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The Impact of Added Cultural Distance and Cultural Diversity on International Expansion Patterns: A Penrosean Perspective

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ABSTRACT International strategy research has identified a variety of multinational enterprise (MNE) expansion patterns. Some MNEs appear to expand internationally at a stable rate, whereas others expand rapidly in one period and then tend to experience slower growth. The latter pattern suggests the occurrence of the Penrose effect. We identified two determinants of these diverging patterns. First, we propose that high levels of added cultural distance (reflecting expansion into new local contexts) during one period, may negatively affect further international expansion because of dynamic adjustment costs. Second, we suggest that managing a network of subsidiaries operating in a set of local contexts with high cultural diversity, increases environmental and internal governance complexity. Extant cultural diversity of the local contexts where the MNE is active in a first period may therefore discourage adding further cultural distance. We test the hypothesized relationships using a panel of 91 German companies.

INTRODUCTION^[1]

A large body of scholarly literature has studied multinational enterprise (MNE) expansion patterns, i.e. the *timing* and *scope* of MNE entry into host countries and the related adjustment to new local contexts. In terms of *timing*, past research has identified various patterns of international expansion. These patterns range from expansion processes characterized by stable international growth rates in terms of number of discrete investment moves, to patterns with expansion peaks and periods of relative stagnation (Maitland et al., 2005).

In terms of *scope*, Johanson and Vahlne's (1977) model proposed that MNEs first enter more proximate countries before penetrating countries with higher psychic distance. In addition, companies only incrementally increase their resource commitment in foreign

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markets. More recently, the 1977 internationalization model has been extended (Johanson and Vahlne, 2009). In the revised model it is not the liability of foreignness per se that matters, but rather the liability of outsidership, i.e. being an outsider to relevant business networks in new local contexts. The key challenge in international expansion is therefore not that a new local context may be foreign in terms of psychic distance with the home environment, but rather that it may be difficult to becoming an insider in local networks. Here, relationship building and reciprocal commitments from local network partners are critical, but when the MNE enters as a complete outsider, this adjustment process may well take up to five years according to Johanson and Vahlne's (2009) analysis. In their revised model, managerial knowledge about - and extant relationships with - a particular local environment matters more than home-host country differences, because it is this extant firm-specific knowledge and relationships that allow identifying and exploiting new business opportunities. Therefore, MNEs have to be able to combine this knowledge with their firm-specific capabilities. This crucial integration process implies adaptation or even the creation of entirely new business models (Meyer et al., 2011; this issue). Problems may arise during this process due to differing experiences or lack of local knowledge (Clark and Geppert, 2011; this issue). Thus, the process of integration is very complex and can require an extensive amount of time.

MNE international expansion into new local contexts represents one specific type of company growth that can be usefully analysed through a Penrosean lens (Meyer, 2006; Pitelis and Verbeke, 2007; Rugman and Verbeke, 2002). Penrose's (1959) classic work suggests that a rapidly growing firm will likely face constraints in terms of managerial resources, i.e. the limited volume of managerial services that can be delivered by the present management team, and the difficulty of expanding this management team in the short run. This managerial constraint will then slow down the firm's growth in subsequent periods. This prediction is the so-called Penrose effect. The Penrosean lens is consistent with Johanson and Vahlne's (2009) revised internationalization model, though the latter focuses primarily on the difficulties of reciprocal 'exchange' with the firm's network partners and on the contribution of such exchange to learning. However, this exchange process can be given a Penrosean interpretation: exchanges with network partners reflect resource recombination activities, and these require more managerial services if the MNE starts as a complete outsider to the local business network, in which case subsequent growth should be slower because managerial constraints will appear earlier.

While the occurrence of the Penrose effect has been observed on the level of single plants and domestic operations (Gander, 1991; Orser et al., 2000; Shen, 1970), this effect has rarely been studied in the MNE context and with a focus on international expansion. However, the application potential of Penrosean thinking is substantial (Pitelis and Verbeke, 2007; Thompson and Wright, 2005). For example, Meyer's (2006) analysis of 'globalfocusing' builds upon the idea that product diversification and international diversification are actually substitutes: 'aggressive internationalization is made possible by a reduction in the portfolio of industries in which the firm operates' (Meyer, 2006, p. 1118). The main reason for this observation of simultaneous investment and divestment is the limited managerial resources available to the MNE, with these scarce resources redeployed towards the business opportunities where they can be most effective.

A few research studies have examined the impact of MNE foreign subsidiary growth rates in one period on subsequent growth rates and have found some supporting evidence for the Penrose effect (Tan, 2003; Tan and Mahoney, 2005). Ultimately, the rapid exhaustion of the pool of managerial resources results from *dynamic adjustment costs*, incurred when 'adjustments of productive resources (such as hiring new employees and new managers) disrupt current operations' (Tan and Mahoney, 2005, p. 114). However, in these papers the Penrose effect has been studied on a plant/subsidiary level. Importantly, a similar analysis has not yet been conducted on the level of MNE parent companies, in spite of its potential implications for corporate-level decision-making on international expansion.

In terms of the *timing* issue, the current paper examines the potential negative impact of strong MNE international expansion in one period on subsequent growth, in terms of number of discrete investment moves by the MNE. In terms of *scope*, we evaluate the impact of the MNE's extant level of geographic diversification, measured as a function of the cultural diversity of the set of local contexts where it operates, on further international growth. High extant cultural diversity can be interpreted as a critical determinant of systematic environmental and organizational complexity for the MNE, thereby triggering *dynamic adjustment costs*, i.e. the need for sustained, high levels of managerial services. Such *dynamic adjustment costs* will slow down subsequent growth.

We test these ideas using a panel of 91 large German firms with international expansion data for a period of at least 5 up to 20 years. Overall, we gathered data on 3929 expansion moves, including 2404 international ones.

SIGNIFICANCE OF A PENROSEAN APPROACH TO ANALYSING INTERNATIONAL EXPANSION

The Penrose Effect in International Expansion

MNEs, when engaged on a path of rapid international expansion, choose this route to reap a variety of economic benefits (Chang, 1995; Kogut and Zander, 1993), building upon idiosyncratic bundles of resources that make such expansion more attractive than other growth options such as product diversification (Meyer, 2006). However, despite its potential benefits, international expansion faces substantial constraints. The key characteristic of international expansion, and the main reason for the higher environmental and organizational complexity as compared to domestic expansion, is the need to bridge the distance between the loci of extant operations and new local contexts. An MNE engaged in international expansion needs to set up subsidiaries and start operations in host country contexts where it is an outsider. This entails not only exploiting existing resources transferred to subsidiaries, but also recombining this extant resource base with newly developed/acquired - or otherwise accessed - resources in the relevant local contexts (Meyer et al., 2009, 2011). Resource recombination requirements also include adjusting the MNE's organizational structure, decision-making routines, and monitoring capabilities to the new local contexts (Barkema et al., 1997; Calori et al., 1994; Johanson and Vahlne, 1977, 2009).

Penrose (1959) suggests that the idiosyncratic experience of a firm's management team largely determines the managerial services that can be derived from the firm's resources;

see also Kor and Mahoney (2000), Pitelis (2002), Mahoney (2005), and Tan and Mahoney (2006) for extensive analyses. In the context of foreign entry, managers must provide entrepreneurial services that allow recombining the MNE's extant resource base with newly accessed resources in the host environment. In addition, in MNEs with various local contexts there have to be entrepreneurial services available for managing the complexities of multi-embeddedness. The challenge is therefore to build up sufficient managerial expertise that can support such resource recombination and the coordination across multiple contexts (Meyer et al., 2011). Here, the critical point is that the use of entrepreneurial services from existing managers to support the international expansion process simultaneously reduces the managerial services available for other purposes, including, among other things, the absorption of new managerial talent in the firm to allow domestic growth.

Importantly, expansion into 'high distance' markets leads to *dynamic adjustment costs* for two reasons. First, penetrating 'high distance' local contexts implies more environmental complexity, in particular as the MNE attempts to become an insider in local networks. The MNE must recombine its extant resource base with needed resources in the external environment, which is a time-consuming process given the liability of outsidership (Johanson and Vahlne, 2009). Second, the MNE must also augment its extant resource base and build new organizational capabilities to manage both its (now more complex) internal as well as its external network (Meyer et al., 2011; Tan and Mahoney, 2006).

In the context of these dynamic adjustment costs, Tan and Mahoney (2006) suggest that MNEs face a dilemma when expanding to foreign markets. If the local context is more distant, for example in terms of culture, higher demands are imposed on extant managerial resources such as managers who can perform the role of expatriates - *inter alia* to permit effective knowledge transfers, to reduce incentive misalignment problems, and to facilitate organizational control in the context of incomplete managerial contracting. Local resources, including newly hired local managers, do not allow the proper delivery of the managerial services required in the short to medium run, though they may ultimately be critical to creative resource recombinations that leverage host country location advantages. The value of expatriates - even for MNEs focused on learning from host environments – is therefore that prior management training, experience, and socialization inside the MNE may be required as a precondition for effective resource recombination and utilization. Effective knowledge transfer can also be achieved through, as Tallman and Chacar (2011, this issue) call them, 'Networks of Practice'. However, the extant managerial resource supply, as measured, for instance, by the number of expatriates available for deployment in these distant local contexts, is rather limited. Hence, in terms of *timing*, rapid international growth in one period associated with culturally distant local contexts, is likely to exhaust the existing managerial resource base, for example in terms of the pool of managers available for deployment as expatriates, and will therefore negatively affect the growth rate in the second period. Here, it should also be remembered that expatriates, in spite of their contribution to improving intra-MNE coordination, do not fully solve the MNE outsidership challenge. In a high distance environment, locally hired managers may be better positioned to deliver the managerial services for coordinating effectively with outside actors because of their experiential knowledge of such an environment.

On the *scope* issue, Penrose (1959) suggests that diversification closely related to existing areas of operation can easily be achieved through simple replication or incremental extension of the firm's present knowledge base. In other words, a sufficient supply of the required managerial resources and related services may be readily available inside the firm to support such diversification. In contrast, both unrelated product diversification and diversifying geographically into distant local contexts increase the required supply of managerial resources, and also limit the useful managerial services that can be derived from these resources, because profitable deployment thereof depends on prior recombination with complementary local resources. Servicing a variety of high distance local contexts is therefore similar to servicing many different industry segments in the realm of product diversification, in the sense that the experiential knowledge base, upon which the firm can draw to support resource recombination, may actually be rapidly exhausted. Operating in a variety of high distance markets simultaneously also implies more internal organizational complexity. In other words, there is not only a requirement to deviate from standard practices, i.e. incurring high dynamic adjustment costs in various local contexts because of the requirement to become an insider, in accordance with Johanson and Vahlne (2009), but there is also the challenge of coordinating with existing operations (e.g. to make sure that information going to - and coming from - the entire set of high distance local contexts is properly transferred, understood, and acted upon) (Meyer et al., 2011).

Managing operations in a set of high distance local contexts thus means that a greater volume of managerial services must be supplied because required resource recombinations will become more idiosyncratic and difficult to complete successfully in the short run. Here, it should be remembered that higher distance also makes it more difficult for new managers to work in a team context with existing, experienced managers.

In the international expansion sphere the *timing* and *scope* issues are thus closely intertwined: as the MNE engages in – and achieves – faster-paced geographic diversification into high distance local contexts during a first time period, the Penrose effect is likely to be greater during the next period. The Penrose effect should not be interpreted as the expression of inefficiency/ineffectiveness of an international expansion programme, but rather as the predictable outcome of taking on high distance, whereby the extant pool of managerial resources critical to resource recombination abroad becomes rapidly exhausted.

Added Cultural Distance in the MNE's International Expansion Path

Our study focuses on FDI as entry mode in new local contexts. FDI requires higher levels of managerial resources to be deployed in host environments as compared to other entry modes, such as exports or licensing. However, in spite of such requisite resource deployment, the overall *dynamic adjustment costs* associated with FDI may still be lower than those resulting from alternative entry modes, where effective resource recombination may not even be achievable (e.g. the case of weak patent protection in an emerging market that makes the monitoring and proper enforcement of licensing agreements prohibitively expensive). As noted above, one of the main difficulties associated with international expansion is the distance between new local contexts and the environments where the MNE has already been active. A critical distance dimension is cultural distance (Ghemawat, 2001). Cultural distance is associated with complexity for the MNE on the individual and organizational levels.

On the individual level, dissimilarities between familiar and unfamiliar environments make expansion a more complex task for managers (Penrose, 1959) and impose additional resource recombination complexities on them at all levels of the organization (Athanassiou and Nigh, 2000; Verbeke and Yuan, 2007). Extensive research has shown that individuals' beliefs, perceptions, and behaviour are influenced by their national culture, meaning that people from different national cultures will think and act differently (Kirkman et al., 2006; Kwok et al., 2005). Within the business context, cultural backgrounds have a strong influence on conflict management and strategic decision-making (Adler, 2002). Hence, international expansion into culturally distant countries implies interacting with subsidiary team members, customers, suppliers, etc. who exhibit very different beliefs, perceptions, and cognitive processes. Higher cultural distance thus implies higher *dynamic adjustment costs* in order to conform to the new cultural setting (Newman and Nollen, 1996) and will make the resource recombination process to move from being an outsider to an insider more difficult and time consuming.

Cultural distance also creates challenges on the firm level. MNEs may need to adjust their organizational coordination and control approaches to fit with the culture prevailing in the new local context (Gómes-Mejia and Palich, 1997). Such adjustment may involve elements of organizational structure and decision-making routines requiring fine-tuning (Johanson and Vahlne, 1977; Newman and Nollen, 1996). Again, higher cultural distance increases the challenges and time required for the MNE organization to adjust effectively to the host environment, i.e. will lead to higher *dynamic adjustment costs*.

In addition to the direct adjustments imposed by cultural distance, as described above, MNEs also need to access and utilize knowledge about local customs and other external conditions affected by local culture (Barkema et al., 1996). If the new cultural setting is less similar to the settings already experienced by the MNE, the experiential resource base accumulated during earlier activities will unfortunately be less useful to the local knowledge absorption process (Cohen and Levinthal, 1990; Haleblian and Finkelstein, 1999), implying again an increase in *dynamic adjustment costs*. Cultural distance erodes the usefulness of the MNE's extant resource base (Barkema et al., 1997), and the recombination thereof with newly accessed resources needed to function effectively in the new local context.

Benito and Gripsrud (1992) provide an early analysis of the possible impact of cultural distance on the location of FDI by (mostly relatively small) Norwegian MNEs. Interestingly, the MNEs in this study did not first engage in FDI in culturally proximate countries (e.g. because natural resource seeking motivations may have required investment in high distance countries from the outset). In addition, later investments did not systematically occur in increasingly distant countries either. Importantly, however, this study found that the locations of sequential investments were interrelated: an FDI project in a culturally proximate country, whereas an investment in a more distant country often appeared to be followed by an investment in a culturally more proximate country. Benito and Gripsrud (1992) did not attempt to explain at the conceptual level the possible reasons for their unexpected observation beyond some speculation on the possible occurrence of a learning effect in case a higher distance investment follows a more proximate one. As regards proximate investments following high distance ones, Benito and Gripsrud speculated: 'Obviously, there are limits to cultural expansion and the chance of selecting a closer location the next time is higher if the starting point is a distant one' (Benito and Gripsrud, 1992, p. 474). However, our Penrosean lens would suggest that an initial investment in a culturally distant country, especially by a smaller MNE, might quickly exhaust the pool of managerial resources to support international expansion and be followed by investments in culturally proximate countries, whereby the demand for specialized managerial services would be lower.

HYPOTHESES

As suggested above, higher cultural distance means increased demand for specialized managerial services and for recalibration of the MNE organizational structure and decision-making routines. If the *added cultural distance* within a particular time period is higher, this means higher *dynamic adjustment costs*. Further international expansion projects into new, high distance local contexts would then exacerbate the *added cultural distance* challenge. Fewer managerial resources will remain to support further international expansion (Tan and Mahoney, 2005). In addition, the high need for resource recombination in a single time period may overwhelm the MNE managers and the MNE organization at large, thereby hindering further expansion steps in the short run (Eisenhardt and Martin, 2000; Vermeulen and Barkema, 2002).

Given the above analysis, we hypothesize that 'adding more cultural distance' through international expansion in one time period, will hamper subsequent internationalization:

Hypothesis 1: Higher added cultural distance associated with the MNE's international expansion in one time period, will reduce the rate of international expansion in the subsequent period.

Managerial and organizational challenges may arise, not only because of the level of cultural distance added by the MNE during one stage of its international expansion path, but also because of the extant level of cultural diversity within its existing subsidiary network (Ellis, 2007; Gómes-Mejia and Palich, 1997). As noted above, more variety in the locations where the MNE operates may exacerbate the scarcity of managerial services required, including those to be deployed for effectively growing a management team in a local setting with the appropriate level of experiential knowledge. Interdependencies and interactions among the various MNE affiliates may also need to be managed to some extent by the MNE's head office (O'Donnell, 2000). For instance, Figueredo (2011; this issue) found that subsidiaries can improve their innovative performance by increasing the quality of their linkages with other corporate subsidiaries. Meyer et al. (2011) also suggest that MNEs need to achieve internal embeddedness to avoid detrimental cost of coordination. MNE headquarters need to establish appropriate structures

to coordinate and control intra-corporate knowledge flows. This managerial task is likely to involve higher complexity if the affiliates are active in a diverse spectrum of cultural settings specific to each local context. Again, managerial services will need to be deployed for this purpose, and will therefore not be available for supporting further expansion projects, in the spirit of Penrose (1959). *Dynamic adjustment costs* will remain systematically higher because of this diversity. We therefore hypothesize:

Hypothesis 2: Higher, extant cultural diversity of the MNE's subsidiary network will reduce the rate of subsequent international expansion.

METHODOLOGY

Sample and Data

We tested our hypotheses on the basis of longitudinal data on the expansion path of German MNEs. The international expansion activity of German MNEs is considerable. For example, in 2005, these firms' outward FDI amounted to US\$55.5 billion, as compared to the OECD countries' average of US\$28.9 billion (OECD, 2007, 2008). The testing of our hypotheses required longitudinal data on MNE expansion, including all expansion steps within a given time period. We therefore used the same dataset as Hutzschenreuter and Voll (2008). This panel includes 91 firms listed in the HDAX segment of the German Stock Exchange for a period from 1985 to 2004.^[2] However, the time periods for which the MNEs are part of this panel vary between firms (with a minimum of 5 years and a maximum of 25 years) so that this sample constitutes an unbalanced panel. For the 91 firms in the panel, the dataset contains the full information on every MNE's (a) portfolio of affiliates for each year the firm is included in the panel, and (b) changes to its portfolio within that same time period. Investments were classified as instrumental to a 'new' affiliate, if they entailed an equity position of at least 50 per cent and in the case of pre-existing operations if the parent firm had only owned a prior equity stake smaller than 50 per cent or no stake at all. Hutzschenreuter and Voll (2008) collected their dataset from annual reports (as in prior research on MNE expansion patterns; e.g. Barkema and Vermeulen, 1998; Barkema et al., 1996). The dataset includes not only firms that are part of the HDAX segment for the full panel length but also companies that were excluded from the index (e.g. due to financial distress). Therefore, an 'index survivor' bias was avoided.

Variables

Dependent variable. Our hypotheses address the impact of an MNE's international expansion characteristics (i.e. the *added cultural distance*) as well as the characteristics of its internal network (i.e. its *extant cultural diversity*) in a first time period, on the rate of its international expansion in a subsequent (second) time period, in terms of new, discrete investment moves. Therefore, the rate of international expansion in the second time period is our dependent variable. Given our focus on international expansion via FDI, with the totality of the MNE's majority owned affiliates abroad reflecting its foreign



Figure 1. Dependent variable

subsidiary network, we measure the dependent variable as the number of new foreign subsidiaries established during the second time period, divided by the number of subsidiaries at the beginning of this period (see Figure 1).

Independent variables. Our independent variables are added cultural distance and extant cultural *diversity*. To measure these variables, we followed the same approach as in Hutzschenreuter and Voll's (2008) empirical work. To measure cultural distance between two countries, we first used the index introduced by Kogut and Singh (1988). According to this formula, the distance between two countries can be computed as the average of the differences between these countries for each relevant cultural dimension while controlling for the variance in each dimension. This index requires an underlying quantification of cultural dimensions. For the computation of cultural distance, we used two alternative approaches. First, we used the four original dimensions^[3] and scores of Hofstede (1980), as this approach has been used extensively in international business research (Gómes-Mejia and Palich, 1997; Roth and O'Donnell, 1996). Second, we used the nine dimensions^[4] and scores of the GLOBE project (House, 2004), aimed to improve upon Hofstede's dimensions (Kirkman et al., 2006; Shenkar, 2001). This alternative measurement overcomes some of the criticism voiced against the Hofstede measurement (see Hutzschenreuter and Voll (2008) for details). We adopted the same scores for the cultural dimensions as used in Hutzschenreuter and Voll (2008).

We measured as follows the *added cultural distance* for each individual MNE in a predetermined, first time period. We computed for each of the MNE's discrete expansion moves, i.e. each establishment of a new subsidiary in this first time period, the distances between the country where the new subsidiary was being set up, and all the countries where subsidiaries were already operating. As MNEs are expected to learn from prior internationalization steps and from their existing subsidiary network (Shenkar, 2001), we then selected from each list the smallest distance, i.e. the distance between the newly established subsidiary and the 'closest' existing subsidiary. Finally, we aggregated the *added cultural distances* represented by each expansion move undertaken in the first time period, and then divided this sum by the length of this time period, expressed in years (see Figure 2).

We measured each MNE's *extant cultural diversity* as the sum of the cultural distances between the countries of every pair of subsidiaries active at the outset of the first time period, divided by the number of pairs. We chose to measure the *extant cultural diversity* at



Figure 2. Independent variables: extant cultural diversity and average added cultural distance from new local contexts

the beginning of the first period, rather than at the beginning of the second one, in order to make sure that the *added cultural distance* incurred during the first period would not affect the *extant cultural diversity* parameter.

Control variables. Firms that exhibit the same level of added cultural distance in a multi-year time period might in fact have different internationalization paths. It might be more difficult to cope with a peak in a single year during a multi-year time period, than experiencing equal added cultural distance in each year of this same period. Added cultural distance might also have a higher impact on future international expansion (i.e. after the time period considered), if it occurs later in the period rather than earlier. To control for such effects, we introduced the variable skewness of added cultural distance. To calculate this variable, we weighted the added cultural distance in each year with negative weights for early years and positive years for later years. The weighted added cultural distances. The resulting value between -1 and +1 indicates when the cultural distance was added within the time period considered, with smaller values reflecting peaks in earlier years and higher values indicating peaks in later years.

Other parameters than international expansion create complexity for the MNE. For example, product diversification moves typically also entail adapting existing routines or developing new ones, as well as learning new skills (Vermeulen and Barkema, 2002). Our study therefore included the number of 4-digit industry codes each MNE *newly entered* into during the first time period, to control for the possible (negative) effect of product diversification moves on the rate of international expansion.

As is the case with *extant cultural diversity*, higher product diversity may also lead to more complexity when managing the subsidiary network. Therefore, we included in our models the variable *product diversity*, measured as the number of 4-digit industry codes in which each MNE *was already active*. We also measured this variable with an entropy measure based on the sales reported in the segment information (Palepu, 1985) and alternatively on the basis of the number of subsidiaries active within different industry codes.

As discussed extensively in the research literature, MNEs must make critical entry mode decisions when establishing new operations abroad. First, they must decide whether to pursue a greenfield investment or to acquire an existing entity (Chang and Rosenzweig, 2001). Second, they must choose whether to perform the expansion alone or with a partner. Both decisions may affect our hypothesized relationships. We monitored the two above aspects of entry mode decisions using the variables *acquisitions* and *total ownership*. The former was calculated as the percentage of entries by acquisitions vis-à-vis all entries within the time range of analysis. Hence, one minus the percentage of entries by acquisitions yields the percentage of greenfield investments vis-à-vis the totality of all international expansion steps. We calculated the latter as the percentage of international expansion moves involving total ownership divided by all international expansion moves during the first period of analysis.

We incorporated return on assets at the beginning of the second time period to control for possible effects of profitability on expansion. MNEs that are more profitable – with profitability being an outcome of its firm specific advantages – might have greater potential to expand internationally than less profitable ones.

Capital structure might also influence the MNE's ability to undertake international expansion projects. Therefore, we controlled for effects stemming from capital structure using the debt ratio, which was computed as total liabilities divided by total assets at the beginning of the second time period.

In order to control for size effects, we measured the variable 'size' using sales for each MNE during the first year of our time range of analysis (Gómes-Mejia and Palich, 1997; Hayward, 2002). To control for time effects, we used year-based dummies.

Analyses

We computed our independent variables and control variables for moving three-year periods, and the dependent variable for each subsequent three-year period. The time period length of three years for each subsequent period has been used in prior empirical research on the same subject matter (albeit on the subsidiary level) (Tan, 2003; Tan and Mahoney, 2005). However, we also computed all variables for subsequent two-year periods, as well as for five-year periods to ensure the robustness of our results. With three-year periods, we generated 492 observations for which the whole set of variables was available from our panel (number of companies multiplied by the number of consecutive time periods). For the two-year and five-year periods, we generated 653 observations and 266 observations, respectively. Here we will focus mainly on the results for the testing with the three-year periods, given space constraints and because the results obtained for the alternative period-lengths are very similar. As the overall time periods for which the MNEs are part of our panel vary between firms, our sample constitutes an unbalanced panel.

In order to control for likely unobserved firm effects, we used fixed-effect models in our analyses. The use of fixed effect models allowed us to work without industry dummies. Using fixed effect models, all constant unmeasured differences across firms were controlled for and industry membership of our sample firms was constant over time (Carpenter and Fredrickson, 2001). For the same reason, the fixed effect models controlled for a possible bias due to different lengths of membership of firms in our unbalanced panel, as the possible control variable 'length of membership' would be a constant for each company.

However, our dependent variable is not normally distributed but takes on only positive values, and has a significant number of observations at zero, thus preventing us from using standard fixed effect OLS regressions. Instead, we used fixed effects Tobit models with indicator variables for our firms. It has frequently been suggested that the maximum likelihood estimator in discrete choice models with fixed effects is biased and inconsistent, but it has also been shown that there is essentially no bias in the slope estimators of a Tobit model and a bias in the estimator of the disturbance variance is small and can be neglected with a panel length of 5 or more (Greene, 2004). In our panel we have around 5 or more observations per group, so that a Tobit model with indicator variables for the firms should not lead to biased estimations (Greene, 2004).

We examined the robustness of our results by using the estimator for censored regression models with fixed effects as proposed by Honoré (1992). This semi-parametric estimator, which has been implemented in the pantob command for the Stata software, is robust to the violation of the normality of the error term and allows the use of fixed effects.

RESULTS

Descriptive Statistics

Table I shows the descriptive statistics for all variables, as well as the correlations among these variables, for the analysis with the three-year periods. Table I shows that our panel consists of rather large firms (with yearly sales averaging 7 billion Euros), but with substantial variation in size within the panel (with the standard deviation of sales being approximately 12 billion Euros). Two elements explain this high standard deviation. First, size varies across firms over time. Second, even within a single MNE, large size differences can be observed over time, as our panel includes both strongly growing as well as declining companies.

The MNEs in our panel undertook 1525 domestic expansion steps and established a total of 2404 new foreign subsidiaries in over 100 different countries. Here, most new foreign subsidiaries were established in the United States (10 per cent), followed by France (5 per cent) and the UK (4 per cent). All other host countries received a significantly lower proportion of direct investments. In terms of broader geographic regions, most new subsidiaries were established in Europe (56 per cent), followed by North America (20 per cent) and Asia (15 per cent). On average, the MNEs in our sample did not exhibit a clear preference for a specific entry mode during internationalization, with new international subsidiaries split almost evenly between acquisitions (1298) and greenfield investments (1106). Of the 2404 new international subsidiaries, 1105 were wholly owned whereas 1299 were partly owned (with a majority equity stake, as noted above).

Hypotheses Testing

In Table II we display the results of the Tobit regression analysis for three-year periods. Model 1 shows the control variables only. In model 2, we include the *added cultural distance*

		Mean	S.D.	<i>I</i> .	5.	<i></i>	4.	5.	6.	7.	~	9.	10.	11.	12.	13.	14.	15.
	Rate of international exnansion	0.43	0.83	1.00														
2.	Added cultural distance	2.05	3.30	0.10	1.00													
3.	(Houseace) Added cultural distance (CT ODF)	3.96	5.75	0.06	0.75	1.00												
4.	(GLODE) Extant cultural diversity (Hefterde)	1.16	0.75	-0.25	-0.10	-0.12	1.00											
5.	Extant cultural diversity	2.43	0.48	-0.19	-0.01	0.02	-0.13	1.00										
6.	(GLODE) Skewness added cultural distance (Hofstede)	-0.03	0.56	0.07	0.01	-0.05	-0.02	0.02	1.00									
7.	Skewness added cultural distance (GI OBF)	00.00	0.50	0.04	0.02	-0.02	-0.07	-0.01	0.64	1.00								
÷.	Product diversity	11.11	10.49	-0.05	-0.05	0.10	-0.14	0.14	-0.03	-0.01	1.00							
9.	Industries entered	1.00	1.85	0.07	0.05	0.19	-0.24	0.04	0.01	0.02	0.26	1.00						
10.	Acquisitions	0.54	0.32	-0.04	-0.05	0.06	-0.04	-0.02	0.01	0.01	0.13	0.13	1.00					
Ξ.	Total ownership	0.46	0.38	0.10	0.15	0.14	0.13	-0.16	0.06	0.10	0.02	0.03	0.05	1.00				
12.	Prior minority	0.02	0.07	0.18	-0.04	-0.07	0.03	-0.14	0.04	0.00	-0.06	-0.06	-0.01	0.04	1.00			
13.	Profitability	0.07	0.07	0.17	0.16	0.10	0.13	-0.01	0.01	0.02	-0.21	-0.08	-0.06	0.15	0.02	1.00		
14.	$Size^{a}$	7,101.75	12,094.94	-0.07	-0.04	0.09	0.05	-0.04	-0.03	-0.01	0.54	0.09	0.01	0.09	-0.08	-0.20	1.00	
15.	Capital structure	0.59	0.23	-0.11	-0.18	- 0.06	-0.15	0.08	-0.02	0.00	0.39	0.16	0.01	-0.03	-0.10	-0.53	0.20	1.00
Mote. Jote.	s. N = 492. Correlations with a million Euros.	absolute val	ue higher th	an 0.1 ar	e signific	ant at 5%	% level.											

Table I. Descriptive statistics and correlations

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	Model 1	Model 2	Model 3
Added cultural distance (Hofstede)		-0.09 (0.02)***	
Extant cultural diversity (Hofstede)		-2.24 (0.22)***	
Added cultural distance (GLOBE)		· · · ·	-0.05 (0.01)***
Extant cultural diversity (GLOBE)			-2.41 (0.20)***
Skewness added cultural distance (Hofstede)		0.11(0.07)	· · · · · ·
Skewness added cultural distance (GLOBE)		· · · ·	0.03 (0.07)
Product diversity	-0.01(0.02)	-0.03 (0.02)*	0.00 (0.02)
Industries entered	0.00 (0.03)	-0.02(0.03)	0.01 (0.02)
Acquisitions	0.04 (0.15)	0.12 (0.13)	0.23 (0.12)+
Total ownership	0.46 (0.14)**	0.40 (0.13)**	0.34 (0.12)**
Prior minority	3.25 (0.58)***	2.03 (0.52)***	1.61 (0.49)**
Profitability	6.45 (1.28)***	4.19 (1.15)***	5.51 (1.07)***
Size	0.00(0.00)+	0.00(0.00)+	0.00 (0.00)
Capital structure	-0.23(0.41)	-0.22(0.37)	-0.66 (0.34)
Chi ²	273.45***	376.89***	445.89***
Pseudo R ²	0.22	0.30	0.35

Table II. Tobit regression of rate of international expansion, analyses based on consecutive three-year periods

Notes: N = 492. Dummy variables omitted; standard errors in parentheses.

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

variable and the *cultural diversity* variable based on the Hofstede measurement as well as the additional control variable *skewness of added cultural distance*. Model 3 includes the same variables, but based on the GLOBE dimensions and scores. Collinearity diagnostics did not suggest problems due to collinearity, as the variance inflation factors for all variables were substantially lower than 10, this number being considered the critical threshold (Neter et al., 1990).

Hypothesis 1 proposed that higher *added cultural distance* in the first time period would negatively affect the rate of international expansion in the subsequent time period. The coefficient of *added cultural distance* in the first period of analysis is statistically significant and negative in both models 2 and 3, thus supporting our hypothesis. Hypothesis 2 suggested that higher, *extant cultural diversity* would negatively affect further international expansion. The results of the regression models strongly support this prediction with a negative and statistically significant coefficient in the two models where *extant cultural diversity* is included. Our control for the *skewness of added cultural distance* did not yield any significant results, indicating that it does not matter whether the *added cultural distance* is experienced at the beginning of the period or at the end.

Robustness of Results

We repeated the analyses with the alternative period-lengths of five years. The results are shown in Table III. The results show negative and significant coefficients for *added cultural distance* in the Hofstede and the GLOBE cases. Higher *extant cultural diversity* also has a negative and significant coefficient in both cases.

	Model 1	Model 2	Model 3
Added cultural distance (Hofstede)		-0.11 (0.03)***	
Extant cultural diversity (Hofstede)		-2.52 (0.40)***	
Added cultural distance (GLOBE)			-0.06 (0.01)***
Extant cultural diversity (GLOBE)			-3.20 (0.37)***
Skewness added cultural distance (Hofstede)		0.43 (0.13)**	· · · · ·
Skewness added cultural distance (GLOBE)			0.17(0.14)
Product diversity	0.14 (0.05)**	0.11 (0.05)**	0.10 (0.04)**
Industries entered	0.13 (0.07)*	0.13 (0.06)*	0.11 (0.05)*
Acquisitions	0.13 (0.29)	0.26 (0.27)	0.63 (0.24)
Total ownership	1.25 (0.32)***	0.95 (0.31)***	0.82 (0.28)***
Prior minority	-0.03(0.63)	0.11 (0.58)	-0.17(0.52)
Profitability	1.07 (2.58)***	9.37 (2.38)***	1.20 (2.20)***
Size	0.00 (0.00)**	0.00 (0.00)***	0.00 (0.00)***
Capital structure	-0.07(0.74)	-0.13 (0.68)	-0.67(0.62)
Chi ²	171.41***	211.05***	272.13***
Pseudo R ²	0.21	0.25	0.33

Table III. Tobit regression of rate of international expansion, analyses based on consecutive five-year periods

Notes: N = 266. Dummy variables omitted; standard errors in parentheses.

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

Table IV shows the result of the censored regression models with fixed effects as proposed by Honoré (1992) for both the three- and five-year periods. These results are consistent with the results obtained using the Tobit regressions.

To check for a possible convergence of cultures as discussed above, we tested for a possible moderating effect (Aiken et al., 1991) of time on the negative relationship between *added cultural distance* or *extant cultural diversity* and the rate of international expansion during the next time period. If there had been any influence of cultural convergence, the negative impact of *added cultural distance* and *extant cultural diversity* on the rate of international expansion during the next time period would have been lower in the later years of our sample period than in the earlier ones. However, we could not identify any significant moderating effect, meaning that the possible convergence of cultures does not affect our results.

We maintained above that higher *extant cultural diversity* is likely to affect negatively the rate of further international expansion, due to the higher complexity of managing the MNE internal network and the related increase in *dynamic adjustment costs*. However, it could also be argued that a slower rate of international expansion might simply result from any set of foreign subsidiaries – irrespective of cultural distance – causing complexity and leading to a slowdown of international expansion. A second alternative (simple) explanation for our results might be that extant MNE activity spread across many countries might reduce the incentives for further expansion in new countries, since MNEs will first establish subsidiaries in host nations that represent the greatest business opportunities. To control for these alternative explanations, we replaced the *extant cultural*

	3-year	periods	5-year	periods
Added cultural distance (Hofstede)	-0.13 (0.05)**		-0.11 (0.05)*	
Extant cultural diversity (Hofstede)	-2.75 (0.69)***		-2.42 (0.75)**	
Added cultural distance (GLOBE)		-0.08 (0.02)***		-0.08 (0.02)***
Extant cultural diversity (GLOBE)		-2.76 (0.44)***		-4.48 (0.87)***
Skewness added cultural distance	$0.03\ (0.07)$		0.12 (0.12)	
(Hofstede)				
Skewness added cultural distance		0.02 (0.07)		0.01 (0.07)
(GLOBE)				
Product diversity	0.08(0.08)	0.01(0.07)	0.34(0.25)	0.18(0.11)
Industries entered	0.01 (0.07)	0.02 (0.08)	0.13 (0.17)	0.13 (0.12)
Acquisitions	0.38 (0.29)	0.38 (0.22)+	0.47 (0.65)	0.92 (0.57)
Total ownership	0.59 (0.38)	0.54 (0.31)+	1.23 (1.13)	0.22 (0.48)
Prior minority	4.46 (2.21)*	1.91 (0.81)*	-0.30(0.67)	-0.40(0.59)
Profitability	6.37 (3.48)+	8.24 (2.69)**	8.91 (4.40)*	1.22 (2.62)***
Size	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Capital structure	-1.37(1.18)	-1.59 (0.74)*	-0.90(1.67)	-1.73(0.95)+
N	492	492	266	266
Chi ²	75.96***	148.76***	60.12***	110.46***

Table IV. Regression of rate of international expansion following Honoré (1992)

Notes: N = 492. Standard errors in parentheses.

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

diversity parameter by the number of countries in which the MNE was active. We could not find any negative impact of this variable on subsequent international expansion. This outcome suggests it is not the number of countries where the MNE is active already, but the heterogeneity among countries that drives complexity and slows down further international expansion. There was no evidence either for the proposition that simply adding affiliates in more countries would reduce subsequent MNE internationalization.

Examining Alternative Effects of Cultural Distance

We suggested earlier that adding more cultural distance in one period subsequently hampers further international expansion. Our empirical results clearly support this line of thought. However, while *added cultural distance* might hamper further expansion in the short run, it does facilitate gaining *access to new resources*, thereby potentially triggering the development of new capabilities in the longer run. Hence, a long-term positive effect on further international expansion cannot be excluded. To check for these long-term effects of *added cultural distance* on international expansion, we repeated the analyses with different time lags between the first three-year period and the second three-year period. We used 'short' time lags of one and two years which simply delay the second period of analyses. We also used time lags of three and six years, which is equal to measuring the effect not on a 'second' period consecutive to the time period of the independent variables, but on a third and fourth time period. The results of these Tobit regressions are shown in Table V. The fixed effect panel data censored regression models following Honoré (1992) clearly support these results with very similar results.

As these models show, we could not detect different (i.e. positive) effects of *added cultural distance* using a time lag. All models except for the six-year lag model clearly support the negative effect of *added cultural distance* in a first time period on the rate of further international expansion. However, we did observe a decreasing negative impact with increasing time lag. Thus time appears to help companies cope with the complexities of international expansion.

We argued above that *added cultural distance* hampers further international expansion due to the resulting complexity of managing both the internal affiliate network and the relationships with external stakeholders. However, the extant literature paints a different picture: more international diversity broadens the MNE's resource base, and may enhance MNE capabilities, which will in turn support further expansion (Tan, 2003). However, such pattern will only materialize up to a point because of dynamic adjustment costs: the relationship between added cultural distance and further internationalization might therefore take the form of an inverted U-curve. While moderate levels of added cultural distance might lead to an enhancement of capabilities, higher levels could lead to the effects measured in our empirical analysis, see above. A similar relationship could be proposed for the effect of extant cultural diversity. While moderate levels of extant cultural diversity might foster learning and capability development, and could therefore have a positive effect on further expansion, higher levels would lead to dynamic adjustment costs and the hypothesized negative effects. Therefore, we also tested for these inverted U-shaped linkages between added cultural distance and subsequent rate of international expansion, and between *extant cultural diversity* and further international expansion. These empirical results were not significant in either case. We did not identify any positive influence of added cultural distance or extant cultural diversity on further international expansion.

DISCUSSION

Discussion of Results

International expansion is a resource intensive and time consuming process. Our results suggest that MNEs faced with more *added cultural distance* in one period do slow down the rate of further international expansion in the subsequent period. Our results are in line with previous research studies, which showed a similar effect on a national or subsidiary/ plant level (Orser et al., 2000; Shen, 1970; Tan and Mahoney, 2005).

We were also able to show that the *extant cultural diversity* characterizing the portfolio of local contexts within which the MNE operates has a negative effect on the rate of its further international expansion. This observation might help to explain Rugman and Verbeke's (2004) findings that most Fortune Global 500 firms are home region oriented. If a higher geographic spread (and accompanying *extant cultural diversity*) slows down further international expansion, MNEs will at a certain level of geographic diversification not be willing or able to diversify further.

We also tested for possible longer-term positive effects of *added cultural distance* and *extant cultural diversity*, but did not find any evidence of such effects in our sample. However, at

	I yeı	ır lag	2 year	rs lag	3 yea	rs lag	б уеат	lag
Added cultural distance (Hofstede)	-0.13 (0.02)***		-0.11 (0.02)***		-0.07 (0.02)**		-0.01 (0.02)	
(Hofstede) (Hofstede)	-2.11 (0.23)***		-1.14 (0.22)***		-0.30(0.21)		$0.20\ (0.20)$	
Added cultural distance (GLOBE)		$-0.05(0.01)^{***}$		$-0.04 (0.01)^{***}$		-0.02(0.01)*		-0.01 (0.00)
Extant cultural diversity (GLOBE)		-2.38 (0.25)***		-1.29 (0.29)***		-0.06(0.11)		$0.32\ (0.23)$
Skewness added cultural distance (Hofstede)	0.07 (0.06)		$0.05\ (0.07)$		$0.01\ (0.05)$		0.02 (0.05)	
Skewness added cultural distance (GLOBE)		-0.05(0.06)		-0.04(0.07)		-0.02 (0.06)		$0.05\ (0.06)$
Product diversity	-0.02(0.02)	0.00(0.02)	0.00(0.02)	0.00(0.02)	$0.01 \ (0.05)$	0.00(0.01)	$0.00\ (0.02)$	$-0.01\ (0.01)$
Industries entered	-0.03(0.03)	-0.01(0.02)	-0.03(0.02)	-0.02(0.02)	0.00(0.01)	0.01(0.03)	-0.01(0.01)	$0.00\ (0.01)$
Acquisitions	0.13(0.13)	0.24(0.13)+	0.13(0.12)	0.21(0.12)	0.11(0.12)	0.11(0.11)	0.34 (0.16)*	$0.38\ (0.15)$
Total ownership	0.18(0.13)	0.11(0.13)	0.06(0.13)	$0.04\ (0.13)$	$0.05\ (0.10)$	-0.02(0.11)	-0.17(0.12)	-0.16(0.13)
Prior minority	$1.49(0.58)^{**}$	$1.14(0.58)^{**}$	0.56(0.57)	$0.52\ (0.59)$	-0.01(0.10)	$0.33\ (0.25)$	0.51(0.44)	0.42(0.43)
Profitability	$5.49(1.25)^{***}$	7.50 (1.24)***	$6.04(1.22)^{***}$	7.61 (1.27)***	$0.15(0.33)^{***}$	$6.01 (1.22)^{***}$	-1.71(1.05)	-1.63(1.02)
Size	$0.00(0.00)^{**}$	0.00(0.00)**	$0.00(0.00)^{**}$	0.00(0.00)**	$3.86\ (0.82)$	0.00(0.00)	+(00.0)(0.00)+	0.00(0.00)
Capital structure	-0.17(0.40)	-0.39(0.39)	-0.65(0.38)	-0.63(0.39)	0.00(0.00)	-0.40(0.32)	-0.07(0.43)	-0.09(0.43)
Ν	419	419	357	357	308	308	176	176
Chi^2	302.28***	345.22***	227.82***	230.24***				
Pseudo \mathbb{R}^2	0.30	0.34	0.30	0.31	0.27	0.27	0.22	0.23

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Notes: Dummy variables omitted; standard errors in parentheses. **** p<0.001, ** p<0.01, ** p<0.01, ** p<0.01.

the subsidiary level, an article by Tan (2003) showed a positive effect of the parent's multinationality on subsidiary growth. This outcome of course does not take into account the internal network's *extant cultural diversity*, but it does suggest there might be diverging effects of a company's multinationality and its *extant cultural diversity* on different levels in the MNE organization, i.e. the level of the overall MNE versus the individual subsidiary level. For example, if a subsidiary belongs to a parent with high multinationality and/or a high level of extant cultural diversity, the parent firm might be well positioned to support the subsidiary with specialized resources and capabilities to foster its further growth in the foreign environment. For the parent MNE itself, however, the complexity resulting from its network of affiliates operating in diverse cultural environments hampers further internationalization in terms of new, discrete investment moves.

Limitations and Suggestions for Future Research

The current paper has focused on cultural differences as proxies for the complexities associated with international expansion. However, other host environmental characteristics may affect the difficulties MNEs face when operating abroad. These difficulties are reflected in the prevailing research literature on other distance components, which complement the cultural distance dimension. The geographic or physical distance dimension (Grosse and Trevino, 1996) and the economic distance dimension (differences in economic development between countries) (Tsang and Yip, 2007), have been studied extensively in the past. A fourth distance dimension, institutional distance (Kostova and Zaheer, 1999; Xu and Shenkar, 2002) has its roots in the application of institutional theory to the international context (Meyer, 2001). The institutional perspective comprises a formal and an informal component (Meyer and Nguyen, 2005; Meyer and Peng, 2005) and the institutional distance dimension applies these components to measure the distance between regulatory institutions (formal) and cognitive and normative institutions (informal) (Gaur and Lu, 2007; Xu et al., 2004) of local contexts. Schwens et al. (2011; this issue), for instance, showed the moderating effect of informal institutional distance and formal institutional risk on entry mode choice. A fifth distance dimension, namely human resource distance (Estrin et al., 2009), has recently been identified.

Our *added distance* concept, though focused solely on the cultural dimension might find a fruitful application in the context of these other distance dimensions: it is not the distance between the home country and the new host country that matters. What matters is the distance between the new host country and the country where the MNE already operates and that is the closest to the new host country, a perspective similar to the new internationalization model developed in Johanson and Vahlne (2009), whereby liability of outsidership is more critical than liability of foreignness.

Industry characteristics are also likely to affect the complexity of international expansion moves (Meyer, 2006; Tan and Mahoney, 2005). We controlled for industry differences by using fixed effect models. However, future research could compare the effect between samples from different industries (e.g. manufacturing vs. service firms). In addition to a variety of host country and industry characteristics, the specific features of the international expansion moves undertaken may influence the MNE's internal networking complexity. For example, the size of the expansion steps relative to overall MNE size and the role of the subsidiary inside the MNE (Bartlett and Ghoshal, 1986; Gupta and Govindarajan, 1991; Rugman et al., 2011, this issue) may influence the internal network complexity, and could be incorporated as variables in future studies. Rugman et al. (2011) also found that the role of the subsidiary can vary across value chain activities, e.g. specific value chain activities can generate a location advantage in certain environments. Furthermore, Jensen and Pedersen (2011; this issue) detected that an MNE's location strategies are based on a fit between context characteristics and attributes of the activities that it wants to offshore.

The location selection for specific value-chain activities is an important decision in MNEs and past research has suggested a 'smile of value creation' (Mudambi, 2008) in particular industries. Here, high value added activities (both upstream and downstream) are located in developed countries, whereas low value added activities (in the middle) are increasingly located in emerging economies. This pattern suggests that there might be a different impact of *added cultural distance* and *extant cultural diversity*, depending upon the nature of the value added activities involved (Rugman et al., 2011). In this context, it is also important to recognize the possible differential impact of the various strategic motivations for FDI.

Given the sources of complexity associated with effective resource recombination as noted above, a number of firm characteristics could facilitate the management of complexity. For example, the organizational form (Mahoney, 1992; Tan and Mahoney, 2005), product characteristics, and both the quality (experience, educational, or cultural background) and quantity of available managerial resources might influence the MNE's expansion potential (Penrose, 1959), and should therefore be included in future research. In our case, however, we were restricted to secondary data, which did not allow including these aspects. Nevertheless, as a result of using fixed effect models, we were able to control across our MNE sample, for all variation of unobserved factors that are time-invariant.

Our analysis above has assumed that there actually is a need for adjustment, with the MNE fine-tuning its structure and decision-making routines to the new local contexts. However, the MNE might try transferring in its entirety its extant business model without any adjustments, and adopt standardized coordination and control mechanisms for every subsidiary. Addressing how actual adjustments allow MNEs to cope more effectively with new environments therefore appears to be a promising avenue of future research, one that should be based at least partly on MNE surveys.

The index we used for cultural distance, based on Hofstede's (1980) dimensions, has been subject to substantial criticism. It has been argued that using country scores for the measurement of cultural distance assumes intra-country 'spatial and corporate homogeneity' (Shenkar, 2001). This simplification, however, is necessary, as data on cultural values in different regions are not available for a sufficiently large number of countries. The fixed effect models account for unobserved actor effects and therefore control for time-invariant differences among the corporate cultures of the panel firms. However, the possible changes over time of corporate culture within individual MNEs were not addressed in our study.

Shenkar (2001) has also pointed out that by using the Kogut–Singh index, one generally assumes symmetry in the cultural distance between countries (distance from

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country A to B is the same as from B to A). In practice, this may not always be the case, but no reliable data presently exist to address Shenkar's (2001) comment.

Furthermore our study was limited to a sample consisting of firms from a single, developed European country. Future research could examine the expansion path of MNEs originating in other parts of the world, and especially in emerging economies, a research stream that has recently gained importance in the international business literature (Wright et al., 2005).

Finally, our study focused on international expansion through FDI, i.e. the setting up of foreign affiliates, because no data were available on the other entry modes. However, other entry modes such as exports, licensing, or franchising are equally legitimate modes of foreign market penetration. The question therefore arises whether the relationships identified in this paper for FDI also hold true for other entry modes.

CONCLUSIONS

The empirical results strongly support the Penrosean view of MNE international expansion as a path-dependent process. As to the influence of cultural diversity on further expansion, the results of this study diverge considerably from Tan's (2003) findings on the subsidiary level. However, it is consistent with Tan and Mahoney's (2006) integrative approach to *dynamic adjustment costs*. Future research could adopt a Penrosean perspective, and assess simultaneously the impact of the availability of overall MNE managerial resources and resources made available to – and developed/ acquired at – the subsidiary level. Recent findings suggest that managerial services made available to a foreign subsidiary in a particular local context, may support this subsidiary's growth (Tan and Mahoney, 2007). Here, the question arises whether this result is purely a distributional effect, or whether some subsidiaries can benefit more than other ones from such services.

Our results suggest that there are indeed constraints to overall MNE expansion, but the question remains whether these constraints could be alleviated by design. Research on this topic could draw upon prior work on MNE managers' tasks and behaviour (Athanassiou and Nigh, 2000), on the staffing of subsidiaries and headquarters (Gong, 2003), on MNE managerial practices (Newman and Nollen, 1996), on the coordination mechanisms adopted (Gupta and Govindarajan, 1991), and on elements of organizational structure (Tan and Mahoney, 2005).

For MNE managers, the implications of this study are twofold. First, they should carefully examine how many international expansion projects in new local contexts they can reasonably undertake with a high probability of effective implementation, taking into account the *added cultural distance* involved. Although there might be cases requiring rapid internationalization and penetration of many local contexts simultaneously, the implications for subsequent international expansion should be kept in mind. Second, managers should be aware that with increasing cultural diversity, the MNE's rate and scope of further international expansion are likely to be reduced, much in line with Rugman and Verbeke's (2004) observations of the limits to the MNE's geographic reach.

NOTES

- [1] This paper builds upon and extends in a substantive fashion Hutzschenreuter and Voll's (2008) analysis, which examined the influence of added cultural distance in international expansion on firm performance, building upon a very different conceptual framework and without the present focus on MNE international growth rates. In the current paper, the effect of added cultural distance on subsequent MNE international growth rates is examined using a Penrosean framework as the main conceptual lens.
- [2] The HDAX segment contains the 110 most highly capitalized stocks traded on the Frankfurt Stock Exchange, most of these being large MNEs. Hutzschenreuter and Voll (2008) excluded all financial institutions, purely financial holdings, retailers, and cross-listed firms.
- [3] Power Distance, Uncertainty Avoidance, Individualism, and Masculinity.
- [4] Uncertainty Avoidance, Power Distance, Societal Collectivism, In Group Collectivism, Gender Egalitarianism, Assertiveness, Future Orientation, Performance Orientation, and Humane Orientation.

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