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RESEARCH NOTES AND COMMENTARIES

DIVERSIFICATION IN CONTEXT: A CROSS-NATIONAL AND CROSS-TEMPORAL EXTENSION

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This research note examines the stability of diversification performance relationships in three countries (France, Germany and the United Kingdom), for two time periods (1982–84 and 1992–94). The aggregate findings, taking the three countries and two time periods together, support a general model favoring related-constrained diversification. However, disaggregated analyses show sharp variations in different countries and time periods. The note concludes that although broad performance relationships can be found, these can be expressed very differently in particular contexts. We consider implications for further research. Copyright © 2003 John Wiley & Sons, Ltd.

INTRODUCTION

Does context matter? This question is increasingly prominent throughout the strategic management field (Gedajlovic and Shapiro, 1998; Thomas and Waring, 1999; Khanna and Rivkin, 2001) and is expressed along two dimensions: first, the generalizability of performance relationships across national boundaries (Bensaou, Coyne, and Venkatraman, 1999; Gedajlovic and Shapiro, 1998); second, the stability of such relationships over time (Grant and Jammine, 1988; Palich, Cardinal, and Miller, 2000). We explore both dimensions in this research note.

We focus on diversification as a strategy with a long history and wide international diffusion (Chandler, 1962; Grant, 2002). Although diversification performance has been studied for more than three decades and in many national contexts (Markides, 2002), most previous studies have confined themselves to single time points and single countries. Very few studies have followed the principle of replicative extension (Hubbard, Vetter, and Little, 1998; Tsang and Kwan, 1999) by using a constant methodological frame to compare diversification across different temporal or national contexts (cf. Grant and Jammine, 1988; Gedajlovic and Shapiro, 1998). This is despite theoretical arguments for diversification performance varying both across time, for instance because of learning effects (Grant and Jammine, 1988), and

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across countries, because of institutional effects (Khanna and Rivkin, 2001).

The aim of this note, therefore, is to explore by replicative extension the contextual variability of diversification performance relationships in three different European countries and at two different time points. As such, this diversification study is unique in combining both temporal and national variation within a constant methodological frame. The next section starts with a general, context-free model of diversification performance and then continues by introducing possible sources of temporal and national variation. The following two sections offer aggregated and disaggregated analyses of diversification performance in France, Germany and the United Kingdom across the 1980s and 1990s. The concluding section discusses implications for research on diversification and strategy more widely.

DIVERSIFICATION AND PERFORMANCE IN CONTEXT

In a recent review, Palich *et al.* (2000) propose general advantages for diversification over non-diversification on the grounds of increased internal efficiencies in allocating resources and market power opportunities such as reciprocal buying or cross-subsidy. However, not all kinds of diversification strategy are the same. Rumelt (1974) classically distinguishes first between related and unrelated and second between related-constrained and related-linked diversification.[1] Of these, theory particularly favors related-constrained diversification (Rumelt, 1974; Palich *et al.*, 2000). Firstly, related diversifiers are superior to unrelated diversifiers because of operational synergies in marketing and technology (Rumelt, 1974) and the transferability of knowledge across allied businesses (Teece, 1982). Secondly, related-constrained diversifiers have the advantage over related-linked diversifiers because they are able to exploit synergistic and knowledge advantages over denser networks of internal relationships (Rumelt, 1974). Hoskisson and Johnson (1992) describe related-linked diversification as a 'between' form of diversification, lacking either the managerial simplicity of unrelated diversification or the focus advantages of related-constrained diversification.

Thus, while we shall consider all the above diversification types, theory suggests the benefits from diversification will be most clearly and consistently realized through related-constrained strategies (Rumelt, 1974; Palich *et al.*, 2000). Accordingly, our first hypothesis concentrates on this strategy type:

> *Proposition 1: Related-constrained diversification strategies will be associated with superior performance compared to undiversified strategies.*

Proposition 1 is posed in general terms without reference to context. However, the proposition relies upon a literature that draws overwhelmingly from American experience (Hoskisson *et al.*, 2001). Researchers increasingly point out how diversification performance may vary both across countries and across time. We will introduce these contextual arguments in turn.

There are two primary factors that can lead to cross-national variations in diversification performance. Firstly, the efficiency of external markets for products, capital, and labor varies between countries (Whitley, 1999; Khanna and Rivkin, 2001; Ramaswamy, Li, and Veliath, 2002). Where external markets work inefficiently the relative advantage of internal hierarchies may be enhanced, leading, for example, to greater advantages to membership of a business group (or unrelated conglomerate). At the same time, however, reported differences between efficient and inefficient strategies may be suppressed because of agency problems (Eisenhardt, 1989). Countries vary widely in the discipline exerted on managerial agents by the market for corporate control and mechanisms of corporate governance (Shleifer and Vishny, 1997). These variations alter the ability of agents to expropriate the benefits of effective strategies for themselves rather than as profits passed on to owners (Fligstein and Brantley, 1992; Li and Simerly, 1998). Where agents are able to expropriate such benefits, the relative advantage of diversification strategies, including related-constrained strategies, may diminish.

[1] Related diversified firms draw more than 30 percent of their turnover from businesses related in terms of technologies and markets. Within this broader category, Rumelt (1974) describes related-constrained diversifiers as having tightly clustered relationships between all businesses in their portfolio and related-linked diversifiers as having a series of limited relationships between businesses.

These theoretical grounds for expecting cross-national variability in diversification performance relationships are reinforced by the inconsistent pattern of results found in the only previous comparative European study, where diversification was measured continuously as a control variable (Gedajlovic and Shapiro, 1998). The following proposition therefore summarizes expectations for cross-national effects:

Proposition 2a: The relative performance of diversification strategies will vary across countries.

Grounds for expecting diversification–performance relationships to change over time are threefold. First, especially with relatively novel strategies, companies may become more adept at extracting potential advantage as managers learn over time (Eisenhardt and Martin, 2000). Such learning may explain the finding from one rare cross-temporal study that diversification performance improved between the early 1970s and early 1980s (Grant and Jammine, 1988). Second, the institutional foundations for local performance relationships may shift, for instance as external markets become more efficient in some nations (Dyas and Thanheiser, 1976; Shleifer and Vishny, 1997). Third, we may expect performance differences to attenuate over time, as movement towards equilibrium prompts companies unsuited to certain strategies to abandon them, leaving more efficient strategies in place (Armour and Teece, 1978). Accordingly we propose:

Proposition 2b: The relative performance of diversification strategies will vary across time.

Propositions 2a and 2b reflect growing doubts about the stability of diversification–performance relationships across temporal and national contexts. The next two sections examine the strategy–performance relationship in the varying contexts of France, Germany, and the United Kingdom over the last two decades of the twentieth century.

METHODS AND DATA

The sample

Following the original Harvard studies on diversification in France, Germany, and the United Kingdom (Channon, 1973; Dyas and Thanheiser, 1976), we focus on the domestically owned firms amongst each country's largest 100 industrial firms, as measured by sales in 1983 and 1993. The sources are the annual lists published in *L'Expansion*, the *Schmake* directory and the *Times 1000*. Excluding firms exempt from publishing performance data, our total sample is 359 firms, divided as follows: France, 54 firms in both 1983 and 1993; Germany, 51 firms in 1983 and 60 firms in 1993; the United Kingdom, 73 firms in 1983 and 67 in 1993. These are smaller numbers than the European samples of Gedajlovic and Schapiro (1998), which ranged from 133 to 82, but larger than or equivalent to other strategy–performance studies such as Grinyer, Yasai-Ardekani, and Al-Bazzaz (1980), Palepu (1985), Hoskisson (1987), and Habib and Victor (1992). In terms of scale, our companies are equivalent to the United States *Fortune* 500, on which earlier studies have relied (Rumelt, 1974; Markides, 1995): the smallest company included in 1993 was equal in sales to the 407th largest *Fortune* 500 firm in that year.

The three European countries differ markedly in institutional structures. The United Kingdom is closest to the American model in terms of corporate governance and market for corporate control, Germany furthest away, and France somewhere in between (Hall and Soskice, 2001). Ten years is a standard comparison interval in the literature (Rumelt, 1974), and the period 1983–93 was one in which these European economies experienced substantial change in the direction to more efficient external markets, with privatization, deregulation, and European integration (Cox, 1997; Whittington and Mayer, 2000). Thus there is substantial temporal and national variability in our contexts.

Variables

We use Rumelt's (1974) diversification types. We note that Rumelt's types focus exclusively on operational relationships and take for granted their strategic value (Grant, 1988; Markides and Williamson, 1994). For the purposes of replication, however, they have the advantage of being the

most widely used diversification measure (Datta, Rajagopalan, and Rasheed, 1991; Dess *et al.*, 1995), a 'gold standard' in the field (Bergh, 2001). They are also well established in the European context (Dyas and Thanheiser, 1976; Channon, 1973).[2] Here we complement the cross-national study of Gedajlovic and Shapiro (1998), who do not differentiate by strategy type. Given their fewness, we combine Rumelt's (1974) single and dominant business strategies into a single 'undiversified' category.

We followed Rumelt (1974) in gathering diversification data on the individual firms from annual reports, business directories and other publicly available sources. As in the original European studies (Channon, 1973; Dyas and Thanheiser, 1976), we also interviewed senior managers in a subset of firms (28 in France, and 25 in both Germany and the United Kingdom). To control for subjectivity, firms' strategies were classified independently by two judges; a third judge helped resolve disagreements. The level of initial agreement was 93.4 percent, which is comparable to other studies using this method (e.g., Hoskisson *et al.*, 1993).

Our models control for size, leverage (debt/equity),[3] industry membership, and ownership (Palich *et al.*, 2000). Company size is captured by the logarithm of assets (Gedajlovic and Shapiro, 1998). Industry membership is controlled for by dummy variables with the 'food, drink, and tobacco' industry grouping being used as the reference variable (Grant, Jammine, and Thomas, 1988). Companies were assigned to industries on the basis of their largest area of activity in terms of sales. Given the importance of powerful owners in European companies, we followed Thomsen and Pedersen (2000) by controlling for both ownership concentration and significant (over 5 per cent) types of owners (banks, the state, other firms, and personal owners). Consistent with Thomsen and Pedersen (2000), we focused on the largest owner of each company and use untransformed and squared measures. Where two owners held equal shares, regressions were run with both owners and with each entered separately—no significant impact on the results could be identified. The data were taken from annual reports and business publications such as *Liens Financiers, Who Owns Whom*, and the *Wegweiser durch deutsche Unternehmen.*

Performance was measured by return on assets before tax and exceptional items.[4] Return on assets remains the most widely used performance measure in the strategy literature (Brush, Bromiley, and Hendrickx, 1999; Combs and Ketchen, 1999) and that used in the European study by Gedajlovic and Shapiro (1998). To smooth any irregularities, we averaged performance over 3 years, with 1983 and 1993 as midpoints (Hall and St. John, 1994). For the United Kingdom, financial data were taken from Datastream, with the few gaps filled on a consistent basis from annual reports; for France, data were taken direct from annual reports; for Germany, data were taken from annual reports, the *Wegweiser durch deutsche Unternehmen*, and

[2] Consistent and complete data allowing the construction of standard industrial classification-based measures were not available on a cross-national basis for the earlier time period of this study. Hoskisson *et al.*'s (1993) comparative analysis supports the joint construct validity of Rumeltian and entropy measures, but not the simple SIC-based product count approach.

[3] Logarithmic transformation was used to satisfy regression assumptions (Norusis, 1993).

[4] We note the limitations of accounting performance measures, including their susceptibility to managerial manipulation (Roberts, 1999; Palich *et al.*, 2000; Scherer and Ross, 1990). However, the high proportion of French and German firms that were not actively traded on financial markets (over a third of the German firms in 1993) made financial market-based measures inappropriate for our study.

Table 1. Diversification strategies amongst large European firms

Percent	France		Germany		UK	
	1983	1993	1983	1993	1983	1993
Undiversified	42.6	39.6	35.3	22.2	27.4	16.4
Related-constrained	31.5	37.7	35.3	33.3	32.9	38.8
Related-linked	9.3	7.5	11.8	20.4	21.9	17.9
Unrelated	14.8	15.1	17.6	24.1	16.4	25.4
Number of firms	54	54	51	60	73	67

the official governmental publication *Der Bundesanzeiger*.

Table 1 presents the distribution of strategies amongst countries and over time according to the four basic types that we use. Table 2 presents correlations between key variables.

RESULTS

We start by offering an aggregate performance analysis covering all three countries in both time periods (regression 1). In line with Thomsen and Pedersen (2000), we find a significant negative relationship between state ownership and performance, but no significant effects associated with the other ownership types. Ownership concentration is not significant. Both size and leverage are negatively related to performance. Several industries show significant (<0.10) relationships to performance. The negative coefficient for Germany suggests that levels of financial performance are typically lower than in the United Kingdom (the omitted reference variable). Performance does not vary significantly over this period.

Supporting Proposition 1, the aggregate analysis finds related-constrained diversification associated positively with performance. There is no such advantage for related-linked diversification, consistent with Hoskisson and Johnson's (1992) characterization of this as a 'between' strategy. Unrelated diversification is positively associated with performance, though only at the 0.10 level of significance.

We next assess Propositions 2a and 2b by disaggregating along the two dimensions of time and nation, holding all else constant (regressions 2 to 7). Apart from France, state ownership exercises a consistently negative effect in 1983. By 1993 this effect disappears in all three countries, probably reflecting the considerable restructuring of nationalized industries in Europe over the decade. Strategy, however, shows striking variability across time and nations. In line with an earlier study of diversification in the United Kingdom (Grant *et al.*, 1988), there are no statistically significant diversification–performance relationships amongst British firms. The same is true for France in 1983, though by 1993 related-constrained strategies emerge as positive and significant, as in Proposition 1. For Germany in 1983, only related-linked diversification strategies have a significant positive relationship to performance. However, just as in France, related-constrained strategies are associated with statistically significant performance effects in 1993.

DISCUSSION AND CONCLUSIONS

Our aggregate analysis of data across two distinct time periods and three different countries provides support for the general performance benefits of related-constrained diversification. This is in line with current theory (Rumelt, 1974; Hoskisson and Johnson, 1992; and Palich *et al.*, 2000), as summarized in Proposition 1.

At this level, we can say that theory generated largely from American experience generalizes across the different national contexts of Western Europe.

However, Propositions 2a and 2b regarding contextual sensitivity also find support. The disaggregated analysis reveals performance variations across contexts. Only France in 1993 and Germany in 1993 yielded the positive relationship with related-constrained diversification found in the aggregate analysis. We found no significant relationships in the United Kingdom in either period, while Germany in 1983 yielded a positive relationship for related-linked diversification, Hoskisson and Johnson's (1992) 'between' strategy. We should note here the possible destabilizing effects of the smaller sample sizes in each of these contexts taken singly and the comparative–static juxtaposition of the two time points. That said, our data do suggest that time and country can make a difference.

In sum, although general relationships can be found at aggregate levels of analysis, in particular contexts they are liable to break down. While we cannot explore here the particular reasons why the diversification performance relationships varied as they did, we can note possible implications for research on diversification and more widely. First of all, we should be cautious regarding any finding from a single context: after all, if we had reported from Germany only in 1983, we could have made a case for related-linked diversification. Second, such contextual variability may help explain the pattern of inconsistent results characteristic of diversification research so far (Grant, 2002). Typically carried out in single

Table 2. Correlations

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11
(1) Return on assets	0.06	0.054											
(2) Related-constrained	0.349	0.477	0.186**										
(3) Related-linked	0.153	0.361	−0.047	−0.31**									
(4) Unrelated	0.19	0.393	−0.010	−0.36**	−0.206**								
(5) Ownership concentration	34.04	36.07	−0.305**	0.029	−0.103	−0.09							
(6) State owned	0.136	0.344	−0.408**	−0.066	−0.008	−0.11	0.528**						
(7) Personal ownership	0.25	0.434	0.060	0.072	−0.118*	−0.06	0.350**	−0.229**					
(8) Firm owned	0.116	0.321	−0.051	−0.08	0.042	0.027	−0.05	−0.144**	−0.169**				
(9) Bank owned	0.063	0.242	−0.041	0.008	−0.045	0.114*	−0.03	−0.103	−0.122*	−0.094			
(10) France	0.304	0.461	−0.229**	−0.005	−0.127*	−0.069	0.275**	0.277**	0.175**	0.030	0.033		
(11) Germany	0.298	0.458	−0.131*	−0.009	0.015	0.032	0.264**	−0.060	0.212**	0.034	0.165**	−0.431**	
(12) United Kingdom	0.398	0.490	0.338**	0.013	0.105*	0.035	−0.505**	−0.205**	−0.362**	−0.060	−0.19**	−0.537**	−0.530**

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$

Table 3. Diversification and performance: regressions on return on assets[a]

	Aggregate	France	Germany			U.K.	
Regression	1	2	3	4	5	6	7
		1983	1993	1983	1993	1983	1993
Related-constrained	0.0149***	0.0007	0.0304**	0.0071	0.0282*	−0.0010	0.0042
	(0.005)	(0.016)	(0.015)	(0.014)	(0.016)	(0.011)	(0.018)
Related-linked	0.0082	0.0197	0.0308	0.0320*	0.0182	−0.0186	0.0108
	(0.007)	(0.027)	(0.026)	(0.018)	(0.015)	(0.012)	(0.022)
Unrelated	0.0127*	0.0235	0.0203	0.0075	0.0261	−0.0018	0.0111
	(0.007)	(0.022)	(0.021)	(0.016)	(0.017)	(0.013)	(0.020)
Ownership concentration	0.0003	0.0012	−0.0006	0.0002	0.0001	0.0009	0.0003
	(0.0003)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Ownership concentration squared	−0.000004	−0.000012	0.000003	0.000002	−0.000007	−0.00002**	−0.000005
	(0.000003)	(0.000008)	(0.000007)	(0.000005)	(0.000005)	(0.000007)	(0.000016)
State owned	−0.0301***	−0.0416	0.00005	−0.0724***	−0.0059	−0.0526**	−0.0144
	(0.010)	(0.036)	(0.030)	(0.022)	(0.018)	(0.026)	(0.061)
Personal ownership	0.0016	0.0021	−0.0043	0.0067	0.0137	0.0186	0.0079
	(0.007)	(0.027)	(0.024)	(0.014)	(0.013)	(0.019)	(0.039)
Firm owned	−0.0076	−0.0250	0.0153	0.0155	−0.0052	−0.0152	−0.0193
	(0.008)	(0.028)	(0.023)	(0.019)	(0.014)	(0.020)	(0.027)
Bank owned	−0.0121	0.0013	−0.0047	0.0229	−0.0133	—	−0.0360
	(0.010)	(0.033)	(0.025)	(0.022)	(0.016)		(0.043)
Industry effects [only significant dummy industry variables shown as + (positive) and − (negative)]	Textile$^-$ Transport$^-$ Mechanical engineering$^-$ Car$^+$ Pharma$^+$ Petrol$^+$ Rubber and plastics$^+$	Rubber and plastics$^-$	Textile$^+$ Mechanical engineering$^-$	Car $^+$ Pharma$^+$		Rubber and plastics$^-$ Mechanical engineering$^-$ Transport$^-$ Pharma$^+$	Bricks, pottery, glass, cement$^-$ Mechanical engineering$^-$ Textile$^-$ Pharma$^+$
Log debt equity ratio	−0.0557***	−0.0874***	−0.0689***	−0.0405*	−0.0695***	−0.0213	−0.0612**
	(0.007)	(0.015)	(0.022)	(0.024)	(0.017)	(0.022)	(0.029)
Log assets	−0.0166***	0.0179	−0.0217	−0.0047	−0.0065	−0.00009	−0.0213
	(0.005)	(0.018)	(0.016)	(0.012)	(0.014)	(0.012)	(0.017)
France	−0.0110						
	(0.007)						
Germany	−0.0114*						
	(0.007)						
1993	−0.0049						
	(0.005)						
Adjusted R^2	0.509	0.583	0.372	0.648	0.535	0.669	0.333
N	359	54	54	51	60	73	67

[a] Standard errors in parentheses.
*** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$

contexts and with differing methodologies, these studies have not been able to control for temporal and national variation. The third implication follows from these. There are substantial benefits for research from systematic replicative extension across many contexts (Hubbard *et al.*, 1998; Schendel, 2000). Replicative extension may help clarify other persistently controversial issues in strategy, such as the industry vs. resources debate, where varying results are hard to interpret because of differences in methodologies, time periods, and national contexts (Rumelt, 1991; McGahan and Porter, 1997; Spanos and Lioukas, 2001). The field will benefit as we accumulate more multi-context studies across a range of topics in strategy.

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