external and internal conformity pressures because they expect these subsidiaries to be more viable once they are aligned with their environment.

The magnitude of the external and internal conformity pressures on a subsidiary depends on the extent to which that subsidiary is integrated into the corporate network of its MNE parent (Gardberg and Fombrun, 2006; Rosenzweig and Singh, 1991). A parent will put strong *internal* conformity pressures on a subsidiary when it finds it important to control the activities of the subsidiary and to coordinate these activities with its own activities or with those of its other subsidiaries, so as to realize synergies in the form of economies of scale or scope (Harzing, 2002; Kostova and Zaheer, 1999). The realization of such economies requires that the subsidiaries involved be tightly integrated by their MNE parents, i.e. be granted limited autonomy, a strategy called global integration (Prahalad and Doz, 1987). For example, the optimal exploitation of scale economies in manufacturing requires that managers of foreign subsidiaries implement the production methods of their MNE parents and make the smallest possible number of adaptations to the design of products, since such adaptations lower the size of production runs and hence scale economies. Intra-firm shipments of intermediate products should also be determined by headquarters, so as to avoid excessive inventories and production delays.

A subsidiary will experience strong pressures for *external* conformity when its success in the local market requires a high level of local responsiveness, i.e. when its products need to be adapted to local tastes and preferences, or when close ties with local stakeholders are required (Miller and Eden, 2006). In such cases MNE parents typically do not integrate the subsidiary but instead grant it considerable autonomy in procurement, production, and the use of brand names, among others (Prahalad and Doz, 1987). Thus, the level of subsidiary integration desired by an MNE parent, i.e. the extent to which a parent limits a subsidiary's ability to make independent decisions, will be the outcome of a subsidiary-specific tradeoff between the conflicting forces of global integration and local responsiveness (Prahalad and Doz, 1987).

### **Achieving Internal Conformity through Greenfields and Acquisitions**

As stated earlier, several studies have argued that acquisitions will perform worse than greenfields because acquisitions are more difficult to integrate and control (Hennart et al., 1998; Li, 1995; Woodcock et al., 1994). From an institutional perspective, these studies suggest that internal conformity is relatively costly to achieve through acquisitions, owing to the large difficulties associated with integrating acquired subsidiaries. Post-acquisition integration implies that the acquirer takes away the decision-making power of the acquired subsidiary and replaces the systems and practices of the subsidiary with its own (Weber, 1996). This process requires interactions between the workforces of the acquirer and the acquired subsidiary, and is likely to result in misunderstandings and conflicts between them, even if the integration process is carefully planned in advance (Buono and Bowditch, 1989; Jemison and Sitkin, 1986). These post-acquisition integration difficulties may stem from differences in management styles and organizational or national cultures, from a lack of inter-organizational trust, or from attempts by the acquired subsidiary's management to defend its autonomy (Buono and Bowditch, 1989; Datta and Grant, 1990; Datta, 1991; Very et al., 1996). Such difficulties result in internal conformity

costs that negatively affect the performance of recently-acquired subsidiaries (Buono and Bowditch, 1989; Haspeslagh and Jemison, 1991; Jemison and Sitkin, 1986; Very et al., 1996).

However, previous studies of the comparative performance of greenfields and acquisitions have overlooked the fact that acquirers do not always exercise strong pressures for internal conformity on their acquired subsidiaries. Instead of tightly integrating them, acquirers sometimes grant their acquired subsidiaries considerable autonomy (Datta, 1991; Uhlenbruck and De Castro, 1998), “demanding conformity only on a few elements of organizational structure or process” (Rosenzweig and Singh, 1991, p. 352), so as to preserve the practices of these subsidiaries (Haspeslagh and Jemison, 1991) and to be locally responsive (Datta and Grant, 1990; Prahalad and Doz, 1987). In such cases post-acquisition integration difficulties are unlikely to occur and the internal conformity costs of acquisitions will be negligible (Davis et al., 2000). In sum, the lower the level of post-acquisition integration, the lower the internal conformity costs of acquisitions will be, and the less their performance will suffer during the first years after they have been made.

Whereas internal conformity is difficult to achieve through acquisitions, it is relatively easy to realize through greenfield investments. As stated earlier, greenfields, in contrast to acquisitions, are relatively easy to integrate into an MNE’s corporate network because they do not come with existing systems and practices, nor with an established workforce with a different culture (Harzing, 2002; Hennart and Park, 1993; Woodcock et al., 1994). Nevertheless, the higher the level of integration desired by an MNE parent, the higher the internal conformity costs of greenfields will be. The reason is that even though many MNEs striving for tight integration staff their foreign greenfields with expatriate managers (Harzing, 2002; Tan and Mahoney, 2006), most of the employees of these greenfields remain local workers whose norms, values, and preferred routines differ from those of their expatriate superiors (Hofstede, 2001). The more

tightly foreign greenfields are integrated into the corporate network of their parents, the more likely that these differences in norms, values, and preferred routines will cause internal difficulties and hinder the integration process (Neal, 1998). We therefore expect the internal conformity costs of greenfields to also increase with the level of integration desired by their parents, albeit at a considerably lower rate than the internal conformity costs of acquisitions.

### **Achieving External Conformity through Greenfields and Acquisitions**

While some have argued that greenfields perform better than acquisitions, others have argued that greenfields perform worse because they suffer from a liability of newness whereas acquisitions do not (Pennings et al., 1994). Besides suffering from a liability of newness, foreign greenfields also suffer from a liability of foreignness, meaning that they incur costs not incurred by local firms (Hymer, 1976; Luo, 1999; Zaheer and Mosakowski, 1997). These costs arise because greenfield subsidiaries typically lack knowledge of the local environment in which they operate, or because they suffer from discrimination from government officials or local customers (Zaheer and Mosakowski, 1997). Acquisitions, on the other hand, are far less likely to suffer from a liability of foreignness, as they come with local market knowledge, solid ties with government officials, and locally-accepted products and brand names.

From an institutional perspective, recently-established greenfields are not yet accepted by their external environment. In order to become accepted, their management needs to spend time and resources on becoming familiar with local rules, norms, and consumer preferences, and on developing sustainable relationships with local suppliers and government officials. Hence, greenfields incur substantial costs to achieve external conformity. These costs will predominantly arise during the first years of a greenfield's existence, since it will gradually obtain more knowledge of the local market, and since local stakeholders will gradually become accustomed to its presence and will start to perceive it as legitimate (Zaheer and Mosakowski, 1997).

Acquisitions, on the other hand, do not generally incur external conformity costs after they have been made, as they are going concerns with a proven track record, industry and local market knowledge, and established ties with suppliers, customers, and government agencies (Caves, 1996; Pennings et al., 1994). In other words, acquisitions are already largely aligned with, and accepted by, the external environment in which they operate (Harzing, 2002).

While previous research has implicitly assumed that the costs of achieving external conformity will be the same for all greenfields, we contend that these costs will decrease with the extent to which greenfield subsidiaries are integrated by their parents. Tightly-integrated greenfields either sell standardized products for which customer tastes are universal, or sell intermediate or finished goods to their parents or to sister affiliates. Consequently, such greenfields do not need to acquire knowledge of local tastes and do not need to be firmly-embedded in local networks. Quasi-autonomous greenfields, on the other hand, typically manufacture products that are tailored to local tastes, and more often rely on local suppliers and distributors. Such greenfields therefore need to acquire intimate knowledge of the local market and need to develop close relationships with local firms (Prahalad and Doz, 1987). Hence, tightly-integrated greenfields will incur lower external conformity costs than quasi-autonomous ones (cf. Gardberg and Fombrun, 2006). In contrast to previous research, we thus expect the external conformity costs incurred by greenfields to decrease with the extent to which they are integrated by their MNE parents.

## **INTEGRATIVE FRAMEWORK AND HYPOTHESES**

We have argued that the *internal* conformity costs incurred by both acquisitions and greenfields increase with the extent to which these two subsidiary types are integrated by their parents, but that these costs increase faster for acquisitions than for greenfields. We have also argued that the *external* conformity costs incurred by acquisitions are negligible, while those incurred by

greenfields decrease with the extent to which greenfields are integrated by their parents. Figure 1 depicts these relationships graphically by plotting the conformity costs incurred by greenfields and acquisitions as a function of the level of subsidiary integration. Greenfield and acquired subsidiaries incurring these conformity costs will experience a lower performance, in particular during their first years. The higher the total conformity costs incurred by a subsidiary, the lower its performance. By jointly considering the depicted relationships, Figure 1 thus allows us to hypothesize on the relationship between the level of integration of greenfield and acquired subsidiaries and their relative performance.

Figure 1 shows that the total conformity costs of acquired subsidiaries – which consist only of internal conformity costs – increase with the level of integration (line D). This suggests that, keeping all other factors constant, integration will have a negative effect on the performance of acquired subsidiaries. Hence:

*Hypothesis 1a:* Subsidiary integration has a negative effect on the performance of acquisitions.

The effect of subsidiary integration on the performance of greenfields, on the other hand, is less clear-cut. Whereas their internal conformity costs increase (line A), their external conformity costs decrease with the level of integration (line B). Unfortunately, institutional theory does not indicate *how fast* the internal conformity costs incurred by greenfields increase with the level of subsidiary integration, nor how fast their external conformity costs decrease. Consequently, it is *a priori* unclear how integration will affect the total conformity costs incurred by greenfields, and hence whether integration will have a negative, a non-significant, or a positive effect on the performance of greenfields. To facilitate its interpretation, we have constructed Figure 1 so that the increase in the internal conformity costs of greenfields (line A) exactly offsets the decrease in their external conformity costs (line B), suggesting that the total conformity costs incurred by



greenfields are the same at all levels of integration (line C), and hence that integration will have no impact on the performance of greenfields. However, since we do not know the exact slopes of the lines A and B, the impact of subsidiary integration on the performance of greenfields is actually an empirical question.

Although we do not know exactly how the total conformity costs incurred by greenfields behave as a function of the level of integration, we do know that these costs will in any case increase less rapidly with the level of integration than the total conformity costs of acquisitions. This is because the *internal* conformity costs incurred by greenfields (line A) increase less rapidly with the level of integration than the internal conformity costs incurred by acquisitions (line D) and, moreover, because the *external* conformity costs incurred by greenfields decrease (rather than increase) with the level of integration (line B). Consequently, integration is likely to have a differential effect on the performance of greenfields and acquisitions. We therefore hypothesize:

*Hypothesis 1b:* The effect of subsidiary integration on the performance of greenfields differs from the effect of subsidiary integration on the performance of acquisitions.

Figure 1 also shows that at low levels of subsidiary integration greenfields incur substantial external conformity costs and no internal conformity costs, whereas acquisitions incur neither external nor internal conformity costs. This suggests that at low levels of subsidiary integration greenfields should perform worse than acquisitions. That is:

*Hypothesis 2a:* Acquisitions perform better than greenfields at low levels of subsidiary integration.

However, Figure 1 also makes clear that the extent to which acquisitions outperform greenfields decreases as the level of subsidiary integration increases. This is because, as stated earlier, the internal conformity costs of acquisitions (line D) increase faster with the level of

integration than those of greenfields (line A) and because the external conformity costs of greenfields decrease with the level of integration (line B). Hence:

*Hypothesis 2b:* The extent to which acquisitions outperform greenfields decreases with the level of subsidiary integration.

Note that our integrative framework does not indicate whether greenfields will eventually start to outperform acquisitions and, if so, at what level of integration this will happen. Figure 1 suggests that the total conformity costs of acquisitions remain lower than those of greenfields at intermediate levels of integration and only exceed them at high levels of integration (i.e., to the right of the vertical dashed line). Hence, Figure 1 suggests that greenfields only outperform acquisitions at high levels of integration. However, theoretically it is also possible that greenfields will already start to outperform acquisitions at intermediate levels of integration, or that greenfields will continue to perform worse than acquisitions, even at high levels of integration. The reason for this theoretical ambiguity is that institutional theory, as stated earlier, does not allow us to specify the exact slopes of the lines A, B, C, and D. Institutional theory only predicts that line D (representing the internal conformity costs of acquisitions) will increase faster than line A (reflecting the internal conformity costs of greenfields), and that line B (representing the external conformity costs of greenfields) will decrease. Hence, whether greenfields will start to outperform acquisitions at a certain level of subsidiary integration is also an empirical question.

## **METHODOLOGY**

We collected our data from secondary sources (to be specified below) and by surveying senior executives of 821 Dutch firms. While most of these executives were members of the management board of Dutch MNE parents, some of them were directors of the Netherlands-based divisions of these parents, since some large Dutch parents allow their divisions to independently make foreign

investments. Netherlands-based divisions and Netherlands-based subsidiaries of foreign MNEs were excluded from the survey. All firms registered in the Netherlands are required by law to file accurate data with the Chamber of Commerce, and this data is compiled in the REACH database, which we used to obtain the names of the managers and their firms.

The questionnaire used was first evaluated by several international management scholars, and then pre-tested on five experienced managers whose firms had made foreign greenfield investments and/or acquisitions in recent years. These pre-tests resulted in several changes in the wording of questions. In the questionnaire we asked managers to provide data on one of their firm's foreign greenfield or acquired subsidiaries, or on both subsidiary types. To ensure the reliability of this data we structured the questionnaire in such a way that managers would only provide data on a subsidiary if (1) their firm was responsible for the subsidiary, (2) the subsidiary had been established or acquired in recent years, and (3) the managers had been personally involved in its establishment mode decision. Appendix A lists the questionnaire items used in this study.

After sending the questionnaire and a subsequent reminder by mail, we obtained a 19.2% response rate (cf. Harzing, 2002: 20%; Luo, 1999: 19.2%), with most respondents being CEOs, CFOs, and Directors of Corporate Development. Some respondents worked for the same firm, but they usually provided data on different subsidiaries. In the very few cases where respondents provided data on the same subsidiary, we followed Very *et al.* (1997) and averaged their responses into a single observation. We received complete data on all questionnaire items listed in Appendix A for 235 foreign subsidiaries of 150 MNEs. We excluded 44 subsidiaries from our sample; 32 because they had been established or acquired by their MNE parents in either 2002 or 2003, which we deemed to be too recently for their performance estimates to be reliable, given that the survey was conducted in mid-2003; and 12 for reasons mentioned below. The final

sample consists of 191 subsidiaries, 91 greenfields and 100 acquisitions, established or acquired by 130 Dutch MNEs in 46 countries over the 1995-2001 period.

To assess whether the 130 MNEs in our sample are representative of the population of Dutch MNEs, we examined whether the size of these 130 MNEs differed from the size of the 691 MNEs that provided no or unusable subsidiary data. *T*-tests that corrected for unequal variances across groups indicated that the MNEs in our sample on average had higher sales (2.72 vs. 1.41 billion euros;  $p < 0.10$ , two-tailed) and more employees (11.400 vs. 3500;  $p < 0.01$ , two-tailed) than the 691 other MNEs. Hence, our findings primarily apply to subsidiaries of large Dutch MNEs.

## **Variables**

*Dependent variable: Subsidiary performance.* Because accounting data on the performance of subsidiaries located in many different countries is generally unavailable and, even if available, often non-comparable across countries because of differences in national accounting systems, we used survey data to measure a subsidiary's performance. Specifically, we asked managers to rate on 7-point Likert-type scales (1) the sales level, (2) the market share, (3) the profit level, and (4) the overall performance of the subsidiary during the first two years after it had been established or acquired, compared to expectations at the time of its inception. While the correlations between the items sales level, market share, and overall performance all exceeded 0.6, this was not the case for some of the correlations between these three items and the item profit level. We therefore excluded the latter item from our performance measure. Since the three remaining items formed a reliable scale (Cronbach's alpha = 0.88), we averaged their scores into a composite measure of subsidiary performance. Previous studies have used similar instruments to measure a subsidiary's performance (e.g., Brouthers et al., 2005; Luo, 1999), and have shown that such instruments correlate well with performance measures based on archival data (e.g., Geringer and Hebert,

1991; Venkatraman and Ramanujam, 1987). Because managers' expectations of the performance of a subsidiary will depend in part on the amount of efforts and resources that were spent in establishing or acquiring the subsidiary, our performance measure in essence captures the effectiveness of the subsidiary from the point of view of parent executives.

In line with Morosini et al. (1998), we asked how the subsidiary performed during the first two years after it had been established or acquired. There are two reasons for adopting this particular time frame. First, as stated earlier, subsidiaries incur most internal and external conformity costs during their first years (Jemison and Sitkin, 1986; Zaheer and Mosakowski, 1997). Second, in the longer run the level of subsidiary integration chosen should yield benefits rather than conformity costs. Consequently, the longer the time period studied, the more likely that a subsidiary's performance will reflect the benefits associated with the chosen level of integration rather than the conformity costs associated with it. In sum, a two-year time window makes it possible to perform a stronger and cleaner test of our conformity cost-based hypotheses.

We asked managers to rate the initial performance of the subsidiary compared to their *ex ante* expectations. This raises two potential concerns. First, managers may have inaccurate recollections of the expected and actual performance of a subsidiary. However, since the establishment of a foreign subsidiary is an important event, and since our respondents were personally involved in the decision leading to this event, they are likely to have had good recall of their *ex ante* performance expectations and the subsidiary's *ex post* performance (Schwenk, 1985, 1988). A second potential concern is that managers may be emotionally involved with a subsidiary, and may hence report biased estimates of its performance. However, since our respondents did not run the subsidiaries themselves but were employed at headquarters, and since they generally worked for large firms with many foreign subsidiaries, their level of emotional involvement with the focal subsidiary is likely to have been moderate. Consequently, they are

unlikely to have reported biased estimates of the subsidiary's performance (Huber and Power, 1985).

*Independent variable 1: Establishment mode.* The first key independent variable is the establishment mode of the focal subsidiary. Based on the questionnaire responses, we coded this variable 1 for greenfield subsidiaries and 0 for acquired ones. Following Shaver (1998), we excluded from our sample 12 greenfield subsidiaries that were co-owned and co-managed by local partners. We did so because the external conformity costs incurred by such subsidiaries are likely to be much lower than those incurred by wholly-owned greenfields, as local joint venture partners usually contribute local market knowledge and a local network.

*Independent variable 2: Subsidiary integration.* As stated earlier, MNEs that tightly integrate their subsidiaries grant them limited autonomy. Since this level of autonomy is hard to measure from secondary sources, we followed Datta (1991) and Weber (1996), among others, and assessed it through the questionnaire. We asked managers to indicate how much autonomy their management team intended to give the focal subsidiary in 12 functional areas, such as procurement, the production/service process, pricing, and job design, at the time it was established or acquired. We reversed the scores on the 12 items so that higher scores reflected tighter integration, and averaged the scores on 11 of the reverse-coded items into a composite measure (Cronbach's alpha = 0.87). The item raising capital was excluded because it correlated poorly with most of the other items and with the composite measure. We asked for the planned rather than for the realized level of autonomy in each functional area because conformity costs are driven by integration *attempts*. The realized level of autonomy does not adequately reflect these attempts because MNE parents do not always succeed in their integration attempts. Assuming that managers generally execute their integration plans, the planned level of autonomy better reflects these attempts. Moreover, by asking for the planned rather than for the realized

level of autonomy, we eliminate the risk that our results are influenced by reverse causality. Specifically, our approach rules out the possibility that a negative effect of integration on subsidiary performance is caused by the fact that poorly-performing subsidiaries are integrated more tightly.

*Control variables.* We control for several other factors potentially affecting foreign subsidiary performance. First, we control for an MNE's international experience, as subsidiaries of MNEs with extensive international experience may perform better than those of MNEs with little such experience (Li, 1995). Following Kogut and Singh (1988), we measured an MNE's international experience by the log of the number of foreign countries in which the MNE had subsidiaries. This number was obtained from the responding MNEs' annual reports and corporate websites.

We also control for an MNE's host-country experience, since subsidiaries operating in countries with which their MNE parents are familiar may perform better than subsidiaries of MNE parents without host-country experience (Miller and Eden, 2006). We obtained data on an MNE's host-country experience by asking survey respondents to indicate whether their firm had previously been active in the country entered through (1) licensing agreements, (2) sales agents, (3) sales subsidiaries, (4) manufacturing or service subsidiaries, or (5) other means. As each of these experiences increases an MNE's knowledge of the host country to a different extent (Johanson and Vahlne, 1977), we assigned different values to them. Specifically, the first four experience types were given the values of 1 through 4, respectively. Almost all experiences in the fifth category involved direct exports to the host country and were assigned a value of 2. Our measure of an MNE's host-country experience is the sum of the values assigned to the different experience types.

Third, we control for the extent to which the activities of the focal subsidiary are related to those of its parent. The less related these activities are, the less subsidiaries can draw on the

product-specific knowledge of their parents, and hence the more poorly they may perform (Li, 1995; Shaver, 1998). To measure the relatedness of the focal subsidiary's activities to those of its parent, we asked respondents for a description of the subsidiary's main products/services and compared it to REACH's description of the parent's main and secondary activities. We created two dummy variables, i.e. 'subsidiary performs related activities' and 'subsidiary performs unrelated activities'. The first dummy takes a value of 1 when the subsidiary's main products/services were the same as its parent's secondary products/services, while the second takes a value of 1 when the subsidiary's activities/services differed from both its parent's main and secondary products/services. When both dummy variables have a value of 0, the main products/services of the subsidiary were the same as those of its parent.

Fourth, we control for subsidiary size, since MNE parents are generally more dependent on large subsidiaries than on small ones (Prahalad and Doz, 1987), and may hence pay more attention and offer more support to large subsidiaries, thereby increasing the performance of such subsidiaries (Bouquet, 2005; Ravenscraft and Scherer, 1987). We therefore included in our models the log of the respondent's rating of the size of the subsidiary compared to the size of its parent.

Fifth, we control for the level of competition faced by the focal subsidiary, as fiercer competition may negatively affect a subsidiary's performance (Miller and Eden, 2006). In line with the two-year time frame of our performance measure, we asked respondents to rate on a 7-point Likert-type scale how much competition the focal subsidiary encountered during its first two years.

Similarly, the state of the local and global economy may also affect the performance of foreign subsidiaries. We therefore asked respondents to rate on a 7-point Likert-type scale how good or bad the economic conditions for the subsidiary were during its first two years.



Seventh, we include the Kogut and Singh (1988) index to control for the cultural distance between the Netherlands and each host country. The larger the cultural distance between countries, the more dissimilar their norms, values, customs, and business practices (Hofstede, 2001; Kogut and Singh, 1988). MNE subsidiaries located in culturally-distant countries may therefore find it difficult to successfully operate in such countries and may hence exhibit a lower performance than those located in culturally-similar countries. On the other hand, an MNE's business practices may be especially valuable to subsidiaries located in culturally-distant countries precisely because these practices are so different from local ones. Subsidiaries in culturally-distant countries may therefore be especially successful (Morosini et al., 1998).

Finally, since the extent to which subsidiaries are integrated, their establishment mode, and their performance may vary across industries, we include 12 industry dummies in our models, using agriculture and horticulture as the baseline industry. To classify MNE parents into industries, we used the BIK code, the Dutch equivalent of the American SIC code, of the main activities of each parent as reported in the REACH database.

### **Common Method Bias**

Because the data on both our dependent variable (subsidiary performance) and several independent variables come from the questionnaire, our results may be subject to a common method bias. However, there are several reasons why our results are unlikely to be subject to such a bias. First, we followed Podsakoff et al.'s (2003) recommendations to use temporal and psychological separations in our survey. We created temporal separations by (i) including the items measuring the key concepts non-consecutively, thereby increasing the likelihood that managers respond to each set of key items without recalling their responses to prior sets of key items, and by (ii) asking for *planned* integration levels and *realized* performance levels, forcing respondents to think of different time periods. We also created a psychological separation by not

revealing to respondents the exact goal of the survey, thereby reducing the perceived relevance of prior items. These separations greatly reduce the risk of common method bias (Podsakoff et al., 2003). Second, although both the level of integration of the subsidiary and its establishment mode were obtained from the questionnaire, these two variables were interacted to test our hypotheses. Interaction effects are unlikely to be subject to common-method bias, as respondents are unlikely to consciously theorize moderated relationships when they fill out a survey (Brockner et al., 1997; Kotabe et al., 2003), especially when they do not know the exact goal of the survey, as in our case. Third, following Kotabe et al. (2003), we performed a principal-components factor analysis on all Likert-type questionnaire items used to construct our perceptual measures. This analysis did not yield one overarching factor, but five separate ones, suggesting the absence of common method bias (Harman, 1967).

## **Method**

Since MNE managers deliberately select what they consider to be the best-performing establishment mode on the basis of parent, subsidiary, industry, and host-country characteristics, we employed Heckman's (1979) two-stage procedure to control for establishment mode self-selection (Shaver, 1998). Using STATA 9.1, we first estimated a binary probit model of the determinants of the choice between greenfield and acquisition entry to generate a correction term for self-selection ( $\lambda$ ), and then employed OLS regression analysis to regress  $\lambda$  and the other independent variables on subsidiary performance. Using STATA's "cluster" subcommand, we adjusted the standard errors of both the first and second-stage models for the fact that several subsidiaries in our sample belonged to the same MNE parent (see Xu et al., 2004 for further details of this procedure).

## RESULTS

Table I reports the results of the first-stage probit model that we ran to generate lambda. The variables included in this model are similar to those included in prior studies on the choice between greenfield and acquisition entry (for reviews, see Datta et al., 2002; Shimizu et al., 2004). The variables that are not included in the second-stage model are operationalized as follows. An MNE's level of diversification was measured through the log of the number of 4-digit BIK codes in which it operated according to the REACH database. MNE type is a dummy variable coded 1 if the subsidiary's parent was into either services or wholesale trade, and 0 if it was into manufacturing. The other variables solely included in the first-stage model are based on single questionnaire items measured on 7-point Likert-type scales, except for 'host-government restrictions on acquisitions and incentives to choose greenfields', which is a composite measure consisting of two items (Cronbach's alpha = 0.66). The results of the first-stage model are largely consistent with those of previous research (see Datta et al., 2002; Shimizu et al., 2004).

Tables II and III depict the regional distribution of the subsidiaries comprising our sample and the industry distribution of their MNE parents, respectively, as well as the mean scores of our key variables by region and by parent industry. Table IV contains the descriptive statistics of the variables included in the second-stage OLS regression models and the correlations between these variables. Except for the inevitably high correlation between the establishment mode dummy and lambda ( $r = 0.77$ ), none of the correlations between the independent variables exceed 0.32, suggesting the absence of multicollinearity. This is confirmed by the fact that the largest variance inflation factor in our full model was 6.19, which is lower than the multicollinearity threshold of 10 (Neter et al., 1996).

Table V displays the results of the second-stage regression analyses that we ran to explore how a subsidiary's establishment mode and its level of integration influence its performance over

the first two years. The establishment mode dummy, which is equal to one for greenfields, has a significantly negative effect on subsidiary performance in Model 1 ( $p < 0.10$ , two-tailed), indicating that when the level of subsidiary integration is ignored, greenfield subsidiaries perform somewhat worse than acquired ones, even after controlling for establishment mode self-selection. Specifically, the regression coefficient of the establishment mode dummy shows a performance difference of 0.72 (on a 7-point scale). However, Model 2 shows that once we control for the level of integration desired by the subsidiary's parent, the effect of establishment mode becomes non-significant, indicating that greenfield and acquired subsidiaries perform equally well. The coefficient of the level of subsidiary integration is significantly negative ( $p < 0.05$ ) in Model 2, implying that foreign subsidiaries perform more poorly when their parents integrate them more tightly.

Hypothesis 1a proposed that the effect of subsidiary integration on the performance of acquisitions would be negative, and hypothesis 1b that this effect would be significantly different from the effect of subsidiary integration on the performance of greenfields. We tested these hypotheses in Model 3 by including an interaction term between subsidiary integration and establishment mode. To avoid multicollinearity problems, we followed Jaccard and Turrisi (2003, p. 33) and centered the subsidiary integration measure before we interacted it with the establishment mode dummy. Note that the interaction term is composed of an ordinal variable (subsidiary integration) and a dummy variable (establishment mode). In such cases the regression coefficient of the ordinal variable indicates the effect of that variable on the dependent variable when the dummy variable is zero, while the coefficient of the interaction term indicates the extent to which the effect of the ordinal variable differs between the two dummy categories (Jaccard and Turrisi, 2003, p. 34). Since the establishment mode dummy is coded zero for acquisitions in Model 3, the coefficient of subsidiary integration in that model thus indicates how subsidiary

integration affects the performance of acquisitions. In line with hypothesis 1a, this coefficient is significantly negative ( $p < 0.001$ ), indicating that integration harms the performance of acquisitions. Furthermore, the significant interaction effect in Model 3 ( $p < 0.05$ ) indicates that the negative effect of integration on the performance of acquisitions is significantly different from the effect of integration on the performance of greenfields. We thus also find support for hypothesis 1b. Because we centered the subsidiary integration measure, the coefficient of the establishment mode dummy in Model 3 indicates the extent to which the performance of greenfields and acquisitions differs at the mean value of subsidiary integration. This coefficient is non-significant, meaning that greenfield and acquired subsidiaries perform equally well at average levels of integration.

As stated earlier, the exact effect of subsidiary integration on the performance of greenfields is theoretically ambiguous and hence an empirical question. In order to gain insight into this effect, we followed Jaccard and Turrisi (2003, p. 34) and reverse coded the establishment mode dummy in Model 4, so that the dummy is coded zero for greenfields in that model. We then interacted the reverse-coded dummy with our centered subsidiary integration measure. As a result, the coefficient of subsidiary integration in Model 4 indicates how subsidiary integration influences the performance of greenfields. This coefficient turns out to be negative but non-significant, indicating that integration does not substantially affect the performance of greenfields. It can thus be concluded that the increase in the internal conformity costs of greenfields at higher levels of integration is offset by the decrease in their external conformity costs. Hence, the horizontal line C in Figure 1 seems to adequately represent empirical reality.

Hypothesis 2a predicted that acquisitions would outperform greenfields at low levels of subsidiary integration, and hypothesis 2b that the extent to which acquisitions outperform greenfields would decrease at higher levels of integration. To test these hypotheses, we used the

results of Model 3 to plot the relationship between the level of subsidiary integration and the performance of both greenfields and acquisitions, keeping all control variables (including lambda) constant at their sample mean. As shown in Figure 2, acquisitions indeed perform better than greenfields at low levels of subsidiary integration, and the extent to which acquisitions outperform greenfields indeed decreases with the level of integration. We thus find support for both hypothesis 2a and 2b. Figure 2 not only shows that the extent to which acquisitions outperform greenfields decreases with the level of integration, but also that greenfields at a certain level of integration start to outperform acquisitions. Follow-up calculations showed that this level of integration equals 3.64, which corresponds to a moderately high level of integration, given that the integration items were measured on 5-point scales.

We assessed the robustness of our regression estimates in two ways. First, instead of averaging the scores on the three performance items into a summated scale, we performed a principal-components factor analysis on these items (resulting in a single factor) and used their factor loadings to compute factor scores of subsidiary performance. When we used this alternative performance measure, we obtained results highly similar to those reported in Table V. Second, we ran our models for each performance item separately. The results were largely in line with those reported in Table V, albeit the p-values of the variables of interest were in some cases somewhat higher.

## **DISCUSSION**

MNEs can enter foreign countries through greenfield investments or through acquisitions. While many studies have examined the determinants of this strategic choice, relatively few have examined its performance consequences, and those that have done so have made opposing predictions. Some studies have argued that acquisitions should perform worse than greenfields because acquisitions are costlier to integrate (Hennart et al., 1998; Woodcock et al., 1994), and

others that greenfields should perform worse than acquisitions because greenfields suffer from a liability of newness (Pennings et al., 1994), but none of them has considered both arguments simultaneously. Moreover, prior studies have tested these arguments in sub-optimal ways by including in their samples subsidiaries that were past the stage of their life during which they incur integration costs and liabilities of newness, and by failing to control for other factors affecting subsidiary performance, particularly establishment mode self-selection.

In this paper we sought to extend these prior studies by integrating their competing arguments into an overarching institutional theory-based framework, and by focusing on the time period during which the costs of integration and the liability of newness arise. Specifically, we proposed that the costs of integration are costs that foreign subsidiaries incur when they have to adapt to their MNE parents (internal conformity costs), while the liability of newness represents costs that subsidiaries incur when they have to adapt to their host-country environment (external conformity costs). Whereas prior studies assumed that the magnitude of these two types of costs depends exclusively on whether the subsidiary was established through greenfield or through acquisition, we have argued and shown that the level of these costs, and hence the comparative performance of greenfield and acquired subsidiaries during their first years, also hinges on the extent to which these subsidiaries are integrated by their MNE parents. We measured subsidiary performance by asking managers of Dutch MNEs how their *ex ante* performance expectations compared to the subsidiary's *ex post* performance during its first two years. Analyzing this measure of performance for 191 Dutch foreign subsidiaries and controlling for establishment mode self-selection and other factors, we found that, keeping constant the level of subsidiary integration, greenfield and acquired subsidiaries perform equally well, suggesting that their total conformity costs are comparable. However, once we allowed for variations in the level of subsidiary integration, we found that the performance of greenfield and acquired subsidiaries

differs systematically, with acquisitions outperforming greenfields at low and intermediate levels of subsidiary integration, and greenfields outperforming acquisitions at higher integration levels. Assuming that the costs that greenfield and acquired subsidiaries incur *after* their turbulent first two years are, on average, the same, these results suggest that MNEs intending to tightly integrate a specific foreign subsidiary are better off establishing it from scratch, and that those intending to grant it much autonomy are better off acquiring it from another firm. In other words, our study suggests that there is no single optimal establishment mode, but that the optimal mode is contingent upon the extent to which an MNE parent plans to integrate the focal subsidiary.

Like any empirical study, ours has some limitations that may form the basis for future research. As stated earlier, we looked at the performance of subsidiaries over their first years because subsidiaries incur most conformity costs during that time period. However, subsidiaries may occasionally incur internal and external conformity costs in a later stage of their life. For instance, parents sometimes grant their acquired subsidiaries a grace period of several years before they start to put internal conformity pressures on them. Similarly, environmental changes or corporate scandals may undermine the external legitimacy of mature foreign subsidiaries, forcing these subsidiaries to incur new external conformity costs. Future studies could focus on these conformity costs occasionally incurred by mature subsidiaries.

A second disadvantage of our two-year time window is that it does not capture the benefits associated with different levels of subsidiary integration, since these benefits typically take several years to be realized. Future studies could therefore examine how the benefits of greenfield and acquired subsidiaries change as a function of the level of subsidiary integration, using longer-run performance estimates. Such studies would further increase our understanding of the comparative performance of greenfield and acquired subsidiaries.



Another potential limitation of our study is that we do not measure the internal and external conformity costs incurred by foreign subsidiaries directly, but instead use the performance of these subsidiaries during their first two years as an aggregate proxy for these two types of costs. However, this need not be a problem. For instance, even though transaction costs play a key role in transaction cost theory, these costs have seldom been measured directly (for notable exceptions, see Benito et al., 2005, and Dahlstrom and Nygaard, 1999), suggesting that the central concepts of solid theories do not necessarily need to be operationalized in order to test the validity of these theories. Nevertheless, future studies could develop direct and separate measures of the internal and external conformity costs incurred by greenfield and acquired subsidiaries, so as to examine whether these costs indeed vary with the level of subsidiary integration in the way we propose (see Figure 1).

The conformity costs incurred by subsidiaries may also depend on other factors besides the level of subsidiary integration. One of these factors is the speed at which MNE parents integrate their subsidiaries. Subsidiaries that are integrated quickly during the first few months may for instance incur either less or more internal conformity costs than subsidiaries that are integrated gradually over a course of two years. Conformity costs may also vary across different types of acquisitions. For example, parents sometimes take a minority stake in foreign firms before acquiring them. Such staged takeovers may result in lower internal and external conformity costs than takeovers of firms in which acquirers do not take a minority stake first. Similarly, hostile acquisitions are likely to cause higher internal conformity costs than friendly ones. We were unable to control for these potentially important factors, but future studies could shed more light on their role.

Lastly, our sample consists of foreign subsidiaries of Dutch firms whose average size was rather large. We therefore urge scholars to examine the extent to which our findings are generalizable to foreign subsidiaries of non-Dutch or smaller firms.

## **CONCLUSIONS**

Despite these limitations, our study contributes to both institutional theory research in IM and to the debate on the comparative performance of foreign entry modes. Prior IM studies based on institutional theory have made some specific assumptions about the extent to which greenfield and acquired subsidiaries are integrated by their MNE parents, leading them to make questionable predictions about the costs that these subsidiaries incur in conforming to their internal and external environment. Rosenzweig and Singh (1991) assumed that MNEs integrate all their greenfields tightly and grant all their acquisitions considerable autonomy, leading them to argue that acquisitions incur lower internal conformity costs than greenfields. Harzing (2002), on the other hand, implicitly assumed that MNEs integrate all their greenfields and acquisitions to the same extent, leading her to advance the competing view that acquisitions incur higher internal conformity costs than greenfields because acquisitions are more difficult to integrate, and that all greenfields incur the same external conformity costs. We have relaxed these assumptions by allowing the level of subsidiary integration to vary across individual subsidiaries, resulting in new insights into the comparative internal and external conformity costs incurred by greenfields and acquisitions. Specifically, our findings support the idea that the internal conformity costs of acquisitions increase faster with the level of subsidiary integration than those of greenfields, and that the external conformity costs of greenfields decrease with the level of subsidiary integration, causing the impact of a subsidiary's establishment mode on its performance to be more subtle than previously assumed.

We also resolve the controversy in the entry mode literature over whether greenfield or acquisition entry results in better performance. Prior studies have advanced competing theoretical arguments and have obtained divergent results, with some finding that greenfields consistently outperform acquisitions (Li, 1995; Woodcock et al., 1994), others finding the reverse (Pennings et al., 1994), and still others that both subsidiary types perform equally well (Shaver, 1998; Tsang and Yip, 2007). We find that it all depends on the level of subsidiary integration, i.e. on the extent to which an MNE parent limits a subsidiary's decision making power in different functional areas. Specifically, we find that acquisitions outperform greenfields at low to intermediate levels of subsidiary integration, that both subsidiary types perform equally well at moderately high levels of integration, and that greenfields outperform acquisitions at higher integration levels. These findings indicate that the level of subsidiary integration is a key determinant of the comparative performance of foreign entry modes, and should hence be taken into account in future entry mode research. We recommend that future IM studies of the relationship between parents and subsidiaries within MNE networks, such as those of intra-MNE knowledge transfers, also pay attention to this level of integration, so as to further increase our understanding of the role of this factor in international business.

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## APPENDIX A: Questionnaire Items Used

*Subsidiary performance:* How did greenfield A [venture B] perform on each of the following aspects during the first two years after it became operational [after the acquisition]? (compared to expectations at the time of entry)

- sales level
- market share
- overall performance

(7-point Likert-type scales ranging from ‘very bad’ to ‘very good’)

*Subsidiary integration:* The degree of subsidiary autonomy is the extent to which a subsidiary’s management team is free to run the venture at its own discretion. How much autonomy did your management team intend to give greenfield A [venture B] at the time it was established [acquired]? Please answer this question for each of the following functions that apply:

- procurement
- product/service design
- R&D
- production/service process
- the use of brand names
- packaging
- pricing
- advertising and sales promotion
- the design of reward systems
- job design
- selection and training of employees

(5-point Likert-type scales ranging from ‘very little autonomy intended’ to ‘very much autonomy intended’. For each item we also provided a separate category ‘no intentions in advance’. We reversed the scores on the items.)

*MNE’s host-country experience:* In which way(s) has your entity been active in country X before greenfield A [venture B] was established [acquired]? Please tick all forms of involvement that apply.

- by means of licensing agreements
- by means of one or more sales agents
- by means of one or more sales subsidiaries
- by means of one or more manufacturing or service subsidiaries
- otherwise, viz. \_\_\_\_\_

*Subsidiary size:* What was the [planned] relative size (in terms of the number of employees) of venture B [greenfield A] compared to the size of your entity at the time of the acquisition [at the time greenfield A was established]?

(7-point Likert-type scale ranging from ‘very small’ to ‘very large’)

*Competition:* How much competition did greenfield A [venture B] encounter during the first two years after it became operational [after the acquisition]?

(7-point Likert-type scale ranging from ‘very little’ to ‘very much’)

*Economic conditions:* How were the economic conditions for greenfield A [venture B] during the first two years after it became operational [after the acquisition]? (7-point Likert-type scale ranging from 'very bad' to 'very good')

Table I. First-stage probit estimates of the determinants of establishment mode choice

<i>Variable</i>	<i>Coefficient</i>
MNE's level of diversification	0.19 (0.16)
MNE's host-country experience	-0.05 (0.04)
MNE's greenfield experience	0.20*** (0.06)
MNE's acquisition experience	-0.22*** (0.06)
MNE type	0.09 (0.19)
Amount of technological knowledge to be transferred to the subsidiary	0.13* (0.06)
Subsidiary performs related activities	-0.01 (0.33)
Subsidiary performs unrelated activities	-1.62† (0.87)
Subsidiary size	-0.53** (0.20)
Subsidiary integration	0.30** (0.11)
Deviation of expected demand growth from sample mean	-0.71** (0.23)
Host-government restrictions on acquisitions and incentives to choose greenfields	-0.33*** (0.10)
Lack of suitable acquisition targets	0.24*** (0.07)
Cultural distance	0.51** (0.17)
Intercept	-1.62* (0.71)
Model $\chi^2$	72.86***
Log likelihood	-86.78
Pseudo R <sup>2</sup>	0.34

*Notes:*

(1) N = 191; greenfield = 1; robust standard errors in parentheses.

(2) MNE's level of diversification and Subsidiary size: logged to eliminate skewness of raw variables.

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

Table II. Key statistics by geographic region

<i>Region</i>	<i>Number of subsidiaries</i>	<i>Percentage greenfields</i>	<i>Mean subsidiary performance</i>	<i>Mean level of subsidiary integration</i>
Belgium and Luxembourg	19	36.8	4.16	<b>2.96</b>
Northern Europe	13	23.1	4.49	2.79
United Kingdom and Ireland	24	41.7	4.16	2.61
Southern Europe	21	42.9	4.24	2.94
Germanic countries	18	33.3	3.69	2.60
Eastern Europe	32	65.6	4.30	<b>2.96</b>
North America	24	<b>16.7</b>	4.08	2.87
Latin America	11	72.7	4.48	2.79
Asia	21	<b>81.0</b>	4.32	2.71
Africa	5	80.0	<b>5.27</b>	2.61
Australia	3	66.7	<b>3.67</b>	<b>2.07</b>

Note: column highs and lows in bold.

Table III. Key statistics by parent industry

<i>Industry</i>	<i>Number of parents</i>	<i>Percentage greenfields</i>	<i>Mean subsidiary performance</i>	<i>Mean level of subsidiary integration</i>
Agriculture and horticulture	4	40.0	<b>5.27</b>	<b>3.14</b>
Food and beverages	12	35.3	4.50	2.34
Machinery and electronics	11	50.0	4.21	3.12
Wood and paper products	11	50.0	3.98	3.06
Chemicals and synthetics	13	52.6	4.32	2.95
Metal products	11	50.0	3.88	3.00
Construction	3	<b>25.0</b>	<b>3.67</b>	2.69
Other manufacturing	4	<b>75.0</b>	<b>3.67</b>	2.88
Retail and wholesale trade	17	40.7	4.17	2.98
Transportation, storage, and communication	10	66.7	4.28	2.97
Financial services	14	57.1	4.05	<b>2.18</b>
Professional services	18	39.3	4.39	2.88
Other services	2	40.0	4.40	2.76

Note: column highs and lows in bold.

Table IV. Descriptive statistics and correlations

<i>Variable</i>	<i>Mean</i>	<i>s.d.</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>
1. Subsidiary performance	4.22	1.33											
2. Establishment mode (greenfield = 1)	0.48	0.50	-0.16										
3. Subsidiary integration	2.80	0.89	-0.16	0.23									
4. MNE's international experience	2.08	1.00	0.09	-0.11	0.01								
5. MNE's host-country experience	2.99	2.49	0.16	-0.18	-0.02	0.12							
6. Subsidiary performs related activities	0.13	0.33	0.06	-0.11	-0.29	-0.02	0.05						
7. Subsidiary performs unrelated activities	0.04	0.19	0.08	-0.13	-0.06	0.10	0.03	-0.07					
8. Subsidiary size	0.77	0.62	0.11	-0.24	-0.07	-0.02	0.14	0.12	-0.01				
9. Economic conditions	4.23	1.58	0.48	-0.03	0.06	0.02	0.02	-0.02	0.10	0.08			
10. Competition	4.47	1.45	-0.10	-0.10	-0.01	0.06	0.09	-0.06	-0.07	-0.03	-0.09		
11. Cultural distance	2.13	1.07	0.05	0.32	0.04	0.04	-0.03	-0.15	-0.01	-0.13	-0.06	-0.23	
12. Lambda	8.66E-09	0.67	-0.08	0.77	-0.00	0.01	-0.00	-0.00	0.00	-0.00	-0.02	-0.03	0.00

*Notes:*

(1) N = 191; correlations greater than or equal to |0.15| are significant at  $p < 0.05$ , while those greater than or equal to |0.23| are significant at  $p < 0.01$  (two-tailed).

(2) MNE's international experience and Subsidiary size: logged to eliminate skewness of raw variables.

Table V. Second-stage OLS regression estimates of the determinants of foreign subsidiary performance

<i>Variable</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Establishment mode (greenfield = 1, acquisition = 0)	-0.72† (0.43)	-0.33 (0.45)	-0.33 (0.44)	
Establishment mode reverse coded (greenfield = 0, acquisition = 1)				0.33 (0.44)
Lambda	0.27 (0.28)	0.04 (0.28)	0.06 (0.28)	0.06 (0.28)
Subsidiary integration		-0.26* (0.12)	-0.45*** (0.13)	-0.04 (0.18)
Subsidiary integration x Establishment mode			0.41* (0.20)	
Subsidiary integration x Establishment mode reverse coded				-0.41* (0.20)
MNE's international experience	0.04 (0.09)	0.06 (0.09)	0.07 (0.09)	0.07 (0.09)
MNE's host-country experience	0.04 (0.04)	0.05 (0.04)	0.05 (0.04)	0.05 (0.04)
Subsidiary performs related activities	0.34 (0.26)	0.19 (0.26)	0.15 (0.26)	0.15 (0.26)
Subsidiary performs unrelated activities	0.09 (0.31)	0.08 (0.31)	0.06 (0.31)	0.06 (0.31)
Subsidiary size	-0.003 (0.18)	0.02 (0.18)	0.03 (0.18)	0.03 (0.18)
Economic conditions	0.44*** (0.06)	0.44*** (0.06)	0.44*** (0.06)	0.44*** (0.06)
Competition	-0.04 (0.07)	-0.06 (0.07)	-0.05 (0.07)	-0.05 (0.07)
Cultural distance	0.20† (0.11)	0.14 (0.11)	0.13 (0.10)	0.13 (0.10)
Intercept	3.44*** (0.77)	4.15*** (0.80)	3.33*** (0.70)	3.00*** (0.70)
Industry dummies significant at p < 0.05	7	10	8	8
R <sup>2</sup>	0.357	0.377	0.393	0.393
F-value of model	5.05***	5.97***	6.15***	6.15***
F-test of additional variable		4.55*	4.37*	4.37*

*Notes:*

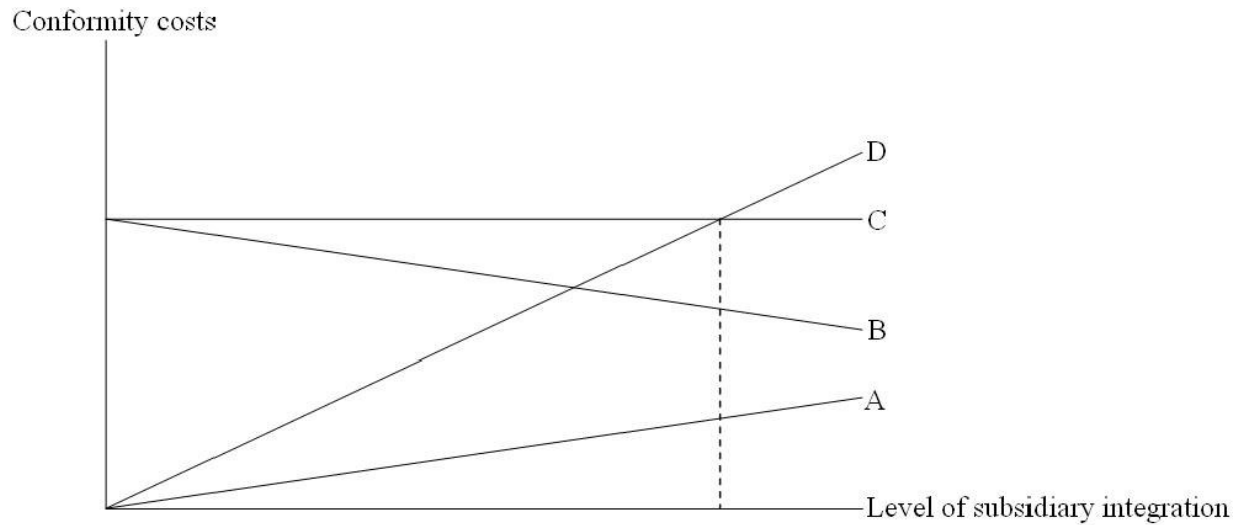
(1) N = 191; robust standard errors in parentheses.

(2) MNE's international experience and Subsidiary size: logged to eliminate skewness of raw variables.

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



Figure 1. Relationship between the level of subsidiary integration and the conformity costs incurred by greenfields and acquisitions

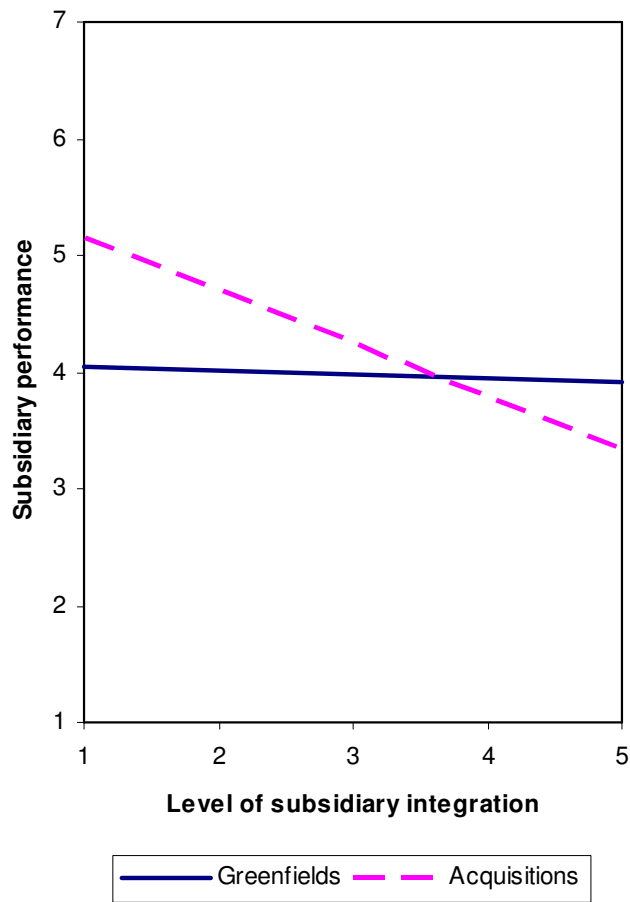


A = Internal conformity costs of greenfields  
 B = External conformity costs of greenfields  
 C = Total conformity costs of greenfields (A+B)  
 D = Internal conformity costs of acquisitions = Total conformity costs of acquisitions

*Notes:*

(1) As explained earlier, the external conformity costs of acquisitions are assumed to be zero because acquisitions are going concerns.

Figure 2. Impact of subsidiary integration on the performance of greenfields and acquisitions



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