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Performance over the CEO life cycle: the impact of structural power creation activities

Abstract

In extending leader life cycle theory (Hambrick and Fukutomi, 1991), the authors examine how structural power creation activities of a CEO influence firm performance over his time in office. On the basis of a sample of 118 CEOs in Germany's 83 largest companies, for an overall number of 717 tenure years, the paper shows that different structural power creation activities of CEOs lead to different slopes of the leader life cycle and that active structural power creation during early tenure results in higher company performance over the course of a CEO's tenure. The authors contribute to leader life cycle research by highlighting the effect of structural power creation activities on the shape of leader life cycles as well as on company performance. To the best of our knowledge, this is the first study that researches the relationship between structural power creation activities of a CEO and company performance over the CEO's tenure.

Keywords: leader life cycle theory, upper echelons, CEO power, company performance, empirical investigation.
JEL Classification: M51, C23.

Introduction

In the present paper we address the question of how structural power creation activities of a CEO influence company performance over the course of his tenure in office. Thus, our paper further develops leader life cycle theory, first established by Hambrick and Fukutomi (1991). Leader life cycle theory predicts an inverted curvilinear relationship between a CEO's tenure in office and company performance. The few empirical studies that have tested leader life cycle theory so far have found general support for the theory (Henderson, Miller and Hambrick, 2006; Giambatista, 2004; Miller and Shamsie, 2001). These studies have also shown, however, that the concrete shape of a leader life cycle is dependent on distinct variables. Hambrick and Fukutomi (1991) name task knowledge, commitment to a paradigm, information diversity, task interest, and power as key characteristics of a CEO that determine the exact structure of the life cycle.

While power receives particular mention in leader life cycle theory, Hambrick and Fukutomi (1991) do not specify how power influences performance over a CEO's tenure. Researchers in the field of organization and management theory, however, have analyzed the development of a CEO's power over the course of his tenure as well as the relationship between power and performance (Pfeffer and Salancik, 2003; Chaganti, Damanpour and Mankelwicz, 2001; Daily and Johnson, 1997; Ocasio, 1994). Pfeffer (1981), for example, has developed a model of the institutionalization and self-perpetuation of CEO power. He assumes that a CEO's power increases automatically over his tenure in office because of three main effects – the commitment to a once-chosen course of action, the institutionalization of beliefs and practices, and the establishment of a growing network of contacts (Pfeffer and Salancik, 2003). Meyer and Rowan (1977) have shown that the institutionalization and self-perpetuation of power have a positive effect on performance resulting from increased legitimacy.

Despite these research findings, several authors point to the fact that the described institutionalization and self-perpetuation of power do not start automatically. Rather, these researchers allude to the relevance of power conflicts and political contestation (Ocasio, 1994; Frederickson, Hambrickand-Baumrin, 1988). Their research findings give reason to believe that for power of a new CEO to emerge and fully develop its positive effects, a new CEO needs to engage in activities that ensure the creation of an initial power base that then self-perpetuates.

Finkelstein (1992) distinguishes four sources of power. Of those, structural power has been found to be particularly relevant for the active creation of a CEO's power base (Shen and Cannella, 2002). As such, we analyzed the impact of different patterns of structural power creation activities of a CEO on the leader life cycle, i.e., on company performance over the CEO's tenure. To the best of our knowledge, this is the first study that researches the relationship between structural power creation activities of a CEO and company performance over the CEO's tenure. On the basis of a sample of 118 CEOs in Germany's 83 largest companies, for an overall number of 717 years, we show that different structural power creation activities of CEOs lead to different slopes of the leader life cycle and that active structural power creation during the early tenure of a CEO results in higher

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company performance. With our study, we contribute to leader life cycle research by highlighting the effects of structural power creation activities on the shape of leader life cycles as well as on company performance. In accordance with the call for more international research (Crossland and Hambrick, 2007), we additionally apply leader life cycle theory in a German context, thus extending upper echelons research to a new geographical setting.

1. Theoretical perspectives on CEO power

In the discussion of organizational effects of executive succession, a significant body of research deals with the question of how the new CEO influences performance (Giambatista, Rowe and Riaz, 2005; Kesner and Sebora, 1994). In this context, power has received little attention (Finkelstein, 1992); to date, only a few empirical studies have investigated the general impact of CEO power on firm performance (Chaganti, Damanpour and Mankelwicz, 2001). At the same time, however, power is regarded as an important influencing factor in upper echelons research (Pollock, Fischer and Wade, 2002). As such, it is not astonishing that leader life cycle theory acknowledges the relevance of the development of a CEO's power on firm performance over his tenure (Hambrick and Fukutomi, 1991).

Building on Eitzen and Yetman (1972), Hambrick and Fukutomi (1991) suggest that over his time in office a CEO goes through a life cycle consisting of "five seasons", during each of which he shows distinct behavior patterns. The authors call these five seasons "response to mandate", "experimentation", "selection of an enduring theme", "convergence", and "dysfunction". Hambrick and Fukutomi (1991) argue that, over these five seasons, an inverted curvilinear relationship exists between a CEO's tenure and firm performance, and they identify five characteristics of the CEO that determine the slope of the leader life cycle: the CEO's task knowledge, his commitment to a paradigm, the diversity of information that he uses, his task interest, and his power.

For most of these characteristics Hambrick and Fukutomi (1991) determine the respective impact on company performance during the CEO's tenure. Increasing task knowledge, i.e., what the CEO learns, for example, leads to positive performance effects on a diminishing scale, particularly in the first two seasons. These positive effects are, however, outweighed over time by progressively rising costs of a mismatch between the paradigm to which the CEO is committed and environmental conditions. These effects of increasing task knowledge and commitment to a paradigm have been empirically confirmed by Henderson, Miller and Hambrick (2006).

The only CEO characteristic for which Hambrick and Fukutomi (1991) do not specify a clear relationship with firm performance during tenure is CEO power. At the same time, however, they regard this characteristic as one of the most important ones. Therefore, we draw on studies that have investigated the relationship between CEO power and firm performance in order to derive a clearer picture (Pfeffer and Salancik, 2003; Chaganti, Damanpour and Mankelwicz, 2001; Daily and Johnson, 1997; Ocasio, 1994).

Overall, these studies find three effects of CEO power in companies. Two of these effects, legitimacy and stability, have a positive performance impact, whereas one, obsolescence, has a negative impact. Research on the role of legitimacy goes back to Salancik and Pfeffer (1977), who analyzed the impact of CEO power on the alignment between the company and its environment and suggest that a company's formal structure should be designed to comply with external expectations rather than internal demands. The resulting positive effect of an alignment between the company and its environment is legitimacy, i.e., companies that meet external expectations gain acceptance (Deephouse and Suchman, 2008; Zucker, 1987; DiMaggio and Powell, 1983; Meyer and Rowan, 1977). CEO power contributes to this alignment; specifically, powerful CEOs provide higher acceptance for their organizations (Bird, 1990). This legitimacy offers advantages for accessing critical resources, such as new customers or investors, as external trust in the company grows (Geletkanycz, Boyd and Finkelstein, 2001).

Besides creating legitimacy for the company, power has a second positive effect: it creates stability, which – at least to a certain extent – is regarded as useful for the positive development of the company (Lawrence, Winnand Jennings, 2001; Goodstein and Boeker, 1991; Pfeffer, 1981). In particular, stability helps to enable effective decision-making by establishing stable lines of authority and responsibility within a company (Lawrence, Winn and Jennings, 2001; Finkelstein and D'Aveni, 1994; Alexander, Fennell and Halpern, 1993).

Over time, however, CEO power also has negative effects – effects that Miller (1991) calls "stale in the saddle" and that Ocasio (1994) names obsolescence. A new CEO develops strategies that at first create a fit between the company and its environment; over time, however, the CEO's early choices become outdated and lead to a decreasing alignment between the company and environmental contingencies (Henderson, Miller and Hambrick, 2006; Miller, 1991). This gap tends to be larger for powerful CEOs and leads to negative performance effects.

In summary, CEO power has two positive effects and one negative effect on performance. On the one hand, growing legitimacy leads to improved access to resources and higher trust in the company. Furthermore, growing CEO power enables stability and therefore the mobilization of energy among the company's employees to get projects accomplished. On the other hand, obsolescence leads, over time, to a misalignment of the company with its environment, producing negative performance effects. These arguments explain very well the contribution of CEO power to the inverted curvilinear relationship between a CEO's tenure and company performance, which leader life cycle theory predicts. The arguments are, however, based on the assumption that CEO power comes into existence automatically and develops continuously, an assumption that goes back to institutional theory.

From an institutional perspective, CEOs develop their power as their relationships, actions, and beliefs become "rules" that are no longer questioned by other organization members. Pfeffer (1981) describes this "institutionalization of power" as the result of three interrelated processes in companies. As part of the first process, the CEO establishes certain courses of action (e.g., certain strategic moves) and a specific belief system (e.g., the importance of shareholder value creation). Because of escalating commitment, the CEO continues to feel bound to the actions and beliefs that he has set (Staw, 1976), while in a parallel process, the other members of the organization start to associate these courses of action and belief systems with the CEO. Thus, over time, the CEO's actions and beliefs become guidelines for the future development of the company and are therefore not questioned anymore (Pfeffer and Salancik, 2003; Zucker, 1987). Finally, the CEO is able to further strengthen his position of power by growing his network and expanding his resources. Overall, this leads to a perpetuation of power. As a result of this "institutionalization", a CEO strengthens his position of power with every year that he stays in office, such as by influencing new board appointments in a manner that brings his followers to power. Consequently, the odds of being replaced decrease over time (Pfeffer, 1981).

Nevertheless, several researchers point to the fact that the described institutionalization and self-perpetuation of power do not start automatically. In line with the findings of Ocasio (1994) and Frederickson, Hambrick and Baumrin (1988), these researchers see political contestation as part of organizational development. Even Pfeffer (1981) acknowledges that prior to a self-perpetuation of power the active creation of an initial power base is necessary. Further research has shown that gaining a certain power base enhances a CEO's ability to control the company's dominant coalition (Pearce II, 1995); the probability of future power contests is reduced (Berger, 2005), as the CEO is better equipped to deal with challengers more easily (Pitcher, Chreim and Kisfalvi, 2000). Once the initial power base is acquired it is also maintained, and the institutionalization of power as described above takes place (Pfeffer, 1981). Therefore, one of the first activities that a newly appointed CEO should undertake soon after his inauguration is the active creation of an initial power base, which then serves as the basis for an automatic self-perpetuation of power in the time that follows.

Finkelstein (1992) has identified four sources of CEO power that can be used to create this initial power base: prestige power, expert power, ownership power, and structural power. Among these sources of power, Finkelstein (1992) regards structural power as particularly important, and other researchers support this view (Shen and Cannella, 2002). Structural power is the only source of CEO power that allows for the active creation of a power base during the early tenure of a new CEO, whereas the other three sources of power are either already pre-determined when a new CEO enters office or take quite a long time to establish. One of the most important ways for a new CEO to create structural power is to change the composition of the management board and to ensure that mostly followers belong to his dominant coalition (Finkelstein, 1992). Thus, our research is guided by the general hypothesis that how a CEO changes the management board during his tenure – i.e., how he creates structural power – determines the shape of his leader life cycle. This general hypothesis is broken down further in the following section.

2. Hypotheses

On the whole, we distinguish four different types of CEOs who, over the course of their tenure, follow different patterns in changing the composition of their management board, i.e., who take different approaches toward establishing a structural power base. Accordingly, these CEOs also experience different effects of power on performance during their tenure. The four behavior patterns that we distinguish are:

1. Early tenure board change.
2. Continuous board change.
3. Late tenure board change.
4. Board stability.

We examined these four behavior patterns and derived hypotheses regarding the tenure-performance relationship for all four patterns, taking into account the three effects of power on performance – legitimacy, stability, and obsolescence – as follows.

2.1. Early tenure board change. CEOs who follow the "early tenure board change" pattern build up a structural power base in the first two years of their tenure by vigorously changing the management board during that time and by making sure that mostly followers belong to their dominant coalition. Subsequently, however, they only undertake minor board alterations. This behavior pattern has two effects. First, by creating an initial structural power base early in their tenure, potential rivals are discouraged (Berger, 2005). Second, stability in the later stages of the CEO's tenure ensures the institutionalization and automatic increase of power (Pfeffer, 1981). Thus, the power level of CEOs of the "early tenure board change" type grows constantly over their tenure, and they are consequently able to take full advantage of the benefits of CEO power in that growing levels of legitimacy and stability lead to performance increases over time. At a certain point in time, however, obsolescence – the negative effect of power – sets in. Specifically, the growing gap between the company's strategy and structure on the one hand and the environment on the other leads to decreasing company performance in the later stages of a CEO's tenure, resulting in an inverted curvilinear relationship between tenure and performance. This reasoning is reflected in hypothesis 1:

Hypothesis 1: Companies in which the CEOs follow an "early tenure board change" behavior pattern are characterized by an inverted curvilinear relationship between CEO tenure and company performance.

2.2. Continuous board change. CEOs who follow the "continuous board change" behavior pattern change the composition of their management board relatively strongly during all of their tenure. As a result of this continuous board change, they are able to overcome contestation by potential rivals during their early tenure and strengthen their position. Thus, the CEO's power grows as his legitimacy increases. Nevertheless, CEOs who follow this behavior pattern are not able to benefit from the positive performance effects of stability to the same extent as the "early tenure board change" type and, consequently, they do not reach the same performance level. In this behavior pattern, we also expect the negative effects of obsolescence to be stronger, as continuous board change fosters disorientation and uncertainty within the company (Gibelman and Furman, 2008). As a result, we also see an inverted curvilinear relationship for CEOs of the "continuous board change" type, but their leader life cycle does not reach the same performance level as the life cycle of CEOs who belong to the "early tenure board change" type. This reasoning is reflected in the following hypotheses.

Hypothesis 2a: Companies in which the CEOs follow a "continuous board change" behavior pattern are characterized by an inverted curvilinear relationship between CEO tenure and company performance.

Hypothesis 2b: Firm performance in companies in which the CEOs follow a "continuous board change" behavior pattern reaches a lower level compared to companies with CEOs of the "early tenure board change" type.

2.3. Late tenure board change. CEOs who belong to this group keep the management board relatively stable in the first two years after taking office, after which they begin to actively and relatively strongly change its composition, and they continue to do so for the remainder of their tenure. In this case, the CEO is able to benefit from the positive performance effects of stability in the first two years of his tenure but, at the same time, contestation grows and potential rivals gain force (Ocasio, 1994). Through changes in the composition of the management board in the later stages of his tenure, the CEO is then able to further strengthen his position as his legitimacy increases. At the same time, however, the positive effect of stability falls away as the board composition continuously changes during the later stages of the CEO's tenure. In addition, obsolescence sets in with growing CEO power, and the negative effects of obsolescence are enforced by increasing contestation by rivals who are not willing to give away without a struggle the power that they acquired during the first two years of the CEO's tenure. In this case as well, we see an inverted curvilinear relationship between tenure and performance. We also expect that the slope of the leader life cycle for CEOs of the "late tenure board change" type is shorter and shows a deeper decline than that of the life cycle of CEOs who follow the "early tenure board change" behavior pattern, as the power increase is less strong and because contestation plays an important role. Consequently, we can assume that the performance level reached by CEOs of the "late tenure board change" type is lower. This reasoning is summarized in the following hypotheses.

Hypothesis 3a: Companies in which the CEOs follow a "late tenure board change" behavior pattern are characterized by an inverted curvilinear relationship between CEO tenure and company performance.

Hypothesis 3b: Firm performance in companies in which the CEOs follow a "late tenure board change" behavior pattern reaches a lower level compared to companies with CEOs of the "early tenure board change" type.

2.4. Board stability. "Board stability" is a behavior pattern that characterizes CEOs who hardly change the composition of their management board throughout their tenure. Because these CEOs never establish an initial structural power base, we do not expect their power to grow over their tenure. This means that the positive performance effect of legitimacy never sets in. At the same time, the positive impact of stability is outweighed by growing contestation from rivals. On the other hand, as the CEO's power remains low, the negative performance effect of obsolescence is also expected to be low. Thus, for CEOs who follow a "board stability" behavior pattern, we do not propose an inverted curvilinear relationship between CEO tenure and company performance; rather, we expect a flat performance curve over the CEO's tenure. In addition, as the positive impact of CEO power does not take effect, we assume that CEOs of the "board stability" type reach a lower performance level over their tenure than CEOs who follow an "early tenure board change" behavior pattern. This reasoning is reflected in the following hypotheses.

Hypothesis 4a: Companies in which the CEOs follow a "board stability" behavior pattern do not show an inverted curvilinear relationship between CEO tenure and company performance, but rather a flat performance curve.

Hypothesis 4b: Firm performance in companies in which the CEOs follow a "board stability" behavior pattern reaches a lower level compared to companies with CEOs of the "early tenure board change" type.

3. Methods

3.1. Sample selection. For purposes of sample selection, we compiled a listing of Germany's largest publicly listed companies. We chose publicly listed companies because a public listing in most cases ensures sufficient data access. Eighty companies are listed in the main German stock market indices DAX and MDAX. These 80 companies, as well as not-listed companies that belong to the 500 largest companies in Germany (German Top500), formed the basis for selecting our sample. From this group, all firms belonging to the financial services sector were excluded, as their performance figures are not comparable to those of other industries, and a final sample remained of 83 companies with 118 CEOs who were in office between 1990 and 2007. The tenure of these CEOs varies between 2 and 15 years, leading to an overall sample size of 717 CEO tenure years.

We specifically selected a German sample because no study had so far investigated CEO life cycles for European companies. Most research regarding the role and influence of CEOs has rather focused on United States CEOs. We thus believe that by studying performance effects over the tenure of German CEOs we can contribute to the advancement of this research stream. For data collection regarding CEOs and their successors, we used the databases Munzinger Online and "Who is Who". Data on performance, firm size, and firm age were gathered from Osiris as well as from the annual reports of the companies in the sample.

As we investigated the slope of the CEO life cycles that result from the four different ways of creating structural power in companies, we divided our sample into four subsamples. For measuring structural power, we followed Finkelstein's (1992) approach to use turnover in the management board as a proxy for structural power generation of the CEO. In German companies, the management board possesses full responsibility for company management. The CEO is the dominant member of the management board, whereas the supervisory board is responsible for appointing and supervising the members of the management board (Oesterle, 1999; Salomo, 2001). Through the exchange of members of the management board, the CEO is thus able to ensure that mostly followers belong to his dominant coalition which, in turn, strengthens his power position.

In order to measure management board turnover, we gathered data on changes in the management board in all companies in the sample and for each year in which those CEOs were in office. We computed management board turnover as the ratio of executive entries plus executive exits divided by the entire number of management board members for the respective year. The mean value of management board turnover in the full sample is 0.28. Based on this mean we divided our sample into four subgroups reflecting the four types of board change (i.e., early power creation). Table 1 gives an overview of the criteria for assigning CEOs to the four different subgroups.

Table 1. Criteria for assignment to subgroups

Subgroup	Management board turnover in tenure years 0 to 2	Management board turnover in tenure years 3 to n	Subgroup size (number of CEOs)
1. Early tenure board change	> 0.28	< 0.28	33
2. Continuous board change	> 0.28	> 0.28	18
3. Late tenure board change	< 0.28	> 0.28	31
4. Board stability	< 0.28	< 0.28	36

3.2. Measures. *3.2.1. Dependent variable. Firm performance*. We measured company performance using accounting-based performance indicators (Shen and Cannella, 2002). We computed return on assets (ROA) for each year of the tenure of each CEO (t_0-t_n). While accounting-based performance measures have some disadvantages, ROA is a commonly used measure in management research (Bigley and Wiersema, 2002; Guthrie and Datta, 1998; Michel and Hambrick, 1992), particularly in upper echelons research (Karaevli, 2007; Helfat and Bailey, 2005; Shen and Cannella, 2002). Its main advantage is that the necessary accounting data is publicly available. To control for effects of varying corporate tax rates in Germany, earnings before tax (EBT) were used in the calculations. Furthermore, we corrected all ROA measures by subtracting industry averages over the sample period in order to control for industry effects.

3.2.2. Independent variable. To measure CEO tenure, we counted the years that a chief executive was in office; the tenures in the sample ranged from 2 years to 15 years. We also created a squared term of a CEO's overall tenure in order to assess a curvilinear relationship between tenure and firm performance.

3.2.3. Control variables. We used company age, company size, and pre-performance as control variables. *Company size* was measured as the logarithm of the company's total revenues for each year; using a logarithmic term seemed appropriate due to the fact that differences in size become less relevant the larger a company is (Datta and Guthrie, 1994; Thomas and Ramaswamy, 1996).

Company age was measured as the difference between each tenure year of the CEO and the year in which the company was founded. Once more, logarithmic values were used, because the difference in age becomes less relevant as the age of the company increases (Wiersema and Bantel, 1992).

Pre-performance. We measured pre-performance as the average ROA of the years prior to each tenure year. Specifically, we computed the average ROA for the three years (t_{m-1}–t_{m-3}) preceding each year that a CEO was in office (t_m) (Daily and Johnson, 1997).

4. Results

We used generalized estimating equations (GEE) to test our hypotheses. This method was developed by Zeger and Liang (1986) as an extension of the GLM procedure to account for autocorrelation within responses by specifying a working correlation matrix (Zorn, 2001; Ballinger, 2004). Our data has an unbalanced cross-sectional time-series structure with multiple CEOs observed at several points in time. The estimation of a pooled cross-sectional time-series model is generally accomplished through a Generalized Least Squares (GLS) procedure (Zegerand Liang, 1986). As we have an unbalanced sample, however, a GEE procedure estimates more efficient and unbiased regression parameters (Ballinger, 2004).

We assumed a marginal regression model, which relates the marginal response for the population $\mu_{ij} = E(y_{ij})$ to a linear combination of the covariates. For this GEE model we specified the following components: (a) a link transformation function to relate the marginal expectation of the response $E[Y_{ij}] = \mu_{ij}$ to the linear combination of the covariates x_{ij} – we chose the identity link function as our data is set as that for normal distribution: $g(\mu_{ij}) = x'_{ij}\,\beta$; (b) the distribution of the dependent variable; and (c) a specification of the working correlation matrix – we specified an autoregressive correlation structure due to the time-series character of our data. Our correlations within the clusters (CEOs) are time-dependent, and therefore we tested an autoregressive correlation. We used STATA statistical software to conduct the analyses.

Table 2 reports the means and standard deviations for all variables in this study.

Table 2. Means and standard deviations

Variable	Mean	S. d.
1. Tenure years	3.76	3.16
2. Tenure years squared	24.17	35.95
3. Performance	4.49	11.84
4. Pre-performance	2.94	4.09
5. Company age	4.37	0.87
6. Company size	6.71	0.67

In order to test for inverted curvilinear relationships between CEO tenure and performance as proposed in hypotheses 1, 2a, 3a, and 4a, we computed a GEE regression model for each of our four subsamples: "early tenure board change", "continuous board change", "late tenure board change" and "board stability". Table 3 shows the results of this analysis with ROA as dependent variable. The four models include the control variables as well as the variables "tenure" and "tenure squared". For a curvilinear effect of tenure on performance, the correlation coefficient of tenure squared should be negative, while the coefficient of tenure should be positive.

Table 3. Results of GEE analyses for ROA as dependent variable

	Model 1: Early tenure board change	Model 2: Continuous board change	Model 3: Late tenure board charge	Model 4: Board stability
Controls				
Pre-performance	2,66*	-0,96	3,15	2,70**
Company age	-2.12	-4.03	2.75	-1.52^{t}
Company size	-7.28	-2.22	5.37^{t}	-2.11
Main effects				
Tenure	2.43**	1.71**	0.43	-0.22
Tenure squared	-0.15*	-0.14*	-0.16	0.01
N (cluster)	33	31	18	36
Wald Chi^2	30.16***	11.72*	12.54*	19.78**

Note: ^{t} p < .10; * p < .05, ** p < .01, *** p < .001.

As Table 3 shows, all four regression models are significant. Hypothesis 1 proposes a curvilinear relationship between CEO tenure and firm performance for CEOs following the "early tenure board change" behavior pattern. As model 1 shows, a significant relationship between CEO tenure and performance exists. The negative correlation coefficient of tenure squared (b = -.15, pb .02) and the positive coefficient of tenure (b = 2.43, pb .001) support the assumption of a curvilinear relationship between tenure and performance in the case of "early tenure board change". Thus, hypothesis 1 is confirmed by our data.

Hypothesis 2a suggests an inverted curvilinear relationship between tenure and company performance for CEOs of the "continuous board change" type. Model 2 displays the expected tenure-performance relationship with a significant negative coefficient of tenure squared (b = -.14, pb .01) and a positive coefficient of tenure (b = 1.71, pb .01). Thus, our findings also give support to hypothesis 2a.

Hypothesis 3a proposes an inverted curvilinear relationship between CEO tenure and company performance for CEOs following a "late tenure board change" behavior pattern. As model 3 shows, however, this hypothesis has to be rejected. Despite the right general direction of effects, the coefficients of the variables "tenure" and "tenure squared" in model 3 are not significant.

Hypothesis 4a suggests that for CEOs who seek "board stability" we do not find an inverted curvilinear relationship between CEO tenure and company performance. Model 4 shows the respective results. The coefficients of neither the variable "tenure" nor the variable "tenure squared" are significant; they do not even point in the direction of a curvilinear relationship. This means that our hypothesis 4a finds support.

With regard to the control variables, Table 3 shows a significant positive influence of the variable "pre-performance" in all models except model 2. This result is in line with findings of several other researchers who have also come to the conclusion that prior performance levels influence performance in later years (Daily and Johnson, 1997; Henderson, Miller and Hambrick, 2006). We did not find consistent and significant results for the other control variables.

In Hypotheses 2b, 3b, and 4b, we propose that the overall performance levels reached by CEOs who follow the "continuous board change," the "late tenure board change," and the "board stability" behavior patterns, respectively, are lower than that of CEOs of the "early tenure board change" type. In order to test these hypotheses we plotted the tenure-performance relationships for all four subsamples (Figure 1).

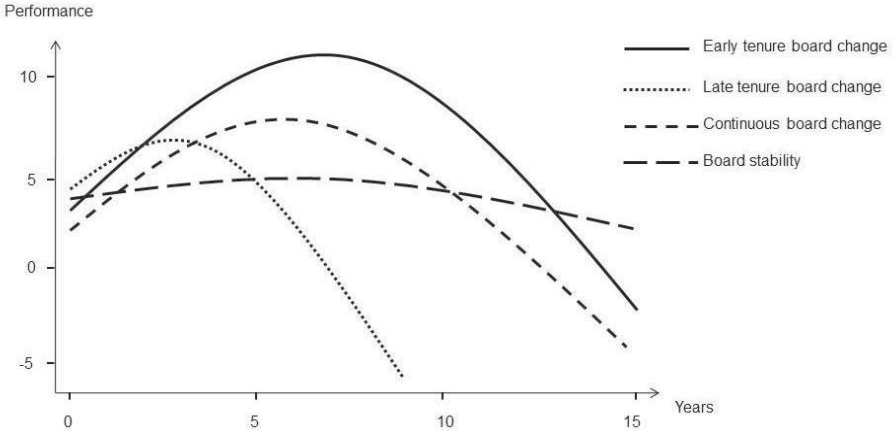

Fig. 1. The plot of CEO tenure and firm performance

As Figure 1 shows, CEOs of the "early tenure board change" type reach a higher performance level than all other subgroups. In order to validate this conclusion, we conducted t-tests on performance sample means; Table 4 provides the respective results. As the table shows, we find significant differences in performance means between "early tenure board change" and "continuous board change", as well as between "early tenure board change" and "board stability." The t-test on differences between performance means of "early tenure board change" and "late board change," however, did not yield significant results. Thus, our data provides support for our hypotheses 2b and 4b, while hypothesis 3b had to be rejected.

Table 4. Results of t-tests

Variable	Mean	Std. error	Null hypothesis
Early tenure board change-performance	7.912	1.024	Ha: diff ! = 0
Continuous board change-performance	5.209	.835	$Pr(\|T\| > \|t\|) = 0.048$
Early tenure board change-performance	7.912	1.024	Ha: diff ! = 0
Late board change-performance	5.167	1.108	$Pr(\|T\| > \|t\|) = 0.1216$
Early tenure board change-performance	7.912	1.024	Ha: diff ! = 0
Late board change-performance	4.408	.570	$Pr(\|T\| > \|t\|) = 0.003$

Although the presented t-tests deliver reliable results on mean differences, effect level tests were conducted to further emphasize the advantageous effect of a CEO's early tenure board change. Table 5 displays the results of these effect level tests. As the table shows, we find a medium effect on performance for CEOs of the "early tenure board change" type, whereas for all the other groups of CEOs this effect is small. This higher performance effect can be regarded as a further indication of the higher performance level reached by CEOs of the "early tenure board change" type.

Table 5. Results of effect level tests

	Total variance accounted for	Effect level
Early tenure board charge	omega2 .370 Eta2 .038 Cohen's f .196	Medium
Late tenure board change	omega2 .007 Eta2 .008 Cohen's f .082	Small
Continuous board change	omega2 .009 Eta2 .010 Cohen's f .097	Small
Board stability	omega2 .006 Eta2 .007 Cohen's f .076	Small

Discussion and interpretation

In extending leader life cycle theory (Hambrick and Fukutomi, 1991), we examined the relationship between CEO tenure and performance for four different groups of German CEOs who used different approaches to create structural power over their tenure. Our findings are generally in line with those of earlier studies that have tested leader life cycle theory (Giambatista, 2004; Henderson, Miller and Hambrick, 2006; Miller and Shamsie, 2001). Nevertheless, to the best of our knowledge, this is the first study that has investigated the role of structural power creation activities – measured as changes in the composition of the management board – on the CEO life cycle.

Specifically, we investigated two aspects: (a) the impact of structural power creation activities on the design of the CEO life cycle; and (b) the impact of different types of structural power generation activities on company performance. Overall, we have found consistent results in these two areas, confirming five of our seven hypotheses. These findings generally indicate that the type of structural power creation activity– i.e., the type of board change behavior – that a CEO applies has an impact on the slope of his leader life cycle as well as on company performance over the course of his tenure.

Impact of structural power creation activities on the slope of the leader life cycle. In our study, we investigated the impact of four different types of board change behavior, which CEOs use to create structural power, on the design of the CEO's life cycle. Our results draw a differentiated picture of the slope of this life cycle. For two of our four groups of CEOs – "early tenure board change" and "continuous board change" – we found an inverted curvilinear relationship between tenure and performance, as proposed by leader life cycle theory (Hambrick and Fukutomi, 1991). For one type – "late tenure board change" – our hypothesis of such a relationship could not be confirmed; and for the last type – "board stability" – we were able to show that no curvilinear relationship exists.

These findings are in line with results of other studies that have also reported the existence of different CEO life cycles. Specifically, Henderson, Miller and Hambrick (2006) have found two different life cycles for CEOs in dynamic and stable industries, respectively. Our study, however, is the first to explicitly investigate the impact of structural power creation activities on the slope of the life cycle. Our

results show that if and how the CEO changes the management board during his tenure has an influence on the shape of his leader life cycle.

Specifically, not making changes in the composition of the management board at all leads to a flatter slope of the life cycle. Even starting late with these changes has negative effects on company performance, particularly in the later stages of the CEO's tenure. Here, contestation by rivals is likely to play an important role. Continuous changes in the composition of the management board – our third behavior pattern – seems to be a sensible alternative in general, but it prevents all positive effects of power to fully unfold. In particular, the positive impact of stability does not take effect. Thus, our findings indicate that the ideal slope – as proposed by leader life cycle theory (Hambrick and Fukutomi, 1991) – is reached by engaging in activities to change the management board during early tenure and by keeping the board stable thereafter.

These results underline the crucial role of power, and particularly of the creation of an initial structural power base early in the tenure, in shaping the CEO life cycle. Bringing one's own team "on board" and working continuously with this team afterwards has, according to our findings, a positive effect on the leader life cycle. This finding is also confirmed by other studies on the development of a CEO's power over time, as well as by studies on the impact of CEO power on performance (Pfeffer and Salancik, 2003; Shen and Cannella, 2002; Chaganti, Damanpour and Mankelwicz, 2001; Daily and Johnson, 1997; Ocasio, 1994).

Impact of structural power creation activities on company performance. We have not only shown that different approaches to creating structural power over the tenure of a CEO lead to different types of CEO life cycles, but we have also demonstrated that these different behavior patterns have an impact on company performance over the CEO's tenure. Specifically, our results indicate that CEOs who change the management board vigorously during their early tenure, in order to make sure that mostly followers belong to their dominant coalition, and who keep the board stable thereafter, achieve a higher performance over their tenure than their peers who show continuous board change or board stability behavior patterns. In the case of late tenure board change, no significant performance difference could be detected. However, the small sample size of CEOs in this group seems to be a potential reason for this finding.

In addition, our findings show that changing the board during early tenure is sensible even if the board composition is not kept stable in the later stages of a CEO's tenure. Furthermore, we found a higher performance in the case of "continuous board change" as compared to "late tenure board change" and "board stability" results. To further support these findings, we ran an additional analysis only on early board change and late board change over all sample CEOs. The results confirm our conclusions, as early board change shows a significant inverted U-shape course of performance, which possesses a much higher performance level than the not-significant performance arch of late board change. This finding is in line with the expectations that other researchers have expressed, but it has not yet empirically shown the impact of early tenure power creation on performance (e.g., Berger, 2005). At the same time, it again confirms our conclusion that, in order to be successful, a new CEO needs to bring his own team "on board" as early as possible.

In spite of our promising findings, our research also has a few limitations. First and foremost, we only used one indicator for measuring structural power creation, i.e., different patterns of management board turnover. Although the call for a multidimensional measurement of structural power is legitimate (Astley and Sachdeva, 1984; Finkelstein, 1992), management board turnover has frequently been used in this context and is the only relevant measure of structural power that is available for German companies (Shen and Cannella, 2002). We also acknowledge that further organizational as well as CEO characteristics may influence the relationship between CEO tenure and performance. Therefore, future researchers should include such promising moderating variables into their research models.

Implications. Overall, the results of our study show that leader life cycle theory as proposed by Hambrick and Fukutomi (1991) is a highly relevant perspective in upper echelons research. Nevertheless, our study has also indicated that a uniform leader life cycle across CEOs from different companies and industries does not exist. Rather, we have shown that structural power creation plays an important role in determining the exact slope of a leader life cycle. Surprisingly, the influence of power on performance over the tenure of a CEO has hardly been researched in the past.

Thus, our study opens up multiple avenues for further research. First and foremost, a further and more fine-grained analysis of the effects of different aspects of CEO and board power on performance over a CEO's life cycle seems necessary. In particular, the role of contestation by rivals should be analyzed further (Ocasio, 1994). Certainly, leader life cycle theory can also be extended in other directions. Among other factors, the roles of stable and dynamic industries, specific demographic cha-

racteristics of the CEO, and managerial discretion deserve further attention (Hambrick and Fukutomi, 1991; Henderson et al., 2006).

Finally, our study shows that findings in the area of leader life cycle theory that have thus far only been derived for U.S. companies are generally transferable to other geographical settings such as Europe and, more specifically, Germany. Nevertheless, our study has also made it clear that the results differ in the details. Thus, it seems desirable to further expand comparative analyses of CEOs and their effects on companies in different countries.

Besides avenues for further research, our study also offers some implications for corporate practice. Specifically, our results indicate that CEOs need to take clear steps with regard to the composition of their management board during their early tenure years in order to strengthen their position and to establish an initial power base. Changing the management board in order to bring in "one's own team" right from the start seems important and promising as the basis for stable performance improvements over a CEO's tenure, even if the board is not kept stable afterwards.

References

1. Alexander J.A., Fennell M.L. and M.T. Halpern (1993). Leadership Instability in Hospitals: The Influence of Board-CEO Relations and Organizational Growth and Decline, *Administrative Science Quarterly*, 38 (1), pp. 74-99.
2. Astley W.G. and P.S. Sachdeva (1984). Structural Sources of Intraorganizational Power: a Theoretical Synthesis, *Academy of Management Review*, 9 (1), pp. 104-113.
3. Ballinger G.A. (2004). Using Generalized Estimating Equations for Longitudinal Data Analysis, *Organizational Research Methods*, 7 (2), pp. 127-150.
4. Berger B.K. (2005). Power over, Power with, and Power to Relations: Critical Reflections on Public Relations, the Dominant Coalition, and Activism, *Journal of Public Relations Research*, 17 (1), pp. 5-28.
5. Bigley G.A. and M.F. Wiersema (2002). New CEOs and Corporate Strategic Refocusing: How Experience as Heir Apparent Influences the Use of Power, *Administrative Science Quarterly*, 47 (4), pp. 707-727.
6. Bird A. (1990). Power and the Japanese CEO, *Asia Pacific Journal of Management*, 7 (2), pp. 1-20.
7. Chaganti R., F. Damanpour and J.M. Mankelwicz (2001). CEOs' Power and Corporate Performance Transitions, *Competitive Intelligence Review*, 12 (2), pp. 47-60.
8. Crossland C. and D.C. Hambrick (2007). How National Systems Differ in Their Constraints on Corporate Executives: A Study of CEO Effects in Three Countries, *Strategic Management Journal*, 28 (8), pp. 767-789.
9. Daily C.M. and J.L. Johnson (1997). Sources of CEO Power and Firm Financial Performance: A Longitudinal Assessment, *Journal of Management*, 23 (2), pp. 97-117.
10. Datta D.K. and J.P. Guthrie (1994). Executive Succession: Organizational Antecedents of CEO Characteristics, *Strategic Management Journal*, 15 (7), pp. 569-577.
11. Deephouse D.L. and M.C. Suchman (2008). Legitimacy in Organizational Institutionalism. In R. Greenwood, K. Sahlin, R. Suddaby (Eds.), *The Sage Handbook of Organizational Institutionalism*, pp. 49-77.
12. DiMaggio P.J. and W.W. Powell (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields, *American Sociological Review*, 48 (2), pp. 147-160.
13. Eitzen D.S. and N.R. Yetman (1972). Managerial Change, Longevity, and Organizational Effectiveness, *Administrative Science Quarterly*, 17 (1), pp.110-116.
14. Finkelstein S. (1992). Power in Top Management Teams: Dimensions, Measurement, and Validation, *Academy of Management Journal*, 35 (3), pp. 505-538.
15. Finkelstein S. and R.A. D'Aveni (1994). CEO Duality as a Double-Edged Sword: How Boards of Directors Balance Entrenchment Avoidance and Unity of Command, *The Academy of Management Journal*, 37 (5), pp. 1079-1108.
16. Fredrickson J.W., D.C. Hambrick and S. Baumrin (1988). A Model of CEO Dismissal, *Academy of Management Review*, 13 (2), pp. 255-270.
17. Geletkanycz M.A., B.K. Boyd and S. Finkelstein (2001). The Strategic Value of CEO External Directorate Networks: Implications for CEO Compensation, *Strategic Management Journal*, 22 (9), pp. 889-898.
18. Giambatista R.C. (2004). Jumping through Hoops: A Longitudinal Study of Leader Life Cycles in the NBA, *Leadership Quarterly*, 15 (5), pp. 607-624.
19. Giambatista R.C., W.G. Rowe and S. Riaz (1994). Nothing Succeeds Like Succession: A Critical Review of Leader Succession Literature since 1994, *The Leadership Quarterly*, 16 (6), pp. 963-991.
20. Gibelman M. and R. Furman (2008). *Navigating Human Service Organizations*, Chicago: Lyceum Books.
21. Goodstein J. and W. Boeker (1991). Turbulence at the Top: A New Perspective on Governance Structure Changes and Strategic Change, *Academy of Management Journal*, 34 (2), pp. 306-330.
22. Guthrie J.P. and D.K. Datta (1998). Corporate Strategy, Executive Selection, and Firm Performance, *Human Resource Management*, 37 (2), pp. 101-115.
23. Hambrick D.C. (1995). Fragmentation and the Other Problems CEOs Have with Their Top Management Teams, *California Management Review*, 37 (3), pp. 110-127.
24. Hambrick D.C. and G.D.S Fukutomi (1991). The Seasons of a CEO's Tenure, *The Academy of Management Review*, 16 (4), pp. 719-742.

25. Henderson A.D., D. Miller and D.C. Hambrick (2006). How Quickly Do CEOs Become Obsolete? Industry Dynamism, CEO Tenure, and Company Performance, *Strategic Management Journal*, 27 (5), pp. 447-460.
26. Kesner I.F. and T.C. Sebora (1994). Executive Succession: Past, Present and Future, *Journal of Management*, 20 (2), pp. 327-372.
27. Lawrence T.B., M.I. Winn and P.D. Jennings (2001). The Temporal Dynamics of Institutionalization, *Academy of Management Review*, 26 (4), pp. 624-644.
28. Meyer J.W. and B. Rowan (1977). Institutionalized Organizations, *The American Journal of Sociology*, 83 (2), pp. 340-363.
29. Michel J.G. and D.C. Hambrick (1992). Diversification Posture and Top Management Team Characteristics, *Academy of Management Journal*, 35 (1), pp. 9-37.
30. Miller D. (1991). Stale in the Saddle: CEO Tenure and the Match between Organization and Environment, *Management Science*, 37 (1), pp. 34-52.
31. Miller D. and J. Shamsie (2001). Learning across the Life Cycle: Experimentation and Performance among the Hollywood Studio Heads, *Strategic Management Journal*, 22 (8), pp. 725-745.
32. Ocasio W. (1994). Political Dynamics and the Circulation of Power: CEO Succession in U.S. Industrial Corporations, 1960-1990, *Administrative Science Quarterly*, 39 (2), pp. 285-312.
33. Oesterle M.-J. (1999). *Führungswechselim Top-Management*, Wiesbaden: Gabler.
34. Pearce J.A. II (1995). A Structural Analysis of Dominant Coalitions in Small Banks, *Journal of Management*, 21 (6), pp. 1075-1095.
35. Pfeffer J. (1981). *Power in Organizations*, New York: HarperCollins.
36. Pfeffer J. and G.R. Salancik (2003). *The External Control of Organizations: A Resource Dependence Perspective*, Stanford: Stanford University Press.
37. Pitcher P., S. Chreim and V. Kisfalvi (2000). CEO Succession Research: Methodological Bridges over Troubled Waters, *Strategic Management Journal*, 21 (6), pp. 625-648.
38. Pollock T.G., H.M. Fischer and J.B. Wade (2002). The Role of Power and Politics in the Repricing of Executive Options, *Academy of Management Journal*, 45 (6), pp. 1172-1182.
39. Salancik G.R. and J. Pfeffer (1977). Who Gets Power – and How They Hold on to It, *Organizational Dynamics*, 5 (3), pp. 3-21.
40. Salomo S. (2001). *Wechsel der Spitzenführungskraft und Unternehmenserfolg*, Berlin: Duncker and Humblot.
41. Shen W. and A.A. Jr. Cannella (2002). Power Dynamics within Top Management and Their Impacts on CEO Dismissal Followed by inside Succession, *Academy of Management Journal*, 45 (6), pp. 1195-1206.
42. Staw B.M. (1976). Knee-Deep in the Big Muddy: A Study of Escalating Commitment to a Chosen Course of Action, *Organizational Behavior & Human Performance*, 16 (1), pp. 27-44.
43. Thomas A.S. and K. Ramaswamy (1996). Matching Managers to Strategy: Further Tests of the Miles and Snow Typology, *British Journal of Management*, 7 (3), pp. 247-261.
44. Wiersema M.F. and K.A. Bantel (1992). Top Management Team Demography and Corporate Strategic Change, *Academy of Management Journal*, 35 (1), pp. 91-121.
45. Zucker L.G. (1987). Institutional Theories of Organization, *Annual Review of Sociology*, 13 (1), pp. 443-464.