



Performance effects of “added cultural distance” in the path of international expansion: the case of German multinational enterprises

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Abstract

This paper contributes to the debate on the performance impact of “added cultural distance” in the multinational enterprise’s (MNE’s) expansion path. Our research focuses on the ability of MNEs to handle complexity associated with added cultural distance in international expansion, and on the effect this may have on profitability. We hypothesise that firms that make expansion moves involving a high level of added cultural distance per unit of time, and those that expand in culturally distant countries in an irregular fashion, that is, with a higher variability, will be less profitable. We test these hypothesised relationships using detailed data on 2404 expansion moves undertaken by our panel of 91 German MNEs, whose expansion paths we tracked during periods ranging between 5 and 20 years.

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INTRODUCTION

International business (IB) and strategy scholars have focused on the international expansion process of firms, and also on the performance implications of multinationality. These topics have been the subject of many empirical studies. Some have found evidence of international expansion patterns characterised by rapid bursts of expansion followed by periods of inactivity, whereas in others an incremental expansion process was observed (Maitland, Rose, & Nicholas, 2005). Further, numerous empirical studies focusing on the impact of multinationality on firm performance have yielded mixed and sometimes contradictory results (for reviews see, e.g., Hennart, 2005; Tallman & Li, 1996). While the first stream of literature focuses on explaining internationalisation paths and on uncovering the reasons behind them, the latter takes primarily a static perspective. Few attempts have been made to bring these two streams of research together, and “little research has directly examined how different rates and patterns of expansion may result in performance differences between firms” (Vermeulen & Barkema, 2002: 637).

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However, there is good reason to believe that the nature of the international expansion path has an effect on firm performance. Firms must learn to manage foreign operations, and they must adapt to foreign settings, in order to realise the potential benefits of internationalisation (e.g., Barkema, Shenkar, Vermeulen, & Bell, 1997; Chang, 1995; Johanson & Vahlne, 1977). Internationalisation thus entails complexity, and how well a firm is able to handle that complexity might very well be dependent on specific characteristics of the expansion path. Research examining the performance effects of path characteristics at the corporate level has led to promising results. Vermeulen and Barkema (2002) suggest that multinational enterprises (MNEs) with an expansion process that is balanced in terms of speed, scope, and regularity stand to benefit more from internationalisation. Based on these findings, Wagner (2004) shows an inverted U-shape relationship between speed of international sales growth and labour cost efficiency. But there are still many unanswered questions, and our understanding of the influence of the international expansion path on performance is still rudimentary. Early studies have yielded interesting results, but they have also raised new questions. For example, these studies do not distinguish among different types of expansion steps; rather they regard all of them as the same. However, there are substantial differences between a German MNE entering the Swiss market and one entering the Chinese market. These two expansion steps would probably entail different levels of complexity, with which the MNE would need to cope, and so would be likely to have different performance implications.

This study contributes to the emerging research stream on the performance effects of internationalisation-path characteristics, by differentiating among expansion move types. We build upon Vermeulen and Barkema (2002) and Wagner (2004), but our contribution includes the effect of added cultural distance encountered in international expansion moves. There are other forms of distance (e.g., geographical), but in this paper we focus on cultural distance, because added cultural distance is a major source of complexity for the internationalising firm (Gómez-Mejía & Palich, 1997). Building on previous research on the effects of cultural distance in international expansion, and on the notion of time compression diseconomies (Dierickx & Cool, 1989), we derive hypotheses on the impact on performance of how much added

cultural distance can/must be absorbed per unit of time, and of the variability in such additions per time period in international expansion. Although we look at variability, building upon Vermeulen and Barkema, we are not interested in the number of steps *per se* but in the level of added cultural distance associated with these steps. We test our hypotheses on panel data on the expansion moves of German MNEs. Our panel consists of 91 companies for which we gathered detailed and exhaustive data on expansion from annual reports for no less than 5 years and in some cases as long as 20 years. Overall, we gathered data on 3929 new ventures, of which 2404 were international.

In the following section we give an outline of the theory behind our study. We then derive our hypotheses. We follow with a discussion of the methodology used and then present our results. This brings us to our conclusion.

THEORETICAL BACKGROUND

Potential Benefits of International Expansion

Many researchers have investigated the potential benefits of international expansion. They have given manifold reasons why setting up subsidiaries in foreign countries might lead to substantial gains (for extensive reviews see, e.g., Chang, 1995; Hennart, 2005; Kogut & Zander, 1993). However, some have argued that the potential benefits of being an internationally active company depend on each MNE's specific circumstances, and that on average "there is no reason to expect that increasing a firm's degree of multinationality will increase its performance" (Hennart, 2005: 24). This view appears to be supported by the fact that extensive empirical research has found numerous possible relationships between international expansion and performance, including negative, U-shaped, S-shaped and linearly positive relationships (e.g., Contractor, Kundu, & Hsu, 2003; Lu & Beamish, 2004; Ruigrok & Wagner, 2003).

Internalisation theory hypothesises that the MNE possesses proprietary knowledge, which is the basis of its firm-specific advantages (FSAs) (Rugman, 1981). Intangible resources, such as technological or marketing skills, can be transferred, deployed and exploited in foreign markets without depreciating their value (Chang, 1995). Here, imperfections in the market for information goods may make the internalisation of knowledge transfer desirable (e.g., Buckley & Casson, 1976). In addition, though entry modes other than FDI may be relevant here,

MNEs can also benefit from market imperfections through operating a network of subsidiaries, for example by exploiting sources of low-cost labour (Vernon, 1966), or by switching production between plants in different countries (Kogut, 1985). The internalisation perspective is of course consistent with the resource-based view of strategy (e.g., Barney, 1991; Penrose, 1959), which argues that a firm's position and its strategic choices depend upon its idiosyncratic resource base. However, internalisation theory does not predict any specific performance increase due to international expansion: firms with a particular bundle of FSAs and faced with comparatively more highly promising domestic expansion projects should obviously not engage in international expansion.

In any case, location matters when deciding upon the firm's expansion path: many scholars have focused on the differences in the environments in which MNEs are active, and the implications thereof for the transfer, deployment and exploitation of extant FSAs. It has also been suggested that the MNE can do much more than simply exploit intangible resources in a variety of countries, and can actually create new FSAs by being active in a variety of locations. MNEs that are active in multiple environments need to adapt to a range of settings, which can in turn lead to innovations and capabilities (e.g., Barkema & Vermeulen, 1998; Kogut & Zander, 1992). Kogut and Zander (1993) see the firm as a social community, which is an efficient mechanism for creating and transferring "knowledge into economically rewarded products" (1993: 627).

Complexity on the Path of International Expansion

International expansion faces substantial challenges. Most difficulties are created by distance (Ghemawat, 2001). As Ghemawat (2001) points out, distance exists not only in the physical sense, but also in the economic, institutional and cultural sense. A firm entering a market that is geographically distant from its home country is likely to experience different economic, institutional and cultural settings. A higher number of activities or subsystems (such as the number of different geographic locations of operations) in any organisation increases the complexity it faces (Daft, 1992); in this case, internationalisation leads to a higher complexity for the firm. For the internationalising firm the environment becomes more complex as it has to deal with a higher number of different

external elements simultaneously (Scott, 1992). Therefore establishing new subsidiaries in such settings, integrating them into the MNE and the overall network of subsidiaries, and managing their daily business in foreign countries are complex tasks. The expanding MNE must change its structures, systems and processes in order to adapt to the new setting (Calori, Lubatkin, & Very, 1994; Johanson & Vahlne, 1977). To realise the potential benefits of internationalisation, the MNE's structures, systems and processes must be suitable for the specific local context, while respecting the requirements of MNE-level coordination and control (Barkema et al., 1997).

The MNE must grapple with unfamiliar settings and environments while building subsidiaries in foreign countries and integrating them into its overall network of subsidiaries. In the beginning, the firm may lack knowledge about the environment, but this can eventually be obtained by doing business in the new environment (Forsgren, 2002; Johanson & Vahlne, 1977) or by acquiring local units that do possess such knowledge (Barkema & Vermeulen, 1998; Forsgren, 2002). The expanding firm must gain the ability to interpret strategic signals from the new and foreign environment.

Cultural Distance as a Source of Complexity in the International Expansion Path

Both theory and practice suggest that cultures differ from each other (e.g., Hofstede, 1980). These differences are commonly referred to as cultural distance, and this type of difference is the focus of our empirical work. The amount of complexity that a firm faces during international expansion depends in large part on the cultural distance between the newly entered countries and those that have been entered previously, as a higher cultural distance means addressing a larger number of external elements simultaneously (Scott, 1992). Setting up foreign subsidiaries requires the firm to "calibrate itself to a foreign national culture" (Barkema, Bell, & Pennings, 1996), which creates complexity and difficulties for individuals as well as at the firm level. As extensive research has shown, cultures affect the beliefs, perceptions, and behaviour of individuals (Kirkman, Lowe, & Gibson, 2006; Kwok, Bhagat, Buchan, Erez, & Gibson, 2005), and firm-level characteristics such as conflict management, decision-making, and leadership (Adler, 2002; Kirkman et al., 2006).

Individuals within an MNE that sets up subsidiaries in culturally distant countries are confronted

with work team members, customers, suppliers, and others who act differently than they do themselves and who have different belief systems and values. Cultural distance can be at the root of interpersonal barriers between members of the firm and outside parties, which may cause friction that interferes with doing business efficiently in the new context (Gómez-Mejía & Palich, 1997). To be able to overcome such friction, individuals need to calibrate themselves to the new culture and adapt their behaviour and practices to the new setting (Newman & Nollen, 1996). This is a difficult and time-consuming process, and the greater the cultural distance, the greater the resulting complexity.

It is not just at the level of individuals that calibration and adaptation must be achieved; cultural distance also necessitates adaptation of structures, systems and processes (Calori et al., 1994; Johanson & Vahlne, 1977; Newman & Nollen, 1996). With each increase in the degree of cultural distance, the “challenges for the organizational control system increase proportionately” (Gómez-Mejía & Palich, 1997: 313). A more complex system of control mechanisms is needed in cases of high cultural distance. Moreover, high cultural distance hampers knowledge-sharing within the corporation (Cho & Lee, 2004), which then requires more sophisticated control and incentive systems. Overall, the higher the cultural distance, the more complex the task of adapting structures, systems, and processes.

MNEs must also learn about local habits and preferences and other external conditions influenced by cultural distance (Barkema et al., 1996). Learning and adaptation can be facilitated by existing knowledge. However, the usefulness of knowledge and experience that is accumulated from earlier activities is determined by the similarity of the new setting to those settings already experienced by the company (e.g., Cohen & Levinthal, 1990; Halebian & Finkelstein, 1999). Cultural distance makes prior experience less valuable by “eroding the applicability” of the firm’s competencies (Barkema et al., 1997: 428). Therefore, in cases of high cultural distance, it will be more difficult, and take more time, to gather the knowledge that is necessary to do business in the new environment.

Constraints to Handling Complexity that Arises from Cultural Distance

Cultural distance is one of the complicating factors in the path of international expansion. There are

limits to the amount of complexity that a firm is able to successfully handle per unit of time (Vermeulen & Barkema, 2002). Firms are constrained by the “time compression diseconomies” noted by Dierickx and Cool (1989). As they famously put it, “MBA students may not accumulate the same stock of knowledge in a one-year program as in a two-year program, even if all inputs other than time are doubled” (Dierickx & Cool, 1989: 1507). This is no less true, as Vermeulen and Barkema (2002) point out, for MNEs as they grapple with complexity caused by the cultural distance they encounter in setting up subsidiaries in foreign countries. Bounded rationality limits individuals’ ability to absorb and evaluate new information per unit of time (Cyert & March, 1963). Adaptation and learning take time, and individuals overwhelmed by new experience will not be able to learn and adapt to a new setting (Eisenhardt & Martin, 2000; Hayward, 2002). At the organisational level, firms are constrained in their ability to absorb and apply new information in their business activities (Cohen & Levinthal, 1990). The adaptation of processes and structures and the refinement and recalibration of routines require time (Nelson & Winter, 1982), and as organisations suffer inertia, they need time to adapt to new situations and change their configuration to fit the new setting (Hannan & Freeman, 1984). It is reasonable to assume that the greater the distance between cultures, the more time will be needed to bridge it. To put it in another way, the greater the cultural distance that firms face on their internationalisation path during a given period of time, the less able they will be to cope with the associated complexity.

HYPOTHESES

Added Cultural Distance and MNE Profitability

As we have argued, there is a limit to the amount of cultural distance and its associated complexity that the firm can handle within a given time. Cultural differences within an MNE can create friction (Gómez-Mejía & Palich, 1997). If too much cultural distance is added over a short period of time, the MNE will be overwhelmed. Individuals within the MNE will be unable to adapt their behaviour and practices sufficiently, and performance will suffer. To reap the potential benefits of international expansion, subsidiaries established during this process must be adequately integrated and supported by structures, systems and processes that fit their specific needs. Without sufficient time, these



structures, systems and processes will not be correctly implemented, and new subsidiaries will not be adequately integrated into the overall network of subsidiaries. Moreover, knowledge about the local culture is necessary to do business successfully in the new environment, and the MNE will not be able to assimilate that knowledge or do business successfully in the new cultural environment.

As cultural distance creates complexity, adding too much of it over a short time period will not only affect the performance of new subsidiaries, but also that of the MNE's previously existing subsidiaries will suffer. Hence:

Hypothesis 1: Everything else constant, higher cultural distance added by international expansion moves per unit of time, will negatively affect firm profitability.

Irregularity over Time in Adding Cultural Distance and MNE Profitability

In addition to the average level of added cultural distance resulting from an MNE's international expansion moves per unit of time, the (ir)regularity over time in adding such distance will influence how well the MNE is able to deal with the complexity resulting from international expansion (Vermeulen & Barkema, 2002). The ability to cope with complexity and to learn from experience is not necessarily constant, and so may also be influenced by the extent of its usage (Cohen & Levinthal, 1990; Eisenhardt & Martin, 2000). High levels of complexity as a result of added cultural distance may at a given point in time overstretch the MNE's ability to make necessary adaptations and therefore result in poor structures, systems, and processes. On the other hand, the MNE may suffer from just the opposite of overheated expansion. Underutilisation also reduces effectiveness in dealing with the complexities of cultural distance. If experiences are not sufficiently frequent, previously learned lessons may be forgotten (Eisenhardt & Martin, 2000). Long intervals between subsequent internationalisation steps may mean that knowledge gained in earlier steps is not available for subsequent ones (Eisenhardt & Martin, 2000; Hayward, 2002; Nelson & Winter, 1982). For this reason, companies with an irregular expansion path will face time compression sooner than regularly expanding firms (Vermeulen & Barkema, 2002). Therefore an expansion process that requires the MNE to deal regularly with new complexities (also meaning that addressing such complexities is

more likely to be routinised) should prove less problematic than a process characterised by an irregular pattern. As cultural distance is a major source of complexity in the process of international expansion we propose:

Hypothesis 2: Everything else constant, irregularity over time in adding cultural distance to the firm's international expansion path will negatively affect firm profitability.

METHODOLOGY

Sample, Data and Possible Survival Bias

Sample. To test our hypotheses, we collected longitudinal data on the expansion path of German companies included in the HDAX segment of the German stock exchange. We started with all firms included during at least one point in time between the initial composition of the index in 1994 and the end of 2004.¹ We chose this approach in order to capture firms that were excluded from the index as well as firms that were established or grew and so were included. From the resulting list of 195 companies, we eliminated financial institutions, real estate companies, and purely financial holdings – a total of 34 companies. We also excluded retailers, another 15 companies, and 11 cross-listed non-German firms (e.g., Vermeulen & Barkema, 2002). Among the remaining 135 companies, there were 30 that had gone bankrupt, had merged with other firms, or had been taken over and so could not be contacted directly. The remaining 105 companies were asked to provide historical annual reports back to 1985. Many firms were not able to provide reports prior to the mid-1990s. As would be expected, annual reports of firms that were no longer in business were especially difficult to obtain. We also tried to compile historical annual reports for both active and non-active companies for the same period from public archives, such as company websites or other Internet sites, such as www.getthereport.com and www.annualreportservice.com. These public sources were sometimes fragmentary. In the end, we were successful in getting annual reports for at least 5 years for 91 MNEs, some of which were still active and others had ceased to do business during our period of analysis.

Data collection. We extracted from the annual reports data on all the subsidiaries that had been

established by these MNEs within the period of analysis (e.g., Barkema et al., 1996; Barkema & Vermeulen, 1998). We included as subsidiaries those affiliates where the parent company held a stake of at least 50%. Thus we included only investments into majority-owned entities in the final database. We chose this approach in order to exclude purely financial holdings. We included all new affiliates regardless of whether they were greenfield investments or acquisitions, and whether domestic or foreign subsidiaries. Moreover, we collected a complete list of subsidiaries for each company during the first year it was included in our panel. We also tracked all divestments of subsidiaries so that we were able to determine the complete portfolio of subsidiaries for each year an MNE was included in our panel as well as all changes to its portfolio within the timeframe for which it was included. We sourced this information from announcements of expansion steps and dissolutions in the management report as well as from changes in the composition of the list of affiliates reported in the appendix of annual reports. This complex and time-consuming approach of extracting expansion steps from annual reports was necessary as equivalent, comprehensive data are not available for German companies from any commercial database. After having collected these data, we checked their quality using two sources. First, we compared our list of acquisitions with information on acquisitions from the Thomson One Banker Deals database. This showed that we had missed no acquisition that was included in this database, and that our data were more comprehensive than the data found there. As acquisitions are only a subset of the expansion steps undertaken by the MNEs in our panel, we contacted the firms again and asked them to verify our data. Eight companies were willing to check our data for completeness and accuracy. This check revealed that we had missed some domestic minority holdings, but had included all investments into majority-owned entities.

Possible survivor bias. We attempted to avoid a possible survivor bias with our approach to data collection. In contrast to other studies with a similar approach, we attempted to include surviving as well as non-surviving firms. However, although we were able to include a considerable number of non-surviving firms, we were constrained somewhat by data availability. We were able to gather data on 11 non-surviving companies, but we were not able to

do so for a further 19. Hence there remains a difference in the percentage of non-surviving companies between our final sample of 91 MNEs and the sample of 135 firms for which we tried to obtain annual reports: 12% of non-surviving firms in the first, 22% in the latter. To check for bias, we gathered financial data for both included and excluded companies from different financial databases (Compustat, Thomson Financial), and conducted a means test (see Carpenter & Fredrickson, 2001, for a similar procedure). This test indicated that the excluded firms did not significantly differ from the sample companies in any of the variables we were able to compile, notably in terms of number of employees, sales, capital structure, and return on assets (RoA).

Independent Variables

Cultural distance was measured in accordance with Kogut & Singh (1988), who determine the value of the distance between two countries as the average of the differences between them in each cultural dimension viewed relevant while at the same time controlling for the variance in each dimension. This measurement is usually referred to as the Kogut & Singh index. This index has conventionally been calculated based on the four cultural dimensions proposed in the seminal work of Hofstede (1980), that is, power distance, uncertainty avoidance, individualism, and masculinity.² While this approach has been used extensively in IB research (e.g., Gómez-Mejía & Palich, 1997; Jensen & Szulanski, 2004), there has also been substantial criticism of Hofstede's dimensions (e.g., Kirkman et al., 2006; Shenkar, 2001). Therefore we also calculated this index based on the nine dimensions and scores of the GLOBE project (House, 2004). To our knowledge, this project is the most recent comprehensive study of cultural dimension and also the latest attempt at quantifying different cultures. Moreover, it takes into account not only cultural values but also cultural practices. Therefore it provides additional information, complementing the Hofstede approach: though cultural values may have an impact on the firm's international expansion, cultural practices are likely to be important too. Further, some have argued that a shortcoming in Hofstede's work is the availability of the index for Confucian dynamism, or long-term orientation, for only a relatively small number of countries (Shenkar, 2001). Using the nine GLOBE dimensions³ we were able to incorporate more aspects of culture than if we had used the Hofstede

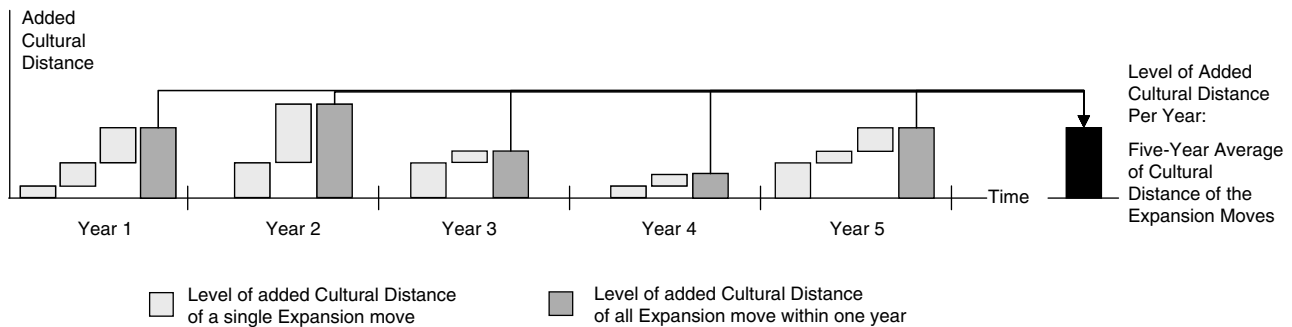


Figure 1 Measurement of cultural distance taken on through expansion moves.

dimensions only. However, Hofstede (2006) himself has recently cast doubts on the validity of the GLOBE dimensions, building upon an analysis he conducted and suggesting that the nine GLOBE dimensions could be reduced to five. No consensus has yet been reached on this point (see e.g., Javidan, House, Dorfman, Hanges, & de Luque, 2006, and Smith, 2006, in a recent *JIBS* Special Issue on this topic), but it is important to note that the GLOBE study data have been collected more recently than Hofstede's. In this context, it has been argued that cultures may converge as a result of increased communication and interaction, meaning that the predictive validity of Hofstede's scores might decrease somewhat over time (Kirkman et al., 2006; Shenkar, 2001). With the scores of the GLOBE project, we are able to incorporate a recent measure for cultural distance. If cultures were indeed converging, this measure might have a somewhat higher predictive validity than Hofstede's scores for more recent periods.

Country scores were taken from Hofstede (2001) and House (2004). We were able to obtain additional scores for countries not included in the original Hofstede list with the help of the consulting firm ITIM (www.itim.org) which is utilising Hofstede's concepts and is supported by him. We were thus able to obtain Hofstede scores for almost all of the countries in our sample. Where country scores were not available for a host country, we carefully examined country characteristics such as the legal system, religions, languages, and ethnicity using data from the *CIA World Factbook*⁴ and assigned scores using averages of the available scores of countries with similar characteristics. Although this was only necessary for 0.09% of the expansion steps in the case of Hofstede's scores, this percentage rose to 11% for the GLOBE scores. As our analyses take place at the firm level, and as we have to include all international expansion steps

made by the MNEs in our panel to capture the complete path of expansion, we had to infer these values as we could ill afford to delete any countries from our study.

To measure the added cultural distance resulting from international expansion moves, we computed for every newly established subsidiary the distance to all already existing subsidiaries and took the smallest distance. Hence the added cultural distance of a single expansion step is its distance to the closest existing subsidiary. To measure the *level of added cultural distance per unit of time*, we summed the added cultural distance of each expansion step taken in a defined period of analysis and then divided that sum by the number of years. Figure 1 illustrates this measurement. It shows how the added cultural distance of the expansion steps undertaken within one year (shaded in light grey) are summed up to the added cultural distance of that year (shaded in dark grey). These sums are then used to determine the average of the yearly added cultural distances within the considered time period of analysis.

The *irregularity in adding cultural distance through international expansion moves* was measured as the coefficient of variation of added cultural distance taken on by expansion moves over a period of one year. Thus it was computed as the ratio of the standard deviation of added cultural distance taken on by expansion moves per year within the time period considered, to its mean.

Dependent Variables

Firm profitability was used as the dependent variable in our study. We measured it using RoA and took a 3-year moving average in order to exclude, to a certain extent, effects from creative accounting. We took RoA because that measure is widely accepted in management research, and is not affected by financing decisions (as opposed to,

e.g., return on equity) (Gómez-Mejía & Palich, 1997). RoA measures the efficiency with which a company produces its output, and is therefore particularly well suited for the examination of synergies and actual performance of business operations (Kim, Hwang, & Burgers, 1989). As our arguments deal with actual performance and the alignment of business operations, it is particularly well suited to this context. Other performance measures, such as market-based measures, would include future perspectives and perceptions of shareholders, which are not of interest in the context of our hypothesised relationships.

Control Variables

Two firms showing the same level of added cultural distance and the same irregularity in adding this cultural distance might in fact have a very different expansion path, as a short example may illustrate. If firm A adds all the cultural distance in the first year of a certain period and firm B adds the same amount of cultural distance in the last year of the respective period, both measures mentioned before will have the same value for the two companies. However, if we look at these firms at the end of the period, firm A had much more time to cope with the cultural distance than firm B. Therefore we need a variable to differentiate between expansion paths where expansion associated with added cultural distance occurs during early years of the analysed period and paths where it occurs in later years. We therefore introduced the control variable *centroid of cultural distance*. To compute this variable, we first weighted the cultural distance of each year. The weight -1 was assigned to the first year, and the weight 1 was assigned to the last year of a period. All years in between were weighted accordingly, with a weight between -1 and 1 . The sum of the weighted yearly cultural distances was then divided by the total cultural distance within the period of analysis. Therefore low values indicate a path where the main proportion of cultural distance taken on comes in early years, and higher values indicate expansion moves associated with cultural distance in later years.

Just as expansion into new countries will result in complexity, so too will expansion into new industries (Grant, Jammine, & Thomas, 1988). Product diversification requires new knowledge, routines and skills in much the same way as internationalisation (Vermeulen & Barkema, 2002). In this instance, the firm enters a new market that is foreign not in terms of national or cultural differences but in terms

of inter-industry differences, and it has to learn to do business in that market. We included the *number of industries entered*, measured as the number of four-digit industry codes the firm newly entered in the period of analysis, to control for the possible effect of complexity stemming from product diversification steps.

We included the variable *cultural diversity* in our analysis to control for the possible effect of international diversification in terms of absolute level of cultural differences that the MNE has already reached. While our hypotheses address additional cultural distance and thus change variables, this control variable reflects the level of cultural diversity of a company's network of subsidiaries at a certain point in time. We measured cultural diversity based on cultural distances, which were computed as described above. For every MNE we computed the sum of the cultural distances between every pair of subsidiaries existing at a given point in time and divided that total by the number of pairs. This measure was computed based both on Hofstede's score and on the GLOBE dimensions. This measure of cultural diversity shares some commonality with the WAR (weighted average relatedness) measure established by Teece, Rumelt, Dosi, and Winter (1994) in the literature on product diversification.

To control for a possible effect of product diversity on performance (e.g., Chatterjee & Wernerfelt, 1991; Palich, Cardinal, & Miller, 2000), we included the control variable *product diversity*, measured as the number of four-digit industries in which the firm was active. In addition, we also measured this variable with an entropy measure based on the sales reported in the segment information of the annual reports (Palepu, 1985).

Companies expanding with new subsidiaries face two broad decisions with regard to their entry mode (Chang & Rosenzweig, 2001): first, they can either build a new subsidiary from scratch or acquire an existing entity; second, they can engage in a new venture alone or with a partner. If a company repeats acquisitions or greenfield investments, learning effects may occur (e.g., Barkema & Vermeulen, 1998; Hayward, 2002). Therefore we introduced the variable *acquisitions*, which was calculated as the percentage of entries by acquisition as compared with all entries within the period of analysis. Hence 100% minus the percentage of entries by acquisitions yields the percentage of greenfield investments of all international expansion steps. Learning effects would suggest that

MNEs concentrating on either entry mode would benefit, and therefore either high or low values of the variable *acquisitions* would be associated with higher performance. Therefore we also checked for non-linearities with the square of this variable.

If firms execute their international expansion projects supported by a partner, they might be able to reduce the managerial resources needed as they might be able to tap the location-specific knowledge of the partner (Lane, Salk, & Lyles, 2001; Lyles & Salk, 1996). On the other hand, increased coordination and control efforts might be needed in an equity alliance, which might require more managerial resources than an expansion without a partner (Chang & Rosenzweig, 2001). To control for a possible effect of equity alliances, we introduced the variable *total ownership*, which is the percentage of international expansion steps taken with total ownership over all international expansion steps in the period of analysis.

We also controlled for effects arising from *size*, *capital structure*, *industry*, and *time*. We measured the variable *size* using sales in millions of euros in the first year of our period of analysis. Capital structure was measured by the debt ratio, which was computed as total liabilities over total assets. For industry we used dummy variables based on two-digit industry codes – specifically the WZ-code provided by the German Federal Statistical Office. Finally, for time effects we used year dummies.

As we have drawn our information from annual reports, our data collection and our results might be biased by the different accounting regimes of the companies in our panel. Therefore we included dummy variables for the accounting standard used by a firm in a specific year.

Analysis

We computed our variables for 5-year periods. We moved these periods to make full use of our panel data. Overall, this gave us 589 observations, that is, the number of firms multiplied by the number of available 5-year periods in our panel, for which the whole set of variables was available. As a Hausman test showed a violation of the assumptions for random-effect models ($p < 0.001$), we used fixed-effect models (Wooldridge, 2002). By estimating fixed-effect models, we control for all constant unmeasured differences across companies that may explain differences in the dependent variable. With the use of fixed-effect models, industry dummies are not necessary, because industry membership does not vary among our sample firms during the

time period studied, and fixed-effect models control for variance due to time-invariant characteristics (Carpenter & Fredrickson, 2001). Because of these characteristics, the fixed-effect models also control for a possible bias arising from different lengths of membership in our unbalanced panel. One way to control for such an effect would be to add a variable containing the length of membership for each firm, but this variable would be a constant for each MNE, and can therefore be dropped in the fixed-effect models.

To detect possible heteroscedasticity, we used a modified Wald statistic for groupwise heteroscedasticity in the residuals of a fixed-effect regression model as proposed by Greene (2000). This test suggests that heteroscedasticity affects our fixed-effect models ($p < 0.01$). Thus when estimating our models we applied Huber–White sandwich estimators of variance in order to improve the efficiency of estimators and reduce heteroscedasticity problems (White, 1980).

To test for serial correlation, we used a test for panel data models discussed by Wooldridge (Drukker, 2003; Wooldridge, 2002). Based on Wooldridge's (2002) discussion of idiosyncratic errors of a linear panel-data model, this test performs a Wald test of the null hypothesis of no autocorrelation. This test is implemented for the Stata software (with the command *xtserial*), and Drukker (2003) provides simulation evidence that the test has good power. We could not detect any evidence of serial correlation using this test.

RESULTS

Descriptive Statistics

The MNEs in our panel are quite large, as their average sales total about €7 billion. However, the standard deviation is relatively high at around 12 billion. This is caused not only by differences across firms over time but also by differences within firms over time. The sample contains some MNEs that are growing strongly and others that are declining. Hence the variance reflects a combination of a within-company variance with an across-company variance. The MNEs in our panel undertook a total of 3929 expansion steps, of which 1525 were domestic and 2404 involved new subsidiaries established outside Germany. Overall, subsidiaries were established in over 100 different countries. Table 1 displays the means and standard deviations of all variables, as well as the correlations among them.

Table 1 Descriptive statistics and correlations

| | Mean | s.d. | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. | 15. |
|--|-----------|------------|----------|----------|---------|----------|---------|---------|--------|----------|---------|---------|---------|---------|-------|-------|---------|
| 1. Return on assets | 0.059 | 0.078 | 1.00 | | | | | | | | | | | | | | |
| 2. Added cultural distance per unit of time (Hofstede) | 2.975 | 4.040 | 0.06 | 1.00 | | | | | | | | | | | | | |
| 3. Added cultural distance per unit of time (GLOBE) | 1.185 | 1.492 | 0.05 | 0.72*** | 1.00 | | | | | | | | | | | | |
| 4. Irregularity of added cultural distance (Hofstede) | 0.274 | 0.146 | -0.12** | 0.16** | 0.11** | 1.00 | | | | | | | | | | | |
| 5. Irregularity of added cultural distance (GLOBE) | 1.086 | 0.624 | -0.14** | 0.14** | 0.02 | 0.57*** | 1.00 | | | | | | | | | | |
| 6. Centroid of added cultural distance (Hofstede) | 0.342 | 0.353 | -0.02 | 0.11** | 0.08* | 0.46*** | 0.26*** | 1.00 | | | | | | | | | |
| 7. Centroid of added cultural distance (GLOBE) | 0.270 | 0.295 | -0.07 | 0.12** | 0.06 | 0.26*** | 0.53*** | 0.43*** | 1.00 | | | | | | | | |
| 8. Cultural diversity (Hofstede) | 1.196 | 0.757 | 0.22*** | -0.08* | -0.11** | 0.03 | -0.05 | 0.01 | 0.03 | 1.00 | | | | | | | |
| 9. Cultural diversity (GLOBE) | 2.429 | 0.480 | 0.04 | 0.02 | 0.05 | 0.00 | 0.04 | -0.07 | 0.01 | 0.74*** | 1.00 | | | | | | |
| 10. Product diversity | 10.825 | 10.515 | -0.11* | -0.05 | 0.14*** | 0.09* | -0.05 | 0.05 | -0.03 | -0.12** | 0.17*** | 1.00 | | | | | |
| 11. Industries entered | 1.370 | 2.336 | -0.13* | 0.06 | 0.23*** | 0.11** | 0.10* | -0.02 | 0.05 | -0.28*** | 0.01 | 0.26*** | 1.00 | | | | |
| 12. Acquisitions | 0.492 | 0.486 | -0.06 | 0.07 | 0.12** | 0.11** | 0.11** | 0.02 | 0.07 | -0.02 | 0.05 | 0.18*** | 0.08 | 1.00 | | | |
| 13. Total ownership | 0.562 | 0.487 | 0.18* | 0.21*** | 0.18*** | 0.19*** | 0.10* | 0.11** | 0.03 | 0.20*** | -0.02 | 0.05 | -0.03 | 0.33*** | 1.00 | | |
| 14. Prior minority | 0.022 | 0.095 | -0.07* | -0.05 | -0.05 | -0.14*** | 0.15*** | -0.09* | 0.05 | 0.08* | 0.06 | -0.03 | 0.01 | 0.14*** | -0.07 | 1.00 | |
| 15. Capital structure | 0.590 | 0.232 | -0.20*** | -0.19*** | -0.02 | 0.11** | -0.01 | 0.04 | -0.02 | 0.05 | 0.25*** | 0.35*** | 0.13*** | 0.10* | -0.05 | 0.08 | 1.00 |
| 16. Size ^a | 7,163.876 | 12,598.690 | -0.11* | -0.10* | 0.07 | 0.05 | -0.09* | 0.11** | -0.08* | 0.05 | -0.01 | 0.53*** | 0.06 | 0.09* | 0.07 | -0.02 | 0.20*** |

N=589.

***p<0.001; **p<0.01; *p<0.05.

^ain Million Euros.

Hypotheses Testing

Collinearity diagnosis suggests that multicollinearity should not affect our models. All variance inflation factors were considerably lower than the value of 10, which has been proposed as the critical threshold (Neter, Wasserman, & Kutner, 1990).

The results of the regression models used for hypotheses testing are shown in Table 2. The variables in these models are computed based on the Hofstede scores. Model 1 represents the basic model, and includes the control variables only. In model 2 the level of added cultural distance per unit of time is added to the basic model. Model 3 shows the effect of irregularity in the amount of added cultural distance taken through the MNEs' expansion moves. Finally, model 4 includes all variables.

Hypothesis 1 suggested that the level of additional cultural distance taken on by expansion moves per unit of time would have a negative impact on MNE performance. The results of the regression models strongly support this prediction, with a negative and highly significant coefficient in the models where added cultural distance per time is included. Hypothesis 2 is also supported by our analysis. In both models that include (ir)regularity in adding cultural distance through international expansion moves (models 3 and 4), the estimates are negative and significant. However, in the overall model this can only be shown with $p < 0.1$.

Robustness of Results

To include an alternative to the Hofstede dimensions for the measurement of cultural distance, we repeated the analysis using the GLOBE data to

measure the MNE's level of cultural diversity and the level of added cultural distance taken on as a result of its expansion moves. The results are shown in Table 3. Hypothesis 1 was again supported, with negative and significant coefficients. Hypothesis 2 also received some support, although at only $p < 0.1$.

Our dependent variable, RoA, is widely used in strategic management research. However, as many authors claim that return on sales (RoS) is more appropriate to measure firm profitability, we used this variable as an alternative. The results are similar to the results with RoA, and strongly support both of our hypotheses (-0.004 at $p < 0.001$ for H1 and -0.006 at $p < 0.01$ for H2 in the full model for the Hofstede measurement; -0.006 at $p < 0.05$ for H1 and -0.013 at $p < 0.01$ in the full model for the GLOBE measurement). In comparison to the results that used the RoA parameter, Hypothesis 2 is also clearly supported in both the Hofstede and the GLOBE case.

To check the robustness of our results, we also changed the measurement of our dependent variable using a yearly RoA (RoS respectively) instead of its moving average. The results were similar to those with the three-year moving averages. Finally, we were also able to replicate the results using return on equity instead of RoA and RoS, though there was some loss of significance.

Other studies have suggested that cultures converge over time, and this being the case Hofstede's scores might lose some of their predictive value (Kirkman et al., 2006; Shenkar, 2001). If cultures converge, the negative impact of the level of cultural distance of expansion moves and of the

Table 2 Results of regression of firm performance (Hofstede)

| | Model 1 | Model 2 | Model 3 | Model 4 |
|--|--------------------|------------------------|-----------------------|------------------------|
| Added cultural distance per unit of time | | -0.005^{***} (0.001) | | -0.005^{***} (0.001) |
| Irregularity of added cultural distance | | | -0.051^* (0.024) | -0.042^+ (0.023) |
| Centroid of added cultural distance | -0.001 (0.007) | 0.002 (0.007) | 0.008 (0.007) | 0.008 (0.007) |
| Cultural diversity | -0.027 (0.017) | -0.017 (0.022) | 0.003 (0.024) | -0.019 (0.022) |
| Product diversity | -0.003^* (0.001) | -0.003^{**} (0.001) | -0.002 (0.001) | -0.003^* (0.001) |
| Industries entered | -0.001 (0.002) | -0.001 (0.002) | 0.000 (0.002) | -0.001 (0.002) |
| Acquisitions | -0.005 (0.006) | -0.003 (0.006) | -0.004 (0.006) | -0.003 (0.006) |
| Total ownership | 0.006 (0.008) | 0.008 (0.008) | 0.006 (0.008) | 0.009 (0.008) |
| Prior minority | -0.036^* (0.014) | -0.050^{**} (0.015) | -0.043^{**} (0.017) | -0.054^{**} (0.016) |
| Size | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) |
| Capital structure | 0.026 (0.023) | 0.020 (0.022) | 0.015 (0.023) | 0.019 (0.022) |
| F | 1.70* | 2.69*** | 1.84** | 2.67*** |
| R ² | 0.049 | 0.089 | 0.051 | 0.101 |

Dummies are omitted; standard errors in parentheses.

N=589.

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$.

Table 3 Results of regression of firm performance (GLOBE)

| | Model 1 | Model 2 | Model 3 | Model 4 |
|--|-----------------|------------------|-----------------|------------------|
| Added cultural distance per unit of time | | −0.007* (0.003) | | −0.007** (0.002) |
| Irregularity of added cultural distance | | | −0.007+ (0.004) | −0.007+ (0.004) |
| Centroid of added cultural distance | 0.004 (0.008) | 0.006 (0.008) | 0.010 (0.009) | 0.012 (0.009) |
| Cultural diversity | −0.030* (0.013) | −0.030* (0.013) | −0.032* (0.013) | −0.032* (0.013) |
| Product diversity | −0.002 (0.001) | −0.002+ (0.001) | −0.002 (0.001) | −0.002 (0.001) |
| Industries entered | 0.000 (0.002) | 0.000 (0.002) | 0.000 (0.002) | 0.000 (0.002) |
| Acquisitions | −0.001 (0.006) | 0.000 (0.005) | 0.000 (0.006) | 0.001 (0.006) |
| Total ownership | 0.000 (0.008) | 0.002 (0.008) | 0.001 (0.008) | 0.002 (0.008) |
| Prior minority | −0.031* (0.014) | −0.041** (0.015) | −0.022 (0.016) | −0.032* (0.016) |
| Size | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) |
| Capital structure | 0.019 (0.021) | 0.018 (0.020) | 0.015 (0.020) | 0.017 (0.020) |
| F | 1.88** | 2.04** | 2.09** | 2.13*** |
| R ² | 0.060 | 0.079 | 0.066 | 0.085 |

Dummies are omitted; standard errors in parentheses.

N=589.

***p<0.001; **p<0.01; *p<0.05; +p<0.1.

level of cultural diversity should be lower in the later years of our sample period than in the earlier years. Therefore we tested for a possible moderating effect (e.g., Aiken, West, & Reno, 1991) of time on the hypothesised relationships. We found no significant impact, and the possible convergence of cultures does not appear to hamper our results. This is also consistent with the recent work of Rugman and Verbeke (2004, 2007) on the world's largest MNEs, which demonstrated the relative lack of inter-regional success (across Asia, Europe and North-America) for most companies, in spite of many efforts towards more institutional convergence at the global level (e.g., through the World Trade Organization).

To test that our results are indeed driven by complexity associated with different steps, we replicated the analysis using simply the number of internationalisation steps per time period considered and the variation in the number of steps per year. In this case, we could not detect any significant relationship between these variables and performance. This indicates that it is not international expansion *per se* that negatively affects profitability, but rather the complexity arising from added cultural distance. Consistent with conventional internalisation theory, we did not find a significant relationship between international expansion and profitability when looking at the mere number of expansion moves.

Examining Alternative Effects

We have argued that added cultural distance in international expansion leads to complexity, and

therefore that expansion moves characterised by high levels of such added cultural distance and irregularity in adding cultural distance will negatively affect profitability. Our results clearly support this argument. However, it has also been suggested that the added cultural distance taken on by international expansion moves might positively affect performance, because the MNE might generate knowledge and capabilities when it is exposed to different cultural environments. This would suggest that the relationship between the level of added cultural distance taken on by expansion moves and profitability would show an inverted U-shaped curve. While lower levels of added cultural distance per unit of time might foster learning and therefore have a positive effect on performance, higher levels could lead to the effects we have hypothesised. Therefore we also tested for such a relationship between the level of added cultural distance taken on per unit of time and profitability. However, we did not identify a significant relationship, and we were not able to detect a positive influence of the level of added cultural distance per unit of time. This suggests that the negative impact of level of cultural distance taken on exceeds possible positive effects.

It is possible that MNEs need time to exploit the possible benefits of added cultural distance in international expansion. Although a high level of added cultural distance might have a negative effect on profitability in the short run, it might have a positive effect after some interval. Therefore we repeated the analyses with 1-year and 2-year time lags between the measurement of the

independent and control variables and the dependent variable. These models showed the same significant negative effect of the level of added cultural distance per unit of time. However, we could not detect a significant impact of irregularity in the models using a 2-year lag. We repeated the analyses with 7-year rather than 5-year periods. These models also showed a significant negative impact on profitability of the level of added cultural distance taken on and of the changes in that level within the 7-year periods.

DISCUSSION

Added Cultural Distance in the Expansion Process

International expansion is a difficult and complex task. Firms entering foreign markets are constrained in their ability to handle the inherent complexity of international expansion and to learn from these activities. We have shown that the added level of cultural distance taken on by expansion moves per unit of time had a negative effect on MNE performance. These findings are consistent with the results of Vermeulen and Barkema (2002), who show that expansion speed negatively moderates the relation between the level of internationalisation and performance. Using added cultural distance as one source of complexity, we were able to address a key difference in the nature of expansion steps. We did this by assuming that higher added cultural distance leads to higher complexity and lower added cultural distance to lower complexity, so that we could distinguish between steps associated with one extreme or the other. Our results indicate that an expanding firm is limited in its ability to cope with such complexity, and can therefore successfully handle only a certain amount of it per unit of time. Our results show that it is not international expansion *per se* that negatively affects profitability, but rather the complexity arising from added cultural distance. We did not find a significant relationship between international expansion and profitability when looking at the mere number of expansion moves, a result consistent with conventional internalisation theory.

We were also able to show that the irregularity in the level of cultural distance taken on by expansion moves within a given period of time has a negative influence on performance. Firms that take on the same amount of additional complexity each period perform better than those with an unbalanced expansion rhythm. In general, this is consistent with the findings of Vermeulen and Barkema (2002).

However, our measures differ from those of these two authors, because we did not look at the number of steps but instead, and more appropriately, at their associated level of added cultural distance.

Implications for Research and Management

The results of this study have several implications for researchers. We contribute to the emerging literature on the performance effects of the internationalisation path by showing that added cultural distance, as a source of complexity, has negative performance implications. However, there are certainly other factors leading to complexity for the internationalising firm, and our results open up interesting possibilities that remain to be studied for a more complete understanding of the performance effects of different internationalisation paths. For example, what are the performance implications of other country characteristics on the internationalisation path? What role do firm characteristics play in the relationship between path characteristics and performance? Trying to answer these questions raises interesting perspectives for further research.

Moreover, our results are of relevance for the stream of research examining the performance effects of multinationality. This research has not yet led to a consistent picture; rather it has uncovered many possible, sometimes contradictory relationships. Our results suggest that it might be necessary to include the way MNEs reach a certain level of internationalisation in order to understand fully that level's performance implications, if any. Obviously, it is only if particular parameters such as cultural distance are not taken on board fully by managers in their cost-benefit calculus for international expansion projects that performance effects can reasonably be expected.

Our results also have implications for managers assessing which internationalisation path would be optimal under a given set of conditions. As we have shown, the level of added cultural distance resulting from expansion moves per unit of time and its variation across periods has negative performance implications. Our results suggest a careful examination of the amount of added cultural distance the firm can successfully handle per step before deciding on expansion projects, that is, the introduction of cultural distance in the formal cost-benefit calculus for international expansion projects. However, our results do not imply that fast international expansion is bad *per se*; there might be situations whereby, for long-term, strategic reasons, rapid

expansion into culturally distant countries would appear necessary. For instance, it might be necessary to enter a promising but culturally distant emerging market quickly in order to build a strong presence there and to benefit from first mover advantages, as compared with other MNEs that might ultimately be faced with the same liability of added cultural distance. Also, firms that have invested heavily in an innovation might want to enter as many markets as quickly as possible to spread R&D costs before competitors introduce imitations. Such rapid internationalisation to spread R&D costs might be necessary in the case of patents that can protect an innovation for only a limited period of time. In such situations managers must carefully weigh the potential benefits from rapid internationalisation against the pitfalls posed by added cultural distance.

Limitations and Suggestions for Future Research

The ability of firms to handle the complexity associated with added cultural distance might vary with firm characteristics, and might therefore differ between firms, and even within a single firm over time. Such characteristics might include, *inter alia*, the make-up of the management team (Eisenhardt & Schoonhoven, 1990; Verbeke & Yuan, 2005) and the MNE's organisational structure (Van Den Bosch, Volberda, & De Boer, 1999). While the use of fixed-effect models captures the variation across MNEs of factors that are time-invariant, we were not able to include the variation within MNEs over time, because data on the composition of the management team and on MNE organisational structure are not consistently available in sufficient detail in annual reports. Prior studies on the MNE's internationalisation path faced the same problem, and unfortunately did not include the above aspects in their analysis either (Vermeulen & Barkema, 2002; Wagner, 2004). However, future research should systematically assess the availability of data that would allow an inclusion of these factors.

We included cultural distance in our analysis to take into account complexity resulting from different steps of international expansion. Although this is in line with previous research (e.g., Calori et al., 1994; Gómez-Mejía & Palich, 1997), other characteristics of host countries might influence complexity. For example, the turbulence of the local environment (e.g., Luo & Peng, 1999) or pending international trade agreements (e.g., Gómez-Mejía & Palich, 1997) might all be important. Moreover, cultural distance is only one form of distance, and

other forms such as geographical, economic, or institutional distance (Ghemawat, 2001) might create similar problems. Future research should examine the effect of these aspects in the international expansion process, especially as recent research on foreign trade has shown a negative effect of several other forms of distance on the trade flows between countries (Dow & Karunaratna, 2006). In addition to country characteristics, specific features of the expansion steps themselves may influence their complexity. These might include the magnitude of the steps relative to company size, the role of the subsidiary in the overall company (e.g., Bartlett & Ghoshal, 1986; Birkinshaw & Morrison, 1995), and other sources contributing to complexity that are not normally assessed (or assessable) in full in the cost-benefit calculus for international expansion steps, and which might therefore be incorporated in future studies.

In our study we were not able to observe directly the decision process leading to internationalisation. This is clearly a limitation, as there are two possible interpretations on how added cultural distance can have a negative impact. First, it is likely, in many cases, that senior MNE managers systematically underestimate cultural distance as compared with other forms of distance, for example, economic and institutional distance, and that cultural distance issues are absent from formal business plans and investment project evaluations. In this case, the source of performance reduction is in fact a bounded rationality problem faced by senior MNE managers. Second, in some other cases, the performance outcomes of adding cultural distance are probably well understood, but here the negative performance impacts are accepted for long-term, strategic reasons.

Both interpretations above are consistent with internalisation theory. As regards the first interpretation, one would normally not expect economic and institutional distance to affect overall MNE performance, as such parameters would presumably be factored into the cost-benefit calculus for alternative projects (whether domestic or international), and alternative entry modes. In other words, higher economic or institutional distance would need to be compensated for by more attractive project features, in terms of intrinsic risk/return characteristics. Cultural distance, however, is a special case, because it does not lend itself particularly well to being translated in increased cost estimates, reduced benefit estimates

or additional, quantifiable risk, and thus tends to be largely neglected by senior MNE managers.

In contrast, with the second interpretation, the observed performance reduction results merely from short-term costs borne by MNEs that will be compensated by longer-term benefits. In the longer term, the overall risk/return profile of large sets of international expansion projects in countries with high cultural distance would therefore be similar to those in countries with a low cultural distance. Here, internalisation theorists would view managerial choices in favour of short-term performance reduction combined with expected, longer-term, compensating performance increases, as the mere reflection of idiosyncratic FSA bundles held by individual companies at specific points in time.

Although the effects shown to be significant in this study were observed/calculated without insights into the underlying managerial decision processes, the question as to which parameters actually do enter the cost–benefit calculus for international expansion projects in MNEs is critical and should be addressed in further research.

We measured cultural distance using an index based on Hofstede's (1980) dimensions. This approach has been criticised because cultures might evolve over time and might actually be subject to convergence (Kirkman et al., 2006; Shenkar, 2001). Therefore we incorporated the alternative GLOBE dimensions and checked for an influence of time on our tested relationships. Our results do not support any influence of a possible convergence. It would obviously be preferable to use longitudinal data on cultures, but we are not aware of any longitudinal study that could be used to determine the specific cultural distance between countries at various points in time. There has also been criticism of the use of country scores for the measurement of cultural distance, because it assumes "spatial homogeneity" and "corporate homogeneity" (Shenkar, 2001). Indeed, we assume in our measurement that cultural values do not differ significantly across regions within a single country. Although this surely is a simplifying assumption, data on cultural values in different regions are not available for a sufficiently large number of countries. While the fixed-effect models account for unobserved actor effects and therefore for differences between the cultures of individual MNEs, we were not able to account for the MNEs' change of corporate culture over time. We were not able to obtain data on the corporate culture of the companies in our sample. Criticism has also been expressed about the common measurement of

cultural distance because of the assumption of symmetry in cultural distance, and cultural distance impacts, between countries. Here, the distance (impact) from country A to B is assumed to be the same as from B to A (Shenkar, 2001). While there may be good reason to doubt this assumption (see Shenkar, 2001), no data are available at present to account for asymmetries. All these aspects are nevertheless well worth examining in further research. Case studies could be an especially promising means of addressing these issues.

Several authors have discussed possible learning effects in the internationalisation process (e.g., Barkema et al., 1996; Johanson & Vahlne, 1977; Luo & Peng, 1999). We have controlled for the MNE's level of cultural diversity at the beginning of the period, as this may proxy for the level of its international experience. However, it might be interesting to capture other relevant issues, such as the success of prior expansion steps (Hayward, 2002). Unfortunately, we were restricted in our analysis by data availability. Moreover, we would have liked to have been able to include the sequence of expansion steps, and specifically the cultural distance between the most recent and prior expansion steps. In our case it was not possible to determine the exact date of each expansion step, though we were able to determine the year. Therefore we were not able to assess the exact sequence of steps within a given year. While this information is available for most acquisitions, no source of secondary data exists to capture all greenfield investments with the exact corresponding date.

This paper examines the consequences of location decisions (and, more specifically, the added cultural distance caused by these decisions) for internationalising firms. As there clearly are implications of such decisions for firm profitability, the question of what factors have an influence on this choice, and the extent to which cultural distance is one of these factors, is very interesting for further research, although it was outside the focus of this paper. There is already a stream of literature examining these factors leading to the decision on which country to enter during internationalisation. Our results clearly show the importance of this literature, and encourage further research on this important question.

The field would benefit from additional research using samples from other countries in order to make sure that these concepts are applicable in other contexts, as home country characteristics may influence possible benefits from interna-

tionalisation (Rugman & Verbeke, 2004; Wan & Hoskisson, 2003), and our hypothesised limits to international expansion may well vary in different circumstances (Vermeulen & Barkema, 2002).

CONCLUSION

This study represents a substantive advance on previous empirical research on the performance impacts of the MNE's internationalisation path. Internationalisation may benefit the firm, but expanding internationally is a complex task, with most companies having only limited capabilities to cope with increased complexity. We have argued that different expansion steps may give rise to different levels of complexity. More specifically, we have differentiated among expansion steps by taking into account "added cultural distance" as one major source of complexity. We were able to show that the level of added cultural distance taken on by international expansion moves per unit of time and variations in that level within particular time periods have negative effects on firm performance. These results indicate that the complexity associated with single expansion steps in the MNE's internationalisation path may have an important influence. Importantly, while our measure of added cultural distance did have a negative effect on performance, a simple count of expansion moves as performed in prior research was not significant, the latter result being an outcome in line with internalisation theory predictions. Further research on the characteristics of expansion steps and their influence on the relationship between path characteristics and performance could therefore be valuable to managers and researchers alike. Our results imply that further research on inter-

nationalisation and performance from a dynamic perspective can greatly contribute to our understanding of the performance implications of international expansion. This approach seems especially promising as the prior, extensive research on the impact of the level of internationality on performance has been particularly inconclusive.

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NOTES

¹The HDAX is a combined index consisting of DAX30, MDAX and TecDAX, and contains the 110 most important firms of the Prime Standard of the German Stock Exchange. For detailed information on the indices of the German Stock Exchange see Deutsche Börse Group (2006).

²We should note that Hofstede later expanded his framework to include a fifth parameter, namely long-term (time) orientation (see Franke, Hofstede & Bond, 1991). However, empirical data for this dimension are not available for the full set of countries of Hofstede's original study, and therefore this dimension is often not included in empirical work.

³Uncertainty avoidance, power distance, societal collectivism, in-group collectivism, gender egalitarianism, assertiveness, future orientation, performance orientation, and humane orientation.

⁴<https://www.cia.gov/library/publications/the-world-factbook>.

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