DISCUSSION PAPER

No 26

Outside Board Memberships of CEOs: Expertise or Entrenchment?

Benjamin Balsmeier,
Achim Buchwald,
Heiko Peters

June 2011

Outside Board Memberships of CEOs: Expertise or Entrenchment?

Benjamin Balsmeier[a,b,c], Achim Buchwald[a,b] and Heiko Peters[d]

a) Monopolies Commission, Bonn, Germany
b) University of Münster, Institute for Organisational Economics, Münster, Germany
c) Düsseldorf Institute for Competition Economics (DICE), Düsseldorf, Germany
d) German Council of Economic Experts, Wiesbaden, Germany

June 2011

We investigate whether outside board memberships of CEOs signal expertise or entrenchment. The analysis is based on panel data of the largest German companies covering the period from 1996 to 2008. Supporting the entrenchment hypothesis, our analysis reveals that firms having a CEO with one or more outside mandates suffer from significantly weaker firm performance compared with firms having a CEO without any outside board mandates. Moreover, disciplinary CEO turnovers become less likely and turnover-performance sensitivity declines with rising board memberships of the top manager. We conclude that outside mandates enhance managerial power at the expense of the home firm's shareholders.

JEL-Classification: J24, J63, L25, M50
Keywords: Corporate Governance, Entrenchment, Outside Board Memberships, CEO turnover

Contact Details:

Benjamin Balsmeier
Monopolies Commission, Heilsbachstraße 16, 53123 Bonn, Germany,
phone: +49 228/338882-42, e-mail: Benjamin.Balsmeier@monopolkommission.bund.de

Achim Buchwald
Monopolies Commission, Heilsbachstraße 16, 53123 Bonn, Germany,
phone: +49 228/338882-39, e-mail: Achim.Buchwald@monopolkommission.bund.de

Heiko Peters
The German Council of Economic Experts, Gustav-Stresemann-Ring 11, 65189 Wiesbaden, Germany, phone: +49 611/75-2927, e-mail: peters.hp@googlemail.com

1 Introduction

It is nowadays widely accepted that boards play a crucial role in corporate governance. While numerous studies deal with their most general characteristics, like the board size or the fraction of independent directors, this paper extends the existing literature by focusing on one specific aspect, namely the outside directorships of the CEO (see Adams et al. 2010 for a recent review of the literature on board composition). Studies on multiple board memberships usually focus on the perspective of the receiving firm because having a majority of outside directors is often deemed to be a feature of good corporate governance. Especially monitoring CEO-directors are often presumed to be independent and particularly skilled. However, the independence of outside directors is often questionable and it can also be argued that outside mandates help CEOs to entrench themselves. Some studies even established a special category for those outside directors who hold more than three mandates simultaneously, calling them 'busy' directors (Fich and Shivdasani 2006).

Corporate networks via personal linkages have a long tradition in Germany. Similar to US companies, multiple board mandates of CEOs are common in large firms. More than one-third of the CEOs we observe hold at least one outside supervisory board mandate. Theoretically, outside board mandates of CEOs could have either a positive or a negative effect on the corporate governance of the home firm. Which explanation actually holds depends crucially on whether the most skilled CEOs receive and accept the most board appointments (Fama and Jensen 1983) or whether outside mandates are rather a kind of perquisite consumption of powerful CEOs (Bebchuk and Fried 2003). The present study aims to discriminate between these two opposing theories. Using a new hand-collected sample of the largest German companies ranging from 1996 to 2008, this is the first study to provide evidence on outside board memberships of CEOs and entrenchment in a European institutional framework.

We investigate three closely related topics to differentiate between the expertise and entrenchment explanations: (1) the relation between outside board mandates and the performance of the sending firm; (2) the effect of outside board mandates on forced

CEO turnover; and (3) the effect of outside board mandates on turnover-performance sensitivity.

Supporting the entrenchment hypothesis, we find that firms having a CEO with at least one outside mandate suffer from significantly weaker firm performance compared with firms having a CEO without any outside board mandates. Moreover, disciplinary CEO turnovers become less likely and turnover-performance sensitivity declines with rising board memberships of the top manager.

The rest of the paper is organized as follows. In the next section we provide an overview of the literature on multiple directorships and examine their effect on corporate governance. Section three describes the institutional framework, our data set and makes methodological remarks. In section four we present the regression results concerning the relationships between outside board mandates and firm performance as well as forced CEO turnovers. Section five concludes.

2 Literature review

Fama and Jensen (1983) point out that multiple board memberships represent an important feature of corporate governance. According to them multiple board mandates are a common outcome of a functioning market for top managers where the most successful managers are appointed to the most boards. Hence, parallel mandates signal outstanding competence of the respective manager. This view is consistent with the notion of a highly skewed distribution of managerial talent, which results in a highly concentrated corporate output among a few individuals (Rosen 1981). From this point of view we would expect there to be no value-reducing effects of multiple board memberships, either at the sending or at the receiving firm. CEOs accept additional mandates as long as the sending and the receiving firm benefit from such a connection.

Adams et al. (2010) offer a simple theoretical model that incorporates this argument and illustrates the decision of a manager on how many mandates to accept. The key aspect of their model is that in a market-driven world of multiple board member-

2

ships, the maximum number of parallel board seats depends on the skill level of the respective manager. Thus, better-skilled managers serve on more outside boards than lower-skilled managers and the lowest-skilled managers receive no outside directorships. Supporting this idea, Gilson (1990) provides evidence of US companies where CEOs of financially distressed firms receive fewer outside board mandates. Additionally, Fich (2005) reports that it is easier for CEOs of well-performing companies to receive further outside directorships.

Taking multiple board memberships as a common outcome of the market for top managers might be, however, too simple. Looking more closely at outside board memberships, it is first of all helpful to differentiate between the view of the receiving firm, where a monitoring director serves as a CEO in another firm at the same time and the view of the sending firm, where the incumbent CEO may simultaneously hold outside directorships.

2.1 Appointing CEOs as monitoring directors

While we focus on the sending firm in our analysis, we briefly describe the motives for appointing an external CEO as a supervisor first, to illustrate why it is likely to be easy for CEOs to receive outside board appointments. The most intuitive motive for appointing outside CEOs as monitoring directors is to gain access to scarce managerial knowledge, thereby improving the portfolio of skilled directors who monitor and advise the executives. Moreover, firms might benefit from the reputation of an outside CEO on their board. Especially firms without a reputable track record or young firms with high uncertainty concerning their future development could benefit from external CEOs on their boards, as investors could take CEO appointments as certification of good growth and profit prospects.

Alternatively, the demand for CEOs as outside directors could also be explained by the 'buddy' hypothesis or by social networking. Here, the incumbent managers seek to establish new allies or tighten existing linkages to entrench themselves in their own company (see Hwang and Kim 2009 and Cohen et al. 2008 for the relevance of social

ties). This idea is consistent with Hermalin and Weisbach's (1998) balance of power model, where the incumbent CEO influences new director nominations in the sense that only supporters of his preferred strategy are selected. Shivdasani and Yermack (1999) provide evidence in relation to this perception by reporting negative stock market reactions to the inclusion of new board members, when the incumbent CEO is present at the nomination committee. Looking at stock market reactions to announcements of outside director appointments the evidence in the literature is mixed, however. While Rosentein and Wyatt (1990) as well as Masulis and Mobbs (2009) report positive stock market reactions, Perry and Peyer (2005) find negative ones.

Most of the reasons why firms could profit from appointing outside CEOs to their board are not mutually exclusive. There might be cases in which the best-suited manager for a vacant directorship is simultaneously well skilled and a friend of the incumbent CEO. A comprehensive empirical investigation, why firms appoint outside CEOs as monitoring directors based on US data can be found in Fahlenbrach et al. (2010). For our analysis, in which we focus on the view of the sending firm, it is just important to state that it is reasonable to assume a considerable demand for firm monitoring by external CEOs.

2.2 Sending CEOs to other firm's boards

Given that firms demand a substantial amount of outside CEOs as monitoring directors, we take a closer look at the supply side next. While most of the existing studies on outside directorships focus on the receiving firm the perspective of the sending firm has received far less attention so far.

The central question in this context is why firms should actually allow CEOs to spend time and effort on topics of other firms. From a shareholder's perspective it is obvious that problems may arise from the fact that the incumbent CEO, who is bound to the day-to-day business of his home company, simultaneously serves as a director on another board. Important decisions at his home firm could be flawed, as he has to serve two employers with possibly conflicting interests. This problem becomes even

worse with rising numbers of outside directorships.

The busyness argument follows this line of reasoning. Firms may suffer from CEOs with parallel board mandates, because with a certain number of mandates even the best-skilled manager is simply not able to devote enough time to every firm. This conjecture is also supported by Fich and Shivdasani (2006). They provide an empirical investigation of the busyness argument, showing that boards with a majority of outside directors who simultaneously serve on three or more boards are associated with weaker profitability and lower turnover-performance sensitivity of the CEO.

Bebchuk and Fried's (2003) managerial power approach furthermore suggests that outside board mandates help managers to raise their discretionary behavior and can therefore be interpreted as an indication of managerial entrenchment. According to the managerial power approach, outside board mandates help CEOs to build up new and tighten existing friendly relationships with other current board members at their home firm, which in turn allows the CEO to influence his own monitoring and compensation policy. Alternatively one could also argue that managers who possess a certain power within the boardroom are able to force their monitors to tolerate outside board mandates. Then outside directorships are not causal of managerial power but are still an indicator of entrenchment.

Even if the best-skilled managers receive the most appointments, entrenchment and the pursuit of private benefits could still be the driving factor for outside board mandates. If managerial talent is highly concentrated among a few individuals, firms that have one of these highly talented CEOs are perhaps simply not able to forbid outside board memberships even if they reduce firm value. The next-best manager would perhaps accept not serving on outside boards, but due to his minor talent the firm value could become even worse. Substantiating this argument, Shleifer and Vishny (1989) show that incumbent CEOs can easily enhance the value gap between themselves and the second-best manager by making specific investments. Accordingly, Fich (2005) reports negative share-price reactions when the incumbent CEO accepts new outside directorships.

Conyon and Read (2006) present a theoretical model that provides a rationalization for allowing executives to serve on outside boards from a shareholder's perspective. They argue that outside board mandates of executives help firms to boost the knowledge and expertise of their agents. Serving on other boards becomes a kind of personal training on the job for high potentials from that point of view. Masulis and Mobbs (2009) support this explanation empirically. In their analysis inside board members with outside directorships can be associated with better operating performance and higher market-to-book ratios. Schonlau and Singh (2009) find that firms that are linked via multiple board memberships undertake significantly more profitable firm acquisitions than firms without personal linkages to the acquired firm.

Beside more power in the boardroom CEOs have manifold personal motives to accept outside directorships. CEOs can benefit from outside mandates through extra salaries from the appointing firm, supplementary business contacts, additional experience, better retirement options and enhanced prestige. Sitting on other boards could provide new career opportunities for a CEO, especially if the appointing companies perform well (Yermack 2004). Accordingly, shareholder lawsuits are not conducive to directors' good reputation (Fich and Shivdasani 2007). The results of Booth and Deli (1996) point in the same direction by showing that outside directorships are more attractive to CEOs when the assets of the home firm are already in place and the growth opportunities of the home firm are small. Further strengthening the reputation motive, Fahlenbrach et al. (2010) report that executives are more likely to leave boards when the performance of the appointing firm is expected to decline or shareholder lawsuits are announced.

Summing up the existing literature it seems clear that CEOs can benefit personally from outside mandates. Thus, we should not wonder about observing numerous outside board memberships of CEOs. From a shareholder's perspective though it is still questionable how outside mandates should be valued as they can still stand for either expertise or entrenchment. Discriminating between these two opposing hypotheses becomes even more difficult within a non-Anglo-Saxon institutional environment as almost all empirical investigations have been based on the data of US companies so

6

far.

We aim to close this research gap by analyzing outside board memberships of CEOs in Germany, the largest economy in Europe with a typical central-European institutional environment. Thereby the present study is the first to provide insights into the effects of outside board memberships of CEOs when the board structure is two-tiered. Since most of the US studies on multiple board memberships focus on the perspective of the receiving firms so far, our study also contributes to the ongoing general debate on the value of outside directorships in all economies around the world.

3 Institutional framework, data description and methodological remarks

3.1 Institutional framework

Before we start our empirical investigation we will briefly explain some important institutional features of the German corporate governance system. The specific regulations of the German corporate governance system have no direct impact on the arguments toward a negative or positive effect of outside CEO directorships in principal but should nevertheless be considered before empirical results based on German data are interpreted. The main differences of the German board model compared with the Anglo-Saxon model are the two-tiered board structure instead of a one-tier board and the mandatory representation of workers among the monitoring directors. The operative leadership of a company is entrusted to the management board, whereas the supervisory board monitors the management board members, regulates executive compensation and appoints new executives. The counterpart of the CEO in a one-tier board is the chairman of the management board in a two-tiered board, though, differently from the Anglo-Saxon model, he is not allowed to be a member of the supervisory board simultaneously. The chairman of a management board chairs all the executive board members. He is responsible for defining and fulfilling all the operative and strategic objectives. Thus, we refer to him as the CEO. In some exceptional cases

the company's charter requires that the supervisory board authorizes fundamental investment decisions that have a huge impact on the whole company. Outside board memberships are allowed up to a maximum of 10 parallel seats, while a chairmanship of a supervisory board counts as double. The law also forbids board interlockings, meaning that two firms cannot send management board members to each respective supervisory board at the same time.

According to the German co-determination act (*'Mitbestimmungsgesetz'*) the supervisory board has to comprise worker and union representatives up to one-half of all the members. The maximum number of union representatives is limited to three. Union representatives on supervisory boards regularly join the board from outside the firm they are supposed to monitor while worker representatives are in fact employees of the company. Worker representatives are elected annually by the workforce. They can simultaneously be a member of a union, but this is not mandatory (see Fauver and Fuerst 2006 for further details and a comprehensive investigation of German co-determination). Although employees have substantial voting rights, shareholders are still able to control supervisory board decisions, as the chairman of the supervisory board is always a shareholder representative and has a second vote in the case of a tie. Beside worker representation on the supervisory board, the German co-determination act requires firms with 2,000 or more employees to have a minimum of 12, 16 or 20 supervisory board members depending on the exact size of the company ($>$2,000, $>$10,000 and $>$20,000 employees respectively). All companies in our sample realize the minimum required size. The law does not determine the number of management board members.

3.2 Data compilation and descriptive statistics

Our panel data are based on the 100 largest firms in Germany according to their domestic value added in every even year during the period from 1996 to 2008. The German Monopolies Commission, a government consultancy in competition economics, identifies these companies. These companies were on average responsible for 17.9 percent of the whole German firm output during the 10-year period from 1996 to 2008, which illustrates the macroeconomic weight of the reviewed companies. For each uneven year we include the 100 largest companies of the former even year in our sample.

The ownership data come from the Hoppenstedt 'Konzernstrukturdatenbank' and Hoppenstedt 'Companies & Sectors'. The accounting data were obtained from Bureau van Dijk's AMADEUS database. Finally, all management board members, supervisory board members were collected from annual company reports, Hoppenstedt 'Leitende Männer und Frauen der Wirtschaft' and press releases.

We removed all the banks, financial services companies and firms that are subsidiaries of a foreign home company to enhance the comparability of the firms in the sample. A small loss of observations occurred due to missing or inconclusive values of some variables of interest. Our final data set contains 88 firms with 707 firm-year observations. The variables used and the according data sources are summarized in table 1.

Table 2 presents mean difference t-tests to assess structural differences between firms having CEOs with and without outside directorships. Interestingly, the fraction of CEOs that leave their office in the current year is not significantly different for both groups, but the fraction of CEOs who are forced to leave their company in the current year is significantly smaller for CEOs with outside mandates relative to CEOs without outside mandates. This simple univariate comparison gives a first hint that CEOs with outside board mandates face a lower risk of being fired.

Moreover, firm performance is with a 3.4 percent average return on assets (ROA) insignificantly smaller for those CEOs with outside mandates than the average firm performance of CEOs without outside mandates, which is 4.1 percent. Finally, CEOs

Table 1: Definitions of variables

Variable	Description	Source
Outside board mandates of the CEO	Number of external supervisory board mandates of the CEO	Company Reports, Monopolies Commission
Outside board mandates of the CEO, dummy	Dummy variable which equals 1 if the CEO holds at least one outside supervisory board mandate	Company Reports, Monopolies Commission
Freeway connectivity	Average weighted journey time by car from the association of municipalities ('Verbandsgemeinde') of the respective company to the nearest freeway access	INKAR database of the Federal Institute for Research on Building, Urban Affairs and Spatial Development
MB members	Number of executives on the management board	Company Reports
SB members	Number of monitoring directors on the supervisory board	Company Reports
ROA	Return on total assets ($= \frac{\text{net income}}{\text{total assets}}$)	Bureau van Dijk
Total assets	Total assets	Bureau van Dijk
Employees	Employees	Company Reports, Bureau van Dijk
Publicly quoted, dummy	Dummy indicating whether the firm is publicly quoted on the stock market	Hoppenstedt
Freefloat	Fraction of free floating shares	Hoppenstedt
Companies	Fraction of shares held by other firms out of the 100 largest firms	Hoppenstedt
Individuals or families	Fraction of shares held by individuals or families	Hoppenstedt
CEO turnover	Dummy indicating whether the CEO leaves the company in the current year	Company Reports, Hoppenstedt, Press Releases
CEO turnover, forced	Dummy indicating whether the CEO is forced to leave the company in the current year	Company Reports, Hoppenstedt, Press Releases

Table 2: Mean comparisons

	CEO without outside board mandates	CEO with outside board mandates	Mean comparison t-test (t-value)
MB members	5.78	7.07	-5.47 ***
SB members	16.04	18.38	-8.00 ***
ROA	4.11	3.44	1.63
Total assets ('000)	14,000	43,100	-8.67 ***
Publicly quoted, dummy	0.51	0.64	-3.54 ***
Freefloat	24.05	47.02	-8.82 ***
Companies	12.87	9.53	2.17 **
Individuals or families	31.72	20.88	3.77 ***
CEO turnover	0.16	0.14	0.56
CEO turnover, forced	0.09	0.04	2.54 **

with outside mandates work in larger companies with larger management and supervisory boards, a higher fraction of free-floating shares and a lower fraction of shares owned by other companies and individuals or families.

Table 3: Descriptive statistics

	Obs.	Min	Mean	Max	Std. Dev.
Outside board mandates of the CEO	707	0	0.67	7	1.09
Outside board mandates of the CEO, dummy	707	0	0.36	1	
MB members	707	1	6.24	26	3.32
SB members	707	3	16.88	24	4.27
ROA	707	-29	3.87	77	6.26
Total assets ('000)	707	787	24,400	263,000	40,200
Publicly quoted, dummy	707	0	0.56	1	
Freefloat	707	0	32.27	100	32.89
Companies	707	0	11.67	100	21.68
Individuals or families	707	0	27.84	100	39.25
CEO turnover	685	0	0.15	1	
CEO turnover, forced	690	0	0.08	1	
Freeway connectivity	707	0	6.85	15	3.43
Sum of employees	705	4,276	142,872	973,060	197,352

Table 3 presents pooled summary statistics of all the variables at the firm level. More than 50 percent of the companies in our sample are publicly quoted. Indeed, the German stock market is much smaller than the US or UK stock market because of a markedly different institutional environment. Many German companies are traditionally owned by large blockholders like families, banks or other companies. Due to strong bank or family affiliations, German companies rely much less than firms from Anglo-Saxon countries on capital markets to raise funds (see Dittmann et al. 2010; Chirinko and Elston 2006; Elston and Goldberg 2003). This structural difference is further supplemented by weak investor protection rights, which make stock market participation less appealing from a shareholder's perspective (see La Porta et al. 1999, 2000).

With around half of the covered companies being publicly quoted, we are not able to use market-based performance measures like Tobin's q or the market-to-book value without facing a considerable loss of observations. A sample of both publicly quoted and not publicly quoted firms constitutes, however, a much more realistic sample of German companies than a sample comprising only listed firms. Only a sample covering all of the largest companies allows us to locate most of the relevant outside mandates.

We use two outcome variables to review the effect of outside directorships of CEOs on corporate governance. We use ROA as our main performance measure and our first dependent variable. Alternatively we calculate the returns on equity (ROE). As the results of our regressions vary only slightly with ROE instead of ROA and ROA is an established measure of performance in the empirical literature we only report the results and descriptive statistics for ROA.

Our second dependent variable is a dummy variable indicating whether the CEO is forced to leave the company in the current year. We define CEO turnover as forced when the following criteria are simultaneously fulfilled: the CEO does not change to the supervisory board of the same company after retirement and at least one major business magazine and one trustworthy Internet site report the turnover as being forced. On average 15 percent of all CEOs in our sample leave their company each year, while disciplinary turnovers amount to 8 percent.

Our main explanatory variable is the number of outside supervisory board mandates of the CEO within the group of the 100 largest German companies in each year. We subtracted all the outside mandates in companies where the home firm of the CEO holds a capital stake of at least 5 percent of the equity.[1] The reason is that outside board mandates, where the home firm holds a capital stake, are probably a proxy for equity monitoring activities rather than a proxy for the unobserved personal characteristics of the respective CEO in which we are most interested.

The chosen method of calculating outside mandates leads to an underestimation of all the outside mandates a CEO might have. There are two reasons why we nevertheless think that this approach works out well. First, we focus only on meaningful mandates. If we captured all the outside mandates we would obtain incomparable measures as a mandate on a board of a firm with 100,000 employees comprises completely different duties, tasks and reputation effects from a mandate in a company with 5 employees.

---

[1]Note that we run all the regressions presented below alternatively with the total number of outside supervisory board mandates of the CEO (regardless of whether the home firm of the CEO holds a capital stake in the receiving firm or not) as well as only the number of those mandates of the CEO that are covered by a capital stake in the home firm. Concerning the total number of outside mandates the results of table 5 turn insignificant for all models. The findings in table 6 remain significant at the 1 percent level in all models. Referring to outside mandates of the CEO that are covered by a capital stake in the home company we find only insignificant effects on firm performance as well as forced turnovers.

Second, we check the robustness of our regression results by including alternatively only those mandates within the group of companies that finally contribute to the analysis but find no qualitative aberrations in the regressions.

To check for time trends in the number of outside board memberships of CEOs figure 1 illustrates the evolution of outside mandates over the covered period from 1996 to 2008. The average number of outside board memberships was with 0.89 mandates highest in 2001 and decreased from then to about 0.53 in 2006 and afterwards. Note that the recent level of 0.57 outside board memberships in 2008 is only slightly lower than the one in 1997 (0.58).

Figure 1: Average number of outside board mandates of CEOs
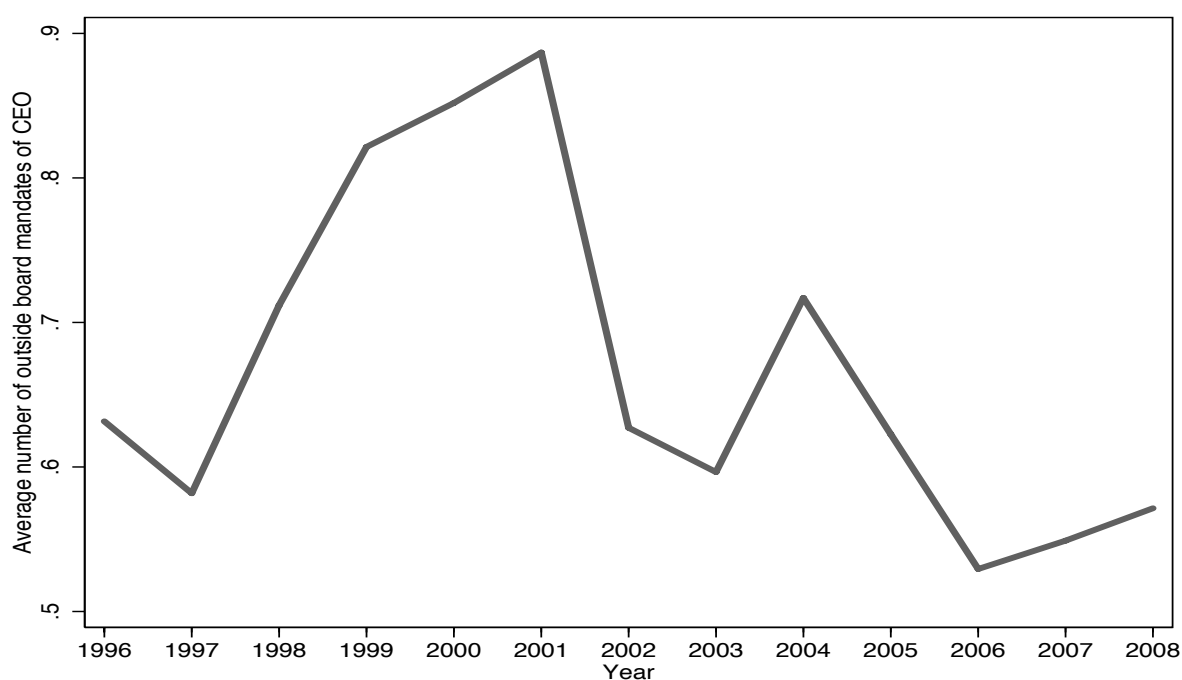
In all the regression models we add further explanatory variables that may affect corporate performance or CEO turnovers beside outside board mandates. With the number of management board members and the number of supervisory board members we control for the potential board size effects that are documented by Yermack (1996).

Larger firms may perform worse as most innovations and growth opportunities have already been realized. Thus, the logarithm of total assets enters the regressions as a

proxy for firm size. We estimate all the regressions with the logarithm of employees as an alternative measure of firm size but find the same results (not reported). By a dummy variable indicating whether a company is listed at a German stock exchange we control for inequalities between listed and privately held firms due to different disclosure requirements and access to capital markets.

Finally, we include three shareholder variables to capture the possible confounding effects of different ownership structures on the relation between outside board memberships and corporate performance and CEO turnover, respectively. We differentiate between the fraction of widely held shares, shares held by other companies out of the 100 largest and the fraction of shares that fall upon families and large individual owners, respectively. All the regressions are alternatively run with dummy variables indicating more than 50 percent free-floating, the existence of a corporate, public, family or individual blockholder owning more than half of the shares as well as the according square terms to check for non-linear relationships between the ownership variables and the outcome variables of interest. As the results concerning outside board mandates of the CEO are robust to these changes we do not report them.

3.3 Methodological remarks

Estimating standard OLS regression models with corporate performance as the dependent variable may raise some reservations due to the potential endogeneity of outside board mandates as well as some of the other explanatory variables. As most of the variables are jointly determined and the direction of causality is unclear we may face a bias in our coefficient estimations. This is a well-known problem in the empirical corporate governance literature, especially in those studies that regress corporate performance on board characteristics (see Adams et al. 2010).

Considering our main explanatory variable we expect to find a negative correlation between outside directorships of the CEO and corporate performance if outside mandates signal CEO entrenchment. A negative correlation between outside board memberships and performance is however also explainable by CEOs seeking outside

board appointments especially when firm performance declines. A standard regression of corporate performance on outside CEO directorships is therefore not able to detect causal relationships between the respective variables. Lagging the explanatory variables reduces problems stemming from simultaneity but might also not be sufficient if CEOs have, for instance, superior information concerning the future development of their firm that leads to an earlier reaction of CEOs to firm performance than is observable for us.

In order to avoid possible estimation biases of outside mandates in our regression analysis we first include time and firm fixed effects to filter out unobserved firm characteristics that might be correlated with our explanatory variables and are constant over time, like e.g. managerial ability and firm specific human capital or specifics of the corporate charter. Note that we find indeed considerable correlation between our explanatory variables and unobserved firm fixed effects in all our performance regressions proving standard OLS and random effects regressions being inconsistent. Although we are quite confident to eliminate one major source of possible estimation bias by inclusion of firm fixed effects we are aware of the fact that this approach does not assure unbiased estimations in case of unconsidered time-variant variables that may affect firm performance as well as the number outside CEO mandates, like e.g. new business contacts or different firm strategies.

To address this concern we checked for possible endogeneity of outside board mandates of the CEO in our performance regression – table 5 – based on Hausman (1978) tests as suggested and described by Wooldridge (2010). This test requires in a first step a regression of outside directorships on all explanatory variables and instrument variables for outside board mandates. We found two suitable instruments for outside directorships.

The first instrument is the connectivity to freeways of the town the headquarter of a company is located. As freeway connectivity is at least in the short run not modifiable by the CEO it is exogenous in our performance regressions. The basic idea behind taking this instrument is that the costs of a CEO to attend outside supervisory board

meetings are affected by the efforts spend for travelling, which are in turn largely affected by the connectivity to freeways. Connectivity to freeways is chosen instead of connectivity to airports or train stations because in Germany most of the companies' headquarters are within a quite comfortable driving distance, so taking a plane or train is in many cases not preferable, especially if one considers the whole time needed to travel from the CEO's home office to the boardroom of another company.[2]

As a second instrument we take the logarithm of the sum of employees of all firms the CEO holds a management or supervisory board position (*sum of employees*). Thereby we generalize the idea that the most prestigious CEOs receive the most appointments. The number of employees a CEO controls – directly by his CEO mandate and indirectly by outside supervisory board mandates – is certainly positively correlated with the prestige and acknowledgement the CEO receives. Therefore, (*sum of employees*) should have considerable explanatory power for the number of outside CEO board memberships. In technical terms the most important advantage of taking this variable as an instrument is that the number of employees of the receiving firm(s) are very likely not affected by characteristics of the home firm of the respective CEO, enabling us to overcome the potentially endogenous relationship between outside mandates and performance of the home firm.

Accordingly, table 4 reports regressions of outside mandates of the CEO (column a) and a dummy indicating whether the CEO has at least one outside mandate (column b), respectively, on *freeway connectivity, sum of employees* and all our above mentioned explanatory variables that will also be included in our performance regressions (see table 5 below). Both estimations confirm the relevance of *freeway connectivity* and *sum of employees* for the number of outside board memberships as well as the according dummy in the way it was supposed. CEOs have significantly less outside board memberships the lower the connectivity of his firm is to freeways and significantly more outside directorships the more prestigious positions he holds measured by the number of employees she controls via all board mandates.

---

[2]Actually airport and train station connectivity both failed a relevance test.

Although not essentially needed for the endogeneity test we briefly describe the results concerning the other explanatory variables as they also offer some interesting results. The number of management board members and the fraction of free floating shares are positively associated with outside board mandates. A higher number of management board members may allow the CEO to spend more time on other boards. On the other hand, managing more assets might restrict her in serving on other boards. Since monitoring intensity rises with the fraction of shares held by blockholders while the power of the CEO over the board consequently declines, the positive correlation between the proportion of free floating shares and outside directorships suggests that CEOs use their discretionary to obtain outside mandates instead of strictly following a value maximizing strategy. Assuming that the stock market has some disciplinary affect on CEO behavior due to enhanced public attention, the negative association between the status of being listed at a stock exchange and outside mandates also fits in this line of reasoning. Regarding our initial research question the results from table 4 point to the entrenchment rather than the expertise hypothesis, therefore.

In order to accomplish the Hausman (1978) endogeneity test the predicted residuals of the outside mandates models in table 4 are included in a second regression of firm performance on all explanatory variables. The estimated coefficient for the residual is the test statistic for the null hypothesis of exogeneity of outside board mandates. Exogeneity is never rejected for all our performance models regardless of measuring firm performance with ROA (t-value 1.57, sum of outside mandates, and 1.10, dummy) or industry adjusted ROA (t-value 1.59, sum of outside mandates, and 1.15, dummy).

Staiger and Stock (1997) point out that endogeneity tests can be misleading if the instruments used are weak. Weak instruments can lead to a high artificial correlation between the instrument and the potential endogenous variable in the presence of other control variables. They suppose evaluating the partial correlation of the potential endogenous variable and the instrument as a test for the power of the instrument. As a rule of thumb, the partial F-statistic should exceed a value of 10 to ensure that the instruments are not weak. In our case we find an F-value of 96.46 in the outside directorship regression (a) and an F-value of 120.74 in the dummy regression (b).

Table 4: Determinants of outside board mandates of the CEO

	(a) OLS	(b) OLS
Log(sum of employees)	0.658***	0.260***
	(13.74)	(13.54)
Log(freeway connectivity)	-0.294***	-0.092***
	(-4.49)	(-3.41)
SB members	0.004	-0.007*
	(0.52)	(-1.68)
MB members	0.028***	0.009**
	(3.43)	(2.45)
Log(total assets)	-0.248***	-0.046**
	(-5.09)	(-2.04)
Publicly quoted, dummy	-0.139**	-0.086**
	(-2.00)	(-2.54)
Freefloat	0.006***	0.002***
	(4.37)	(2.61)
Companies	-0.005***	-0.002***
	(-4.10)	(-3.21)
Individuals or families	-0.000	-0.001
	(-0.16)	(-1.12)
Time and industry fixed effects	yes	yes
Observations	705	705
R^2	0.535	0.487
First stage F-statistic	96.46	120.74

Notes: The dependent variable are the number of outside board mandates of the CEO in columns (a) and the dummy variable for outside board mandates of the CEO in column (b). All regressions use heteroskedasticity-robust standard errors. t-values are given in parentheses. Star levels *, **, *** denote significance at the 10%, 5% and 1% level respectively.

Consequently we can safely conclude that outside board CEO directorships are not a source of endogeneity in our performance regressions.

For those readers who might still have concerns regarding the exogeneity of our instruments we furthermore run Hansen tests of overidentifying restrictions (see Hansen et al. 1996).[3] The joint null hypothesis of this test is that the instruments used are uncorrelated with the error term of the second stage regression and therefore correctly excluded. For all our performance regressions presented below exogeneity of our instruments is never rejected (p-values between 0.264 and 0.305).

4 Empirical Findings

4.1 The effect of outside board mandates on corporate performance

Given the results of the endogeneity tests presented above we estimate the effect of outside supervisory board mandates of the CEO on firm performance by standard OLS regressions including time and firm fixed effects. Performance regressions will give us a first hint for a differentiation between an entrenchment or expertise effect of outside CEO directorships having in mind that either effect might have other reasons though.

Our dependent variable is ROA in models (a), (b), (c) and (e). To account for different ROA levels by industry we also present regressions of industry adjusted ROA in models (d) and (f).[4] Model (a) represents estimations with the total number of outside directorships, while all other models rely on a dummy indicating whether the respective CEO has at least one outside mandate instead of the total number in models (b), (c) and (d). To avoid simultaneity models (e) and (f) include one year lagged values of the dummy variable, which causes a loss of 100 observations. The results stay basically the same.

Regressions of firm performance on the total number of outside CEO directorships were always insignificant, so we do not present modifications of model (a). We also

---

[3]In the presence of homoskedastic standard errors the test is known as the Sargan test.
[4]Industry adjustments are calculated as deviations from the industry median in each year. Taking the mean instead of the median reveals basically no difference (not presented).

checked for non-linear relationships between mandates and performance but found none that were robust against the inclusion of firm fixed effects or lagged values.

Table 5: Effect of outside board mandates on corporate performance

	(a) OLS	(b) OLS	(c) OLS	(d) OLS	(e) OLS	(f) OLS
Outside board mandates	-0.120					
of the CEO	(-0.60)					
Outside board mandates		-1.251***	-1.267***	-1.117**		
of the CEO, dummy		(-2.68)	(-2.74)	(-2.38)		
Lagged outside board mandates					-1.386**	-1.269**
of the CEO, dummy					(-2.35)	(-2.22)
SB members	-0.121	-0.110	-0.131	-0.112	-0.094	-0.084
	(-0.75)	(-0.70)	(-0.81)	(-0.67)	(-0.66)	(-0.55)
MB members	0.058	0.083	0.079	0.071	0.066	0.061
	(0.61)	(0.88)	(0.84)	(0.74)	(0.73)	(0.67)
Log(total assets)	0.637	0.844	0.852	0.968	0.537	0.653
	(0.41)	(0.54)	(0.54)	(0.61)	(0.35)	(0.42)
Publicly quoted, dummy	0.718	0.867	0.669	0.443	0.356	0.171
	(0.44)	(0.58)	(0.43)	(0.29)	(0.23)	(0.11)
Freefloat	0.001		0.002	0.003	0.021	0.019
	(0.04)		(0.14)	(0.21)	(1.30)	(1.19)
Companies	-0.014		-0.015	-0.011	-0.026	-0.026
	(-0.48)		(-0.52)	(-0.39)	(-0.94)	(-0.92)
Individuals or families	-0.009		-0.009	-0.008	-0.016	-0.015
	(-0.58)		(-0.60)	(-0.45)	(-0.85)	(-0.75)
Firm and time fixed effects	yes	yes	yes	yes	yes	yes
Observations	707	707	707	707	607	607
Number of groups	88	88	88	88	87	87
R^2	0.073	0.079	0.080	0.044	0.097	0.054

Notes: The dependent variable is ROA in columns (a),(b),(c),(e) and industry adjusted ROA in columns (d),(f). All regressions use heteroskedasticity-robust standard errors. t-values are given in parentheses. Star levels *, **, *** denote significance at the 10%, 5% and 1% level respectively.

We interpret the results as evidence in favor of the entrenchment of CEOs with outside board mandates. While the total number of outside board memberships of the CEO is not significantly different from zero, the corresponding dummy variable models – (b) to (f) – show a significant negative effect at the 1 percent and 5 percent levels. Firms with CEOs serving on outside boards suffer from outside appointments of the top manager. Companies that have a CEO with outside mandates have on average a significantly lower ROA of 1.25 percent (b) or 1.39 percent (e) compared with companies that have a CEO without any outside mandates. As we account for unobserved heterogeneity at the firm level this effect represents not only the difference between companies in the sample. It also allow us to conclude that *within* firm variation

of having a CEO without to a CEO with outside directorships negatively affects *within* firm performance.

We are aware that there are also alternative explanations for this negative relation apart from CEO entrenchment. CEOs might be resources constrained in terms of ability, time, and energy. They could make an honest mistake of over committing themselves to too many responsibilities, which would not imply entrenchment. Exogenous changes unforeseeable to CEOs could occur, making board services significantly more demanding than the CEOs had initially anticipated. This would put CEOs with outside board memberships at a disadvantage compared to CEOs without outside board memberships. To further clarify whether outside directorships of the CEO are really associated with entrenchment rather than unforeseen demand for their skills we analyze forced CEO turnovers in the next section.

4.2 The effect of outside board mandates on CEO turnover

Although the results from our firm performance regressions are explainable by outside board memberships helping CEOs to entrench themselves in their home company, we still do not know whether the negative relation between outside board memberships and firm performance is a result of limited resources or whether outside mandates really enhance the power of the CEO and enable him to exploit this power at the expense of the shareholders.

In order to discriminate between these two alternative explanations we identify all the disciplinary CEO turnovers in the covered period. CEO turnovers highlight the personal perspective of the CEO and allow us to focus on an alternative outcome variable, which is closely related to corporate governance quality. In particular we are interested, first, in the relationship between outside mandates and the risk of a CEO being fired and, second, the turnover-performance sensitivity.[5] A negative effect of

---

[5]We further analyze a special category of CEO turnovers, namely those in which a CEO gives up his chairmanship of the management board to change to the supervisory board of the same company afterwards. These changes can be assessed as a sign of poor corporate governance and strong managerial entrenchment. According to a mean comparison t-test the fraction of CEOs with outside board mandates who change to the supervisory board is insignificantly higher by 2.8 percentage points than that for CEOs without outside mandates. Multivariate analyses along the lines of the regression models of forced CEO turnover in

outside mandates on forced CEO turnover would provide a rationalization why CEOs like to engage in other firms although the performance of their home company seems to suffer from such behavior. A negative relation would thus support the entrenchment hypothesis. By contrast, a positive relation between outside mandates and forced CEO turnover would rather point to the busyness explanation, which reduces firm value but can be uncovered and panelized by shareholders. The CEO may still profit from outside mandates even if his tenure is subsequently shorter, but it is not his personal power in the boardroom that makes outside mandates attractive to him then. Even if CEOs underestimate the demand for their skills on outside boards or become overcommitted due to unforeseeable reasons it is still not reasonable to assume that shareholders would accept less performance at their home firm due to a personal mistake by their CEO. Moreover, it would be even less reasonable to reduce the turnover-performance sensitivity due to over demand of the CEO at outside boards.

Similar to our firm performance models endogeneity problems could occur in the turnover regressions if CEOs anticipate their lay-offs and try to circumvent or lower their personal loss due to a forced turnover by seeking more outside board mandates in advance. Therefore we test possible edogeneity of outside CEO directorships in our probit regressions of forced CEO turnovers based on Rivers and Vuong (1988) tests. The procedure is basically the same like proposed by Hausman (1978) in the standard OLS regression framework. The Rivers and Voung test also requires in a first step a regression of outside mandates or the according dummy, respectively, on all explanatory variables and an instrument. As we take the same explanatory variables in our turnover regression framework like in the firm performance regressions the results of table 4 represent this first step. In a second step the predicted residuals of these models are taken as an additional explanatory variable in the turnover probit models. The estimated coefficient for the predicted residual from the first stage serves as the test statistic for the null hypothesis of exogeneity of outside CEO directorships. Exogeneity is never rejected in the turnover probit models (t-value 1.16, dummy, 1.00, sum of

---

table 6 also reveal only insignificant evidence (not presented). The insignificant multivariate results could stem from few observations as we only observe 32 changes of the CEO to the supervisory board within our sample period.

mandates, 0.18, sum of mandates in the sub sample of firms having a CEO with at least one outside mandate).

Given the results of the Rivers and Voung tests, we estimate three standard probit regressions (a-c) presented in table 6 where the dependent variable equals one if the CEO is forced to leave the company in the current year and zero otherwise. Alternatively three corresponding Cox regressions are presented (d-f) as these models explicitly account for left and right censoring in the data. Industry dummies are added to all the regressions in table 6 to capture unobserved heterogeneity between industries.

Table 6: Effect of outside board mandates on forced CEO turnover

	(a) Probit	(b) Probit	(c) Probit	(d) Cox	(e) Cox	(f) Cox
Outside board mandates	-0.261***			-0.606**		
of the CEO	(-2.62)			(0.55)		
Outside board mandates		-0.568***	-0.721***		-1.234***	-1.385***
of the CEO, dummy		(-2.89)	(-2.85)		(0.29)	(0.28)
ROA	-0.050***	-0.051***	-0.058***	-0.066***	-0.067***	-0.070***
	(-2.63)	(-2.65)	(-2.83)	(0.94)	(0.94)	(0.94)
Outside board mandates			0.051			0.052
of the CEO, dummy x ROA			(1.04)			(0.06)
SB members	0.012	0.009	0.008	0.024	0.020	0.019
	(0.48)	(0.36)	(0.33)	(1.02)	(1.02)	(1.02)
MB members	-0.006	-0.007	-0.008	-0.015	-0.015	-0.015
	(-0.25)	(-0.30)	(-0.32)	(0.99)	(0.99)	(0.99)
Log(total assets)	0.092	0.104	0.111	0.219*	0.239*	0.246*
	(1.27)	(1.41)	(1.50)	(1.24)	(1.27)	(1.27)
Publicly quoted, dummy	0.035	0.027	0.026	-0.147	-0.171	-0.172
	(0.17)	(0.13)	(0.12)	(0.86)	(0.84)	(0.85)
Freefloat	0.001	0.000	0.000	0.003	0.002	0.002
	(0.23)	(0.13)	(0.08)	(1.00)	(1.00)	(1.00)
Companies	-0.003	-0.003	-0.002	-0.010	-0.010	-0.010
	(-0.62)	(-0.61)	(-0.58)	(0.99)	(0.99)	(0.99)
Individuals or families	0.001	0.001	0.001	-0.001	-0.001	-0.002
	(0.29)	(0.19)	(0.18)	(1.00)	(1.00)	(1.00)
Time fixed effects	yes	yes	yes	no	no	no
Industry fixed effects	yes	yes	yes	yes	yes	yes
Observations	690	690	690	690	690	690
Number of subjects	191	191	191	191	191	191
Number of failures	52	52	52	52	52	52
Pseudo R^2	0.067	0.070	0.073	0.044	0.045	0.046

Notes: The dependent variable is a dichotomous variable that equals one if the CEO is forced to leave the company in the current year and zero otherwise. Cox regressions with heteroskedasticity robust standard errors. z-values (probit models) and hazard ratios (Cox regressions) in parentheses. Star levels *, **, *** denote significance at the 10%, 5% and 1% level respectively.

Models (a) and (d) in table 6 represent the regression results with the total number of outside directorships of the CEO as our main explanatory variable, while models

(b) and (e) rely on the corresponding dummy variable instead. All these regressions reveal a highly significant negative effect of outside board mandates on disciplinary CEO turnover. One more board mandate of the CEO reduces the likelihood of the top manager being fired by 3.5 percent (average marginal effect of probit model a).

The Cox regressions (models d-e) reveal largely the same results in terms of statistical significance and economic magnitude. The coefficient of the number of outside directorships of the CEO in model (d) is significantly negative (-0.61, p-value=0.00), indicating that each additional mandate leads to a 45 percent decrease in the hazard rate of disciplinary turnover.[6] Note that a 45 percent decrease in the unconditional average risk ratio of 8 percent amounts to a reduction in the likelihood of the top manager being fired of 3.6 percent, which is close to the average marginal effect estimated with the according probit regression (3.5 percent, model a).

Comparing the group of firms having a CEO without outside mandates with the group of firms having a CEO with at least one mandate (models b and e) reveals that a top-executive departure is 71 percent (model e) less likely for the latter group compared with the former (6.7 percentage points reduction in the unconditional risk ratio according to the average marginal effect of model b).

Referring to the other explanatory variables we find statistically significant coefficients only for ROA and total assets (only Cox regressions). As expected, higher firm performance decreases the risk of a forced turnover for the CEO. A one percentage point increase in ROA reduces the risk of being fired by 0.7 percent (average marginal effect model a). Models (d-f) suggest that CEOs of larger firms face a higher risk of disciplinary turnover.

The Cox regressions further allow us to have a closer look at disciplinary turnovers conditional on the time the CEO is in his position. Figure 2 shows that the risk of the CEO being fired rises steadily in the first years, peaks around the fourth year,

---

[6]The hazard ratio is defined as the ratio of the hazard function under one set of covariates (X') to the hazard under a base case set of corariates (X^0): $R(X', X^0) \equiv \frac{h_i(t|X')}{h_i(t|X^0)}$. For instance, the percentage change in the hazard given a one-unit change in the kth quantitative covariate is estimated as $\frac{h_i(t|X_k=\hat{X}+1)}{h_i(t|X_k=\hat{X})} - 1 = e^{\beta_k(\hat{X}+1)-\beta_k(\hat{X})} - 1 = e^{\beta_k} - 1$.

declines up to 7.5 years, increases to 11.5 years and declines thereafter. The decreasing likelihood of a disciplinary CEO turnover after the fourth year could be explained by CEOs starting to entrench themselves after surviving the first 4 years in the company. This finding is consistent with the results of Gregory-Smith et al. (2009), who find decreasing disciplinary CEO turnovers after the fifth year of CEOs' tenure for UK companies.

Figure 2: Smoothed hazard estimates
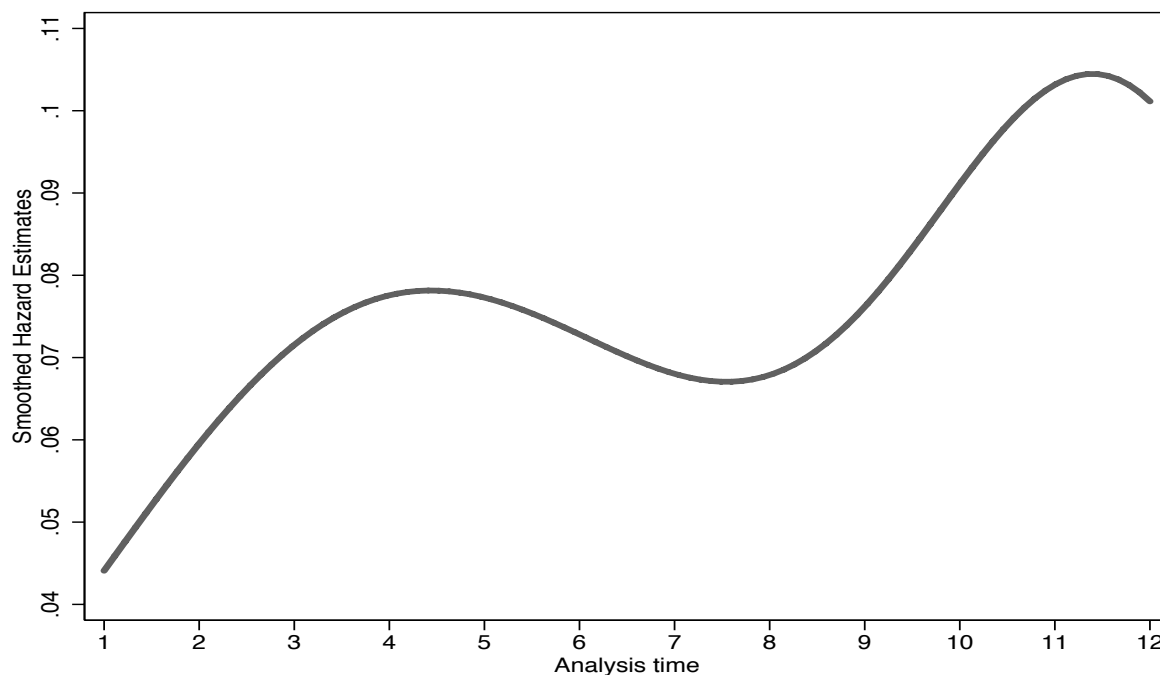
Beside the direct link between outside board mandates and disciplinary turnovers we are interested in whether top executives with outside board mandates can influence the turnover-performance sensitivity. A straightforward extension of our models (b) and (e) in table 6 is therefore to include an interaction term of ROA and the dummy variable indicating whether the CEO has at least one outside board mandate (models c and f). Following the entrenchment hypothesis and taking into account the previous results we would expect to find weaker turnover-performance sensitivities for CEOs with outside mandates than for CEOs without external directorships.

The interaction term of models (c) and (f) is insignificant. For the probit model the interaction term is not only insignificant itself but also for almost all the observations

(see figure A1 in the appendix and Ai and Norton 2003; Norton et al. 2004). Hence, firm performance is negatively related to forced turnovers only for those CEOs without outside mandates. Apparently, CEOs with outside mandates can entrench themselves to such a high extent that firm performance becomes unrelated to the risk of a disciplinary turnover for them. Controlling for different turnover-performance sensitivities of CEOs with and without outside mandates reveals moreover a higher turnover-performance sensitivity of the latter group (-0.7 percent, average marginal effect model c) compared with the previous estimation without this covariate (model b).

As a robustness check we alternatively exclude the outside board membership variables from specifications (a) and (d) and estimate the reduced models separately for all the firms having a CEO with at least one outside mandate and the subsample comprising only CEOs without outside mandates. Indeed, the performance coefficients based on the sample comprising CEOs with outside mandates were consistently smaller than the estimations with the other sample part. Additionally, only the subsample comprising CEOs without outside mandates shows performance coefficients significantly different from zero.

Given the finding that CEOs with outside board mandates are related to weaker performance of the home firm – table 5 – we interpret our turnover results as confirmation of the entrenchment hypothesis. It is hard to imagine why shareholders should maintain poorly performing CEOs except that the respective CEO has some power over his own turnover. That CEOs are able to underperform while simultaneously reducing their risk of being fired fits best the theoretical explanations based on the managerial power approach of Bebchuk and Fried (2003, 2004).

Considering the CEO perspective it seems that outside directorships provide manifold advantages. Beside experience, business contacts, prestige and extra salaries paid by the receiving firms they offer CEOs safe positions at their home firm. From this point of view it is not surprising that roughly one-third of the CEOs of the largest German companies serve on at least one outside supervisory board. One could even argue that this number is quite small bearing in mind the strong positive incentives

for CEOs to be appointed to other boards.

4.3 Robustness check considering only stock companies

One potential caveat of our study might still be that we rely on a quite heterogeneous sample of firms facing different legal restrictions and regulations due their different legal forms. Some results might be driven especially by those firms that are not regulated by the German law for stock companies ('Aktiengesetz'). Therefore, we rerun all our regressions presented above only for the sub sample of firms for which the law for stock companies applies. The according results can be found in the Appendix, tables A1 and A2. With regard to statistic significance and basically also with regard to the estimated economic impact all findings in the full sample also appear for the sub sample of stock companies. The regulation of corporate governance introduced by the German company law seems to be of minor importance for the effect of outside CEO directorships on corporate governance therefore.

5 Conclusion

The present study analyzed empirically whether outside board memberships of CEOs signal CEO entrenchment or expertise in a European institutional environment. Using a sample of the largest German companies, where a two-tiered board structure is mandatory, we observe that – similar to large US companies – outside board mandates of CEOs commonly occur. In sum, the evidence clearly favors the entrenchment hypothesis. This perception is first of all based on the finding that CEOs serving on outside boards are negatively related to the performance of their home firm. Furthermore, we find evidence that the number of outside board mandates reduces the risk of the CEO being fired while lowering the performance-turnover sensitivity at the same time. Actually we found no statistically significant effect of firm performance on disciplinary departures of top executives with one or more outside mandates. We conclude that, at least in Germany, outside board mandates of top managers signal

entrenchment rather than outstanding expertise.

Our findings are complementary to studies of multiple board memberships and entrenchment in the US, i.e. Bebchuk and Cohen (2005) and Fich (2005), where it has already been shown that outside board mandates may serve as an entrenchment device. The US evidence on the value of outside board memberships is mixed however and the according studies focused largely on the perspective of the receiving firm so far. By investigating outside board memberships of the CEO from the perspective of the sending firm within a European institutional framework for the first time, our study contributes to the ongoing debate on the value of outside CEO directorships and supports the perception that firm linkages via multiple board memberships do not only have a crucial impact on corporate governance in the Anglo-Saxon one-tier board model. Apparently, multiple board memberships and the managerial power approach introduced by Bebchuk and Fried (2003, 2004) is also of high relevance in a two-tiered board system.

References

Adams, R. B., Hermalin Benjamin E., and M. S. Weisbach (2010). The role of boards of directors in corporate governance: a conceptual framework & survey. *Journal of Economic Literature 48*(1), 58–107.

Ai, C. and E. C. Norton (2003). Interaction terms in logit and probit models. *Economics Letters 80*(1), 123–129.

Bebchuk, L. A. and A. Cohen (2005). The costs of entrenched boards. *Journal of Financial Economics 78*(2), 409–433.

Bebchuk, L. A. and J. M. Fried (2003). Executive compensation as an agency problem. *Journal of Economic Perspectives 17*(3), 71–92.

Bebchuk, L. A. and J. M. Fried (2004). *Pay without performance - the unfulfilled promise of executive compensation.* Cambridge, Massachusetts, London: Harvard University Press.

Booth, J. R. and D. N. Deli (1996). Factors affecting the number of outside directorships held by CEOs. *Journal of Financial Economics 40*(1), 81–104.

Chirinko, R. S. and J. A. Elston (2006). Finance, control, and profitability: the influence of German banks. *Journal of Economic Behavior and Organization 59*(1), 69–88.

Cohen, L., A. Frazzini, and C. Malloy (2008). The small world of investing: board connections and mutual fund returns. *Journal of Political Economy 116*(5), 951–979.

Conyon, M. J. and L. E. Read (2006). A model of the supply of executives for outside directorships. *Journal of Corporate Finance 12*(3), 645–659.

Dittmann, I., E. Maug, and C. Schneider (2010). Bankers on the boards of German firms: what they do, what they are worth, and why they are (still) there. *Review of Finance 14*(1), 35–71.

Elston, J. A. and L. G. Goldberg (2003). Executive compensation and agency costs in Germany. *Journal of Banking & Finance 27*(7), 1391–1410.

Fahlenbrach, R., A. Low, and R. M. Stulz (2010). The dark side of outside directors: do they quit when they are most needed? Research Paper 10-17, Swiss Finance Institute.

Fama, E. F. and M. C. Jensen (1983). Separation of ownership and control. *Journal of Law and Economics 26*(2), 301–325.

Fauver, L. and M. E. Fuerst (2006). Does good corporate governance include employee representation? Evidence from german corporate boards. *Journal of Financial Economics 82*(3), 673–710.

Fich, E. M. (2005). Are some outside directors better than others? Evidence from director appointments by fortune 1000 firms. *Journal of Business 78*(5), 1943–1971.

Fich, E. M. and A. Shivdasani (2006). Are busy boards effective monitors? *Journal of Finance 61*(2), 689–724.

Fich, E. M. and A. Shivdasani (2007). Financial fraud, director reputation, and shareholder wealth. *Journal of Financial Economics 86*(2), 306–336.

Gilson, S. C. (1990). Bankruptcy, boards, banks and blockholders: evidence on changes in corporate ownership and control when firms default. *Journal of Financial Economics 27*(2), 355–387.

Gregory-Smith, I., S. Thompson, and P. W. Wright (2009). Fired or retired? A competing risk analysis of chief executive turnover. *The Economic Journal 119*(536), 463–481.

Hansen, L. P., J. Heaton, and A. Yaron (1996, July). Finite-sample properties of some alternative gmm estimators. *Journal of Business & Economic Statistics 14*(3), 262–80.

Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica 46*(6), 251–1271.

Hermalin, B. E. and M. S. Weisbach (1998). Endogenously chosen boards of directors and their monitoring of the CEO. *American Economic Review 88*(1), 96–118.

Hwang, B.-H. and S. Kim (2009). It pays to have friends. *Journal of Financial Economics 93*(1), 138–158.

La Porta, R., F. Lopez-De-Silvanes, and A. Shleifer (1999). Corporate ownership around the world. *Journal of Finance 54*(2), 471–517.

La Porta, R., F. Lopez-De-Silvanes, A. Shleifer, and R. W. Vishny (2000). Investor protection and corporate governance. *Journal of Financial Economics 58*(1-2), 3–27.

Masulis, R. W. and S. Mobbs (2009). Are all inside directors the same? Do they entrench CEOs or facilitate more informed board decisions? Finance Working Paper 241, European Corporate Governance Institute.

Norton, E. C., H. Wang, and C. Ai (2004). Computing interaction effects and standard errors in logit and probit models. *The Stata Journal 4*(2), 154–167.

Perry, T. and U. C. Peyer (2005). Board seat accumulation by executives: a shareholder's perspective. *Journal of Finance 60*(4), 2083–2123.

Rivers, D. and Q. H. Vuong (1988). Limited information estimators and exogeneity tests for simultaneous probit models. *Journal of Econometrics 39*(3), 347–366.

Rosen, S. (1981). The economics of superstars. *American Economic Review 71*(5), 845–858.

Rosentein, S. and J. G. Wyatt (1990). Outside directors, board independence, and shareholder wealth. *Journal of Financial Economics 26*(2), 175–191.

Schonlau, R. and P. V. Singh (2009). Board networks and merger performance. Working Paper 449, Tepper School of Business.

Shivdasani, A. and D. Yermack (1999). CEO involvement in the selection of new board members: an empirical analysis. *Journal of Finance 54*(5), 1829–1853.

Shleifer, A. and R. W. Vishny (1989). Management entrenchment - the case of manager-specific investments. *Journal of Financial Economics 25*(1), 123–139.

Staiger, D. and J. Stock (1997). Instrumental variables regression with weak instruments. *Econometrica 65*(3), 557–586.

Wooldridge, J. M. (2010). *Econometric Analysis of Cross Section and Panel Data* (Second ed.). MIT Press.

Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of Financial Economics 40*(2), 185–211.

Yermack, D. (2004). Remuneration, retention, and reputation incentives for outside directors. *Journal of Finance 59*(5), 2281–2308.

Appendix

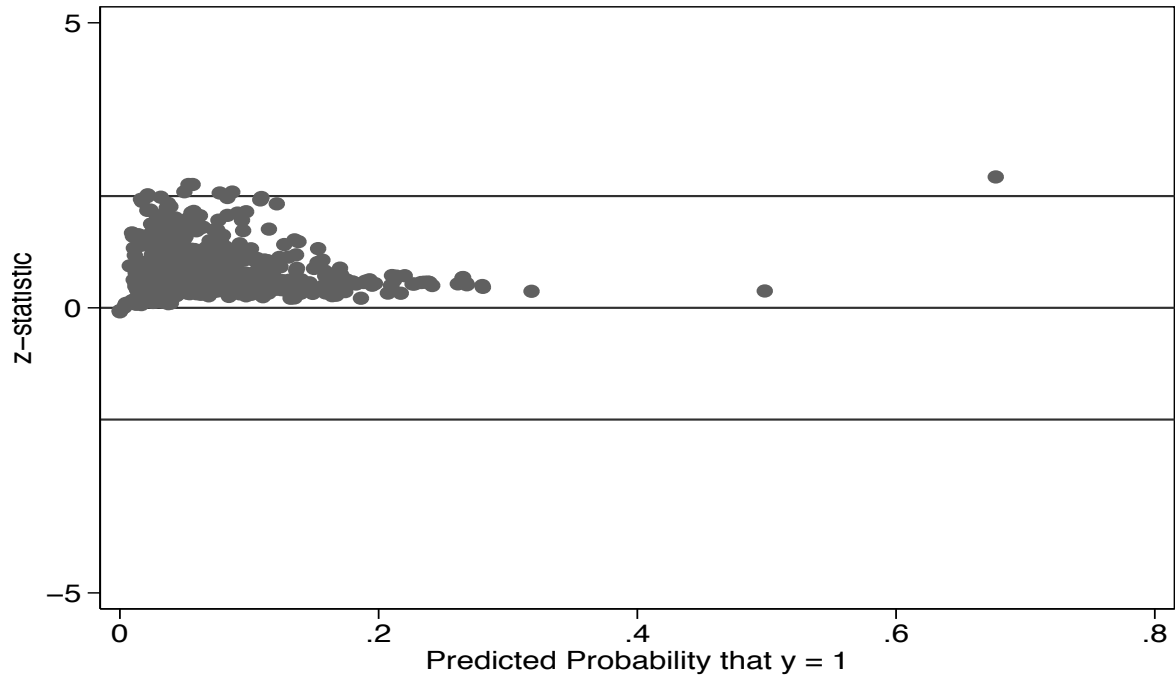Figure A1: Z-statistics of interaction effects after probit

Table A1: Effect of outside board mandates on corporate performance only for stock companies

	(a) OLS	(b) OLS	(c) OLS	(d) OLS	(e) OLS	(f) OLS
Outside board mandates of the CEO	-0.092 (-0.43)					
Outside board mandates of the CEO, dummy		-1.091** (-2.20)	-1.098** (-2.21)	-0.959* (-1.91)		
Lagged outside board mandates of the CEO, dummy					-1.248** (-2.08)	-1.078* (-1.90)
SB members	0.083 (0.70)	0.094 (0.62)	0.073 (0.61)	0.107 (0.82)	0.128 (1.01)	0.157 (1.13)
MB members	0.098 (0.99)	0.106 (1.09)	0.106 (1.09)	0.087 (0.90)	0.046 (0.42)	0.029 (0.26)
Log(total assets)	-0.593 (-0.68)	-0.312 (-0.36)	-0.342 (-0.39)	-0.247 (-0.28)	-0.633 (-0.60)	-0.543 (-0.51)
Publicly quoted, dummy	-0.605 (-0.36)	-0.485 (-0.31)	-0.485 (-0.30)	-1.277 (-0.88)	-0.733 (-0.46)	-1.492 (-1.16)
Freefloat	-0.002 (-0.19)		-0.001 (-0.08)	-0.001 (-0.06)	0.018 (1.17)	0.015 (1.01)
Companies	0.002 (0.09)		0.001 (0.05)	0.005 (0.18)	-0.013 (-0.56)	-0.014 (-0.57)
Individuals or families	-0.019 (-0.68)		-0.019 (-0.69)	-0.018 (-0.59)	-0.030 (-0.82)	-0.032 (-0.78)
Firm and time fixed effects	yes	yes	yes	yes	yes	yes
Observations	527	527	527	527	447	447
Number of groups	70	70	70	70	69	69
R^2	0.101	0.109	0.113	0.046	0.151	0.069

Notes: The dependent variable is ROA in columns (a),(b),(c),(e) and industry adjusted ROA in columns(d),(f). All regressions use heteroskedasticity-robust standard errors. t-values are given in parentheses. Star levels *, **, *** denote significance at the 10%, 5% and 1% level respectively.

Table A2: Effect of outside board mandates on forced CEO turnover only for stock companies

	(a) Probit	(b) Probit	(c) Probit	(d) Cox	(e) Cox	(f) Cox
Outside board mandates	-0.206*			-0.465*		
of the CEO	(-1.94)			(0.63)		
Outside board mandates		-0.422**	-0.594**		-0.914**	-1.122**
of the CEO, dummy		(-1.98)	(-2.23)		(0.40)	(0.33)
ROA	-0.066***	-0.066***	-0.077***	-0.078***	-0.078***	-0.083***
	(-3.18)	(-3.16)	(-3.36)	(0.92)	(0.92)	(0.92)
Outside board mandates			0.063			0.075
of the CEO, dummy x ROA			(1.22)			(1.08)
SB members	0.035	0.029	0.030	0.059	0.052	0.052
	(0.92)	(0.77)	(0.79)	(1.06)	(1.05)	(1.05)
MB members	0.007	0.004	0.003	0.017	0.009	0.011
	(0.25)	(0.14)	(0.13)	(1.02)	(1.01)	(1.01)
Log(total assets)	0.092	0.097	0.100	0.199	0.211	0.218
	(1.13)	(1.17)	(1.20)	(1.22)	(1.23)	(1.24)
Publicly quoted, dummy	0.192	0.160	0.163	0.048	0.008	0.019
	(0.70)	(0.58)	(0.59)	(1.05)	(1.01)	(1.02)
Freefloat	0.001	0.000	-0.000	0.002	0.000	-0.001
	(0.18)	(0.03)	(-0.07)	(1.00)	(1.00)	(1.00)
Companies	0.000	0.000	0.000	-0.005	-0.005	-0.005
	(0.08)	(0.06)	(0.07)	(1.00)	(1.00)	(1.00)
Individuals or families	0.006	0.005	0.005	0.007	0.006	0.005
	(1.35)	(1.20)	(1.14)	(1.01)	(1.01)	(1.01)
Time fixed effects	yes	yes	yes	no	no	no
Industry fixed effects	yes	yes	yes	yes	yes	yes
Observations	511	511	511	511	511	511
Number of subjects	147	147	147	147	147	147
Number of failures	40	40	40	40	40	40
Pseudo R^2	0.086	0.086	0.091	0.054	0.053	0.054

Notes: The dependent variable is a dichotomous variable that equals one if the CEO is forced to leave the company in the current year and zero otherwise. Cox regressions with heteroskedasticity robust standard errors. z-values (probit models) and hazard ratios (Cox regressions) in parentheses. Star levels *, **, *** denote significance at the 10%, 5% and 1% level respectively.

PREVIOUS DISCUSSION PAPERS

26   Balsmeier, Benjamin, Buchwald, Achim and Peters, Heiko, Outside Board
      Memberships of CEOs: Expertise or Entrenchment?, June 2011.

25   Clougherty, Joseph A. and Duso, Tomaso, Using Rival Effects to Identify Synergies
      and Improve Merger Typologies, June 2011.

24   Heinz, Matthias, Juranek, Steffen and Rau, Holger A., Do Women Behave More
      Reciprocally than Men? Gender Differences in Real Effort Dictator Games,
      June 2011.
      Forthcoming in: Journal of Economic Behavior and Organization.

23   Sapi, Geza and Suleymanova, Irina, Technology Licensing by Advertising Supported
      Media Platforms: An Application to Internet Search Engines, June 2011.
      Published in: The B. E. Journal of Economic Analysis & Policy.

22   Buccirossi, Paolo, Ciari, Lorenzo, Duso, Tomaso, Spagnolo Giancarlo and Vitale,
      Cristiana, Competition Policy and Productivity Growth: An Empirical Assessment,
      May 2011.

21   Karaçuka, Mehmet and Catik, A. Nazif, A Spatial Approach to Measure Productivity
      Spillovers of Foreign Affiliated Firms in Turkish Manufacturing Industries, May 2011.
      Forthcoming in: The Journal of Developing Areas.

20   Catik, A. Nazif and Karaçuka, Mehmet, A Comparative Analysis of Alternative
      Univariate Time Series Models in Forecasting Turkish Inflation, May 2011.
      Forthcoming in: Journal of Business Economics.

19   Normann, Hans-Theo and Wallace, Brian, The Impact of the Termination Rule on
      Cooperation in a Prisoner's Dilemma Experiment, May 2011.
      Forthcoming in: International Journal of Game Theory.

18   Baake, Pio and von Schlippenbach, Vanessa, Distortions in Vertical Relations,
      April 2011.
      Forthcoming in: Journal of Economics.

17   Haucap, Justus and Schwalbe, Ulrich, Economic Principles of State Aid Control,
      April 2011.

16   Haucap, Justus and Heimeshoff, Ulrich, Consumer Behavior towards On-net/Off-net
      Price Differentiation, January 2011.
      Published in: Telecommunication Policy 35 (2011), pp. 325-332.

15   Duso, Tomaso, Gugler, Klaus, Yurtoglu, Burcin B., How Effective is European Merger
      Control? January 2011.
      Forthcoming in: European Economic Review.

14   Haigner, Stefan D., Jenewein, Stefan, Müller, Hans Christian and Wakolbinger,
      Florian, The First shall be Last: Serial Position Effects in the Case Contestants
      evaluate Each Other, December 2010.
      Published in: Economics Bulletin (2010), Volume 30, Issue 4, pp. 3170-3176.

13   Suleymanova, Irina and Wey, Christian, On the Role of Consumer Expectations in
      Markets with Network Effects, November 2010 (first version July 2010).
      Forthcoming in: Journal of Economics.

12   Haucap, Justus, Heimeshoff, Ulrich and Karacuka, Mehmet, Competition in the Turkish Mobile Telecommunications Market: Price Elasticities and Network Substitution, November 2010.
Published in: Telecommunications Policy 35 (2011), pp. 202-210.

11   Dewenter, Ralf, Haucap, Justus and Wenzel, Tobias, Semi-Collusion in Media Markets, November 2010.
Forthcoming in: International Review of Law and Economics.

10   Dewenter, Ralf and Kruse, Jörn, Calling Party Pays or Receiving Party Pays? The Diffusion of Mobile Telephony with Endogenous Regulation, October 2010.
Published in: Information Economics and Policy 23 (2011), pp. 107-117.

09   Hauck, Achim and Neyer, Ulrike, The Euro Area Interbank Market and the Liquidity Management of the Eurosystem in the Financial Crisis, September 2010.

08   Haucap, Justus, Heimeshoff, Ulrich and Luis Manuel Schultz, Legal and Illegal Cartels in Germany between 1958 and 2004, September 2010.
Published in: H. J. Ramser & M. Stadler (eds.), Marktmacht. Wirtschaftswissenschaftliches Seminar Ottobeuren, Volume 39, Mohr Siebeck: Tübingen 2010, pp. 71-94.

07   Herr, Annika, Quality and Welfare in a Mixed Duopoly with Regulated Prices: The Case of a Public and a Private Hospital, September 2010.
Forthcoming in: German Economic Review.

06   Blanco, Mariana, Engelmann, Dirk and Normann, Hans-Theo, A Within-Subject Analysis of Other-Regarding Preferences, September 2010.
Forthcoming in: Games and Economic Behavior.

05   Normann, Hans-Theo, Vertical Mergers, Foreclosure and Raising Rivals' Costs – Experimental Evidence, September 2010.
Forthcoming in: The Journal of Industrial Economics.

04   Gu, Yiquan and Wenzel, Tobias, Transparency, Price-Dependent Demand and Product Variety, September 2010.
Published in: Economics Letters 110 (2011), pp. 216-219.

03   Wenzel, Tobias, Deregulation of Shopping Hours: The Impact on Independent Retailers and Chain Stores, September 2010.
Published in: Scandinavian Journal of Economics 113 (2011), pp. 145-166.

02   Stühmeier, Torben and Wenzel, Tobias, Getting Beer During Commercials: Adverse Effects of Ad-Avoidance, September 2010.
Published in: Information Economics and Policy 23 (2011), pp. 98-106.

01   Inderst, Roman and Wey, Christian, Countervailing Power and Dynamic Efficiency, September 2010.
Forthcoming in: Journal of the European Economic Association, August 2011.