Opening the Black Box:
Internal Capital Markets and Managerial Power in Conglomerates

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This version: October 2009

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Abstract

How do firms allocate capital internally across units? Do more powerful and better connected managers inside a conglomerate get larger capital allocations? To answer these questions, we put together a unique five-year *business-unit* panel data set on *planned* and *actual* capital allocations inside a world-wide conglomerate with 5 divisions and 22 business units, and construct measures of managerial power and connections from profile data and a questionnaire carried out for unit CEOs. Our conglomerate shows the same kind of inefficiencies in capital allocation and investment behavior documented in previous studies. In the search for a potential channel behind such behaviour, we test if cash windfalls at the headquarters are distributed inside the conglomerate according to managerial power or connections. In contrast to planned capital allocations, which are not affected by connections, we find that units with more powerful and better connected managers get substantially larger parts of the windfalls. Our estimates show powerful managers increasing their actual vs. planned investment between 10 and 32% more than their less powerful peers. These results are not explained by managers' abilities or an endogenous allocation of managers across units. In support of bargaining power theories, our results provide direct empirical evidence of an important channel of capital misallocation inside firms.

1. Introduction

How do firms allocate capital internally? Do units with better investment opportunities receive larger capital allocations and invest more? Are units run by more powerful or better connected managers favored with higher investment budgets? Stein (2003) and Maksimovic and Phillips (2007) provide a comprehensive review of the bright and the dark side theories of internal capital markets initially studied by Gertner, Scharfstein and Stein (1994). The efficient internal capital markets view holds that capital allocation inside a firm is the result of a process of pooling the internally generated cash flows of all units and subsequently allocating funds to their best use across units (e.g., Weston, 1970, Williamson, 1975, Matsunaka and Nanda, 2002, Maksimovic and Phillips, 2002). Through winner-picking methods, internal capital markets may add value as the firm gives larger allocations to those units with higher investment opportunities (e.g., Stein, 1997). In these models, capital allocation is mainly determined by the investment prospects of a unit (e.g., marginal Tobin's Q).

An alternative view suggests that investment opportunities may not be the only driving force behind capital allocations and that units run by more powerful or better connected managers may succeed in attracting larger allocations beyond their opportunities. These ideas have been formalized in inefficient internal capital market models such as Meyer, Milgrom, and Roberts (1992), Scharfstein and Stein (2000), Rajan, Servaes, and Zingales (2000), and Wulf (2008) among others.[1] These models assume that unit CEOs have a preference for larger capital allocations (e.g., for rent-seeking or empire building reasons) and thus try to get more funds allocated to their units through the use of so-called influence activities. Influence activities are costly and inefficient due to the amount of resources spent on affecting allocations and the potentially suboptimal final investment decisions. The basic prediction of these models is that capital allocation is influenced by the power of unit managers vis-à-vis the CEO and not investment prospects alone.[2]

Although there has been substantial theoretical progress on internal capital markets, empirical evidence on the topic has been hard to come by. Similar to the situation of the internal labor markets

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[1] Some inefficient internal capital market theories also focus on agency problems at the CEO level. These agency models predict that CEOs try to allocate more capital to those units which would entrench them more (e.g., units where they have more human capital or experience), which could provide them with private benefits (e.g., Stulz, 1990), or where they can expect some future favors from the receiving managers. While these models have been able to explain rather well general overinvestment of conglomerates and free cash flow problems, they have more difficulties explaining the internal misallocation of funds inside conglomerates (see Rajan, Servaes and Zingales, 2000).

[2] These models focus on the activities and the power of managers operating below the CEO to explain the allocation of capital inside firms. In Meyer, Milgrom, and Roberts (1992), unit managers are modeled as rent-seeking agents trying to influence the CEO to get larger capital allocations (e.g., by overstating their own units' prospects or by exercising bargaining power and lobbying activities). In the same spirit, Scharfstein and Stein (2000) show that division managers can raise their bargaining power to extract larger benefits from the CEO by pursuing rent-seeking activities. As a result of the agency conflict between managers and shareholders, these benefits take the form of preferential capital allocations rather than higher compensation. Unit managers may derive utility from larger capital allocations, as in the classic empire-building view of the agency literature. Rajan, Servaes, and Zingales (2000) show that internal distortions in the allocation of capital can arise even if CEOs are acting on behalf of shareholders.

literature, described by Baker and Holmstrom (1995) as in a stage of "too many theories, too few facts," empirical research on internal capital markets may benefit from "… studies of personnel records, supplemented by interviews and institutional facts" (Baker and Holmstrom, 1995). We follow this line of thinking and the work of Baker, Gibbs, and Holmstrom (1994a, 1994b) who test internal labor market theories based on detailed internal data from a single firm. In this paper, we study the internal capital allocation process and its connection to unit managers' power and connectedness inside a large world-wide conglomerate.

Our analysis relies on two databases we put together. First, we were granted access by the conglomerate to a proprietary detailed data set on *planned* and *actual* capital allocations at the business unit level.[3] The information comes from the internal management accounting system providing quarterly data on planned capital allocations and monthly data on actual (realized) capital allocations of each of the five divisions and the 22 business units of our conglomerate between 2002 and 2006.

Second, to generate measures of unit managers' power and connectedness, we created a second database for the managers of all divisions and business units inside the conglomerate. Throughout our five year period, there were 13 different Division CEOs and 43 different Business Unit CEOs. There are three main sources for this database. First, we use management profile data from BoardEx and Zoominfo for all division and business unit managers.[4] Second, we complemented and cross-checked this data with information from social networking web pages, annual reports, and a systematic web and newspaper search. From these sources, we construct several measures of manager characteristics and histories to proxy for power and connectedness. Some of these measures follow previous studies (e.g., Cohen, Frazzini, and Malloy, 2008, Landier, Nair, and Wulf, 2009, Bandiera, Barankay, and Rasul, 2009, Fracassi, 2008, Ryan and Wiggins, 2004 and Berger, Ofek, and Yermack, 1997). Finally, for the 43 Business Unit CEOs, we were able to complement the management profile data with information from an internal questionnaire that we designed and ran ourselves.[5] The survey contains both self-constructed questions and other questions previously used in the management and sociology literature to measure influence and power (e.g., Podolny and Baron, 1997, and Forret and Dougherty, 2001, 2004). The survey allows us to construct two complementary indexes measuring a manager's networking activities and his/her connection to higher management.

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[3] Our data analysis will focus on the business unit level as the divisions do not have operating activities themselves and only form a roof for the business units therein.

[4] BoardEx data has recently also been used by Cohen, Frazzini, and Malloy (2008). Cohen, Frazzini, and Malloy (2009) have also exploited Zoominfo data.

[5] Survey methodology has recently also been used in Kaplan, Klebanov and Sorenson (2008) to link managerial characteristics elicited in a questionnaire and corporate financial outcomes.

Before we look at the effects of the power of unit CEOs on capital allocation, we begin our analysis by showing that our conglomerate seems to be exposed to the same kind of inefficiencies in capital allocation and investment behavior as documented in previous studies. First, following Berger and Ofek's (1995) methodology, we find that the discount of our conglomerate is 15 % on average over the sample period, hence comparable with that of other large conglomerates (see Berger and Ofek, 1995, and Lang and Stulz, 1994). Second, we compare the investment rates of the conglomerate's business units with those of matched stand-alone firms. We find that, consistent with other papers (e.g., Rajan, Servaes, and Zingales, 2000, Berger and Ofek, 1995), the units of our conglomerates overinvest compared to matched stand-alone firms. Third, we follow Ozbas and Scharfstein (2008) and compare the sensitivity of investment to investment opportunities of the business units with those of matched stand-alone firms. Consistent with Ozbas and Scharfstein (2008), our results also show that the conglomerate's business units generally show a lower sensitivity of investment to Tobin's Q (compared to the comparable stand-alone firms). Finally, we follow the division-level analysis in Shin and Stulz (1998) and find that, consistent with their findings, investment by a given division depends on the cash flow of the firm's other divisions, but much less than on cash flow available to the own division (i.e., they might overinvest if large amounts of free cash flow are available). Overall, this evidence suggests that the investment of individual divisions is not sufficiently insulated from its own operating cash flows and that the documented overinvestment might be driven by large amounts of free cash flow.[6] We should point out that, unlike the majority of previous papers which present results at the division level, our main analysis is based on business-unit level data, which makes matching samples more precise and comparable.

Although the documented behavior of the conglomerate and its units provides suggestive evidence against the classic arguments of efficient internal capital market theories, we still lack evidence on the potential channels behind such inefficiencies in capital allocation. The main contribution of our paper lies in the ability of our data to empirically document the effect of power and connections on capital allocation.

To identify this effect, we follow a method similar to that in Blanchard, Lopez-de-Silanes, and Shleifer (1994), who analyze firms' behavior after an unexpected cash windfall. During our sample period, our conglomerate faces several cash windfalls resulting from headquarters' sales of equity stakes in other companies whose activities are largely unrelated to the current activities of the units. The windfalls are substantial, varying from 4 to 10 % and 24 to 84 % of the firm's annual sales and

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[6] These results are also in accordance with the findings in Gertner, Powers, and Scharfstein (2002) as they find that spun-off business units are significantly more sensitive to measures of investment opportunities than when they were part of the conglomerate.

operations cash flow, respectively. The units have not considered these cash windfalls in their submitted and approved planned capital allocation budgets. Nonetheless, these cash flows are partially available for investments of the business units *ex post*. We show that about 20% of the proceeds resulting from the windfalls are used for investment inside the conglomerate.

For a set of reasons, the equity sales are largely exogenous to the business and division managers and their units and the analysis of windfalls thus provides a suitable scenario to test our theories.

First, the equity stakes were held and managed by the headquarters and did not form parts of the business units' assets. The selling decisions were therefore also made at the headquarters level and the unit managers were not involved in these decisions. Second, our sample firm is neither financially constrained nor in need of cash to finance investment opportunities of the various units. The sale of the stakes was therefore not endogenous in the sense that the assets were sold to finance investments of the conglomerate's units (see Hovakimian and Titman, 2002). Third, the activities of the companies in which the equity stakes were sold were unrelated to the activities of the business units in most, namely five out of eight, cases. In the three cases were the activities were related to those of some units, this was mainly because the companies were suppliers of some goods, the sale of the stakes implied only small reductions of the equity investments in these companies. We will also show that our results are robust to excluding those units from the sample which had business relations (these were two units). In all eight cases, the stakes were sold as they were considered non-strategic assets, the firm wanted to exploit market opportunities, and it wanted to reduce the exposure to cyclical industries.

Studying the effects of power on the distribution of cash windfalls rather than on planned capital budgets also has the advantage of mitigating the potential reverse causality problem between planned budgets and power: historically high planned capital allocations could themselves be a driver of managerial power inside the organizations.

Our methodology exploits the availability of planned investment data and studies the effects of the cash windfall on how business unit investment actually changes *relative* to what was initially filed in the plans. Looking at the change of actual relative to planned investment, rather than at actual investment only, allows us to largely control for investment opportunities which may differ across units (these differences should be reflected in the planned budgets).

Investment rates generally increase throughout business units when cash windfalls arrive: quarterly investment increases by about 21% on average. But the investment increase is far from homogeneous and some of the variance can be explained by the different degrees of power and connections of business and division unit managers. We find according to several measures of power that unit managers with more power and better connections get significantly larger parts of the cash

windfalls. This leads to unit managers with more bargaining power or better connections increasing their investment substantially more than the rest. The estimated economic magnitudes are large even after directly controlling for proxies of investment opportunities (e.g., imputed Tobin's Q or internal measures of the firm), unobserved business unit heterogeneity, and clustering of standard errors at the business unit level.

For example, following a windfall, a unit's actual investment (relative to what has been planned) increases by 32% if the tenure of a Business Unit CEO increases from the first to the third quartile of the distribution. Similarly, the actual investment rate increase (relative to plan) of Business Unit managers living close to the headquarters is 29%, versus a mere 5% increase for unit managers who live abroad.

Our results are robust to different alternative specifications such as: (i) the use of division fixed effects instead of business unit fixed effects to account for possible division-wide policies in the allocation of capital; (ii) pooled OLS regressions without division or business unit fixed effects and with standard errors clustered at the business unit level; (iii) specifications where standard errors are not clustered; (iv) specifications where actual capital expenditures over total assets is used as the dependent variable; (v) logit regressions where the dependent variable is a dummy which is 1 if actual capital expenditures exceeds planned capital expenditures; (vi) specifications which account for possible autocorrelation in the error term; and (vii) specifications were we drop those units from the sample which had business links with the equity stakes.

In the robustness section, we also address two potential concerns about the main results of the paper. First, we show that our results are unlikely to be driven by an endogenous allocation of (powerful) managers to units with the best investment opportunities. Second, we address the issue of a potential relation between our power measures and management ability. We conduct a series of tests to show that these measures are unlikely to proxy for ability. First, we try to develop a direct proxy for managers' ability by collecting information on whether the unit CEOs hold non-executive director positions outside of the firm. One could argue that more able managers would have a higher outside visibility and would therefore be more likely to be hired as non-executives by other firms. Our results are robust to the inclusion of this variable in the regressions. Second, if power captured ability we would expect our proxies to be positively related to the unit's operating performance. Using different measures of operating performance, we do not find such relations in the data. Finally, our power measures do not seem to be related to *ex ante* (planned) allocations of capital, which does not support the link between our measures and management ability either.[7]

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[7] We will provide a detailed description of the allocation process based on the firm's internal documents.

Overall, our evidence suggests that power and connections do not play a strong role in the normal capital allocation process which may include mechanisms that try to reduce inefficient influence activities. Rather it is during instances of unpredicted or *ad hoc* cash windfalls when managerial power comes into play as the institutionalized and structured budgeting processes in the firm are less likely to be binding then.[8]

Our results complement those in Rajan, Servaes, and Zingales (2000) and in McNeil and Smythe (2009) who study the effect of managerial power in the capital allocation process for a large cross-section of firms. Although our paper is only about a single conglomerate, it has the benefit of providing detailed data of the power structures inside the firm as well as on planned and actual capital allocations at the business-unit level. In this sense, our paper, along with those of Cremers, Huang, and Sautner (2009) and Xuan (2009), starts to fill in the empirical gap stressed by Schoar (2002) and Maksimovic and Phillips (2002, 2007). They argue for the need to look inside the corporation to understand governance structures and their connection with resource allocation and management decision at different levels.[9]

The rest of this paper is organized as follows. Section 2 describes the conglomerate and analyzes its investment behavior. Section 3 presents our data and describes the capital allocation process inside the conglomerate. Section 4 presents the main empirical results of the association of power and connections to capital allocation. Section 5 discusses alternative explanations and provides robustness checks. Finally, Section 6 concludes.

2. The Conglomerate: Organizational Structure and Investment Behavior

2.1 Organizational Structure and Financial Characteristics of the Conglomerate

Our firm is a major international conglomerate headquartered in Europe with operations around the world and more than 100,000 employees. To ensure that the conglomerate is similar to other big conglomerates, we compare a set of financial characteristics of our firm with those of other large

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[8] This finding is consistent with descriptions of conglomerates' capital allocation processes which are argued to include sophisticated and institutionalized procedures for the setting of *ex ante* planned allocations with close resemblance to textbook recommendations (see Anthony and Govindarajan, 2003, and Brealey, Myers, and Allen, 2006). It is also consistent with the theory and evidence on efficient capital allocation in Maksimovic and Phillips (2002).

[9] There is also a related literature in the area of management accounting. Covaleski and Dirsmith (1986), for example, describe the role of politics and power in budgeting systems using interviews with nursing managers from six hospitals. Pfeffer and Salancik (1974) provide a similar analysis for universities. Abernethy and Vagnoni (2004) analyze the consequences of power on organizational functioning. Their data set is based on questionnaire answers which are analyzed with the help of structural equation modeling techniques. Our paper is furthermore related to the very few studies in finance which analyze internal management accounting data from one conglomerate (see, for example, Bartram, 2008 or Wagner, Miller, and Zeckhauser, 2006). A growing body of literature is also looking at the connections and power structures between firms and politicians and the effects for the allocation of capital and corporate financing policies (e.g., Leuz and Oberholzer-Gee, 2006, Fisman, 2001, Johnson and Mitton, 2003, or Faccio, 2006).

conglomerates. As comparison firms, we look at all non-financial firms listed in the Dow Jones 30 and the Euro Stoxx 50. Table 1 shows in Panel A that our conglomerate is by no means an outlier but seems to have a slightly lower investment rate, a lower leverage ratio, and higher cash holdings. In terms of firm size, measured by total assets, our firm is in the bottom size quartile of the non-financial Euro Stoxx 50 firms.

For our subsequent analysis, it is important to note that our firm is unlikely to be financially constrained and in need of cash to finance the various units. Apart from having a relatively low leverage ratio and high cash holdings, other measures used in the literature also suggest that our firm faces low financial constraints (see Cleary, 1999, Cleary, 2006, Kaplan and Zingales, 1997, and Whited and Wu 2006). The conglomerate, for example, increased its dividend payments over the sample period. While the dividend remained unchanged from 2002 to 2004, it was significantly increased in both 2005 and 2006. Also in comparison with other non-financial EuroStoxx 50 and Down Jones 30 firms, the conglomerate has a relatively high dividend payout ratio. Furthermore, the firm initiated a share repurchase program in 2005 and paid out about 1 billion EUR to its shareholders. As argued in Hovakimian and Titman (2006), these considerations are important as the cash windfalls which we exploit later in this paper could not be considered exogenous to the business units' capital expenditures, if the firm was financially constrained.

From an organizational point of view, our conglomerate operates word-wide with five product divisions. Each product division itself has no operating activities and consists of a number of business units which are operating under its roof. Divisions are run by Division CEOs, while the business units are managed by Business Unit CEOs. The divisions and their business units have no access to the external capital market and hence can raise neither debt nor equity. There are a total of 22 business units inside the conglomerate. The general operational structure of the conglomerate is summarized in Figure 1. Division 2, for example, has a total of eight business units underneath. The divisions govern the business units across different countries. To support and facilitate various cross-division activities, the conglomerate has a headquarters which coordinates central corporate functions such as outside financing or legal affairs. The headquarters also holds and manages a set of equity stakes in other corporations. The executive board of the firm is responsible for the day-to-day management and for all major corporate decisions. The executive board is chaired by a CEO who was in office during the entire sample period. Each of the five divisions is run by a Division CEO. The Division CEOs are generally *not* part of the executive board.[10] Below the Division CEOs, all business units are run by Business Unit CEOs.

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[10] For a limited time period within our sample, one Division CEO served also as a member of the executive board.

Panel B of Table 1 presents descriptive statistics for the five product divisions. The numbers in each column result from the aggregation of the respective business unit numbers. The documented statistics are mean values for each division and calculated based on annual data. Tobin's Q is an imputed number and the median Tobin's Q of all other traded firms in the European Union which have the same 3-digit SIC code as the respective division. The table shows that the five divisions are each significant economic players, both in terms of total sales and total assets, and in terms of total number of workers employed (on average between 7,800 and 45,000 per year).

2.2 Investment Behavior of the Conglomerate

Before we look at the effects of the power and connectedness of unit CEOs on capital allocation, we begin our analysis by showing that our conglomerate seems to be exposed to the same kind of inefficiencies in capital allocation and investment behavior as documented for other conglomerates in previous studies.

First, we calculate the firm's conglomerate discount and thereby implicitly compute how the capital market assesses the conglomerate's investment behavior. Using the methodology of Berger and Ofek (1995), we find that the discount of our firm is, on average, 15% over the sample period. Hence, it is comparable with what has been documented for other large conglomerates (see Berger and Ofek, 1995 or Lang and Stulz, 1994). In fact, our conglomerate almost matches the 13-15% discount which has been found for the average firm in the Berger and Ofek (1995) sample.

Second, we compare the investment rates of the conglomerate's business units with those of matched stand-alone firms. We find that the business units of the conglomerate generally invest more than comparable stand-alone firms which operate in the same industry (see Panel A of Table 2). This finding is again consistent with related studies which document that, on average, segments of conglomerates overinvest compared to matched stand-alone firms (see Rajan, Servaes and Zingales, 2000 or Berger and Ofek, 1995).[11] It is also consistent with the arguments in Jensen (1986) and Stulz (1990) who suggest that overinvestment in conglomerates is a potential source of the value loss from diversification.

Third, we use a methodology similar to the one in Ozbas and Scharfstein (2008) and compare the sensitivities of the business units' investments to their investment opportunities with the same sensitivities of matched stand-alone firms.[12] We find that the conglomerate's business units generally

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[11] Lamont (1997) provides evidence that specific segments of conglomerates sometimes also underinvest. In his study, he shows that non-oil segments of oil firms reduce investment as a result of drops in the oil price (which are unlikely to affect the investment prospects of non-oil divisions).

[12] For this analysis, we regress Capital Expenditures/Total Assets on Tobin's Q of the stand alone firms, Cash Flow/Total Assets, and a interaction of a Dummy which takes the value 1 if an observation comes from one of the conglomerate's

show a lower sensitivity of investment to Tobin's Q (compared to the comparable stand-alone firms). Consistent with what has been documented in the literature, for example in Ozbas and Scharfstein (2008), this finding suggests that our conglomerate's investment is generally less responsive to measures of investment opportunities compared to stand-alone firms. The results are reported in Panel B of Table 2.

Fourth, we compare the investment-cash flow-sensitivity of the divisions of the conglomerate with the sensitivities documented in studies using division-level data (e.g., Shin and Stulz, 1998).[13] This analysis allows us to construct a first measure of the functioning of the firm's internal capital market. We closely follow the approach used in Shin and Stulz (1998) and regress investment of a division on its cash flow, proxies for division investment opportunities, and on the cash flow of the other divisions of the firm. To create a measure of investment opportunities, we follow Shin and Stulz (1998) and use the sales growth and a measure of (imputed) division Tobin's Q. Furthermore, we also use division EBIT and EVA as additional proxies for investment opportunities. Our estimates, reported in Table 3, are consistent with what has been documented for conglomerates in other studies. More specifically, we find the investment inefficiencies documented in Shin and Stulz (1998), namely, that investment by a given division depends on the cash flow of the firm's other divisions, but much less than it depends on a division's own cash flow. This finding suggests that the investments of individual divisions are not sufficiently insulated from their own operating cash flows, and that they might overinvest if they have large amounts of free cash flow available.[14]

Taken together, these results show that our conglomerate seems to be exposed to the same kind of inefficiencies which have been documented in other studies. This provides suggestive evidence against the classic arguments of efficient internal capital market theories.

3. Data and Methodology

In a next step, we investigate the potential channels behind such inefficiencies in capital allocation. We thereby try to test the predictions of the inefficient internal capital market theories which suggest that power struggles inside conglomerates are at the root of the observed inefficiencies. The main contribution of our paper lies in the ability of our data to empirically document such effects of power and connections on capital allocation.

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business units with the Tobin's Q variable as well as an interaction with the cash flow variable. Robust standard errors are clustered at the firm level.
[13] We use division level data, constructed by aggregating business unit variables, to be able to compare our results with those in studies using division level data (e.g., Shin and Stulz, 1998).
[14] Based on the estimates in Column 1 of Table 3, a positive one standard deviation shock to a division's own cash flow is associated with an increase in its quarterly investment rate by 0.000125. This corresponds to about 14% of the average quarterly investment rate of a division.

To identify the effects of power, we use a methodology which is similar to the one employed in Blanchard, Lopez-de-Silanes, and Shleifer (1994), who analyze firms' behavior after an unexpected cash windfall. We study how power and connection inside the firm affect the allocation of capital from unexpected cash windfalls which occur at the headquarters level. Our data expands those of the papers by Rajan, Servaes, and Zingales (2000) and McNeil and Smythe (2009) by the use of two new databases on capital allocations and power and connectedness inside the conglomerate and by exploiting the allocation of capital from largely exogenous cash windfalls.

3.1 Internal Capital Allocation: Process and Data

We were granted access by the conglomerate to a proprietary detailed data set on actual *and* planned capital allocations at the business unit level. The information comes from the internal management accounting system and covers monthly data on actual (realized) capital allocations and quarterly data on planned allocations of business units which are operating inside the conglomerate for the period January 2002 to December 2006 (see Appendix A-1 for an overview of our data).[15]

The data on planned capital allocations comes from the firm's annual capital allocation plan and is the result of a process which consists of two distinct phases.[16] Figure 2 provides a graphical overview of this process, how the two phases relate to each other, what the involved parties are, and who makes what decisions and when.

The objective of the first phase, the strategic outlook, is to develop a long-term strategic business plan for the conglomerate. Therefore, the firm tries to identify future growth opportunities for all divisions and their business units. The strategic outlook includes general targets for planned investments as well as the required resource allocations and serves as the coarse foundation for the internal capital allocation process. The process is highly institutionalized and structured, and it typically starts in January and ends in April of a given year, with strategic decisions being made for the three-year period starting in January of the subsequent year.

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[15] Note that most empirical studies have used data at the division level to study internal capital markets (e.g., using the Compustat segment database). Villalonga (2004) discusses the potential problems associated with using segment data for studying internal capital markets. Recent exceptions for studies using data beyond the division level to understand internal capital allocations include Schoar (2002) and Maksimovic and Phillips (2002) which use plant level data, Natividad (2008) who uses data from Hollywood studios, Gopalan, Nanda and Seru (2007) who use data from Indian Business Groups, and Cremers, Huang, and Sautner (2009) who use internal accounting data from a large banking group. With the exception of Cremers, Huang, and Sautner (2009), these studies do not look at the effects of the distribution of power and connections inside firms.

[16] A detailed description of how this plan is developed is given in Appendix A-2. To describe and understand the process, we can use documents provided by the firm on (i) the institutional details of the allocation process, (ii) the time line of different budgeting meetings, (iii) the managers that generally participate in these meetings, and (iv) the approval procedures for investments. The company applies the OECD principles on transfer prices for all within-firm sales. This implies that transfers within the firm are priced using the arm's length principle, i.e. transfer prices should be the same as if the two divisions or business units involved were two independent firms which are not part of the same conglomerate. We therefore do not expect any significant reallocations of capital through transfer prices.

Right after the finalization of the strategic outlook, a concrete annual capital allocation plan, the second phase of the allocation process, is developed for the coming year. The objective of the annual capital allocation plan is a one-year investment plan containing detailed resource allocations for all business units. The link between the strategic outlook and the allocation plan is the breaking down of the strategic outlook into the setting of concrete investment and allocation targets.[17]

Discussions over the annual allocation plans start in June with the Division CEOs, based on the strategic outlook, preparing allocation targets for the coming year. They are then presented to their Business Unit CEOs for negotiations and adjustments. The Division and Business Unit CEOs then present the revised capital allocation plans to the headquarters (executive board) and joint negotiations as well as revisions take place. In October or November, the executive board decides on the concrete investment and allocation targets for the coming year. For our empirical analysis, we can employ *ex ante* allocation data from this plan. This data is available on a quarterly basis.

Figure 3 provides an overview of the budgeting process across different years and documents for which years data is available. Since the annual capital allocation plan is not modified, it is generally more informative than the strategic outlook whose plans are overlapping and adjusted during the three-year period.[18]

The process behind the concrete execution of capital expenditures for specific projects is relatively straightforward. Based on standard NPV rules, the firm requires approval by the executive board for any project which involves an investment exceeding a specific threshold.[19] All investments which are below these thresholds are at the discretion of the business units and can easily and quickly be executed (e.g., buying or replacing small machines or IT). Most importantly, the conglomerate has *no* institutionalized and structured process and formalized rules for the allocation of cash windfalls which occur if the headquarters sells, for example, some of its equity stakes in other firms. Moreover, the proceeds from cash windfalls are not considered and included in the submitted and approved planned capital allocation budgets.

Overall, the internal process for capital allocations in normal situations for *ex ante* allocations resembles textbook recommendation (e.g., Anthony and Govindarajan, 2007, Brealey, Myers, and Allen, 2006 or Balakrishnan et al., 2009). However, the conglomerate has no institutionalized

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[17] The proposed annual allocation plan also translates into a complete set of planned balance sheets and income statements for each business unit, which are subsequently aggregated and consolidated at the division as well as the firm level.

[18] During the year, the firm also conducts quarterly budget revisions (updates) and rolling forecasts. These revisions, for which we do not have data, are typically necessary if product demand conditions change. In our regressions, we account for potential adjustments by controlling for lagged deviations of planned EBIT from actual EBIT.

[19] The respective thresholds depend on the different divisions and vary from 5 to 35 million EUR, depending on how capital intensive business units are. The input variables for the calculations of the NPVs (e.g., the cost of capital) are provided by the headquarters.

procedures for the *ad hoc* allocation of capital resulting from cash windfalls (i.e., for abnormal situations).

Table 4 presents descriptive statistics of the planned and actual allocation data at the business unit level. All variables are calculated based on quarterly observations. As the changing number of observations shows, the variables are available for most but not all business units and quarters. The table shows that the (*ex ante*) planned values do not exactly match the *ex post* realized ones. Planned capital expenditures, for example, are generally higher than the actual ones. This is a well-know phenomenon in the management accounting literature and called budgetary slack (see Davila and Wouters, 2005). Table 4 documents in Panel B pairwise correlations between actual and planned values. It shows that planned and actual numbers are generally highly correlated, but the correlations for many variables are far from being perfect. While the correlation between planned and actual capital expenditures, for example, is only 0.8605, the correlation between planned and actual sales is 0.9741.[20]

3.2 Measures of Power and Connectedness

To measure power and connection inside the firm, we construct different proxies for both the Division and Business Unit CEOs. In total, there are 13 different Division CEOs and 43 different Business Unit CEOs working for the firm during the sample period. Some of these managers are still employed by the firm while others have left or retired.

We can use three main sources for our data. First, we use management profile data from BoardEx and Zoominfo for all Division and Business Unit CEOs. Second, we complement and cross-check this data with information from social networking web pages (e.g., LinkedIn, Facebook, and MySpace), annual reports, and a systematic web and newspaper search. From this data, we construct several measures of power and connectedness based on manager characteristics and histories.

We assume that managers are better connected inside the firm if they live closer to the headquarters. As in Cohen, Frazzini, and Malloy (2008) we proxy for the relation to the CEO by measuring personal connections via shared educational networks. We therefore create a dummy which is one if a unit manager studied at the same university as the CEO of the firm and also graduated from there in the same discipline.

Moreover, we proxy for the relation to the CEO by measuring if a manager had a personal overlap with the CEO inside a unit of the firm at some point in the past (e.g., if both worked at the same time in the same unit or the same foreign subsidiary). A similar measure of past employment

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[20] Note that the latter correlation suggests that the quality of the forecast of the expected investment profitability is rather high, implying that the internal measures of investment opportunities are of high quality.

network is used in Fracassi (2008). We also follow the corporate governance literature and look at the tenure of managers. Following Ryan and Wiggins (2004) and Berger, Ofek, and Yermack (1997) we assume that the power and connectedness of managers increase as their tenure lengthen. Using tenure as a proxy, we try to capture the social networks of a person inside the company. We also construct a related tenure variable which directly measures the number of years a manager has been working in a powerful position at the firm (e.g., Division CEO, Business Unit CEO, or Head of Marketing). Moreover, we measure distance to the headquarters and build a dummy, Proximity to HQ, which takes the value one if a manager lives in the country where the firm originates from and has its headquarters (see Bandiera, Barankay, and Rasul, 2009, Landier, Nair, and Wulf, 2009 for similar measures). As the firm is a world-wide conglomerate, not all business units are located and run in the country of the headquarters and in its geographic proximity.

Lastly, we construct an index which measures whether a manager has characteristics which are likely to be helpful for being well connected inside the firm. This index, labeled Favorable Biographics, ranges from 0 and 4 and is formed by adding 1 when a unit manager: (1) speaks the local language; (2) has the local nationality; (3) went to the university of the CEO; (4) graduated in the same discipline (engineering) as the CEO. The first two measures are in line with Bandiera, Barankay, and Rasul (2009), while the last two are similar to the ones in Cohen, Frazzini, and Malloy (2008).

Finally, for the 43 Business Unit CEOs, we were able to complement the management profile data with information from an internal questionnaire that we designed and ran ourselves. The survey contained both self-constructed questions and other questions previously used in the management and sociology literature to measure influence and power (e.g., Podolny and Baron, 1997, and Forret and Dougherty, 2001, 2004). In the summer of 2008 we distributed, with the support of the firm and after several beta tests, a questionnaire to all 43 current and former Business Unit CEOs. We guaranteed that the survey answers are analyzed fully confidentially and anonymously for research purposes only, and that they will not be traceable. We use the survey instrument to construct measures of managers' networking activities and their connection to higher management. In total, 20 Business Unit CEOs returned the survey which results in a response rate of about 47%. Based on the survey, we construct two indexes. A detailed description of the underlying questions, their sources, and how these indexes are constructed is provided in Appendix A-4.

The first index, Networker Type, ranges from 0 to 5 and tries to measure to what extent a Business Unit CEO undertakes networking activities. The index is formed by adding one when a manager: (1) is a member in a fraternity; (2) is a member of a social club in the firm; (3) regularly stops by the headquarters to say Hello; (4) accepts regularly highly visible work assignments; (5)

participated regularly on highly visible task forces or committees. The last three components of this indexed were developed and used in Forret and Dougherty (2001, 2004).

The second measure, Connection to Division CEO, proxies for how well connected a Business Unit CEO is to his Division CEO. The index ranges from 0 to 3 and adds one when a manager: (1) has a Division CEO as a personal mentor; (2) goes at least occasionally for lunch with the Division CEO; (3) meets the Division CEO in persona at least every two weeks. The second component again follows Forret and Dougherty (2001, 2004) while the third one is used in Podolny and Baron (1997).

Summary statistics of our power and connection proxies are reported Table 5 with correlations being documented in Appendix A-5.

3.3 Cash Windfalls

During the sample period, our conglomerate faces several cash windfalls resulting from headquarters' sales of equity stakes in other companies (often minority holdings).[21] The units have not considered these cash windfalls in their submitted and approved planned capital allocation budgets. Nonetheless, these cash flows are partially available for investments of the business units *ex post*. The analysis of windfalls provides a suitable scenario to test our theories since the equity sales are largely exogenous to the unit managers, the divisions, and their business units.

First, the selling decisions were made at the headquarters level and the unit managers were not involved in these decisions. Moreover, the equity stakes were held and managed by the headquarters and outside the business units reach. The stakes were therefore not under the discretion of the divisions and their business units and they did not form part of the business units' assets. With one exception, no unit manager was acting as non-executive director on the board of the companies.[22]

Second, as documented before, our sample firm is neither financially constrained nor in need of cash to finance the investment opportunities of the various units. The sale of the stakes was therefore not endogenous in the sense that they were conducted to finance investments of the conglomerate's units (see Hovakimian and Titman, 2002).

Third, the activities of the companies in which the equity stakes were sold were unrelated to the activities of the business units in most, namely, five out of eight cases. In the three cases were the activities were related to those of two of the firms business units, this was mainly because the companies were providing some supplies to the units, the sale of the equity stakes implied only small reductions of the equity investments in these companies. Moreover, our results are robust to excluding

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[21] During our sample period, the company did not experience cash windfalls resulting from won or settled lawsuits as exploited in Blanchard, Lopez-de-Silanes, and Shleifer (1994).
[22] In one case a Division CEO was on the supervisory board of one of the firms. Our results are robust if we drop this person and its unit from the sample.

these units from the sample. In all eight cases, the stakes were mainly sold as they were considered non-strategic assets, the firm wanted to exploit market opportunities, and it wanted to reduce the exposure to cyclical industries.

Studying the effects of power and connection on the distribution of cash windfalls rather than on planned budgets is also advantageous for another reason. Instead of being the result of power and connection, high planned budgets could by itself also be a manifestation and hence driver of managerial power in organizations. This reverse causality problem in the analysis of planned capital allocation is mitigated when cash windfalls are used. As cash windfalls are not part of planned capital budgets but come on top of the existing budgets, they obviously cannot proxy for power (in contrast to historically high budgets).

We measure cash windfalls by looking at all equity stakes which have been sold by the headquarters during the sample period and which generated cash inflows of at least 500 million EUR. Table 6 provides descriptive statistics of the cash windfalls. In total, we could identify eight equity sales transactions leading to an average cash windfall of 703 million EUR, ranging from 615 to 935 million EUR. These windfalls occur in a total of 6 different quarters and the average cash windfall per windfall quarter is 938 million EUR.[23] As is apparent from Figures 4 and 5, the cash windfalls are substantial for the conglomerate and its five divisions, and they are likely to impact the firm's operations. The windfalls in 2005, for example, amount to 10% of the total sales of the firm, 19% of the total assets, about 84% of the cash flows from operations, four times the annual investment, and 126% of the firm's EBIT. Panel B provides a summarized description of characteristics of the windfalls. Detailed information for each windfall is provided in Appendix A-6.

Panel C provides information on how the company used the proceeds from the windfalls. The numbers are averages calculated over the years in which the cash windfalls occurred. The table shows that almost 20% of the money from the windfalls was used for investments within the conglomerate. Importantly, 30% of the money was paid out to the firms' shareholders in the form of dividends and share repurchases, and another 20% was used to increase cash holdings. These usages further mitigate concerns that the equity stakes were sold primarily in order to raise capital for the financing of projects. Figure 6 plots cumulative abnormal returns from a simple event study around the cash windfall announcement dates. While the market seems to initially react positive to the windfalls, this effect disappears over the next 20 trading days suggesting some skepticism by the market.

In the following, our methodology exploits the availability of planned investment data and studies the effects of the cash windfall on how business unit investment actually changes *relative* to

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[23] The cash windfalls occurred in Q4 2003 (one windfall), Q3 2004, Q4 2004 (two windfalls), Q2 2005, Q3 2005 (two windfalls), and Q4 2005.

what was initially filed in the plans. We will therefore study the distribution of the cash windfalls within the conglomerate by looking at the differences between actual and planned investment (i.e., between actual and planned capital allocations). The occurrence of cash windfalls which are used for investment but not included in the allocation plans cause a deviation of actual from planned investment. As can been seen from Figure 7, the actual investment across the business units of the firm is substantially closer to planned investment if a cash windfall arises. This reduction in budgetary slack is uniform across all cash windfall quarters. If managerial power or connectedness matter for the allocation of cash windfalls, we should expect that more powerful or better connected managers receive a larger piece of these cash windfalls for their own units. This should imply that their investments, compared to the units of less powerful or connected managers, increases more strongly relative to the plan.

4. The Allocation of Cash Windfalls and Managerial Power and Connectedness

In Table 7, we examine whether bargaining power and influence activities around cash windfalls can explain the differences between actual and planned capital expenditures. We regress the difference between actual and planned capital expenditures on the (log of the) cash windfalls, our power (or connection) variables, and an interaction term of the cash windfalls and the power/connection variables. The difference between actual and planned capital expenditures is scaled by the total assets of a business unit. Our managerial power or connection measures vary from regression to regression and are named in the columns above the regressions. We add the power proxies individually to the regressions to avoid problems due to multicollinearity. Table 7 reports the regression estimates using proxies of Business Unit CEO power and connection. In unreported regressions, we also run the same regressions using proxies of Division CEO power. These results will be discussed later.

In all regressions, we account for a wide range of factors, namely differences in investment opportunities, unobserved business unit heterogeneity, seasonal effects, and a set of other controls. We control for differences in investment opportunities using sales growth, EBIT divided by lagged total assets, and lagged values of imputed Tobin's Q. Business unit fixed effects are included to control for unobserved heterogeneity (e.g., in investment opportunities) at the business unit level. We also include lagged EBIT deviation from the plan and a Fourth Quarter Dummy as some of the business units sell substantial fractions of their products in this quarter. Time dummies are further added to account for year effects.

The regression estimates show that the cash windfalls have a positive and significant effect on the difference between actual and planned capital expenditures. Given that actual investment is

generally below planned investment due to budgetary slack (see Table 4) this suggests that a typical cash windfall moves actual investment upwards towards what has been planned.[24] Based on the estimates in Column 1, a cash windfall of 700 million EUR, this equals roughly an average windfall, increases the left hand side variable by 0.0017 [=log(1+700)*0.0006]. For a given planned investment rate this suggests that the actual investment rate, i.e. capital expenditures over total assets, increases by about this number, after controlling for business unit fixed effects.[25] Relative to an average quarterly investment rate of 0.0081, calculated across all no cash windfall quarters, this corresponds to a substantial increase in quarterly investment by about 21% [=0.0017/0.0081]. The regressions also show that actual and planned investments are generally closer to each other if investment opportunities, measured using EBIT/Total Assets, are better. Moreover, lagged EBIT deviations also seem to be a significant determinant of how close actual and planned investments are.

Most importantly, we find that the investment increase is far from homogeneous and some of the variance can be explained by the different degrees of power and connections of business and division unit managers. More specifically, the results provide evidence across various measures of managerial power and connection suggesting that unit managers who have more influence within the conglomerate get a larger fraction of the windfalls for their own business units. These results hold even after controlling for performance and profitability measures as well as unobserved business unit heterogeneity.

Our results suggest that, *ceteris paribus*, Business Unit CEOs who have the same degree and graduated from the same university as the CEO, those who have a relatively long tenure in the firm or in a powerful position, or those who live in the country where the headquarters is located, receive larger parts of the cash windfalls for their own units' investments. Moreover, we find that Favorable Biographics and our survey-based measure of a manager's networking activities also significantly explain the distribution of the windfalls. In the regressions in which we use proxies for Division CEO power and connection, we find that those Division CEOs which live in proximity to the headquarters and those with longer tenure receive larger parts of the windfalls for their business units.

The estimated economic effects of power on the windfall distribution are large. Suppose a windfall of 700 million EUR arises. How do different levels of managerial power or connectedness affect how actual investment rates change relative to those that have been filed in the budgets? To illustrate these economic effects, Table 7 calculates the change in the dependent variable using the estimated power coefficients of the regressions. If we look, for example, at Proximity to HQ and at a

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[24] This effect is uniform across all cash windfall quarters. In one cash windfall quarter, actual investment even exceeds what has been planned (two windfalls took place in this quarter).
[25] We can assume a fixed planned investment rate as the cash windfalls were not incorporated in the annual capital allocation plan.

Business Unit CEO who lives abroad we find that the change in his business unit's actual investment rate relative to the plan is 0.00037.[26] This corresponds to an increase in quarterly investment by only 5% [=0.00037/0.0081] relative to the average quarterly investment rate of 0.0081. If, to the contrary, a Business Unit CEO lives close to the headquarters, i.e. close to where the decisions are being made, his actual investment rate increases by 0.0024. This corresponds to an increase in quarterly investment relative to the plan by a substantial 29%.

To illustrate the effects of the tenure variable, we compare business units whose CEOs' tenure is at the first quartile (i.e., 4 years and low power) with those where tenure is at the third quartile (i.e., 26 years and high power). The change in actual investment (relative to the plan) of business units where the Business Unit CEO has low power will be 0.00066 if a windfall arises. This equals about 8% of the average quarterly investment rate. On the contrary, the change in investment of units where the CEO has high tenure is substantially larger. Using again the same regressions estimates, the quarterly investment rate will change by 0.00231 or 40% relative to the average investment rate. Overall, a unit's actual investment (relative to the plan) increases by 32% if tenure goes up from the first to the third quartile of the distribution.

Taken together, our results provide evidence consistent with the inefficient internal capital market models of Meyer, Milgrom, and Roberts (1992), Scharfstein and Stein (2000), Rajan, Servaes, and Zingales (2000) or Wulf (2008), which suggest that variables which are related to the bargaining power of managers inside a firm have to be taken into account when analyzing internal capital allocations.

5. Robustness and Alternative Explanations

5.1 Alternative Regression Specifications and Controls

As it is important for the results in Table 7 to properly control for investment opportunities, we conduct a set of robustness checks of the above results. We include various alternative measures for investment opportunities such as the planned measures of investment opportunities (e.g., Planned Sales Growth or Planned EBIT/Total Assets), past realized values, and future realized values.[27] Moreover, we also use different measures of imputed Tobin's Q (e.g., based on average values of comparable firms rather than based on medians). While the measures for investment opportunities are

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[26] See Column 7 of Table 7. This is calculated as log(1+700)*(0.0001+0*0.0006998)=0.00037. Note that the coefficients of Managerial Power * log(1+Cash Windfall) are multiplied by 1,000 in the Table 7.

[27] The availability of measures of investment opportunities from the firm allows us to mitigate problems of measurement error in proxies for investment opportunities such as (imputed) Tobin's Q which rely on market data from comparable firms and might be correlated with investment (see Cummins, Hasset, and Oliner, 2006, Erickson and Whited, 2000 or Whited, 2001).

not always significant in the regressions, the coefficients of the interactions variable between power/connection and the cash windfalls remain significant across the specifications. The reported results are also robust to including sales (as a measure of business unit size), cash flows from operations (standardized by total assets), and lagged values of EBIT (standardized by total assets).

As an additional robustness check, Table 8 provides regression estimates for several alternative specifications of the baseline model reported in Table 7. These alternative specification use: (1) division fixed effects instead of business unit fixed effects to account for possible division-wide policies in the allocation of capital; (2) pooled OLS regressions without division or business unit fixed effects and with standard errors clustered at the business unit level; (3) specifications where standard errors are not clustered; (4) actual capital expenditures over total assets as the dependent variable; (5) logit regressions where the dependent variable is a dummy which is 1 if actual capital expenditures over total assets exceeds planned capital expenditures over total assets; (5) an AR(1) process for the error term to account for possible autocorrelation in the error term; (6) a sample which excludes the two units which of the conglomerate which were related to three of the eight equity stakes. The estimates show that our results are robust to such alternative regression.

5.2 Endogenous Allocation of Managers to Business Units

One alternative explanation of our findings could be an endogenous allocation of (powerful) unit managers to those units with the best investment opportunities. To investigate this possibility, we can distinguish between two possible scenarios.

In the first scenario, the most powerful managers lobby to be placed at those business units or divisions with the best investment prospects at a given point in time. The allocation of managers to certain units would then be driven by their power rather then their ability to run a specific unit. However, our data suggests that this is unlikely to be happening. First, internal job movements are of rather low frequency in our firm while measures of investment opportunities vary substantially cross-sectionally and over time. Out of all 43 Business Unit CEOs employed during the sample period, only six (or 14%) moved from running one business unit to running another one. Furthermore, there were no movements of Division CEOs across divisions during the entire sample period. Second, if we compare the power variables of the six job moving Business Unit CEOs with those of the remaining 37 ones who did not move, we cannot find any significant between-group differences. Taken together, this speaks against an endogenous allocation of powerful managers to those units which have the best investment prospects.

In the second scenario, the conglomerate could allocate managers to business units or divisions based on managerial ability and such that those units with the best prospects get the most able

managers. If this scenario explains what happens and if our power proxies in fact capture ability, we should expect a positive relationship between our power variables and planned capital budgets as well as future performance. However, as we will document in Section 5.3, this does not seem to be the case. Moreover, the low frequency of job movements again suggests that such an endogenous allocation cannot be a main driver of our results.

5.3 Power as a Measure of Ability

One potential concern of our findings is that the power variables, in fact, capture ability. To address this concern, we conduct several robustness checks. First, we develop a direct proxy for a manager's ability by collecting information on whether a unit CEO holds a non-executive director position outside of the firm. One could argue that more able managers have a higher outside visibility and would therefore be more likely to be hired as non-executives by other firms. While this variable is certainly not a perfect proxy, it is reasonable to assume that it is correlated with ability.

The constructed dummy variable, External Director Position, has a sample mean of 0.32 for the Business Unit CEOs and of 0.82 for the Division CEOs. We include this direct proxy of managers' ability as well as its interaction with the cash windfall variable by amending the regressions from Table 7. The corresponding regressions are reported in Table 9 (we again do not report the Division CEO variable to save space). The estimates show that our results are robust to directly including a proxy for ability in the windfall regressions with some power variables even becoming more significant. These results hold for both proxies of Business Unit and Division CEO power.

Second, if power captured ability, we could expect our proxies to be positively related to the unit's operating performance. To see if this is the case, we regress the operating performance of the business units on our power proxies and a set of controls. We measure operating performance by looking at both Return on Assets (EBIT/Total Assets) and Sales Growth. In the regressions, we control for cash flow from operations, past investment, marketing expenditures, R&D expenditures, size (total sales), and personnel intensity. We account for unobserved heterogeneity by using business unit fixed effects, use year dummies and a dummy for the fourth quarter. The corresponding regression estimates with Return on Assets as the dependent variable are reported in Table 10. The results do not change if we use Sales Growth. The results show that across both performance measures and with one exception, we cannot detect a positive relation between performance and our power and connectedness measures. In fact, for some measures we even find a statistically significant negative relation. Our results are again robust to using the Division CEO measures.

Third, if power and connection capture ability, we should expect to find that ability (i.e., our power measures) is reflected in the planned capital budgets in the sense that more able managers get

larger allocations *ex ante*. In order to investigate this, Table 11 presents regressions at the business unit level in which *ex ante* planned investment is regressed on our measures of Business Unit CEO power and connection (lagged by one quarter). We control for lagged values of planned EBIT divided by total assets (return on assets), a measure of capital intensity, planned sales growth, the lagged deviation of planned from actual EBIT, and include a Fourth Quarter dummy to control for seasonal effects.[28] Having access to planning data allows us to use the profitability measures that are actually employed by the firm to assess future opportunities.

The regression estimates show that planned investment is significantly related to measures of future growth opportunities and profitability. These results are in line with neoclassical investment models, e.g., Maksimovic and Phillips (2002), which suggest that corporate resources should go to the units with the highest growth opportunities.[29] Interestingly, we cannot detect that our measures of power are *positively* related to *ex ante* capital allocations. This finding again holds for both measures at the Business Unit and Division CEO level. On the one hand, this finding suggests that our power variables are unlikely to proxy for ability as otherwise we should see a positive relation between planned investment and our power proxies. On the other hand, our evidence also suggests that power and connections do not play a strong role in the normal capital allocation process which may include mechanisms that try to reduce inefficient influence activities and power struggles. This finding is consistent with descriptions of conglomerates' capital allocation processes which include sophisticated and institutionalized procedures for the setting of ex ante planned allocations with close resemblance to textbook recommendations (see Anthony and Govindarajan, 2007, Brealey, Myers, and Allen, 2006, Balakrishnan et al., 2009). Together with our previous results, this suggests that it is during instances of unpredicted or *ad hoc* cash windfalls when managerial power comes into play as the institutionalized and structured budgeting processes in the firm are less likely to be binding then.

5.4 Capital Expenditures from Cash Windfalls versus Normal Budgets

We have provided evidence that well connected and powerful managers can capture substantial amounts from cash windfalls to increase their own units' investments. To better understand this channel and why investments increase so substantially during these cash windfall quarters, we conducted several structured interviews with important decision makers inside the firm. One view that was expressed there was that investment approval procedures seem to be more lax in months with

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[28]This regression setup is consistent with management accounting research in which, for example, budget adjustments as a result of spending variances are analyzed (see, for example, Lee and Plummer (2007)). We include a Fourth Quarter Dummy as some of the business units sell large fractions of their products in the fourth quarter.
[29]The regression results are very similar if we use other measures of investment opportunities (e.g., Planned EVA/Total Assets) instead.

large cash windfalls. As discussed in Section 2, for each actual investment, certain NPV criteria have to be fulfilled.[30] It was argued that these approval procedures are more lax when large windfall proceeds are available. The firm thereby arguably tries to avoid that large amounts of cash accumulate in their cash accounts and cause shareholder activists to target the company. If such lax approval is more prevalent at units run by powerful managers, this could provide an explanation of our findings.

It was also stated that if money from the normal capital budget (planned capital allocations) is not spent, for example because of a lack of profitable investment opportunities, it is not available for spending by other business units of the conglomerate. Proceeds from the cash windfalls, on the other hand, are available for the distribution within the entire firm. If a unit does not capture and utilize the available funds for its investments, it is likely to be captured and used by others. Relinquishing capital from windfalls hence implies that other units will utilize it. All managers therefore have an incentive to capture as much as possible from the windfalls.

A related question is as to why the shareholders of the conglomerate do not require the full payout out of the cash windfalls given that parts are inefficiently distributed inside the firm based on power and not purely based on investment opportunities. In fact, as we have shown in Table 6, only 20% of the money from the cash windfalls is eventually paid out to the shareholders in the form of dividends or share repurchases. This amount roughly equals what is kept inside the firm for capital expenditures. While we do not have final evidence on why the shareholders do not require all the money, one explanation could be a standard free cash flow problem (see Jensen, 1986). Apart from having a relatively low leverage, the firm is widely held and does not have blockholders owning 5% or more. Moreover, the conglomerate operates in a country which is considered to have rather low anti-director and anti-self-dealing rights according to the indexes by La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) and Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008). The general preference of the CEO to keep free cash flows inside the firm, together with rather low levels of ownership concentration and investor protection, and a general contractual incompleteness with regard to writing policies over the cash windfalls could therefore explain why not all money from the cash windfalls is paid out to the shareholders.

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[30] Planned capital expenditures are usually the upper limit for actual capital expenditures. Actual investment can be below planned investment in the cases in which not all actual investment projects have been approved by upper level managers (the headquarters) even though they have been budgeted. If planned investment is not spent, it cannot be transferred to the next year. However, there is no year-end ratcheting due to the approval procedure in which upper level managers have to decide on suggested investment projects.

6. Conclusion

Combining a unique data set from the internal management accounting system of a large international conglomerate with management profile and internal survey data, we tested predictions of theories linking managerial power to capital allocation. The data provides empirical evidence of a potentially large channel of inefficiency in capital allocation in multi-unit firms and conglomerates. We showed that unit managers who have more bargaining power or better connections within the conglomerate are able to extract a larger part of cash windfall for their own business unit investments. In contrast to the large importance of power and connection measures for the allocation of windfalls, the regular capital allocation process that originates planned budgets does not seem to be influenced by unit managers' bargaining power.

Bargaining power therefore does not matter in the formalized allocation process, but exerts large influence on *ad hoc* distributions emerging from unpredicted or unaccounted cash windfalls. The combination of these two findings opens up interesting venues for future research to try to understand the capital allocation processes of these two types of cash flows and the aspects that may be responsible for the difference in results.

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