



The relationship between international diversification and performance in service firms

N Capar¹ and
M Kotabe²

¹Department of Management, Florida State University, Tallahassee, USA; ²Fox School of Business and Management, Institute of Global Management Studies, Temple University, Philadelphia, USA

Correspondence:

Masaaki Kotabe, The Washburn Chair of International Business and Temple University, The Institute of Global Management Studies, 349G Speakman Hall (006-00), Philadelphia, PA 19122, USA.
Tel: +1 215 204 7704;
Fax: +1 215-204-8029;
E-mail: mkotabe@temple.edu

Abstract

International diversification is a growth strategy that has a major potential impact on firm performance. The relationship between international diversification and firm performance has been extensively studied in the international strategy literature. A major gap in the literature has been the non-existence of studies that have examined the effect of international diversification on performance in service firms. Previous studies that have tested the international diversification–performance relationship were based on samples of manufacturing firms. We argue that the form of the relationship between multinationality and performance is different in service firms. We provide a theoretical argument for this claim and hypothesize that there is a U-shaped curvilinear relationship between multinationality and performance in service firms. Our sample consists of 81 major German service firms, spanning across four industries. Results show that there is support for a U-shaped curvilinear relationship. Based on the findings, implications and directions for future research are provided.

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The relationship between international diversification and firm performance has been an important topic for researchers in strategic management and international business (e.g., Buhner, 1987; Grant, 1987; Daniels and Bracker, 1989; Geringer *et al.*, 1989; Haar, 1989; Tallman and Li, 1996; Hitt *et al.*, 1997; Delios and Beamish, 1999; Gomes and Ramaswamy, 1999; Geringer *et al.*, 2000; Kotabe *et al.*, 2002). International diversification can be defined as a firm's expansion beyond the borders of its home country across different countries and geographical regions. The terms, such as international diversification, multinationality, and international diversity, are often used interchangeably in the literature. This will be also the approach in this paper, although an attempt will be made to use the term *international diversification*, for the sake of consistency.

This importance of international diversification comes from the fact that it represents a growth strategy (Chandler, 1962; Ansoff, 1965) that has major potential impact on firm performance. Despite the numerous studies that have examined the association between multinationality and performance, these efforts have provided evidence of conflicting results (Annavarjula and Beldona, 2000). Following this finding, a more recent stream of research has

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focused on potential methodological and theoretical causes that might explain the lack of consistent findings. In this light, some recent studies have argued that there exists an inverse U-shaped curvilinear relationship between international diversification and performance, as opposed to a linear relationship, which has been the underlying premise in earlier studies (Hitt *et al.*, 1997; Gomes and Ramaswamy, 1999).

However, studies examining the international diversification–performance relationship were based largely on samples of manufacturing firms (Habib and Victor, 1991). Thus it is likely that the *form* of the relationship between international diversification and performance observed in manufacturing firms might not apply similarly to firms in service industries. By ‘form’, we refer to the relationship between international diversification and performance in terms of how the performance of service firms will change within an observed range of international diversification.

The service sector has been explored to a limited extent so far, although service firms have contributed to the majority of the job growth in the industrialized nations. Service firms are expanding internationally for the same reasons as the manufacturing firms: labor costs, market access, and resources, among others (Guile, 1988). Despite these similarities, there are also some differences between manufacturing and service firms. First of all, the nature of service businesses is mostly intangible. Second, the production and consumption of many services occur simultaneously owing to the impossibility of inventory in services (Habib and Victor, 1991). Thus we have limited understanding as to what the form of the international diversification–performance relationship is for service firms.

We argue that the earlier theoretical rationale used to explain the relationship between multinationality and performance in manufacturing firms needs to be somewhat modified to account for the differences inherent to service firms. In this paper, we fill this important gap in the literature by providing an argument that the form of the relationship between international diversification and performance is different for service firms, and consequently provide an empirical test of our argument. We examine this relationship between international diversification and performance by using a sample of major German service firms spread over four industries spanning a period of 3 years between 1997 and 1999.

The remainder of the paper is organized as follows. First, a theoretical background and literature review of the international diversification–performance relationship will be provided. Second, the research methods of the study will be explained. Third, the results will be presented and discussed. Finally, a review of the study will be provided in the conclusion section along with the identification of limitations of the study and possible future directions of inquiry.

Theoretical background and hypothesis

International diversification and firm performance in manufacturing firms

International diversification offers several advantages to firms. Buhner (1987) argued that international diversification offers prospective market opportunities, which gives firms the opportunity for greater growth. The most accepted argument for international diversification has been grounded on the theoretical assumption that firms exploit the benefits of internalization in international markets (Hymer, 1976; Rugman, 1981; Caves, 1982). Internalization of markets has advantages such as economies of scale, scope, and learning (Kogut, 1985; Ghoshal, 1987; Kim *et al.*, 1989, 1993), and sharing core competencies among different business segments and geographic markets (Hamel, 1991).

Firms with strong competencies that are developed at home can utilize these in international markets (Bartlett and Ghoshal, 1989). Thus it is argued that the higher the involvement of a firm in international markets is, the higher will be the exploitation of tangible and intangible resources, which is expected to lead to higher performance (Hymer, 1976). This view is based primarily on the resource- or knowledge-based view of the firm in strategic management (Barney, 1991; Kogut and Zander, 1993), and on internalization theory in the FDI-based international business literature (Buckley and Casson, 1976; Hymer, 1976).

In addition, multinational firms have the opportunity to integrate their activities across borders by standardizing products, rationalizing production, and/or allocating their resources more efficiently and effectively (Kobrin, 1991). Furthermore, multinational firms can gain additional competitive advantages by exploiting market imperfections (such as a less competitive environment) and cross-border transactions (such as transfer pricing), and can also achieve a greater bargaining power



with increased size (Sundaram and Black, 1992). All of these arguments support the view that a positive, linear relationship exists between international diversity and performance. Although some studies have demonstrated a positive relationship (Daniels and Bracker, 1989; Haar, 1989; Grant, 1987; Gomes and Ramaswamy, 1999), other studies have shown either a negative relationship or no relationship at all (Siddhartan and Lall, 1982; Kumar, 1984). Most of these studies have assumed that the relationship between international diversification and performance is linear (Gomes and Ramaswamy, 1999).

Another stream of research has examined a non-linear relationship between multinationality and performance, and has argued for a theoretical rationale to justify their position (Tallman and Li, 1996; Hitt *et al.*, 1997; Gomes and Ramaswamy, 1999; Kotabe *et al.*, 2002). These studies have found an inverse U-shaped relationship between multinationality and firm performance, where performance increases up to a certain point, and then levels off.

It is suggested that higher levels of international diversification, especially combined with product diversification and expansion into markets that are physically and culturally more distant (Davidson, 1983; Papadopoulos and Denis, 1988; Erramilli, 1991), greatly enhances the transaction costs and information processing demands (Egelhoff, 1982; Hitt *et al.*, 1994). According to transaction cost theory, a high level of diversification increases the governance cost of firms (Williamson, 1975; Hitt *et al.*, 1997). Dealing with factors such as logistics, trade barriers, and cultural diversity is likely to increase the cost of operations. There are also environmental factors that contribute to the complexity of operations, such as government regulations, trade laws, and currency fluctuations (Sundaram and Black, 1992). These transaction costs and the different environmental pressures greatly increase the managerial information processing demands.

All of these factors, it has been argued, might increase the cost of operations along with increasing levels of international diversity. Thus the more a firm is diversified internationally, the more complex will be its operations. Combining the transaction-cost- and the resource-based viewpoints, Tallman and Li (1996) offer a poignant summary that performance will vary with international diversity in a non-linear relationship, increasing as strategic resources are given greater scope but decreasing as product scope exceeds the

range of these resources and governance scope surpasses management capabilities.

Consequently, performance will suffer beyond a certain point, suggesting an inverse U-shaped curvilinear relationship between international diversity and performance. Results of several studies have demonstrated such evidence. More specifically, they have shown empirical results that, after a certain level of international diversification, performance begins to decline (Tallman and Li, 1996; Hitt *et al.*, 1997; Gomes and Ramaswamy, 1999; Kotabe *et al.*, 2002). The results of these studies imply that, while there are benefits of moderate levels of international diversification, the transaction costs associated with higher degrees of multinationality eventually decrease the level of performance. In other words, the increasing complexities due to higher levels of international diversification increase the costs of managing such operations.

International diversification and performance in service firms

A service firm is an organization that provides to some extent an intangible item that also requires some interaction between the buyer and the seller (Berthon *et al.*, 1999). The international expansion of firms in the service industries during recent times has led to increased attention among researchers to examining the various aspects of the internationalization process of service firms. It must be said, however, that despite the increased use of global strategies by multinational firms, research on the international strategies for service firms is rather at an evolutionary stage (Lovelock and Yip, 1996; Kotabe *et al.*, 1998; Murray and Kotabe, 1999). Previous studies on services in an international context examined the determinants of foreign direct investment in service industries (e.g., Weinstein, 1977; Terpstra and Yu, 1988; Li and Guisinger, 1992) and foreign market entry modes for service companies (e.g., Erramilli, 1990; Erramilli and Rao, 1990, 1993), and sourcing strategies of multinational service firms (Murray and Kotabe, 1999), but have not examined the effect of multinationality on performance in service firms.

It has been argued that theories developed to explain the behavior of multinational manufacturing firms could be applied to multinational service firms (Boddewyn *et al.*, 1986). As service firms are expanding internationally for the same reasons as manufacturing firms (labor costs, market access, resources, etc.), the underlying theoretical rationale

should be the same (Boddewyn *et al.*, 1986; Dunning, 1989; Li and Guisinger, 1992). Dunning (1989) argued that multinational service firms could benefit from global economies of scale in various aspects of the value chain. Similarly, Campbell and Verbeke (1994) suggested that multinational service firms could achieve economies of scale in marketing activities. However, these arguments are based on the assumption that service firms, just like manufacturing firms, would incur certain fixed costs that are to some extent independent of a company's output (Katrishen and Scordis, 1998).

We argue that the form of the relationship between international diversification and performance for service firms is somewhat different than for manufacturing firms. In contrast to a positive linear or an inverse U-shaped relationship between multinationality and performance, which has been the premise and evidence in earlier studies, we argue that the relationship is a U-shaped curvilinear relationship for service firms. Below, we offer our theoretical rationale.

Despite the similar motivations of service firms to expand internationally, the unique characteristics of service firms are likely to lead to a different pattern with respect to performance. That is, contrary to manufacturing firms, service companies are likely to face declining performance with initial attempts at international diversification for the following reasons.

First, many countries still have a strict control over the extent of foreign involvements in service industries, preventing service multinationals from operating efficiently (Feketekuty, 1988). The constraints often seen in services industries include, but are not limited to, ownership restrictions, domestic preference policies, unfavorable tax treatments, and unbalanced employment rules (Knight, 1999). For example, a tourism firm operating in Turkey can employ only tour guides certified by that country's Ministry of Tourism and who are Turkish citizens. Host country restrictions and regulations were cited in one study as the most common problem faced by international service firms (Reardon *et al.*, 1996).

Second, services supplied by multinational firms to local customers may have to be adapted more extensively than manufactured products owing to linguistic and cultural differences of the customers along with the intangible nature of most services (Zeithaml *et al.*, 1985; Patterson and Cicic, 1995). Rugman (1981) noted that more internationally diverse firms might have relatively higher costs

than less diverse firms. This may be because firms must differentiate their products and management systems in response to the local environment (Ghoshal, 1987). This is especially true for service firms that require intensive customer contact, extensive customization, and cultural adaptation (Knight, 1999; Patterson and Cicic, 1995). For example, various German tourism firms point to the need to customize travel packages from country to country and from hotel to hotel based on customer preferences (Handelsblatt, 2002). Also, firms with greater international diversity are more complex and thus more costly to manage (Buckley and Casson, 1976; Hitt *et al.*, 1997). Although this logic also applies to manufacturing firms, the inherently higher need for adaptation of services to local requirements will likely raise the cost of operations for service firms higher than for manufacturing firms. The customization and cultural adaptation of many services is expensive (Knight, 1999), but unavoidable if a firm is to become successful in a local market. The need for higher adaptation of services also introduce some new elements that have implications for two opposing forces – the desire for greater control and the difficulty in monitoring the quality of the service activities (Erramilli and Rao, 1993). The desire for greater control arises most noticeably from the intimate contact between the producer and the customer during the process of service delivery (for many services), and the involvement of customer in the co-production of the service. The difficulty in monitoring arises from the intangibility of the service.

Third, many services require simultaneous production and consumption (location and time-boundedness) of their output (Berthon *et al.*, 1999). The nature of location-boundedness, or inseparability of services, forces the buyer into intimate contact with the production process (Carman and Langeard, 1980). This closeness is attributed to the simultaneous production and consumption of most services. Whereas goods are generally first produced, then sold and then consumed, services are generally first sold, then produced and consumed simultaneously (Zeithaml *et al.*, 1985).

The inseparability of many services makes it necessary for a parent firm to have a local facility (Boddewyn *et al.*, 1986). Boddewyn *et al.* (1986, 43) noted that

[a] comparison of exporting vs. foreign direct investment is not appropriate in the cases of location-bound and

combination services, which implies a possible choice between exporting and foreign direct investment, and a progressive evolution from the former toward the latter under certain conditions. In fact, some services require foreign direct investment from the very beginning.

Therefore, when a service firm makes an initial expansion abroad, it must undertake considerably higher investments than manufacturing firms that begin foreign expansion by exporting. Such investments are likely to increase the costs and thereby reduce the performance of these firms (Boddewyn *et al.*, 1986). This makes it less likely for service firms to benefit from scale economies, something that often accrues to manufacturing firms when they expand internationally. In fact, it can be expected that, because of the initial investments required and the additional governance costs, service firms will likely suffer from diseconomies of scale. In their study of multinational insurance companies, Katrishen and Scordis (1998) found that these firms indeed suffered from diseconomies of scale. They also observed that the diseconomy of scale increased even further at higher levels of multinationality.

If service firms are expected to suffer from diseconomies of scale, why is it then that they expand abroad in the first place? Ghoshal (1987) suggests that, as firms further increase their total involvement in foreign markets, they may benefit from economies of scope and economies of scale in the long run. The firm gains cost savings from economies of scope by sharing cost-producing activities across geographic markets and through worldwide learning. Through knowledge gained worldwide, the firm learns ways to lower its costs. The economies of scope associated with higher levels of multinationality can come from a variety of aspects.¹

In developing competitive strategies for service firms, various researchers (Carman and Langeard, 1980; Lovelock, 1992; Anderson and Narus, 1995) have highlighted the necessity of distinguishing between core and supplementary services. *Core services* are the necessary outputs of a firm that consumers are looking for, whereas *supplementary services* are either indispensable for the execution of the core service or are available only to improve the overall quality of the core service bundle (Murray and Kotabe, 1999). The production and consumption of some services, such as those provided by supplementary services, do not need to take place at the same location. For example, a consulting firm can utilize video- or teleconferencing to fulfill some of the need of its international customers over time (Mathe and Perras, 1994). In other words,

the value chain can be gradually configured in such a way that not all parts of the value chain have to be duplicated in each local context (Lovelock and Yip, 1996). This allows service firms to utilize economies of scope advantages over time, as the need for additional investment is reduced.

Furthermore, Lovelock and Yip (1996) noted that some service firms can also achieve economies of scale by providing global customers with standardized products and by centralizing upstream value chain activities. In addition, not only can some activities of the value chain be centralized, but they can also be performed in locations that will provide the lowest cost. For example, the cost of labor is much lower in less developed countries. Thus an international hotel chain might sell a room from its home country for a location that has much lower operating costs while at the same time charging a similar price.

The aforementioned arguments can be summarized in the following hypothesis:

Hypothesis: The relationship between international diversification and performance in service firms will be U-shaped curvilinear, with performance decreasing up to a certain point, beyond which higher levels of international diversification will increase performance.

Methods

The sample

The sample consists of major German firms from four service industries: retail/wholesale, utility, information technology (IT) service, and tourism. The sample was drawn from *The Largest 500 German Companies List* (Die Welt Zeitung Information Services: <http://www.welt.de/wirtschaft/ranglisten/>), similar to the *Fortune 500* list in the United States.

To be included in the sample, a firm had to: (1) be a service firm, (2) belong to one of the four industries used, and (3) have >70% of sales originating in one single business. The four service industries were chosen based on the rationale that a large portion of firms that operate in those areas are major players in international markets and that adequate number of firms were present in those industries (Gomes and Ramaswamy, 1999). In contrast, the criterion of having at least 10% of foreign sales that had been used in many previous studies has not been employed in this study (e.g., Stopford and Wells, 1972; Geringer *et al.*, 1989; Habib and Victor, 1991; Gomes and Ramaswamy,

1999). Note that including only firms with the ratio of foreign sales to total sales (FSTS) of at least 10% would lead to considerable left-censoring of the data, which could lead to underestimation of the effect of multinationality on performance. In many cases, this decision rule has been applied rather arbitrarily because of the unavailability of data, as US firms whose foreign revenues are less than 10% of their total revenue are not required to report this in their annual financial statements according to FASB 14.² Finally, the criterion of not including diversified businesses was to prevent potential confounding effects due to product diversification (Hitt *et al.*, 1997; Gomes and Ramaswamy, 1999).

The resulting sample consisted of 81 major service firms spanning four industries (utility, 29; retail/wholesale, 34; IT service, 10; and tourism, 8). Data used in the empirical analysis were collected from a variety of public information sources (*Die Welt* annual survey, directories, and annual reports). Data were collected for a 3-year period between 1997 and 1999 and then averaged to reduce random variation. The average annual revenues or sales of these service firms (in our sample) were 8.1 billion DM, ranging from 1.1 billion DM to 67.6 billion DM; and the average number of employees was 16,074.

Variables and measures

Performance

Return on sales (ROS) was used to measure firm performance. The choice of using this accounting-based profitability measure was due largely to data availability and also to the fact that many previous studies have used this measure (e.g., Grant, 1987; Haar, 1989). Although many other studies have used *return on assets* (ROA) for performance, data were not widely available on assets in order to compute ROA. Hitt *et al.* (1997) have indicated that both ROA and ROS have generated similar findings and that they were highly correlated ($r=0.91$). Furthermore, service firms tend to possess significant portions of intangible assets, and the degree of intangible assets is likely to differ considerably across different service industries (for example, utility firms *vs* consulting firms). Thus assets-based performance measures are less likely to take this difference into consideration.

International diversification

Consistent with the majority of previous studies, international diversification was operationalized as

the ratio of FSTS in this study (e.g., Stopford and Wells, 1972; Grant, 1987; Habib and Victor, 1991; Tallman and Li, 1996). There have been recently some arguments in the literature about this measure (Sullivan, 1994; Ramaswamy *et al.*, 1996; Hitt *et al.*, 1997; Gomes and Ramaswamy, 1999). For example, Sullivan (1994) has suggested the use of a multidimensional measure consisting of five items, and Ramaswamy *et al.* (1996) have cast serious doubts on this measure based on problems with content validity, criterion validity, and reliability. In turn, Ramaswamy *et al.* (1996) have argued for the use of single-item measures. Other measures used, besides the FSTS measure, in some studies include the number of countries in which the firm operates (e.g., Tallman and Li, 1996) and the ration of foreign assets to total assets (Gomes and Ramaswamy, 1999). However, because of data availability constraints and for comparison purposes, the FSTS ratio has been used in this study.

Control variables

Consistent with previous studies (e.g., Gomes and Ramaswamy, 1999) firm size and industry effects were employed as control variables. Firm size, measured by the natural logarithm of number of employees, was used to control for the potential effect of scale economy differences. In addition, possible industry effects were controlled for by using three industry dummy variables, representing the four industries (I_1 =utilities, I_2 =retail/wholesale, I_3 =IT service, I_4 =tourism). The tourism industry is the residual dummy variable (that is, when all I 's=0).

Analysis

To test our hypothesis, the two regression equations were used as presented below. That is, the linear effect *vs* the curvilinear effect of international diversification on firm performance was tested by a two-step hierarchical regression procedure using OLS estimation.

$$Perf = \beta_0 + \beta_1 SIZE + \beta_2 I_1 + \beta_3 I_2 + \beta_4 I_3 + \beta_5 ID + e, \quad (1)$$

$$Perf = \beta_0 + \beta_1 SIZE + \beta_2 I_1 + \beta_3 I_2 + \beta_4 I_3 + \beta_5 ID + \beta_6 ID^2 + e, \quad (2)$$

where *SIZE* is the firm size; I_i the type of service industry ($i=1, 2, 3$); *ID* the international diversification; and ID^2 a squared term of *ID*.

As can be seen, Eq. (1) represents the linear model, whereas Eq. (2) represents the curvilinear model, where the ID^2 will be entered to test for curvilinearity. The curvilinear model will be supported if the R^2 associated with the curvilinear model (Eq. (2)) is significantly higher than the linear model (Eq. (1)), and the coefficient of the squared term for international diversification (ID) variable, β_6 , is positive and significant.

Results and discussion

Table 1 reports means, standard deviations, and the bivariate correlations for the variables used in the study. The correlations among the variables present no problem of multicollinearity. Table 2 presents the results for both the linear model and the curvilinear model of the relationship between international diversification and performance.³

The first equation in Table 2 is an examination of the linear effect of international diversification on ROS. As can be seen, there is a statistically significant positive relationship between ID and performance at $P < 0.001$. This result is consistent with the findings of other studies (Hitt *et al.*, 1997; Delios and Beamish, 1999; Gomes and Ramaswamy, 1999). In addition, the overall model is also significant at the $P < 0.001$ level, with an Adj. R^2 of 0.279. Among the control variables, only firm size was statistically significant and had a negative slope coefficient. In other words, we observed some tendency that the larger the firm size (in terms of total number of employees), the lower the firm performance (in terms of ROS), assuming the level of international diversification to be constant.

The second equation in Table 2 shows that there is support for our hypothesis that there is a U-shaped relationship (curvilinear effect) between international diversification and firm performance in service firms. As can be seen, both the coefficient of the squared international diversification term (ID^2), 0.887, and the overall model are statistically significant at $P < 0.001$. The sign of the linear effect becomes negative in the second model whereas the

Table 1 Means, standard deviations and correlations ($N=81$)

Variables	Mean	S.D.	1	2	3
1. Firm performance (ROS)	0.048	0.20	1.00		
2. Firm size ($SIZE$)	8.329	1.79	-0.196*	1.00	
3. International diversification (ID)	0.18	0.26	0.341**	0.128	1.00

* $P < 0.05$; ** $P < 0.01$.

Table 2 Effect of international diversification on firm performance (ROS)

Independent variables	Linear model	Curvilinear model
Intercept	0.539*	0.358**
Size ($SIZE$): log of empl.	-0.061**	-0.032**
I_1 : utility	0.027	0.019
I_2 : retail/wholesale	0.063	0.059
I_3 : IT service	0.016**	0.018**
International diversification (ID)	0.419****	-0.646*
Intl. div. ² (ID^2)		0.887****
Adj. R^2	0.279	0.345
F	7.242****	9.164****
ΔF	12.416****	

* $P < 0.10$; ** $P < 0.05$; *** $P < 0.01$; **** $P < 0.001$.

Note: Assuming away the effect of size ($SIZE$) and industry differences, if any, the estimated regression equation for the curvilinear model will be stated as

$$ROS = 0.358 - 0.646ID + 0.887(ID)^2.$$

To show how international diversification affects firm performance, a partial derivative of the curvilinear regression equation is taken with respect to ID :

$$\frac{\partial(ROS)}{\partial(ID)} = -0.646 + 1.774ID,$$

which will be 0, if $ID=0.177$.

This partial derivative will be negative if $ID < 0.177$; it will become positive if $ID > 0.177$. In other words, other factors being constant, the effect of international diversification on firm performance will be negative until international diversification, or the ratio of foreign sales to total sales, reaches 0.177, or approximately 18%.

sign of the curvilinear effect is positive, indicating a U-shaped relationship.

In other words, the explanatory power of the model increased significantly when the squared term of international diversification, ID^2 , entered the model. As can be seen in Table 2, the adjusted R^2 increases significantly from 0.279 to 0.345 ($F=12.416$; $P < 0.001$). This indicates that the curvilinear model fits the data better than the linear model, thus rendering support for our hypothesis.⁴

As explained in the notes to Table 2, managerially speaking, the incremental effect of international diversification on firm performance is expected to stay negative until international diversification, or the ratio of FSTS, reaches approximately 18%. Above and beyond this 18% threshold level, international diversification is expected to improve firm performance.

As a follow-up, we also conducted a t -test to examine to see whether there was any group difference in ROS for firms below and above the 18% threshold level. As presented in Table 3, the difference is marginally significant at the 0.09 level,

Table 3 The mean difference in return on sales between high- and low-international diversification (*ID*) groups (*t*-test)

<i>Group</i>	<i>N</i>	<i>Mean</i>	<i>S.D.</i>	<i>t-Value</i>
<i>ID</i> >0.18	26	0.060	0.043	1.665 (<i>P</i> =0.093)*
<i>ID</i> <0.18	55	0.043	0.037	

**P*<0.10.

with the high (*ID*>0.18) and low (*ID*<0.18) international diversification groups of firms having a mean ROS of 6 and 4.3%, respectively. This suggests that the high international diversification group of firms may have a slightly higher mean ROS than the low international diversification group of firms. If a linear relationship was analytically forced on the data, we would expect *ID* to be positively related to ROS. This is consistent with our linear model results presented in Table 2.

The results of our study of service firms differ from recent findings for manufacturing firms by Gomes and Ramaswamy (1999) and by Hitt *et al.* (1997), who both found evidence in favor of an inverse U-shaped curvilinear relationship between international diversity and firm performance for manufacturing firms. This clearly suggests that the form of the relationship between international diversification and firm performance in service firms is not the same. A second possible explanation might be that their findings explain a true inverse U-shaped relationship for US manufacturing firms, but that these results do not necessarily apply to firms from other countries, whether they are manufacturing or service firms. This could be a plausible explanation as well, given that most studies tested the multinationality–performance relationship on US firms, leading to theories that might not be universally applicable. In fact, many theories in management are heavily reliant upon US-based studies, and therefore the theories might not be exactly applicable to organizations from other countries and cultures (Boyacigiller and Adler, 1991). In either case, it might be premature to quickly claim a universal inverse U-shaped curvilinear relationship between international diversity and firm performance.

The descriptive statistics in Table 1 also show an average international diversity level of 18% for the German firms studied. This is a much lower level of multinationality compared with, for example, a level of 42% (Gomes and Ramaswamy, 1999) reported in a separate study. This might be due to the fact that the internationalization of service

firms is relatively more recent than that of manufacturing firms. For those service firms, particularly in the early stages of internationalization, foreign expansion may result in lower profitability than do domestic business activities, as was the case with manufacturing firms engaged in exporting (Kotabe and Czinkota, 1992). Combined with the relatively low levels of foreign market knowledge and international business expertise across the international stages, initial overseas expansion may indeed be a high-risk activity with insufficient profit rewards.

However, once these firms reach a threshold level of international diversification (that is, approximately 18% in terms of a ratio of FSTS), they may very well reap the benefits of being first movers as well as those of the economies of scale and scope. Furthermore, Germany is a country that is comparatively much smaller, in terms of both its population and its geographical size, than the US. It is physically and culturally close to its many neighbors and other surrounding countries, among which a great deal of relatively free trade has existed for decades (e.g., EU countries and non-EU countries). Thus the transaction cost rationale (Williamson, 1975) of increasing costs after a certain level of involvement in international markets might not apply to the German context, or even to the European context for that matter, owing to greater market familiarity (Davidson, 1983; Papadopoulos and Denis, 1988; Erramilli, 1991). Because of the closer economic and cultural ties, and geographical proximity to the different markets, it is likely that transaction costs at higher levels of multinationality are less critical and lower compared with US firms' international operations. The German firms may have built upon their market knowledge that has been obtained incrementally over a long period of time (Franko, 1976; Johanson and Vahlne, 1977; Melin, 1992).

Conclusion

The main contribution of this paper is that it represents the first attempt to empirically examine the relationship between international diversification and performance in service firms. Previous studies that have examined the international diversification–performance relationship were based on samples of manufacturing firms. Thus it has been argued in this paper that the same form of relationship between international diversification and performance observed with manufacturing firms might not apply to firms from service industries (Guile,



1988). We have provided an argument that the form of the relationship between multinationality and performance is different for service firms than it is for manufacturing firms. The result of our study supports our claim that international diversification would reduce performance up to a certain point owing to diseconomies of scale associated with such expansion, consistent with an earlier finding by Katrishen and Scordis (1998). At higher levels of multinationality, performance begins to increase, owing probably more to benefits of economies of scope than to economies of scale that accrue with higher levels of international diversity. This is based on our finding that, at least in our German sample, larger firms (in terms of total sales) tended to have a lower performance level (in terms of ROS). This interesting finding calls for more empirical studies that will operationally distinguish between economies of scope and economies of scale to examine their effect on firm performance.

The study also has a number of limitations. First of all, international diversity was measured by a single indicator only, namely the ratio of FSTS. Ideally, it is desirable to have multiple or different indicators to capture the international activities of firms more fully. However, constraints in data availability hindered this attempt. One should also note that persons residing in neighboring countries of Germany may cross the border to shop in German cities and vice versa, making the clear separation of domestic and foreign markets impossible.⁵ However, given the scale of the firms in the sample and the fact that markets are still separated on a cultural and legal basis despite the recent integration efforts of the EU, the foreign to total sales ratio used in this study still remains the most accepted and appropriate measure of international diversification. Second, the study was based on a limited number of service industries based in Germany. Thus generalizability to other service industries and service firms from other countries should be made with caution. Our findings should call for more investigation to this effect.

For example, replication studies based on service firms in other industries (e.g., banking, advertising, and insurance) might be a fruitful avenue of research, as they constitute another major set of service industries on a global basis. This would allow us to see whether the U-shaped relationship between international diversification and performance would apply to other service industries as well. A further limitation of our study is that we

were not able to include, owing to data unavailability, a number of potentially relevant variables. As such, future studies could include product diversity as a moderator variable. As demonstrated by Hitt *et al.* (1997), the relationship between international diversity and performance is moderated by product diversity. Furthermore, it might be also useful to include R&D and advertising intensity as moderators, as these two variables are likely to add some explanatory power to the relationship between international diversity and firm performance (Kotabe *et al.*, 2002). Firm-level resources (Barney, 1991) such as these are likely to contribute in better understanding the differences in performance levels of multinational firms. Finally, future studies with longer-range data might examine whether the U-shaped relationship observed in this study holds over time.

In conclusion, this paper examined the relationship between international diversification and performance by using a sample of German service firms. Evidence was found in favor of a U-shaped curvilinear relationship between international diversification and performance. It is apparent that further studies are needed in order to examine more closely the form of the relationship between international diversification and performance in service firms. It is hoped that the current paper was a step in this direction.

Postscript: Since our manuscript was accepted, a similar article by Contractor, Kundu, and Hsu has appeared in the January 2003 issue of *JIBS*. As these two articles complement each other, readers are encouraged to read both.

Notes

¹One could further extrapolate that at very high levels of international diversification (that is, when service firms operate in many countries), particularly with a highly coordinated global strategy, the bureaucratic costs of excessive scale and scope would begin to outweigh their benefits in service firms as well as in manufacturing firms. If so, then the relationship between international diversification and performance in service firms might take a right-tipped S shape over time, or an inverse U-shaped curve followed by a downward shift. Although our study could not permit us to extrapolate beyond the 3-year data period, a longitudinal dataset over a long period could make such a study possible. We thank one anonymous reviewer for raising this issue.

²The distribution of international diversification was somewhat right-skewed. Given the nature of the data, we also suspect that it would be the case with almost all of the studies dealing with the multinationality variable. Unlike US-data-based studies, our study included those firms with less than 10% FSTS as well as those with at least 10% FSTS. In this sense, the right-skewedness of the distribution over international diversification in our sample is not as salient as that in earlier US-data-based studies.

³Multicollinearity would not be a problem as the tolerance and the variance inflation factors (VIF) in the regression analyses were well within the acceptable range (Belsley *et al.*, 1980).

⁴Lagged measures of international diversification were also used to examine the causality between international diversification and performance. We lagged the performance measure for both 1 year and 2 years, and the results did not change significantly. Coefficient estimates for the curvilinear effects in the 1-year and 2-year lagged 'curvilinear' models were 1.202 and 1.188, respectively, and both significant at the 0.01 level. Therefore we believe that the results presented in Table 2 adequately capture the causal effect of international diversification on performance.

⁵We thank one anonymous reviewer for pointing this out.

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