SFB 649 Discussion Paper 2012-021

A Strategy Perspective on the Performance Relevance of the CFO

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This research was supported by the Deutsche Forschungsgemeinschaft through the SFB 649 "Economic Risk".

http://sfb649.wiwi.hu-berlin.de
ISSN 1860-5664

SFB 649, Humboldt-Universität zu Berlin
Spandauer Straße 1, D-10178 Berlin

SFB 649 ECONOMIC RISK BERLIN

A STRATEGY PERSPECTIVE ON THE PERFORMANCE RELEVANCE OF THE CFO

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Working Paper

February 2012

Research on functional members of top management teams (TMTs) has increasingly drawn interest to the strategic management field over the past few years. Studies have documented the rise of the chief financial officer (CFO) to pivotal importance and considerable power within the organization. By adopting a contingency perspective and drawing on the coalitional view of the firm, we investigate whether and when a relatively powerful CFO in the TMT is beneficial to firm performance. Multi-source panel data on 292 US firms over the five-year period from 2006 to 2010 revealed that the positive impact of powerful CFOs on performance is strengthened by the degree of unrelated diversification and the firm's tendency toward Defender-type strategies but not by its degree of internationalization.

JEL classification: G30, M10

Key words: Power/resource dependency theory, top management team, finance function, chief financial officer, organizational politics and power, diversification, generic business level strategies, internationalization, panel data analysis

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This research was supported by the Deutsche Forschungsgemeinschaft through the SFB 649 "Economic Risk", and this support is gratefully acknowledged.

INTRODUCTION

Research on top management teams (TMTs) has been growing into one of the most prominent topics in the field of strategic management, especially since Hambrick and Mason's (1984) seminal article on the upper echelons perspective. Interested in the impact of managers' characteristics on strategic choice and firm performance, the majority of empirical studies to date has focused either on the TMT as a whole or on the chief executive officer (CEO; e.g., Daily and Johnson, 1997; Crossland and Hambrick, 2011).

Only in recent years has the analysis of individual functional TMT members' organizational influence gained more attention, for example in studies on the chief marketing officer (CMO; e.g., Nath and Mahajan, 2008; Lamberti and Noci, 2009; Nath and Mahajan, 2011), the chief operating officer (COO; e.g., Hambrick and Cannella, 2004; Marcel, 2009), and the chief information officer (CIO; e.g., Enns, Huff, and Golden, 2003; Medcof, 2008). In his current literature review, Menz (2011) concludes that "given the inconclusive and even partly contradictory results, scholars should continue analyzing functional TMT members' effect on firm performance" (Menz, 2011: 73).

We would like to address this need by focusing on the chief financial officer (CFO). Research has documented the rise of the finance function and the CFO to one of the most powerful members of the TMT, with "critical say in strategic and operational decisions, […] often second only to the chief executive officer" (Zorn, 2004: 347). This development was attributed to a number of changes in legislation and the market environment and is expected to continue since new regulation, like the Sarbanes-Oxley Act, further strengthens the CFO's position of power (Fligstein, 1987; Zorn, 2004).

To our knowledge, however, no prior study has investigated whether or when a powerful CFO is actually beneficial to firm performance. Since most research on the CFO was conducted in the field of accounting and finance and with a focus on CFO succession and incentive structures (e.g., Shehzad, 2001; Stevens *et al.*, 2005; Geiger and North, 2006; Indjejikian and Matejka, 2009; Chava and Purnanandam, 2010; Gore, Matsunaga, and Eric Yeung, 2011) we attempt to fill this gap by addressing the following two research questions:
(1) Does the relative power of the CFO in the TMT have a general (positive) influence on firm performance?
(2) In which strategic constellation is a powerful CFO especially beneficial to firm performance?

To do so, we take a coalitional view of the firm, in which power is central for resolving conflict (Cyert and March, 1963; Pfeffer, 1981). When a strategic choice is made, situations are typically characterized by uncertainty, imperfect information, and bounded rationality. In such situations, decision making is "an essentially political process in which constraints and opportunities are functions of the power exercised by decision makers" (Child, 1972: 16). Under these conditions, decisions will be reflective of the dominant coalition's cognitions, values, and beliefs (Hambrick and Mason, 1984). Powerful TMT members, for example a powerful CFO, should thus have an impact on firm performance and his "style" be reflected in strategic decisions.

Since we expect this impact to not be uniform, we take a contingency perspective to analyze under which conditions the resources contributed by a CFO are especially beneficial to performance. Namely we test three moderators (unrelated diversification, Miles and Snow's (1978) strategic type, and internationalization) which on the one hand represent central features of firm strategy (Finkelstein, Hambrick, and Cannella, 2009) and which, on the other hand, have been used as contingency factors in studies on CEO- or TMT-performance effects (e.g., Thomas, Litschert, and Ramaswamy, 1991; Nath and Mahajan, 2011).

We conduct this study using secondary multi-source panel data on 292 US firms over the period from 2006 to 2010. Our data includes information on approximately 35,000 individual TMT members, which we use to construct a multi-indicator measure of the relative power of the CFO in the TMT.

This working paper is structured as follows: In the next section, we briefly review the CFO's path to relative power in the TMT and define the term. We theoretically derive our hypotheses on the performance-relevance of the CFO and the interaction with the three above mentioned contingency factors. Figure 1 illustrates the conceptual framework. We then describe the method applied to test for our hypotheses, including a description of the study's sample, measures, and analyses. In the last section we briefly discuss the results obtained so far.

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Insert figure 1 about here

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THEORY AND HYPOTHESES

From the 1970s on, research published in practitioner-oriented journals documented the changing role of the CFO from a back office function, mainly confined with bookkeeping, tax reporting and the preparation of financial statements to one of the most powerful members of the top management team (TMT), with "critical say in strategic and operational decisions, […] often second only to the chief executive officer" (Zorn 2004: 347) (e.g., Gerstner and Anderson 1976; Bergson, 1980; Johansson, Walther, and Dunleavy, 1997).

This development drew academic attention to explaining the reasons for such transformation of finance control. In his work on different conceptions of control, Fligstein (1987, 1990) attributed the rise of finance personnel (measured by chief executive officers (CEOs) with a subunit background in finance) to a better fit of finance capabilities with new environmental/market conditions after the Celler-Kefauver Act of 1951[1], which made finance personnel succeed in an "intraorganizational power struggle".

In a more recent review specifically focused on the rise of the CFO, Zorn (2004) found another change in US law in the late 1970s to be "a watershed in the role of the corporate finance function, laying the foundation for the CFO's subsequent rise to pivotal, strategic importance" (Zorn 2004: 359)[2]. Zorn documents a number of further developments throughout the 1980s and 90s (e.g., the emergence of complex financing techniques, the challenge to defend a company against hostile takeovers, the increasing dominance of institutional investors) which increased the CFO's importance, especially towards the end of the last century with the dominance of the shareholder-value model.

Yet another recent change in regulation made the CFO's entrenchment in the TMT likely to continue. Since 2002, the Sarbanes-Oxley-Act (SOX) aims at enhancing transparency for investors and enhance trustworthiness of a company's financial reporting, e.g., by having the CFO personally certify the accuracy of the reported financial results (e.g., Li, Sun, and Ettredge, 2010). "Sarbanes-Oxley is perhaps the most sweeping change in corporate governance since the Securities and Exchange Commission (SEC) was founded" (Finkelstein et al. 2009: 230).

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1 The Act essentially prohibited concentration in product lines due to acquisitions of firms with related products. It was upheld by the US Supreme Court in 1982 but is seen as an initiating reason for the conglomerate strategy with unrelated diversification as a main objective (Fligstein, 1987).

2 The change in law consisted of the obligation for companies to account for inventories and fixed assets with current cost accounting (FASB statement 33, issued 1979 as a consequence of high inflation during the late 1970s) (Zorn, 2004).

These developments suggest that the CFO has become one of the most powerful members of the TMT and hence we attempt to examine the consequences of this accumulation of power.

Like prior research in this area, we define power as an individual's capacity to influence key decisions in an organization (e.g., Pfeffer, 1981; Finkelstein, 1992; Adams, Almeida, and Ferreira, 2005; Nath and Mahajan, 2011). By nature of this definition, "power is a relative concept" (Finkelstein, 1992: 508) and a zero-sum game (Emerson, 1962; Blau, 1986).). It arises from the interdependent nature of managerial work (Thompson, 1967) and will accrue to those functional TMT members, "who (1) can cope with uncertainty […] and (2) are uniquely positioned to do so" (Finkelstein 1992: 508).

Power plays a central role in our research for the following reason: In the coalitional view of the firm (Cyert and March 1963; Pettigrew, 1973; Mintzberg, 1983), a company in general and its dominant coalition (the TMT) in particular are considered a political organizations, composed of parties with different, often conflicting goals, preferences, capabilities, and experiences. In such constellations, conflict is inherent and power is the main instrument to resolve it (Pfeffer 1981). In TMTs, power becomes additionally important given the nature of decisions it has to take. These decisions are often characterized by a high degree of uncertainty, ambiguity, and thus bounded rationality (Mintzberg 1983; Thompson 1967). As a consequence, strategic choice is highly influenced by the characteristics, capabilities, and values of the relatively most powerful entity in the TMT (Child 1972; Bourgeois III and Eisenhardt, 1988; Finkelstein 1992) and organizational outcome becomes reflective of the latter (Hambrick and Mason 1984).

Hence, TMTs with relatively a powerful CFO are likely to take decisions that are strongly influenced by the CFO's capabilities and style. "Collectively, the extant literature suggests that, while various functional TMT members require similar social and communication skills, there are differences in the type and scope of their technical capabilities" (Menz 2011: 16). For the CFO, the main capabilities are seen in technical specialties (e.g., accounting, cost control, financing techniques, acquisitions and divestitures, investor relations) but also in more general management skills like the steering of a portfolio of businesses on the basis of sound financial analysis and planning (e.g., Gerstner and Anderson, 1976; Miles *et al.*, 1978; Fligstein, 1987; Zorn, 2004). These capabilities led to the rise of the CFO (Zorn, 2004).

If we take the resource dependency perspective (Pfeffer and Salancik, 1978), this implies that companies gave power to the CFO, because his capabilities enable him to reduce uncertainty and add critical resources to the firm (Emerson, 1962; Pfeffer and Salancik, 1978). On this basis we formulate a baseline hypothesis in preparation of the contingency perspective:

H_1: The relative power of the CFO in the TMT is positively related to firm performance.

As briefly discussed in the introduction, we find strong theoretical precedence for a contingency perspective on the CFO power – performance relationship. We employ the concept of coalignment between the above mentioned specific capabilities of a CFO and firm strategy (Thomas, Litschert, and Ramaswamy, 1991). As Menz (2011) noted, "studies suggest that functional TMT members may affect economic performance but […] these effects are often subtle and contingent upon industry, firm, and particularly TMT-level factors that require further analyses" (Menz, 2011: 23).

Unrelated diversification

Firms that pursue a strategy of unrelated diversification are characterized by offering a portfolio of products, which is not or hardly related (Palepu, 1985). As Fligstein (1987) notes, in such conglomerate-like firms, the "most likely winners in the firm power struggle became those with a finance background. Since the firm was no longer involved in a few product lines, manufacturing expertise proved too narrow and sales and marketing strategy applied only to growth in market share of related products. Once firms started investing in products too dissimilar to consider related, the only criterion that could be used to evaluate product lines was financial" (Fligstein, 1987: 50).

As Finkelstein (1992) argues, "the managerial job in diversified firms often resembles that of managing a financial portfolio, an activity in which financial executives typically have some experience" (Finkelstein, 1992: 524). Other authors confirmed and extended this finding (e.g., (Song, 1982); (Smith and White, 1987), (Jensen and Zajac, 2004). In this vein, Nath and Mahajan (2011) found CMO power negatively associated with firm performance in cases of unrelated diversification. The strong fit between the CFO's capabilities (here especially portfolio management) and the skill requirements in unrelated diversified firms lead us to hypothesize:

H_2: The positive relationship between the relative power of the CFO in the TMT and firm performance is strengthened (weakened) in strongly (weakly) unrelated diversified firms.

Strategic type

Another strategy aspect on which we apply the concept of coalignment is the company's strategic type as classified by Miles and Snow (1978). The authors differentiate four types of companies, whereas the two extremes are "Defenders" and "Prospectors." While Defenders are characterized by a focus on internal operational efficiency and the aggressive penetration and protection of existing markets, Prospectors create change in the industry and are oriented towards developing new, innovative products (Miles *et al.*, 1978).

Thomas, Litschert, and Ramaswamy (1991) applied this classification to empirically test whether the coalignment of CEO functional background and strategic type had significant performance implications. Their findings supported the hypothesis that CEOs with marketing or research and development experience were associated with positive firm performance in Prospector firms due to a match of owned and required functional capabilities. We apply the underlying rationale and propose that the CFO will enhance performance in Defender firms because of his expertise in cost control and operational efficiency. We hypothesize:

H_3: The positive relationship between the relative power of the CFO in the TMT and firm performance is strengthened in strategic Defender-type firms (and weakened in strategic Prospector-type firms).

Internationalization

A company's degree of internationalization characterizes its exposure to and dependence on foreign markets, either structurally (i.e., in terms or resources) or with regards to performance (i.e., in terms of foreign revenues) (Sullivan, 1994). It thus reflects the firm's geographic diversification (e.g., Carpenter, 2004). As for product diversification, the management of multinational companies can be compared to the management of a portfolio, whereas different countries – culturally and geographically diverse – now take the role of different product lines.

As this comparison suggests and as we additionally derive from anecdotal evidence, we argue that for the management of such geographic portfolios, functional finance skills are beneficial. Especially as the steering of different country units on the basis of defined financial evaluation metrics is expected to promote unit performance, we hypothesize:

H_4: The positive relationship between the relative power of the CFO in the TMT and firm performance is strengthened (weakened) in strongly (weakly) internationalized firms.

METHOD

Sample

To test for our hypotheses, we gathered information on every individual TMT member of 387 US Fortune 2000 firms over the period from 2006 to 2010 from multiple secondary sources: S&P's COMPUSTAT and ExecuComp databases, Thomson Reuters' Datastream as well as from annual reports and general websites.

We excluded 95 financial services firms (SIC codes starting with 6) because of likely structural differences towards the rest of the sample (e.g., Bertrand and Schoar, 2003; Adams, Almeida, and Ferreira, 2005; Chava and Purnanandam, 2010). All of the 292 firms in our final sample had a CFO in every of the five years of examination.

Measures

Relative power of the CFO: Many studies on managerial power employ a selection of the 13 objective indicators identified by Finkelstein (1992) (e.g., Haleblian and Finkelstein, 1993; Daily and Johnson, 1997). We restricted our construct to indicators suitable for calculating relative power within the TMT and obtainable from secondary sources for every individual TMT member. We added indicators of power derived and empirically tested in more recent literature (e.g., executive tenure (Finkelstein and Hambrick, 1989; Wade, O'Reilly, and Chandratat, 1990; Ocasio, 1994)).

Our final construct of relative power of the CFO consisted of the following seven indicators, each of which was calculated as the CFO's score divided by the average score of the TMT: Total compensation, tenure in board, age, share ownership, number of functional areas[3], number of formal titles, and board presence[4].

Results from confirmatory factor analyses (e.g., comparative fit index of 0.96 (Bentler, 1990)) confirmed that the seven indicators load significantly on one factor only. We calculated the

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3 We classified TMT members into functional areas according to their formal titles mentioned in the ExecuComp database. To do so, we employed and extended the classification logic proposed by Menz (2011) and finally counted the different functional areas in which an individual TMT member had experience in, since he or she first appeared in the ExecuComp database (starting from 1992).

4 In order to define a relative measure for the attribute of whether or not a TMT member is also present in the company's board of directors, we coded a dummy variable equal to 2 this was the case and equal to 1 otherwise. We chose to do so because a 0/1 dummy variable would always yield 0 if the CFO was not present on the board. Our definition on the other hand allows for a differentiation of power even in such a situation.

overall construct of power as the arithmetic mean of the seven indicators and find acceptable fit with a Cronbach's alpha of 0.72 (Cronbach, 1951).[5, 6]

Unrelated diversification: We measured the degree of unrelated diversification by calculating the entropy measure of product segment sales on the 2-digit-SIC code level (Jacquemin and Berry, 1979; Palepu, 1985).

Strategic type: In order to allow for a more precise analysis of the interaction between the relative power of the CFO and the company's tendency toward a certain strategic type, we did not create a dummy variable to classify firms either as Defenders or Prospectors but calculated a continuous measure of four indicators: The ratio of the firm's research and development expenses over sales, its advertising expenses over sales, the ratio of cost of good sold over sales, and total assets per employee (Hambrick, 1983)). Since Defenders rank low on the first three measures but high on the last, we reverted asset intensity by multiplying the standardized values by -1. Finally, to facilitate interpretation of our findings, we reverted the calculated index (again, by multiplying with -1) so that high index scores signal Defender-type strategies and low index scores Prospector-type strategies.

Internationalization: We measured the degree of internationalization using a composite measure as the sum of the ratio of foreign sales to total sales and the ratio of foreign assets to total assets (e.g., Carpenter, 2004).

Firm performance: We used return on assets (RoA) as our primary performance metric (reported in the following section) and return on equity (RoE), return on sales (RoS), Tobin's q, and total return to shareholders as additional dependent variables.[7]

Control variables: We controlled for time effects and industry effects in our panel regressions by including dummy variables for years and for industries at the 2-digit-SIC code level (e.g., Nath and Mahajan, 2011). Firm-level controls included firm size, measured by the logarithm of sales (e.g., Carpenter and Sanders, 2002), firm age, measured by the logarithm of years since founding (e.g., Caselli and Di Giuli, 2010), as well as leverage, measured by the ratio of

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5 Example year 2010; more details on this analysis as well as on all further analyses can be obtained from the authors on request.

6 To ensure robustness, we conducted all following analyses also with two alternative power measures, one which was the result of multivariate regression analysis after an exploratory factor analysis and one which was the result of the structural equation model in the confirmatory factor analysis. Both yielded highly comparable results.

7 We defined the accounting measures of performance RoA, RoE and RoS as EBITDA divided by the total assets (or equity/sales respectively). Like Bertrand and Schoar (2003) we decided to use this operating performance metric because we found net income (in the enumerator) distorted from extraordinary effects during the years of the financial crisis and because we appreciate operating results for being comparable across firms with different asset- and financing structure.

long-term debt plus debt in current liabilities over long-term debt plus debt in current liabilities plus the book value of common equity (e.g., Adams, Almeida, and Ferreira, 2005).

Analyses

Given the panel structure of our data, we conducted all analyses employing Generalized Estimating Equations (GEE) (Liang and Zeger, 1986) in StataCorp (2011) in order to avoid bias from within-subject dependence. Our specification for the GEE was a Gaussian family, an identity link, and an AR(1) first-order autoregressive correlation structure (because it is reasonable to assume that firm performance in adjacent years is correlated most highly).

RESULTS AND DISCUSSION

Table 1 with descriptive statistics and correlation coefficients reveals that none of the pooled correlation coefficients exceeded 0.5. Due to the panel structure of our data, it should nevertheless be noted, that the p-values of such pooled correlations are not reliable. However, we note that all variance inflation factors and condition indices were less than 3, leading us to conclude that multicollinearity is not an issue (Wooldridge, 2010).

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Insert table 1 about here

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Results from the panel regression analyses are shown in table 2. Model 1 includes the control variables only, model 2 the main effect to test for H_1. Although relative power of the CFO in the TMT has a positive coefficient, the effect is not significant and thus H_1 is not supported. The three hypothesized interaction effects were sequentially calculated in the models 3a to 3c. Positive and significant interaction effects between CFO power and unrelated diversification and strategic type support both H_2 and H_3 respectively. The interaction of power and internationalization has a negative coefficient, which is not significant. Thus, H_4 is not supported. A reason for the lack of support for this hypothesis could be the negative correlation between the degree of internationalization and strategic type for firms in our sample. It is conceivable that the negative interaction effect of Prospector-type strategies implicitly cancels out a potentially positive interaction effect of geographic diversification.

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Insert table 2 about here

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In a post hoc analysis we tested for a three-way-interaction effect between CFO power, unrelated diversification and strategic type (model 4). To facilitate the interpretation of the positive and significant effect on performance, figure 1 shows the CFO power – firm performance relationship for four different combinations of the moderators. The graph illustrates that a high degree of unrelated diversification in combination with the strategic Defender type strengthens the positive effect of increased CFO power on firm performance.

Interestingly, it also reveals that in situations in which one of the two moderators is at an "unfavorable" level, i.e., low unrelated diversification or strategic Prospector type, it cancels out the strengthening effect of the other, "favorable" attribute. Slope difference tests statistically confirmed this interpretation by indicating that the slope for high unrelated diversification and Defender strategy (unfilled diamond mark) is significantly different from all other slopes ($p < 0.01$), whereas all other pairs of slopes were not statistically different from each other (Dawson and Richter, 2006).

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Insert figure 2 about here

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FIGURES AND TABLES

Figure 1: Model of the relative power of the CFO in the TMT and its related performance outcome

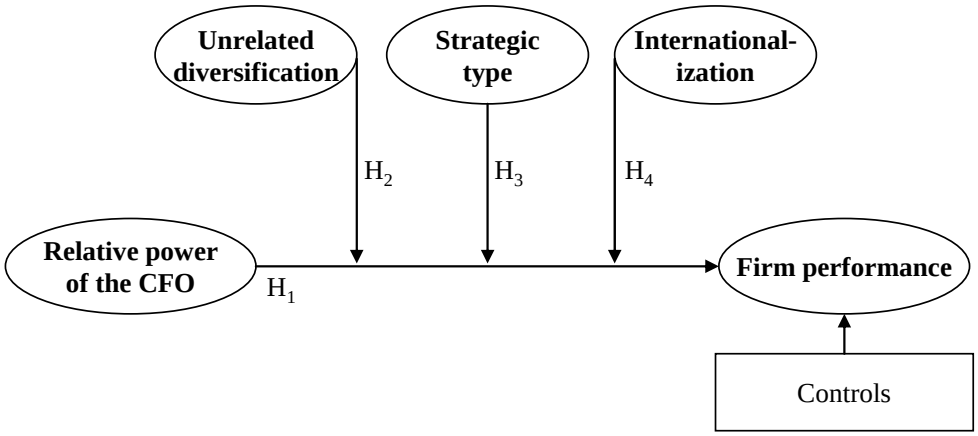

Figure 2: Three-way-interaction between relative CFO power, unrelated diversification and strategic type

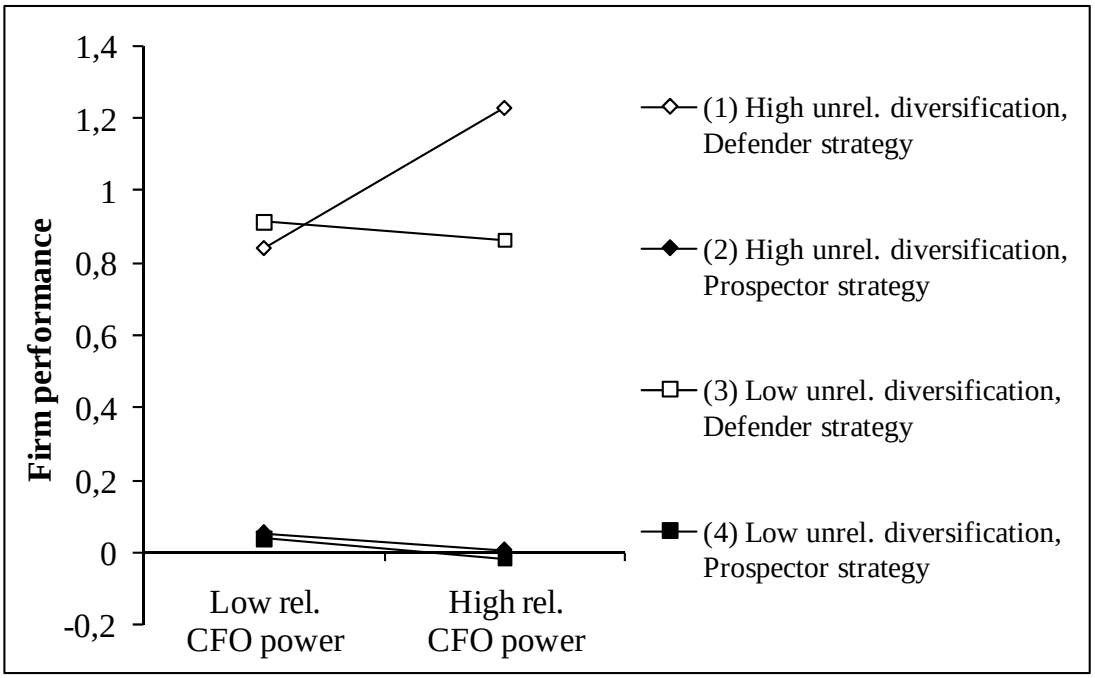

Table 1: Descriptive statistics and correlation coefficients

		Mean	Std.	1	2	3	4	5	6	7	8
1.	RoA	0.15	0.07	1.00							
2.	Relative power of the CFO	0.03	0.58	-0.03	1.00						
3.	Unrelated diversification	0.18	0.33	-0.02	0.01	1.00					
4.	Strategic type	-0.11	0.51	0.05**	-0.02	-0.06**	1.00				
5.	Internationalization	0.46	0.44	0.13***	-0.02	0.18***	-0.06**	1.00			
6.	Firm size	8.00	0.46	-0.03*	-0.03	0.26***	-0.15***	0.11***	1.00		
7.	Firm age	1.49	0.40	0.05*	0.01	0.17***	-0.04	0.10***	0.25***	1.00	
8.	Leverage	0.41	0.25	-0.24***	-0.02	0.00**	0.00	-0.16***	0.08***	0.05*	1.00

Note: The table shows correlations between measures of an unbalanced panel of 292 firms observed over five years; year-wise p-values may differ and are available on request. We do not report the industry dummy control variables in the interest of space.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2: Effects of the relative power of the CFO on firm performance (RoA)[a]

	Model 1	Model 2	Model 3a	Model 3b	Model 3c	Model 4
Independent						
Relative power of the CFO		0.02	0.02	0.03*	0.04**	0.03*
		(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Unrelated diversification			-0.00			0.04
			(0.04)			(0.04)
Relative power of the CFO x unrelated diversification			0.05***			0.06***
			(0.02)			(0.02)
Strategic type (high = Defender)				0.46***		0.47***
				(0.03)		(0.04)
Relative power of the CFO x strategic type				0.05***		0.06***
				(0.02)		(0.02)
Internationalization					0.05	
					(0.03)	
Relative power of the CFO x internationalization					-0.02	
					(0.02)	
Unrelated diversification x strategic type						0.03
						(0.04)
Relative power of the CFO x unrelated diversification x strategic type						0.05**
						(0.02)
Control variables						
Firm age (log)	0.04	0.04	0.04	0.04	0.04	0.03
	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)
Firm size (log)	0.08*	0.07*	0.08*	0.13***	0.03	0.12***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Leverage	-0.24***	-0.24***	-0.24***	-0.21***	-0.26***	-0.20***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.03)
Year dummies	Included	Included	Included	Included	Included	Included
Industry dummies	Included	Included	Included	Included	Included	Included
Constant	0.49	0.51	0.49	0.48	0.23	0.49
	(0.34)	(0.34)	(0.34)	(0.36)	(0.34)	(0.36)
Wald chi²	376.79***	379.59***	389.06***	595.93***	332.51***	612.88***
N	1197	1197	1195	1197	966	1195

[a] Standardized beta coefficients; variables winsorized at the 1%- and 99%-level, multivariate outliers identified and removed; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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This research was supported by the Deutsche Forschungsgemeinschaft through the SFB 649 "Economic Risk".