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Outrage and Camouflage – An Empirical Examination of the Managerial Power Theory

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List of Abbreviations

AG	Aktiengesellschaft (English: Corporation)
AktG	Aktiengesetz (English: Stock Corporation Act)
CalPERS	California Public Employees' Retirement System
CAR	Cumulative abnormal returns
CDA	Compensation Discussion and Analysis
CEO	Chief executive officer
DAX	Deutscher Aktienindex (English: German share index)
DCGK	Deutscher Corporate Governance Kodex (English: German Coporate Governance Code)
EC	European Commission
EESA	Emergency Economic Stabilization Act
EU	European Union
EUR	Euro
GB	Great Britain
IRS	Internal Revenue Service
ISS	Institutional Shareholder Services
Ln	Natural logarithm
M&A	Mergers and Acquisitions
MDAX	Midcap-DAX (English: German midcap share index)
NYSE	New York Stock Exchange
OLS	Ordinary Least Squares
PP&E	Property, Plant and Equipment
R&D	Research and Development
ROA	Return on Assets
ROI	Return on investment
S&P 500	Standard and Poor's 500
SAR	Stock Appreciation Rights
SEC	Security exchange Commission
SG&A	Selling, General and Administrative
SIC	Standard Industrial Classification
TARP	Troubled Asset Relief Program
TSR	Total Shareholder Return
UK	United Kingdom
US	United States of America
USD	US-Dollar
VIF	Variance Inflation Factor
VorstAG	Gesetz über die Angemessenheit der Vorstandsvergütung (English: Act on the Appropriateness of Executive Compensation)
VorstOG	Gesetz zur Offenlegung der Vorstandsgehälter (English: Executive Compensation Disclosure Act)

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1 Introduction

"Indeed, it's difficult to overpay the truly extraordinary CEO of a giant enterprise. But this species is rare. Too often, executive compensation in the US is ridiculously out of line with performance. That won't change, moreover, because the deck is stacked against investors when it comes to the CEO's pay. The upshot is that a mediocre-or-worse CEO – aided by his handpicked VP of human relations and a consultant from the ever-accommodating firm of Ratchet, Ratchet, and Bingo – all too often receives gobs of money from an ill-designed compensation arrangement."

Warren Buffet (2005)[1]

1.1 Motivation

For years executive compensation has been a controversially discussed topic both in public as well as in the world of academia. The reasons for this fascination are manifold. While shareholders, such as Buffet, often criticize the lacking pay-performance-sensitivity of executive compensation, other parties are more upset about the rising inequality of income. A representative survey conducted by the German foundations Bertelsmann Stiftung, Heinz Nixdorf Stiftung and Ludwig-Erhard-Stiftung in 2007 concluded that only 15% of Germans believe the distribution of both income and wealth to be fair. 66% were in favor of increased governmental activity to increase social equity (Vehrkamp and Kleinsteuber (2007)). Due to ever-rising wages, scandals, economic crises and a simultaneous increase in visibility of compensation, the discussion never seems to lose momentum. The problems in explaining executive compensation also gave way to a new theory of management compensation, the managerial power theory (Bebchuk et al. (2001)). It challenged the idea of incentive pay as a remedy for the agency problem as suggested by the optimal contracting theory. Instead of assuming that the information asymmetry between agent and principal can be cured by providing the agent enough incentives to act in the best interest of shareholders, the managerial power theory interprets compensation as a problem of the agency conflict itself. The authors believe that managers use their knowledge, privileges and the resulting power in extracting rents above the optimal level (Bebchuk et al. (2001)). Similar to Buffet, Bebchuk et al. (2001) doubt the shareholders' power to effectively oppose the executives.

Despite the power an executive may exert on the supervisory board to not oppose his excessive compensation, Bebchuk et al. (2001) do believe in an upper limit on rent extraction defined by the so-called "outrage constraint". The outrage constraint is crossed when the costs associated with negative reactions of observers are significant enough to "deter the adoption

[1] Warren Buffet (2005) in his yearly letter to shareholders: http://www.berkshirehathaway.com/letters/2005ltr.pdf

of arrangements that managers would otherwise favor" (Bebchuk and Fried (2004), p. 5). Costs are mainly caused by harmed reputation within social networks and the job market, which limits future career options.

As the crucial factor for outrage is the visibility of rent extraction to a critical group "about whose views the executives and directors care" (Bebchuk et al. (2001), p. 33-34), disclosure and availability of compensation information play an important role. Bebchuk et al. (2001) accordingly believe that managers engage in practices to disguise or camouflage compensation by disclosing less transparent compensation reports or choosing components with less visibility such as pensions. The more difficult the compensation system is to understand, the less likely the public is to notice and get outraged.

Notwithstanding the great interest in the topic of executive compensation from academia and the public, the questions arising from this theory have not yet been addressed sufficiently in research. The identified gaps serve as the starting point for this dissertation. First, there is no clear definition for outrage and how it can be measured in empirical analysis. Second, there is little empirical evidence for the effects of outrage and camouflage. The handful of papers covering these topics are too few and too inconsistent in their findings to reach a conclusion (Core et al. (2008), Kuhnen and Niessen (2012) and Bednar (2012) as well as Robinson et al. (2011), Coulton et al. (2001), Laksmana (2008) and Ben-Amar and Zeghal (2011)). The results of such analyses are of high importance to shareholders and the legislator as the managerial power theory poses important questions regarding the effectiveness of compensation and governance mechanisms in companies. Additionally, so far research has concentrated on Anglo-American settings only. Beyond extending the literature merely in the number of findings, this thesis also helps to generalize the results by examining new datasets in a new research setting. More specifically, this thesis concentrates on hand-collected German datasets.

Germany offers both a distinct corporate governance system as well as an unique legislation and media landscape. All these factors may have a significant impact on the findings of the identified research questions.

1.2 Positioning of the dissertation within compensation research

The theoretical basis of incentives is grounded in the agency theory (Jensen and Meckling (1976), Holmström (1979)). Jensen and Meckling (1976) define an agency-relationship as "a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf, which involves delegating some decision making authority to the agent (Jensen and Meckling (1976), p. 308). The company is perceived as a nexus of such contracts, which makes the agency theory relevant in many parts of the

company. If both parties try to maximize their utility, the agent will not always make decisions in the best interest of the principal. Due to information asymmetry between the two ex-ante as well as ex-post, the principal struggles to understand whether he is choosing the right candidate and whether the agent will make an effort (Jensen and Meckling (1976), Holmström (1976)). Consequently, monitoring is needed after the hiring. However, in corporations with separation of ownership and control, constant monitoring of the executives by shareholders is extremely costly or even impossible. Assuming the agent can influence the firm's outcome through his effort levels, compensation contracts linked to the company performance offer a solution. Prendergast (1999, p. 7) sums it up by saying: „Incentives are the essence of economics".

Unfortunately, the choice of performance parameters in compensation contracts is not always free of distortions. An agent maximizing his utility will choose actions that maximize the compensation resulting from the (always incomplete) contract but not necessarily actions that maximize the principal's utility. Research has shown that compensation contracts have an impact on earnings management, accrual reporting, and manipulation (e.g., Healy (1985), Holthausen et al. (1995)). For example, relative performance measures such as return on Investment (ROI) can lead to underinvestment as projects with below average return may not be pursued so not to reduce the overall average return. Beyond the unintended disincentives that can arise by choice of certain key performance indicators (KPIs), the assessment of performance is an area of uncertainty as well. As shareholders do not assess performance themselves but assign this task to the directors or supervisory board, another principal-agent-conflict arises.

Other incentive components, such as options, have been subject to much criticism as well. After extensive use in the 1990s and corporate scandals such as Enron or Worldcom, options were associated with excessive risk-taking and fixation on stock-prices (Hall and Murphy (2003)). At the same time, the cost of options to shareholders is higher than the value perceived by the executives due to dilution. In times of crisis, companies struggle to retain employees, who may not have influenced the company's downturn, with options deep under water. In the past, this had led to an extensive repricing of options to restore the incentive effects (Carter and Lynch (2001)). Some managers also benefitted by opportunistically timing the pricing (Arya and Sun (2004) and Callaghan et al. (2004)). The option backdating scandal of 2006 raised overall doubt in the incentives provided by this compensation component. Backdating refers to the practice of selecting a date in the past, on which the stock price was particularly low, to be the option grant date. This way companies pretend to have issued at-the-money options at an earlier point in time, while in reality in-the-money options are issued

at a later point in time, thereby enhancing the value of the option grants (Ertimur et al. (2012), Collins et al. (2009), Hall and Murphy (2000), Heron and Lie (2007)).

The questions resulting from these observations were the following: What are the real consequences of executive compensation? What impact does the composition and design of executive compensation have on executive behavior and eventually firm performance?

All the evidence mentioned above nurtured doubt in the effectiveness of governance to set adequate executive pay and paved the way for the already mentioned managerial power theory (Bebchuk et al. (2001), Bebchuk and Fried (2003) and (2004)). According to this theory, executive compensation can be explained by a combination of managerial self-interest as well as the limited power of boards, shareholders and market forces. Not only do directors have few incentives to restrict executive compensation, on the contrary, Bebchuk et al. (2001) see substantial risk for the directors' career when tackling executives' compensation. This weak position results from board dynamics, management's influence on director appointment, and future career concerns within tightly knit networks where people know each other. As shareholders or market forces do not have the right means of influencing managerial compensation either, the theory concludes that managers have considerate power over their own compensation. This results in excessive compensation with low pay-performance-sensitivity. To prevent negative attention of this rent extraction, less transparent compensation components and reports are chosen.

This leads to the following research questions: What are the real drivers of executive compensation? Are these determinants valid drivers?

The two identified dimensions of research, determinants and consequences of executive pay, build the core of Table 1. The questions have been the topic of extensive research with both theoretical and empirical contributions.

Nonetheless, the larger part of research on executive compensation has concentrated on finding reasons for the observed compensation phenomena and is, therefore, examining the determinants of pay. Not surprisingly, the most sought-after determinant is performance as the goal of optimal compensation contracts. Pay-performance-sensitivity is supposed to solve the agency problem and incentivize executives to act in the best interest of shareholders (Murphy (1985), Coughlan and Schmidt (1985), Hall and Liebman, (1998), Murphy (1999), Core, Holthausen and Larcker (1999), Buck et al. (2003)). Other examined economic determinants have been firm size (Wright, Kroll and Elenkov (2002)), complexity (Rose and Shepard (1997), Fatemi, Desai and Katz (2003)), risk (Bloom and Milkovich (1998), Prendergast (2002)), future company prospects (Core et al. (2008)) as well as industry (Hubbard and Palia (1995), Anderson, Banker and Ravindran (2000)). Most of these variables are now established

standard controls for compensation research. Numerous other factors are also considered. Hubbard and Palia (1995) for example examine the role of competitiveness, the managerial talent market and deregulation as drivers for executive compensation.

With the increasing doubt in executive compensation and the effectiveness of governance to handle this issue, research on the influence of ownership, governance and managerial power gained more momentum. Family ownership (Gomez-Mejia, Larraza-Kintana and Makri (2003)), institutional ownership (Khan, Dharwadkar and Brandes (2005)), the existence of large shareholders (Shleifer and Vishny (1986)) and executive ownership (Toyne, Millar and Dixon (2000) and Core, Holthausen and Larcker (1999)) are drivers for the design of the remuneration contracts. Governance variables such as independence of directors (Conyon and Peck (1998), Core, Holthausen and Larcker (1999)), CEO duality (Brickley, Coles and Jarrell (1997)), the composition of the compensation committee (Bebchuk and Fried (2004)) and board size (Yermack (1997), Core, Holthausen and Larcker (1999)) have also been examined. Additionally, interlocking boards and board busyness were subject to research (Core, Holthausen and Larcker (1999), Andres, van den Bongard and Lehmann (2013)). All of the mentioned variables serve to measure the weakness of governance that may result in managerial power since power itself is difficult to measure. Additionally, tenure (for instance, Westphal and Zajac (1994)) and celebrity status (Tosi et al. (2004)) can serve as a proxy for power. Wright, Kroll, and Elenkov (2002) and Grinstein and Hribar (2004) examine the consequences of M&A activity on subsequent CEO pay.

Other executive characteristics looked at – apart from managerial power – are managerial expertise and experience (Hogan and McPheters (1980)), horizon (Ryan and Wiggins III (2001)) gender (Gayle, Golan and Miller (2012), Vieito and Khan (2012)) and narcissism (Chatterje and Hambrick (2011)).

Finally, Hall and Liebman (2000), Perry and Zenner (2001) as well as Rose and Wohlfram (2002) examine effects of regulation on executive pay.

Among the lesser papers analyzing the consequences of pay, once again a considerate part of research concentrates on the compensation's impact on performance (Mehran (1995), Finkelstein and Boyd (1998), Core, Holthausen and Larcker (1999), Lee, Lev and Yeo (2008), Core, Guay and Larcker (2003)). Further strategic change (Carpenter (2000), Schwalbach (2001), Cho (2001), and Cho and Hambrick (2006)), turnover (Pfeffer and Davis-Blake (1992), risk-taking behavior (Devers et al. (2006)) and earnings management (Holthausen, Larcker, and Sloan (1995), Bergstresser and Philippon (2006)) have also been examined. Executive compensation has an impact on media coverage (Core et al. (2008), Kuhnen and Niessen (2012)) as well as disclosure on executive compensation (Coulton et al. (2001), Robinson et al. (2011)).

<table>
<tr><th colspan="2" rowspan="2"></th><th colspan="2">Direction of Causality</th></tr>
<tr><th>Determinants</th><th>Consequences</th></tr>
<tr><td rowspan="4">Object of Analysis</td><td>Level of Compensation
- Total compensation
- Compensation components</td><td rowspan="4">Company characteristics
- Performance
- Firm size
- Industry
- Prospects
- Complexity
- Risk
- Ownership
- Governance
- M&A
Executive characteristics
- Power
- Tenure
- Experience / expertise / horizon
- Narcissism
- Gender
- Media coverage
Other
- Legislative changes</td><td rowspan="4">Firm outcomes
- Performance
- Strategic change
- Risk-taking
- Earnings management
- Media coverage
- Disclosure

Consequences for manager
- Turnover
- Managerial retention
- Media coverage</td></tr>
<tr><td>Structure of Compensation
- Design of compensation components
- Weighting of components (fix vs. variable, cash vs. share-based)</td></tr>
<tr><td>Adequacy of Compensation
- Pay-performance-sensitivity
- Excessive compensation</td></tr>
<tr><td>Distribution of Compensation
- among Executives
- across the company</td></tr>
</table>

Table 1: Overview of the existing literature

Apart from dividing research on executive compensation into determinants and consequences, a classification along different aspects of pay is evenly worthwhile. The *subject of analysis* can be broken down into four broad categories: level of compensation, the structure of compensation, adequacy of compensation and finally distribution of compensation.

The first and second row of the table is addressed by research aiming to understand what drives the level of total compensation or the chosen structure of compensation. Questions of research may include the search for determinants of higher share-based compensation or a lower one-year bonus. Examples for research on the level of executive compensation can be found in Murphy (1985), Coughlan and Schmidt (1985), Morck et al. (1988), Murphy (1999), Buck et al. (2003) and Sanders and Tuschke (2007). Evidence on the determinants of the structure of executive compensation is provided by Gerhart and Milkovich (1990), Mehran (1995), Carpenter and Sanders (2002) and Frye (2004). The optimal mix of compensation requires knowledge on how to design compensation components and what the design's implications are. Alternative bonus designs, for example, are examined both empirically (Wallace (1997), Balachandran (2006)) as well as theoretically (Reichelstein (1997), Friedl (2005)).

Based on the findings from previous work identifying economic determinants of the level of executive pay, some researchers started examining the adequacy of executive pay. To examine pay adequacy, a differentiation between adequate and excessive compensation has to be made. As a first step expected pay has to be estimated: this is done with the help of

previously established benchmark models such as Murphy (1999), Smith and Watts (1992) and Core et al. (1999). The residual between the estimated expected pay and the actually paid compensation represents the excessive pay, i.e., compensation beyond the explainable levels. This field of research aims at clarifying whether companies really suffer from rent extraction as suggested by the managerial power theory. Brick, Palmon, and Wald (2006), Kuhnen and Niessen (2012), Robinson et al. (2011), Core et al. (2008) examine either the determinants or the consequences of excessive pay.

While the first three rows of the table examine pay on an individual level or with the help of averages, the fourth row is distinctive as it requires a group of comparison. The objective of the analysis is to learn what drives the distribution of compensation within the same hierarchy level (Siegel and Hambrick (2005), Shaw, Gupta and Delery (2002)), or the distribution of pay across different hierarchy levels (pay dispersion or also called pay spread or pay slice, see Lazear and Rosen (1981), Bognanno (2001), Main, O'Reilly III and Wade (1993) for the distribution of pay between CEO and the other officers). Finally, verticality gives insights into how the compensation is distributed across the company. This ratio can be calculated on a personal level by comparing a specific executive's compensation to the average employee's compensation or also based on average executive compensation in relation to the average employee's compensation. Executive compensation research will likely pick up with regards to this aspect of pay as new disclosure requirements oblige the companies to disclose such a ratio from 2017 onwards.

Many papers do not just cover one of the dimensions but examine multiple aspects of executive pay such as structure and height (Bednar (2012)) or height and adequacy (Core et al. (2008)).

The dissertation at hand consists of a literature review and two empirical papers on the above-introduced assumptions of the managerial power approach. The literature review, essay 1, collects evidence and findings for the existence of outrage as effective means for limiting managerial compensation. Essay 2 examines this question empirically with media coverage as a measure of public outrage. Finally, essay 3 provides evidence on the prevalence of camouflaging techniques as a reaction to public outrage. Both empirical papers use multiple forms of executive compensation as explaining variables for outrage and camouflage: Total level of compensation, excessive compensation and the distribution of pay across the company (measured as (average) executive income in relation to average employee income). To estimate excessive compensation, standard economic determinants such as company performance, size, riskiness, prospects, and industry as well managerial tenure are employed. Essay 2 further analyzes the impact of outrage (measured via media coverage) on the level, excessiveness, and structure of management compensation. The covered areas are highlighted in blue in Table 2.

		Direction of Causality	
		Determinants	**Consequences**
Object of Analysis	**Level of Compensation** - Total compensation - Compensation components	**Company characteristics** - Performance - Firm size - Industry - Prospects - Complexity - Risk - Ownership - Governance - M&A **Executive characteristics** - Power - Tenure - Experience / expertise / horizon - Narcissism - Gender - Media coverage **Other** - Legislative changes	**Firm outcomes** - Performance - Strategic change - Risk-taking - Earnings management - Media coverage - Disclosure **Consequences for manager** - Turnover - Managerial retention - Media coverage
	Structure of Compensation - Design of compensation components - Weighting of components (fix vs. variable, cash vs. share-based)		
	Adequacy of Compensation - Pay-performance-sensitivity - Excessive compensation		
	Distribution of Compensation - among Executives - across the company		

Table 2: Topics covered in this thesis

1.3 Research gap and research questions

Despite the numerous papers and extensive public discussion in the field of managerial compensation, very few papers aim to verify the managerial power theory's assumptions empirically. Most papers concentrate on the missing pay-performance-link, but little is known about 1) the existence of outrage over executive compensation and its drivers, 2) the consequences of outrage both for compensation as well as shareholder value and 3) the existence of camouflage to hide the managerial rent extraction. Furthermore, no consensus has been reached across the handful papers contributing to these questions. The weakness in the literature can be attributed to a lacking definition of outrage as well as data restrictions for both outrage and disclosure measures.

It can also be noted that no comprehensive literature review is available that gathers the existing findings and puts them into perspective. The dissertation, therefore, starts by consulting the literature on the phenomenon of outrage to identify possible measures for empirical research. Along the different measures, the analysis aims to understand the extent to which determinants and consequences of outrage have already been examined. In a second step, evidence on the effectiveness of the derived measures is gathered. Essay 1 consequently addresses the following research questions:

Research Question 1: *How can measures for outrage be derived from the managerial power theory?*

Research Question 2: *What impact do the identified measures have on executive compensation?*

Finally, as public interest in executive compensation has been discussed controversially, the literature review collects ideas and findings how to evaluate public outrage. This expands the knowledge on whether the outrage is helpful in limiting corporate excesses as intended by Bebchuk et al. (2001) and (2004), Bebchuk and Fried (2003) or whether it is an intrusion into the matters of shareholders by the "uninvited" public (see Murphy (2012)).

Research Question 3: *How can outrage be classified as justified or invasive?*

The result of the analysis suggests that media coverage is a promising proxy for outrage as it is both observable as well as measurable. Furthermore, its scope makes it more likely to impact compensation or shareholder value than less public measures such as shareholder proposals. It is likely that topics with more media coverage have higher impact and are more important to the public which might create the necessary momentum to initiate change. The media has already proven this capability in other settings such as environmental pollution (Dyck and Zingales (2002)) or fraud (Miller (2006)).

However, the media suffers also from shortcomings. As space in newspapers is limited, only a fraction of stories can actually be covered and journalists consequently have to decide which ones are the "newsworthy" ones. This automatically poses the question how the media chooses the topics to cover. For outrage to work as external governance, the media needs to exhibit certain expertise in distinguishing between excessive and adequate pay. Research from Niven (2001) provides evidence for a negativity-bias in the media as bad outcomes are far more often covered than good ones. Scandals simply sell better. Further doubt in the media's capability to provide expert judgment and external governance is also raised by findings from Bednar (2012) and Core et al. (2008). While the media is easily appeased by window-dressing instead of real corrective actions (Bednar (2012)), option payouts trigger major coverage even though these are not necessarily excessive (Core et al. (2008)). At the same time, Core et al. (2008) confirm that the media does choose to cover executives only for excessive pay.

Even though Dyck et al. (2008)) point out the importance of the broader media landscape for the media's effectiveness, so far research has not yet generalized the findings from Core et al.

(2008) with the help of a different research setting. The question arises, whether the media views executive compensation from a shareholder point of view and distinguishes between excessive and adequate pay even in a less shareholder oriented country such as Germany (Fiss and Zajac (2004)). Or is stakeholder orientation setting the agenda for the media so that questions of social equity dominate the headlines? Germany is known for its “envy culture” and said to begrudge wealth and success. To read about the high levels of executive pay might, therefore, be enough to satisfy the uneducated reader’s curiosity and need for scandals. Does the German media consequently rather engage in sensationalism regarding executive compensation?

The relevance of the topic for shareholders and legislators in combination with the few and ambiguous findings leaves a gap that is addressed in essay 2 of this thesis:

Research Question 4: *What are the determinants of media coverage on executive compensation?*

Even though very little is known about the decision process of the media regarding executive compensation, the consequences of media coverage have been more often addressed. Nonetheless, the literature is still indecisive regarding the effect of the media on building opinions or reputation. The persuasion theory assumes that cumulative coverage repeating arguments or messages is shaping the recipient’s perception (Brosius (2003) and Enikolopov, Petrova, and Zhuravskaya (2011)). Cohen (1963) on the other hand believes that the press „(…) may not be successful much of the time in telling the people what to think, but it is stunningly successful in telling its readers what to think about.“ (Cohen (1963), p. 13). By informing the public about compensation practices, a larger group of people can form an opinion which leads to stronger public pressure (Dyck et al. (2008)). Research provides insights regarding the influence of public pressure on company behavior with respect to a company’s environmental policy (Dyck and Zingales (2002)), accounting malfeasances (Miller (2006)), governance violations (Dyck et al. (2008)), board ineffectiveness (Joe et al. (2009)) and the pursuit of value-reducing acquisitions (Liu and McConnell (2013)).

However, with regards to management compensation, the existing empirical evidence is mixed. While Johnson et al. (1997) find strong evidence of decreased executive compensation levels and increased cash compensation and performance sensitivity, the study from Core et al. (2008) cannot find evidence that press coverage affects excessive CEO compensation. Kuhnen and Niessen (2009) and Kuhnen and Niessen (2012) on the other hand find that firms lower the most criticized pay components but increase less controversial types of pay, therefore rather changing the structure of pay than its sheer height. This is also in line with

findings from Bednar (2012). Once again, all the existing evidence stems from the US, making the results little generalizable. This leaves a research gap as the media's impact seems to be significantly linked to its standing in the respective country (Dyck et al. (2008)). Furthermore, the prevalent governance system might have a significant impact on the influence of the media as well. Germany with its stakeholder orientation and employee representation may either make an even stronger case for critical media coverage or, depending on the media's agenda, have even less impact on matters of governance.

Essay 2 contributes to extending and generalizing the previous findings within this distinct research setting by answering the following research question:

Research Question 5: *What impact does media coverage on executive compensation have on executive compensation itself?*

Finally, as public interest in executive compensation has been discussed controversially, essay 2 also aims to understand how the media coverage is perceived by the shareholders. While Murphy (2012) describes the media as "uninvited guests" to the bargaining table, Bebchuk et al. (2001) attribute an important role in the governance process to the media. To the best of my knowledge, so far the stock market reactions to media coverage on compensation have not yet been examined. However, shareholders' reactions towards other forms of dissent such as shareholder proposals (Fortin et al. (2014)) or legislative changes (Cai and Walkling (2011) and Ferri and Maber (2013)) suggest that shareholders evaluate outrage positively when it serves the compensation's improvement from an economic point of view. Sheer capping of executive compensation, on the other hand, leads to a negative market reaction (Kim (2010). Consequently, the examination of stock market returns provides further evidence on whether the media coverage is perceived as external governance support as proposed by Bebchuk et al. (2001). The identified research gap will be addressed with the following research question:

Research Question 6: *How do shareholders react to media coverage on executive compensation?*

The second assumption made by Bebchuk et al. (2001) is that companies try to prevent public outrage by engaging in camouflage. This assumption will be examined in essay 3. Camouflage according to Bebchuk et al. (2001) can either refer to choosing less transparent pay components (such as pensions) or to deliberately disclosing less or opaque information in the compensation reports. This idea suggests that companies choose the level of compensation disclosure dependent on compensation characteristics. Findings from countries shaped by the Anglo-American governance system seem to support the managerial power hypothesis.

Robinson et al. (2011) find evidence that excessive CEO compensation is positively associated with disclosure defects identified by the Securities Exchange Commission (SEC) and according to Coulton et al. (2001) compensation disclosure is significantly less transparent for CEOs with relatively high compensation in Australia. Muslu's (2010) results based on European data, on the other hand, do not support the managerial power theory. Germany is a particularly interesting setting to examine executive compensation disclosure as for many years very few requirements regulated the disclosure, much in contrast to the US. The small number of results leaves space for additional research that covers a broader set of variables in a setting with distinct compensation, governance and legislation characteristics. These enable the researcher to gain valuable insights on the disclosure decision within its cultural context. My last research question is, therefore:

Research Question 7: *What are the determinants of (lacking) compensation disclosure?*

Overall, I chose the research questions introduced above to address issues that are controversial in the literature, have not yet received clarifying answers, and are highly relevant to shareholders as well as decision-makers in the legislative. The following chapter introduces the data samples used to examine these research questions.

1.4 Data samples

This thesis contains a literature review (essay 1) as well as two empirical papers (essay 2 and 3). In testing my hypotheses empirically, I maximize statistical validity and generalizability of results. The empirical analysis uses both primary and secondary data. This means that considerable resources and time were invested into the collection and evaluation of data creating datasets that have not been available or analyzed before. While the use of secondary data enables to quickly analyze larger amounts of data, the use of primary data enables the researcher to focus on specific subjects and increases the control over how the information is collected.

Essay 2 and 3 are built around a hand-collected executive compensation dataset from 2006 to 2014. It covers companies listed in the German Aktienindex DAX and MDAX (essay 2 only DAX, essay 3 DAX, and MDAX), the two most important indexes of the prime standard. By including the MDAX a good mix of industries can be guaranteed. Furthermore, this enables the researcher to examine a part of the famous German "Mittelstand". A descriptive study of the hand-collected data is published annually (see for example Friedl et al. (2016) and Friedl et al. (2015)) and publicly discussed in the media (for example Cabras (2015)).

For essay 2 a media dataset is employed. This dataset has been hand-collected by the company Media Tenor. The identified media is analyzed by specialists with the help of a codebook. As it is to be expected that media coverage concentrates on the bigger companies anyways (Jensen (1979), (Miller (2006)) the dataset is limited to the DAX. Obtaining a larger sample would have been even more costly and time-consuming and clearly going beyond the resource constraints of this thesis. The dataset comprises 1,349 person-year observations.

The second part of the dissertation is based on a hand-collected dataset on compensation information revealed in the compensation report as part of the annual report. The information pieces are broken down into items that add up into an index. Using an index to measure transparency is a common approach in the literature (Marston and Shrives (1991)). The maximum amount of points can be earned by disclosing all information that would be needed to understand how much the existing compensation system costs the shareholder per officer and what gains each officer obtains per year. This way one can understand at which point companies "drop out" from providing all information. The collected points are then set in relation to the maximum of achievable points. The maximum of achievable points varies across companies dependent on the compensation components employed by the respective company. This way every company can reach 100% disclosure. The index information is collected for all companies with compensation information in the DAX and MDAX, therefore fully matching the compensation dataset. Validity and reliability of the index are guaranteed by taking different measures explained in essay 3. The dataset comprises 429 firm-year observations.

1.5 Structure and key findings of the dissertation

This dissertation consists of three independent and self-containing essays. Each essay is presented in one chapter (chapter 2, 3 and 4) and represents a scholarly contribution on its own. Therefore, each paper has its own introduction, literature review and methodology section (in the case of the empirical papers). Figure 1 provides an overview of the three papers and their position within the managerial power theory.

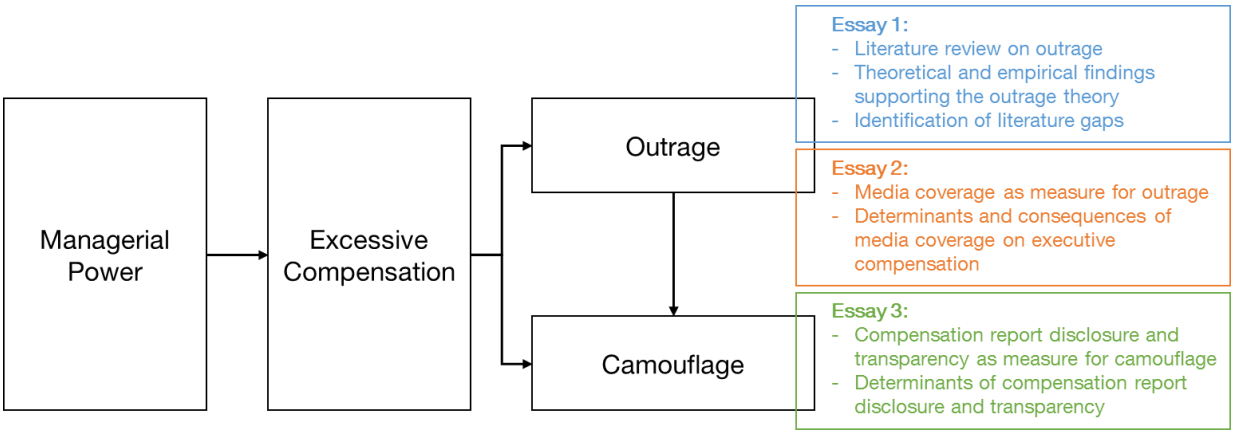

Figure 1: Positioning of dissertation within managerial power theory

Essay 1 (chapter 2) examines outrage on a theoretical level. I review the existing literature to manifest whether the described phenomenon is likely to exist and whether there is empirical evidence in favor of the theory of outrage. The managerial power theory lacks a practical definition of outrage and ways of measuring it. According to Bebchuk and Fried's (2001) definition, the outrage constraint is crossed when "the adoption of arrangements that managers would otherwise favor" (Bebchuk Fried (2004), p. 5) is deterred. By identifying parties about whose opinions managers and directors care, I identify possible ways of measuring outrage and then examine studies using these proxies. Even though the theoretical basis is sound and findings from other research areas suggest that a moderating effect of outrage on governance and compensation may exist, empirical evidence on consequences of outrage are scarce and results are inconsistent. Murphy (2012) describes parties such as the media, labor unions and politicians as "uninvited guests" (Murphy (2012), p. 47) without a real stake in the company. The review paper consequently aims to collect empirical evidence on the market reaction following the outrage to understand how shareholders perceive it. Especially in this field, major research gaps are identified.

Essay 2 (chapter 3) examines the most promising proxy for public outrage: media coverage on compensation. The media exhibits distinctive advantages as a proxy for outrage. Due to economic necessity of media houses to cover topics of public interest, the media serves as a voice of the society. The likelihood of creating enough pressure to impact managers' and directors' reputation might, therefore, be higher than for less observable forms of public dissent. The visibility of the media makes the feedback on topics collectible for research as well. The paper examines determinant of media coverage on compensation, the coverage's impact on compensation and sheds light on stock market reactions induced by the media coverage. The results show that the media does distinguish between expected and excessive compensation. This is in line with findings from the US (Core et al. (2008)). At the same time, high inequity between executive compensation and average employee income drives media

attention. Consistent with other papers (Kuhnen and Niessen (2012) and Bednar (2012)), I find a change in structure away from fixed to more incentive-based compensation. The German media seems to be as ineffective as the US media to limit the percentage of excessive compensation and compensation levels though. Quite to the contrary, both compensation level and adequacy of pay worsen for executives with coverage. The event study shows that coverage induces cumulative abnormal returns around the media coverage depending on the existence and sign of excessive compensation in the company. Overall, the results raise doubt in the effectiveness of outrage as a limit to managerial rent extraction.

Essay 3 (chapter 4) concentrates on the second assumption of the managerial power theory, camouflage as a way to prevent public outrage. In particular, the paper investigates the amount and quality of information provided in the compensation report as part of the annual report. The findings suggest that companies refrain from more detailed disclosure because it induces additional effort. As neither excessive pay nor governance are drivers of lacking compensation disclosure, I cannot find evidence for camouflage as proposed by Bebchuk et al.'s (2001) highly discussed managerial power theory. The empirical analysis establishes mainly 4 robust disclosure determinants: company size and age, family members in the boards and verticality, which is the ratio between average employee compensation and average executive compensation. Findings on other variables such as proprietary cost are inconclusive.

Overall, the results draw a more complex picture of the interactions between pay, public attention and company disclosure. Questions of social equity, however, seem to play a role in both settings. This finding is in line with previous research depicting Germany as a more stakeholder and less shareholder oriented country.

2 Essay 1: Outrage – Effective constraint on managerial rent extraction or unwanted interference? A review of the existing literature

Abstract

Outrage over executive compensation has frequently been a part of public life in the past decades. In this article I gather evidence from empirical, experimental and analytical research in four areas: 1) the plausibility of the underlying assumptions of the managerial power theory, 2) possible ways how to measure outrage, 3) the effectiveness of outrage to actually limit compensation, 4) the evaluation of outrage from a shareholder and stakeholder perspective. Even though the theoretical basis is sound and a few findings suggest that a moderating effect of outrage on governance exists, empirical evidence on the effects on compensation is scarce and results are inconsistent. Furthermore, major research gaps in the evaluation of outrage by shareholders are identified. Findings from shareholder activism suggest that the type of shareholders, the initiators of the activism, and the motivation behind the activism play an important role in the shareholders' reaction.

JEL classification: G34; J33; M52; M12

Keywords

Executive compensation; Press; Media; Corporate governance; External corporate governance.

2.1 Introduction

Executive compensation is a constant and vigorously discussed topic in research and media. Even though there is a vast amount of scientific articles about compensation and empirical research on the main drivers of compensation, the fascination for compensation phenomena does not loose drive.

The opposing concepts of optimal contracting and managerial power serve as a nutritious ground for academic discussions. Both approaches refer to the agency theory, which formalizes the relationship between a principal, giving a task, and an agent, performing the task. The optimal contracting theory understands compensation as a remedy for the agency conflict by setting proper incentives for the agent, i.e., the executives, to work in the best interest of the principals, i.e., the shareholders. The managerial power theory interprets compensation rather as a problem of the agency conflict itself as managers use their knowledge, privileges and the resulting power in extracting rents above the optimal level. However, the theory believes that public outrage can serve as a limitation to managerial self-serving. The outrage constraint is crossed when the costs associated with negative reactions of observers are significant enough to "deter the adoption of arrangements that managers would otherwise favor" (Bebchuk and Fried (2004), p. 5). The crucial point is not the level of rent extraction, but it's visibility to a critical group about whose views the executives and directors care (Bebchuk et al. (2001), p. 34).

Scholars such as Jensen and Murphy (1990) on the other hand view outrage rather as unwanted interference as they believe in the boards' capabilities in setting contracts with close to optimal incentives. They claim the pressure exerted by "parties such as employees, labor unions, consumer groups, Congress and the media creates forces in the political milieu that constrain the type of contracts written between management and shareholders" (Jensen and Murphy (1990), p. 254). Murphy (2012) criticizes that these parties "have no real stake in the company [...] and no real interest in seeing companies being managed well" (Murphy (2012), p. 47).

The public interest in managerial compensation is therefore perceived controversially by scholars. While the one party perceives outrage as helpful, the other is critical of the outsiders' interference. To shed light on the question which party is right, this literature review aims to provide a systematic framework for gathering the empirical, experimental and analytical findings related to the outrage phenomenon. Chapter 2.2 introduces the idea of the managerial power theory and outrage in more detail and examines its plausibility. Chapter 2.3 elaborates on possible ways of measuring public dissent as a proxy for outrage while chapter 2.4 clarifies whether any of these measures have indeed lead to changes in compensation. Finally, chapter

2.5 makes a step towards a better understanding whether outrage is an unwanted or a justified interference before chapter 2.6 concludes.

2.2 The idea of managerial power

At equilibrium, executives and companies should bargain at arm's length with regards to executive compensation. While the executive, as homo oeconomicus, bargains for the highest compensation possible to maximize his utility, the company should give in to bargaining depending on the degree to which it believes the candidate is the best available for the job. However, according to Bebchuk et al. (2002), in reality, corporations are often not capable of building a sufficient counterweight to the bargaining manager. They believe that boards, markets, and shareholders have an only limited influence on constraining executive pay.

First, the supervisory directors are not bargaining with the executives at arms' length. Directors and executives often belong to the same social group and are part of networks of cross-appointments. The open opposition may limit the likelihood of being re-elected to the current board or being recommended into other boards. Overall, Bebchuk et al. (2002) do not see sufficient incentives for an individual director to cut down executive compensation, especially as the economic significance for the company often seems negligible in comparison to other costs.

Second, Bebchuk et al. (2002) do not believe that market mechanisms are capable of replacing the weak directors. The market for corporate control may be effective for cases of serious performance problems or changes in company valuation, but takeovers are simply too costly for limiting excessive compensation. Product markets or the market for additional capital will not be affected by excessive compensation levels and will, therefore, have no disciplining power either.

Third, according to Bebchuk et al. (2002) shareholders have an only limited impact on compensation packages as they have no formal way of influencing them apart from the – so far unsuccessful – approach of litigation.

Even though Bebchuk et al. (2002) doubt the existing control mechanisms, they believe that managers cannot extract compensation without limitations: outrage over excessive executive compensation gives sufficient incentives to the board of directors to oppose rent extraction and helps shareholders and markets to gain a better standing against the bargaining managers. To make outrage a useful constraint to rent extraction, executives and directors must care about it. According to Bebchuk et al. (2002), they do so because the public perception of managerial compensation being too high or morally questionable imposes social and

reputational costs on directors and managers. Furthermore, outrage might weaken the company's position within consumer, investor and employment markets.

To believe in the moderating impact of outrage on compensation however, three things have to hold: 1) consumers, investors and future employers know about the (excessive) compensation practices, 2) their outrage over compensation practices harms the company's overall reputation or the individual in charge, 3) the harmed reputation is important enough to motivate changes. The following sections gather evidence on these three prerequisites.

2.2.1 Knowledge about compensation practices

An old saying goes: "What the eye does not see, the heart does not grieve over". Similarly, outrage over compensation is unlikely to erupt as long as there is no knowledge about compensation practices. In order to know about compensation practices, some disclosure is needed. Without disclosure, contracts remain a private agreement between employer and employee.

The first impulse for disclosure was given by politicians in the United States of America (USA) rather than by shareholders. After the Big Depression in the 1930s, some companies had to be bailed out by the state, which therefore developed an interest in how the company was set up (Murphy (2012), p. 45). In 1932, the railroad companies receiving government assistance were asked to disclose the names of executives making more than $10,000 per year. Outraged over the compensation levels, the government's Reconstruction Finance Corporation required the respective railroad companies to reduce executive compensation. Triggered by this incident, the Securities and Exchange Commission (SEC) was established in 1934 and started overseeing all companies listed on the New York stock exchange. All listed companies were required to disclose the compensation of the three highest-paid executives. Many amendments and similar regulations in other countries followed.

The public knowledge about management compensation is also spread by the media and large interest groups with public followings. The media provides easy and comparably cheap access to information by gathering and synthesizing information from various sources. Gaining the same information level would require significant individual effort. The easier the information is accessible, the more people get informed (Dyck and Zingales (2002), Dyck et al. (2008)) and therefore a broader public can form an opinion. Due to social networks and the internet, access to and spreading of information has become even easier (Oranburg (2015)).

Apart from the media, interest groups engage in creating awareness too. The largest federation of unions, the American Federation of Labor and Congress of Industrial Organizations, provides a website called Executive Paywatch, which enables users to compare their own

salary to their employer's CEO's compensation (http://www.aflcio.org/Corporate-Watch/Paywatch-2015). Additionally, proxy advisors engage in research and analysis to support shareholders in their voting decisions. They provide information and even give recommendations how to cast votes.

The disclosure requirements, the media, and active shareholders are likely to create enough awareness for executive compensation that stakeholders can form an opinion. Assumption 1 can, therefore, be affirmed, as awareness is needed to create outrage among a company's stakeholders.

2.2.2 Plausible negative impact of executive pay on reputation

Bebchuk et al. (2002) argue that outrage over compensation may impose reputational costs. Indeed studies suggest that companies may have to worry about outrage over pay: Experimental evidence from Mohan et al. (2015) shows that consumers perceive companies with lower pay dispersion as more attractive than those with high verticality between CEO and worker pay. The survey study of Rost and Weibel (2013) finds that attendees concerned about extraordinarily high compensation were willing to support political initiatives or stated that they punished norm infringers, e.g., by boycotting the product or changing the workplace. The experiments of Guth, Schmittberger, and Schwarze (1982) show that if inequality gets too high participants are even willing to give up own benefits in order to penalize the other person's unfair behavior. This so-called "altruistic punishment" has been looked at by many other researchers as well (for example Fehr and Gächter (2002), Charness and Rabin (2002), Andreoni and Miller (2002)).

Unfortunately, experimental studies often suffer from limitations. First, in the experimental setting, the awareness for pay practices is probably significantly higher than in real life. Second, the purchasing or job decision is directly linked to the company's executive pay which is less pronounced in real life. Finally, social desirability may influence the results, too. As defined by Chung and Monroe (2003) social desirability bias is the tendency of individuals to underestimate (overestimate) the likelihood of engaging in an undesirable (desirable) action. People have been shown to act very differently in experimental settings than they do in field settings (List (2006)). Furthermore, the design of questionnaires has a huge impact on the result (Bertrand and Mullainathan (2001)).

Empirical work with field data at least confirms that high inequality between low-income employees and executives drives up absence (Dittrich and Carrell (1979), turnover rate (Summers and Hendrix (1991) and Dittrich and Carrell (1979)) and theft within the organization (Greenberg (1993)). The higher dispersed pay is, the lower is individual and organizational performance (Bloom (1999), Pfeffer and Langton (1993)) and product quality (Cowherd and

Levine (1992). Overall cooperative behavior (Harder (1992) and Pfeffer and Langton (1993)) and group cohesion are reduced (Levine (1991)). Wade et al. (2006) provide evidence that lower-level managers leave the company when they are relatively underpaid to the CEO.

Therefore, one can conclude that companies should indeed be aware of the importance of executive compensation to employees and customers.

2.2.3 The importance of reputation

Reputation is an important factor for individuals and institutions, especially in a competitive market. Reputation is an intangible good, which is hard to imitate and can, therefore, serve as a competitive advantage (Dierickx and Cool (1989), Hall (1992), Schwaiger (2004)). Companies with high reputation are more attractive as an employer (Cable and Turban (2003), Collins and Han (2004)) and call more satisfied and loyal customers their own (Fombrun and van Riel (1997) and Hall (1992)). Companies with good reputation also gain advantages on the financial market: Diamond (1989) shows an inverse relationship between a borrower's reputation and his interest rates for debt. The model of Gomes (2000) suggests that even companies without explicit corporate governance mechanisms can be an attractive investment as long as managers can develop a reputation for treating minority shareholders well. Reputation is, therefore, a vital factor for a company to gain employees, investors, and customers. Therefore, these groups' outrage can be costly to the company.

Even more important than the loss of corporate reputation may be the loss of personal reputation to directors and executives. Research shows that personal reputation can serve as a signal to the labor market. According to Fama and Jensen (1983), the main incentive for outside directors to hold a board seat is to develop a reputation as an expert in decision control. Directors benefit from seats held in larger and better-performing companies (Yermack (2004) and Ferris et al. (2003)) and directors, who act in the interest of shareholders, are rewarded with additional board seats (Coles and Hoi (2003) and Harford (2003)). Directors serving at companies experiencing accounting restatements (Srinivasan (2005)), financial distress (Gilson (1990)) or a financial fraud lawsuit (Fich and Shivdasani (2007)) lose their board seats more frequently. Directors are also tempted to leave companies with struggles ahead in order to contain damage to their reputations (Fahlenbrach et al. (2014)). According to the cited literature, reputation is an immensely valuable good for directors. As many CEOs serve as outside directors in other companies' boards or stay as a supervisory director after they resign (Renneboog and Zhao (2011), Quigley and Hambrick (2012), Harford and Schonlau (2013) and Evans et al. (2010)) this is also relevant to them. Yermack (2004) finds that shareholders penalize managers for the private use of corporate jets. Tannenbaum et al. (2011) furthermore show that experiment participants preferred to hire a more expensive CEO when the

alternative candidate requested a frivolous perk because this was seen as a sign of lacking moral.

Another aspect of negative attention can be social shaming. Human beings generally want to be accepted by their peers and within their societies. Shaming brings into question a person's morals and destroys a person's reputation also in a social environment (Kahan and Posner (1999))). This affects not only their own lives but also those of their relatives (Wagner (2014)). The anecdotal evidence suggests that being singled out and used as a negative example can be very effective (Kahan and Posner (1999)).

Overall, the findings support assumption 3 of Bebchuk et al.'s (2001) idea: Public opinion is an important factor for a company's, director's and manager's success. Outrage over excessive executive compensation can harm both current public image as well as long-term reputation. I can, therefore, conclude that outrage might indeed limit compensation excesses in order to prevent a negative impact on the future success.

2.3 Measuring outrage

To validate the assumption of outrage as an effective means of limiting executive pay, empirical findings have to be examined. Albeit, measuring outrage is by no means an easy and non-ambiguous task for researchers. According to Bebchuk and Fried (2004), the outrage constraint is crossed when the costs associated with negative reactions of observers are significant enough to "deter the adoption of arrangements that managers would otherwise favor" (Bebchuk and Fried (2004), p. 5). However, it is impossible to tell what an executive would have favored if he had not been worried about outrage. This piece of information is private knowledge of the executive and therefore impossible to examine by researchers. Furthermore, Bebchuk et al. (2001) state that there may be "negative reactions [which only] amount to criticism not reaching the level of outrage" (Bebchuck and Fried (2004), p.4). With further information missing, the theory lacks a clear definition of outrage, how to measure it and how to distinguish between outrage and mere criticism. The only option remaining is therefore to measure forms of observable dissent and to examine whether these have resulted in observable changes in executive pay. Unfortunately, compensation already adjusted ex-ante to prevent outrage is not comprised in this definition.

According to Bebchuk et al. (2002), the visibility of rent extraction to parties the managers and directors care about is vital for the outrage constraint to work. Consequently, large interest groups with influence over a considerate number of people or the media are likely to build up enough momentum to actually cross the outrage constraint.

In the following, I introduce different ways of measuring dissent which is likely to have an impact. To gather all relevant articles, a backward and forward reference searching was applied. The search was initiated with relevant buzzwords such as “outrage”, “dissent”, “shareholder activism”, “media” and “executive compensation”. The literature base was then extended by looking into both the relevant papers’ sources as well as their citations. The measures introduced comprise shareholder activism, public campaigns and the media as these interest groups cover both shareholders and stakeholders and are promising due to their importance to managers and directors alike.

Due to the fact that Execucomp offers a database for executive compensation in the US, a large share of executive compensation literature is published there. Nonetheless, findings from other countries can occasionally be found, especially if regulation in the regarding country is ahead. In the case of “Say on Pay”, research from Great Britain (GB) and Australia is prevalent for example. The following chapters introduce the identified measures, while chapter 2.4 provides results with regards to their effectiveness in limiting executive pay. Chapter 2.5 examines findings on the evaluation of the introduced measures.

2.3.1 Compensation-related shareholder activism

Dissatisfied shareholders have numerous ways to express their dissent, especially in the US, where shareholder activism is very common. Gillan and Starks (2007) see shareholder activism as “a continuum of responses to corporate performance” (Gillan and Starks (2007), p. 3). On the one side of the continuum are shareholders, who simply sell their stock in response to unwanted developments, and on the other side the market for corporate control, in which investors initiate takeovers and LBOs to fundamentally change corporate behavior.

With the introduction of shareholder proposals by the SEC in 1942, shareholder gained a strong tool for communicating disapproval to the company. Additionally, voting results in director elections, approval of stock option plans and management-sponsored proposals can be used as a form of communicating dissent. In many countries, shareholders furthermore gained the right to vote on the compensation system itself, the so-called “Say on Pay”.

Shareholder proposals

Any company listed on an American stock market has to follow the rules of the SEC. Shareholder Proposal Rule (Rule 14a-8) allows any shareholder continuously holding $2,000 (or 1% of the market value of equity) for a minimum of 1 year to place certain types of proposals in annual corporate proxy statements. These will be put to the vote of all shareholders during the annual meeting. If shareholders disagree with corporate management this is a straightforward way to express their dissatisfaction. This makes shareholder proposals a good indicator for outrage. As regulation already exists since 1934, there is a vast amount of US

studies in this area. Subgroups of papers are examining governance related proposals (Karpoff et al. (1996), Del Guercio and Hawkins (1999), Gillan and Starks (2000), Prevost and Rao (2000), Thomas and Cotter (2007), Hadani et al. (2011)) and proposals for compensation changes (Johnson and Shackell (1997), Johnson et al. (1997), Thomas and Martin (1999), Prevost et al. (2006), Subramaniam and Wang (2009), Ferri and Sandino (2009), Burns and Minnick (2013), Ertimur et al. (2011), Cai and Walkling (2011), Sun et al. (2013), Fortin et al. (2014)).

"Just Vote No" campaigns

In the US, directors are voted on the board according to the companies' bylaws. Terms of service for elected directors vary. One-, three- and five-year terms are common. Furthermore staggered boards are widely spread, where directors of the same board serve for a different length of term. Yearly (re-)elections guarantee that no vacancies arise.

During a "Just Vote No" campaign shareholders use the (re-)election to express their dissent by marking their proxy cards to "withhold authority" from the proposed directors. Even though the regarding SEC regulations on director election is effective since 1967, shareholders only started using the withholding of votes as means of expressing dissent from the 1990ies onwards (Grundfest (1993)). A substantial amount of withheld votes undermines a director's reputation and may, therefore, have stronger effects than shareholder proposals even though both are not legally binding. Campaigns are organized in an increasingly easy fashion as fellow shareholders may not only be reached via letters and press releases but also via e-mail, social media and other forms of internet communication. An upside of this channel of dissent is its relatively low cost in comparison to shareholder proposals, which require proponents to file official documents with the SEC and sometimes involve lawsuits. As "Just Vote No" campaigns work with creating awareness among fellow shareholders they might gain even more momentum by casually informing also uninvolved parties.

Voting upon management-sponsored proposals

Similar to voting outcomes on director elections, shareholders' reactions towards management sponsored compensation plans can be examined when these have to be approved by the shareholders. Shareholder approval of option plans is needed under some corporate laws (for example in the *New York Business Corporation Law* § 505(d) until 2000). Furthermore, the corporate statutes of all states require approval whenever the charter must be amended to increase the number of authorized shares (Sonthalia (2004)). According to section 422(b)(1) of the *Internal Revenue Code*, an incentive stock option is an option granted to an employee for any reason connected to the employment, but only if approved by the stockholders of the granting corporation within 12 months before or after the date such plan is adopted. *The Code*

of Federal Regulations (26 CFR 1.422-3), specifies that, if the applicable State law does not prescribe a method and degree of stockholder approval, an incentive stock option plan must be approved by a majority of the votes cast at stockholders' meeting. Finally, Section 162(m) of the *Internal Revenue Code* only allows the deduction of management compensation if the executive's total annual compensation is below $1 million per year or the amount above $1 million per year is performance-based. To assess an option plan as performance-based, it has to be approved by the shareholders.

Shareholders might oppose equity plans for two reasons: either they disagree with the equity plan itself due to dilution or lacking pay-performance-sensitivity or they want to send a more generic signal of disapproving the compensation system installed. Similar to a "Just Vote No" campaign the voting outcome can be used as a proxy for outrage.

Investor activism via SEC Schedule 13D

Another way of influencing corporate policy is a confrontational activist campaign initiated by filing an SEC Schedule 13D described by Klein and Zur (2009). A confrontational activist will start his campaign by acquiring the beneficial ownership of 5% or higher of any equity security in a publicly traded firm with the stated intent of influencing the firm's policies. Another proxy for measuring dissent can be obtained by counting the number of campaigns with the stated intent to change compensation practices.

"Say on Pay"

The term "Say on Pay" is used for a corporate governance tool, which allows a company's shareholders to vote yearly upon the management's compensation in the shareholders' meeting. "Say on Pay" regulation can be found in numerous countries[2] but is a fairly recent form of governance in the US. Most of the literature examining "Say on Pay" stems from Great Britain, the early adopter, with legislation introduced already in 2002. Studies from the US – an advisory "Say on Pay" vote was introduced in 2011 – are already emerging and will probably gain more importance over time. There are two forms of "Say on Pay": first, votes can be advisory, like in Great Britain and Germany, or second, binding, like in the Netherlands and Sweden. Australia, previously a country with the advisory "Say on Pay", introduced the so-called "Two-Strikes Rule" in 2011: the board of directors may be put up for reelection if the compensation receives 25% or more "no" votes at the annual general meeting in two consecutive years. Shareholders do vote directly upon the compensation system, which allows low voting support to be a good proxy for shareholder dissent. Further, outrage may be

[2] USA, Australia, Belgium, GB, Canada, France, Germany, Suisse, the Netherlands, Norway, Sweden and in Japan; The introduction in Great Britain was followed by the Netherlands 2004 (binding "Say on Pay"), as well as Sweden (2006, binding), Norway (2007, binding) and Germany (2009, advisory).

triggered when the low voting support gains public attention and therefore adversely affects a company's reputation. Dissent can be measured by the percentage of (dis-)approval but also by measuring how many proposals the company receives to implement a "Say on Pay" for shareholders.

2.3.2 Public campaigns

Apart from expressing dissent via existing governance channels, shareholders may also engage in campaigns seeking public attention which enforces change via public shaming. This can be public naming of governance infringers like in the case of the California Public Employees' Retirement System (CalPERS) (Wu (2004)) or a catchy advertisement like the full-page ad in the Wall Street Journal initiated by investor Bob Monks who attacked Sears, Roebuck and Co's board of directors for governance weaknesses the board was unwilling to work on (Monks (1992).

This kind of activism also works well for unions or other activists. The largest federation of unions, the American Federation of Labor and Congress of Industrial Organizations, for example, set up a website called Executive Paywatch, which enables users to compare their own salary to their employer's CEO's compensation (Executive Paywatch: http://www.aflcio.org/Corporate-Watch/Paywatch-2015). Another well-known example is the success of the Swiss activist Thomas Minder, who initiated a ballot measure ("Abzocker-Initiative", an initiative against rip-offs) aiming among others at limiting payoffs and golden hellos.

2.3.3 Media coverage

The media adopts an important role in the outrage phenomenon. First, by collecting and assembling vast amounts of information, it creates awareness for compensation practices and enables a larger group of people to form an opinion. Only when rent extraction is "clearly apparent to outsiders" (Bebchuck et al. (2001), p. 34), outrage can emerge. Second, if outrage is already funneled and expressed by protest or activism, the media gives these outrage campaigns a channel to be more effective (see for example media coverage on Swiss executive pay referendum in 2013, the so-called "Abzockerinitiative"). Often enough the media makes already existing dissent visible by giving it a platform. Only then it becomes important to parties such as directors and managers as well as politicians and legislators. Media coverage can be used as a proxy for outrage by counting all newspaper articles on compensation or by counting all articles with certain characteristics, e.g., such as a negative tonality. In the second case, percentage variables can be considered as well (e.g., percentage of articles with negative tonality). Apart from traditional media outlets, newer forms of media

offer new insights as users express their interest in the topic without the classical media as mediator. The number of tweets on a certain topic on Twitter offers a new field of research. Google gives further insights into search history by providing a Search Volume Index, an index indicating the importance of topics over the course of time.

2.3.4 Indirect effects – The effect of legislation on compensation

In response to public dissent one cannot only observe direct changes in compensation: when compensation practices dominate the newspapers and feelings of outrage rise, executive pay becomes a topic of interest and therefore important to the government. Highly and publicly discussed topics are often picked up by politicians so to gain voters' approval or – vice versa – not to lose support because they stay passive (Dyck and Zingales (2002), Johnson Porter Shackell (1997), Herbst (1998), Culpepper (2010), Kuhnen and Niessen (2012)). The introduced regulation usually aims to 1) enhancing disclosure or to 2) limit either the use of certain pay components or 3) the level of pay. Additionally, two dimensions can be analyzed: 1) Research can examine whether there is increased legislation after outrage and 2) whether the regulation induced by outrage has the intended effects on compensation.

2.4 Dissent as effective outrage

The outrage constraint is crossed when the costs associated with negative reactions of observers are significant enough to "deter the adoption of arrangements that managers would otherwise favor" (Bebchuk and Fried (2004), p. 5). This definition is tricky because it is impossible to know what would have been favored by the manager if he wasn't afraid of outrage. To make outrage observable – and therefore analyzable for the researcher – this research paper has to apply a simplified definition of outrage: the only means of determining whether the outrage constraint was crossed is to understand whether changes in compensation have been adopted after dissent was expressed (see chapter 2.3). If outrage is effective, changes in compensation should be observable after the dissent arises. Beyond this direct effect, dissent may also amount to successful outrage by triggering legislative changes.

Before I examine the findings, it is vital to define the possible dimensions of compensation changes. Table 3 provides an overview. Compensation may change by reducing the level and or altering its composition (e.g., by granting more incentive pay and reducing fixed cash compensation). A rising number of papers also examines the adequacy of executive pay by looking into changes in the level or percentage of excessive compensation (see for example Core et al. (2008), Kuhnen and Niessen (2012)) or the pay-performance-sensitivity. Excessive compensation measures compensation that cannot be explained by standard economic determinants provided in models such as Coughlan and Schmidt 1985, Smith and Watts

(1992), Murphy (1999) and Core et al. (1999). To measure compensation beyond the adequate level an econometric model for “just” compensation is defined and calculated with the help of determinants such as firm size, growth opportunities, stock return, accounting return, tenure and industry controls. This econometrically estimated compensation is then netted against the actually paid compensation to receive the excessive compensation as remaining residual (see chapter 2.5 for a review of the implications of this measure for the justification of outrage). Finally, research can also analyze the pay dispersion within the executive board or across the company.

Level of Compensation - Total compensation - Compensation components
Structure of Compensation - Design of compensation components - Weighting of components (fix vs. variable, cash vs. share-based)
Adequacy of Compensation - Pay-performance-sensitivity - Excessive compensation
Distribution of Compensation - among Executives - across the company

Table 3: Measuring change in compensation

2.4.1 Compensation-related shareholder activism

First, I gather the empirical evidence from research on shareholder activism. The results provide information whether changes in compensation plans have been implemented after the shareholders took action against executive compensation. The mentioned papers can be found tables sorted by chapter in the appendix.

Shareholder proposals

The earliest studies, conducted by Johnson and Shackell (1997), Johnson et al. (1997) and Thomas and Martin (1999) find no evidence that compensation-related shareholder proposals change executive compensation. However, the sample by Johnson et al. (1997) consists mainly of small individual investors rather than large blockholders and proposals are not related to compensation levels or pay-performance-sensitivity. Thomas and Martin (1999) see at least some support for the hypothesis that activism alters pay, as the growth of average executive compensation levels slows down in companies that received a shareholder proposal the previous year. Nevertheless, this change is not significant. Subramaniam and Wang (2009) observe only weak evidence that there is a shift towards equity-based pay one year after the

pay proposal as the results are not robust. They find no evidence for a change in overall compensation levels.

The more recent studies concentrate on specific forms of shareholder proposals. Ferri and Sandino (2009) have a closer look at companies receiving proposals requesting an advisory shareholder vote on the expense of employee stock options. Following the proposal, a decreased level but no change in the composition of CEO compensation was observed. However, the effect of decreased compensation was completely attributable to companies which actually implemented the requested expense of employee stock options (a decrease of $2.29 million in CEO compensation versus an increase of $0.34 million in non-targeted firms). Burns and Minnick (2013) only look at companies receiving requests to implement "Say on Pay". According to their results, the level of total compensation remains the same but the structure changes towards more incentive-based compensation instead of cash compensation. Ertimur, Ferri and Muslu (2011) divide proposals into three types: "rules of the game" (proposals to change the pay-setting process), "pay design" (proposals to influence the outcome of the compensation setting process), and "pay philosophy" (aims to shape the objective of the pay-setting process). Furthermore, they distinguish proposals according to their proponents, namely individuals, union pension funds, public pensions, religious organizations, and other shareholder groups (investment advisors, investment management firms, and mutual funds). Only companies targeted by pay-design proposals sponsored by institutional proponents and excessive compensation[3] prior to the proposal experience a significant decrease in excessive CEO pay (decrease of $2.3 million). Fortin et al. (2014) observe increased pay-performance-sensitivity after performance-focused shareholder proposals but no such effect after shareholder proposals not focused on performance.

Overall, the results suggest that shareholder proposals became more effective over time. This may be due to an increased willingness of boards to satisfy shareholders needs or simply due to the fact that later studies concentrate on very specific shareholder requests (for example by asking specifically for performance sensitivity), which are more likely to get accepted. A summary of the mentioned papers can be found in the table "Shareholder proposals" in Appendix 1.

"Just Vote No" campaigns

Cai et al. (2009) find that even though voting support for directors is generally high, fewer votes are associated with subsequent lower excessive CEO compensation. Similar results are provided by Fischer et al. (2009). However, the more recent study of Armstrong et al. (2013)

[3] Compensation which cannot be explained by standard economic determinants like company performance, size and future prospects (also called excessive pay, see chapter 2.4 for references and chapter 2.5 for the measure's implications for the justification of outrage).

does not find effects of director elections on subsequent CEO compensation. In comparison to the three papers above, only Ertimur et al. (2011) examine a “Just Vote No” campaign. In this case, votes are withheld with the outspoken intent to influence management compensation. The study of Ertimur et al. (2011) finds strong evidence for compensation changes. According to their study, there is a 38% decrease in CEO compensation after a “Just Vote No” campaign. The impact of such a campaign may be more significant than the simple withholding of votes as it is more publicized and therefore more harmful to the directors’ reputation. A summary of the mentioned papers is provided in the table “”Just Vote No” campaigns” in Appendix 1.

Voting upon management-sponsored proposals

While there are some studies examining shareholder voting behavior as a function of current compensation (see Morgan and Poulsen (2001) and Morgan et al. (2006)), so far only two papers are looking into the consequences of rejected compensation proposals for the rest of the compensation plan. Martin and Thomas (2005) find a significant relationship between the percentage of votes against the proposed option plan and a decrease in salary (both absolute and relative) as well as a significant decrease in the percentage of option pay. On the other hand, Armstrong et al. (2013) find that, even though voting support is negatively associated with existing excessive compensation in the company, there is little evidence that either lower shareholder voting support for or outright rejection of proposed equity compensation plans leads to a decrease in the level or composition of future CEO incentive compensation. The results are therefore inconsistent. A summary of the mentioned papers can be found in the table “Management sponsored proposals” in Appendix 1.

Investor activism via SEC Schedule 13D

Klein and Zur (2009) investigate confrontational activist campaigns by looking at SEC Schedule 13D filings with the stated intent of influencing the firm’s policies. Targeted firms usually benefit from a positive (longer term) market reaction and activists frequently succeed their stated goal. Even though this form of shareholder activism seems to have an impact on company outcomes, very few filings target CEO compensation issues (2 filings out of 305). Director compensation, on the other hand, has been targeted quite often (76 filings out of 305). However, Klein and Zur (2009) do not examine changes in compensation, and therefore the measure cannot be evaluated for its effectiveness in altering executive compensation. The mentioned paper is summarized in the table “Investor Activism via SEC Schedule 13D” in Appendix 1.

“Say on Pay”

Carter and Zamora (2008) examine data from the Great Britain, where “Say on Pay” has been mandatory since 2002. As a reaction to negative votes corporate boards grant less dilutive stock option compensation and increase the pay-performance-sensitivity of bonuses. However, they cannot find support for the assumption that salary growth slows down. Alissa (2009) finds that British companies with excessive compensation above the sample’s average reduce compensation after negative “Say on Pay” votes, whereas companies with excessive compensation below average do not. Also, the study of Conyon and Sadler (2010) based in Great Britain cannot find empirical support for the assumption that high shareholder dissent changes level and or structure of CEO compensation. Sheehan (2010) tries a different research setting by analyzing compensation reports from Great Britain and Australia with a qualitative content analysis in search for announced compensation changes. The results are mixed: Evidence from Great Britain shows considerable change either by announcing new compensation practices or a review of current practices whereas Australian companies exhibit very little changes after low voting support. He assumes that this is due to the different credibility and history of enforcement in Australia and Britain. Ferri and Maber (2013) find that lower voting support leads to the removal of controversial CEO pay practices like high perks as well as an increased pay-performance-sensitivity – especially sensitivity to poor performance. Overall the findings from Great Britain suggest that compensation is not lowered but at least reconsidered with regards to its structure.

Insights on the effects of a binding “Say on Pay” vote – in contrast to the advisory votes implemented in Great Britain – are provided by Monem and Ng (2013) and Faghani et al. (2015). Both studies examine Australian companies after the “Two-Strikes Rule” introduced in 2011 (Dissent in two subsequent “Say on Pay” votes may have major consequences for the board, see chapter 2.3.1 for more detail). Monem and Ng (2013) find that companies with a “first strike” subsequently improve CEO compensation to be more significantly positively related to stock returns. Faghani et al. (2015) additionally examine changes in compensation levels. They confirm the increased proportion of performance-based compensation and find that companies having received a “first strike” engage relatively more frequently in larger pay reductions (reducing one or more components). The binding “Say on Pay” established in Australia seems, therefore, to be effective.

Research from the US is picking up more recently as “Say on Pay” was only introduced in 2009. The early US study of Burns and Minnick (2013) does not yet examine “Say on Pay” voting outcome, but the consequences of receiving shareholder proposals asking for the introduction of “Say on Pay”. The tackled companies use less cash but more incentive-based compensation after the proposals. Examining the findings after the first year of “Say on Pay”

Thomas et al. (2011) come to the conclusion that companies alter their disclosure filings or compensation practices even before the “Say on Pay” vote is cast if the proxy advisor company Institutional Shareholder Services (ISS) gives a negative voting recommendation. Proxy advisor companies provide research and analysis to shareholders to support their voting decision. Similarly, Larcker et al. (2015) and Balsam et al. (2016) state that companies change compensation prior to the “Say on Pay” vote so to prevent negative attention after low voting support. Larcker et al. (2015) provide evidence that the compensation is shifted towards features known to be favored by proxy advisory firms. According to Balsam et al. (2016) companies which had to introduce “Say on Pay” reduced the compensation level and increased the performance sensitivity prior to the initial vote cast in 2011. For companies with excessive CEO compensation, the effect of decreasing pay is even more pronounced.

As only approximately 4% of all public companies received a negative vote in 2012 and 2013 proxy seasons, the US-based paper of Iliev and Vitanova (2015) does not use the voting outcome as a measure for dissent. Instead, they utilize the fact that some companies were provided a two-year exemption from holding a “Say on Pay” vote to isolate the causal effect of holding advisory shareholder votes on executive compensation. Companies forced to implement “Say on Pay” right away exhibited rising total CEO pay and higher cash bonuses. Brunarski et al. (2015) find that overcompensated managers in companies with low voting support engage in practices to please their shareholders, for example by increasing dividends or increasing corporate investment. However, according to their study, excessive compensation even increases. Kimbro and Xu (2016) find that boards respond to negative votes by at least reducing the growth of CEO compensation.

The generally high voting support suggests that shareholders might not be the ones most upset about compensation practices. Overall findings are mixed but suggest that rather the structure than the level of compensation is influenced. Summaries of all mentioned papers are provided in the table “Say on Pay” in Appendix 1.

2.4.2 Public campaigns

Even though the Swiss campaign against excessive compensation initiated by entrepreneur Thomas Minder (“Abzocker-Initiative”) sparked major media coverage, so far there is only little scientific work examining its effects. This may be due to the fact that such campaigns have more indirect effects. The Swiss campaign was supported by 68% of citizens and initiated major legislative changes. “Say on Pay” was adopted, certain pay components banned, election procedures altered and criminal sanctions introduced (Eklund (2015)). Research examining the direct effect of the campaign or other campaigns on executive compensation could not be found. Research in the area of governance suggests that public shaming may be

successful. Wu (2004) investigates an annual “Focus List” published by the largest state pension fund in the US, the California Public Employees’ Retirement System (CalPERS), which publicly names companies with poor governance. Wu finds great success of the campaign. Despite the fact that so far there is no scientific evidence that public campaigns have a direct impact on compensation, an indirect effect is likely.

2.4.3 Media coverage

Johnson et al. (1997) provide the first study examining the effects of compensation related media coverage on executive compensation. They find that negative coverage on compensation leads to a smaller subsequent increase of total compensation and larger pay-performance-sensitivity. Core et al. (2008) extend the scope of Johnson et al.’s (1997) paper but fail to find evidence that negative press coverage motivates firms to substantially change executive compensation. Empirical evidence from Kuhnen and Niessen (2009) suggests that norms and public attitude shape CEO pay. They show that companies react to temporary public outcry regarding excessive executive compensation by lowering total CEO pay and by shifting away from option-based compensation towards other types of pay. Kuhnen and Niessen (2012) find that companies reduce the most criticized types of pay with the result of overall lower pay-performance-sensitivity. Controversial pay types are avoided even more when firms, CEOs or boards have stronger reputation concerns (Kuhnen and Niessen (2012)). Bednar (2012) examines both negative and positive coverage of a firm’s governance and leadership. He concludes that media coverage is unrelated to the total amount of compensation granted to a CEO. Nevertheless, positive coverage seems to lead to a decrease in the percentage of at-risk compensation, whereas negative coverage is associated with increased at-risk pay.

Even though there is anecdotal evidence of managers passing on compensation after public media pressure (see examples of German managers Josef Ackermann, former CEO Deutsche Bank, and Martin Winterkorn, former CEO of Volkswagen), the empirical results suggest that the media has an influence on the structure but not on the level of compensation.

2.4.4 Indirect effects – The effect of legislation on compensation

Overall, the findings of the previous section are mixed with regards to the effectiveness of dissent to alter compensation. Some settings suggest that public pressure leads to changes in compensation, others do not. Even if the evidence for direct effects of dissent on compensation may be inconsistent and hard to grasp, there is the possibility that outrage shapes compensation indirectly via regulation and legislation. Politicians get voted for the positions they take during election campaigns and campaigns not supported by the voters – even though

they might be sensible from an economic point of view – usually get punished. If politicians perceive it necessary to express concern about executive pay and initiate further regulation, the topic is surely of public interest (Johnson Porter Shackell (1997), Dyck and Zingales (2002), Kuhnen and Niessen (2012), Murphy (2012)).

Murphy (2012) provides a very good overview of legislation influencing compensation in the US. According to his observations, policy responses are nearly always initiated by some kind of outrage over perceived abuses. The introduced legislation then aims at 1) enhancing disclosure or at limiting either 2) the level of pay or 3) the use of certain pay components. Due to reasons of brevity, I concentrate on legislative changes in the US, as an example of the Anglo-American one-tier board system, and Germany, as an example of the two-tier board system. The next section starts with disclosure legislation and ends with the legislation regarding the level and composition of executive pay.

2.4.4.1 Enhancing disclosure

The request for increased compensation disclosure started in 1932 in the US. Railroad companies, which had to be bailed-out by the state, were asked to disclose the names of executives making more than $10,000 per year. Outraged over the compensation levels, the government's Reconstruction Finance Corporation required companies receiving government assistance to reduce executive compensation. Soon after, the Securities and Exchange Commission (SEC) was established and started overseeing all companies listed on the New York Stock Exchange (NYSE). All listed companies were required to disclose the compensation of the three highest-paid executives. Many amendments – including perquisite disclosure in the 1970s, enhanced option grant disclosures in 1992, 2002 and 2006 and major disclosure changes in 2010 – and similar regulation in other countries followed. Canada adopted disclosure rules in 1993, followed by the United Kingdom in 1997, Ireland and South Africa in 2000 and Australia in 2004. In May 2003, the European Union Commission (EC) issued an "Action Plan" recommending that all listed companies in the European Union (EU) report details on individual compensation packages by 2006. Germany enacted the regarding legislation in 2006, and by 2011 most of the other EU countries passed rules requiring similar disclosure.

In the US, disclosure enhancements are often triggered by outrage over some kind of abuse of the regarding pay component. In 1977 it was the outrage over "three-martini lunch, yachts and hunting lodges" that managers received as perquisites (Murphy (2012), p. 58), in 1992 the outrage over the widespread exercise of valuable options while the reduction of overcapacities lead to layoffs, in 2002 the accounting scandals at Enron, WorldCom and other companies and 2006 the option backdating scandal. In the extended disclosure rules of 1992, the SEC

requested a table summarizing the major pay components over the past three years, tables for option grants, holdings and exercises, a description of the compensation philosophy employed and a graph providing insight into the company's stock performance in comparison to the overall market and the company's peers (Murphy (2012)). *The Sarbanes Oxley Act*, as a consequence of the accounting scandals, obliged executives to disclose new stock option grants within two business days of the grant (Murphy (2012)). Particularly the backdating scandal shook the public confidence in companies and their compensation systems (Ertimur et al. 2012)). Erik Lie of the University of Iowa and the Wall Street Journal revealed that a considerate amount of companies falsified their stock option agreements by entering the grant date with the lowest possible price. More than 140 companies were under investigation (Murphy (2012)). By 2006, new disclosure rules aimed at hindering backdating by not only requesting the exercise prices for option grants, but also the grant date and its market price as well as the date that the board approved the grant. As option backdating means committing accounting fraud, the scandal was followed by criminal prosecution by the SEC, which filed civil charges against 24 companies and 66 individuals until 2009 (Murphy (2012)). Finally, the financial crisis gave rise to further increased disclosure demands with the introduction of the D*odd-Frank Wall Street Reform and Consumer Protection Act*, also called *Dodd-Frank Act*, in 2010 (Murphy (2012)). Covering all financial institutions, it asks for additional information on the link between financial performance and the resulting compensation, as well as a ratio expressing the relation between CEO compensation and the median pay of all other employees (which will start to take effect in 2017). Furthermore, it introduced an advisory "Say on Pay" vote to guarantee that shareholders were informed about the implemented compensation system and to give them a formal means of expressing concerns (Murphy (2012)).

In Germany, compensation disclosure was not so clearly triggered by outrage. While the *German Corporate Governance Code* ("Deutscher Corporate Governance Kodex", DCGK), a set of rules compiled by leading industry representatives and scholars, already requested individual disclosure of management compensation in 2002, disclosure only became obligatory with the *Executive Compensation Disclosure Act* ("Gesetz über die Offenlegung der Vorstandsvergütungen", VorstOG), becoming effective on January 1st of 2006. The legislative change was induced by increased pressure from the European Union to increase the level and consistency of disclosure within Europe.

Has disclosure been a successful way of getting compensation "under control"? On the one hand, yes: McGahran (1988) finds that the disclosure rule of the SEC enables the Internal Revenue Service (a US government agency responsible for tax collection and tax law enforcement) to enforce the taxation of perks as income (as intended by the Internal Revenue

Code of 1954). Even after the new tax enforcement perks are still part of compensation plans, but a shift towards more cash compensation is observable. The disclosure requirements of the *Sarbanes-Oxley Act* of 2002 seem to have put an end to the option backdating activities (Heron and Lie (2006) and Narayanan and Seyhun (2005)). Vafeas and Afxentiou (1998) state that the new SEC compensation disclosure rule of 1992 makes pay significantly more sensitive to accounting and market performance than before.

Unfortunately, it cannot be concluded that it helped to limit the overall levels of compensation. The studies of Craighead et al. (2004) and Zhou and Swan (2006) shed light on the consequences of disclosure in the Canadian context. Zhou and Swan (2006) find a positive effect on incentives but no change in pay levels as such. Craighead et al. (2004) conclude that lacking pay-performance sensitivity in widely held firms is reduced after the mandated disclosure. Furthermore, stock option grants become more dependent on return on equity. However, at the same time, the authors observe a general and significant increase in CEO cash compensation for all firms after controlling for firm size, growth, and inflation. This is in line with the findings from Dierynck and Renders (2014): Disclosure leads to increased compensation for managers in the lower part of the compensation distribution – probably due to social comparison – but also to a decreased compensation in the upper part of the compensation distribution. Grinstein et al. (2011) observe that the 2006 disclosure rules on perks had a twofold effect. While companies disclosing the perks for the first time suffered from negative stock market reactions and consequently reduced perks in the following year, companies which already had disclosed perks at an earlier point in time increased their perks to meet their peers. German data on the effects of the *Executive Compensation Disclosure Act* ("Gesetz über die Offenlegung der Vorstandsvergütungen", VorstOG) provides a similar finding. The new disclosure rule leads to increased total compensation for executives who did not have access to compensation information prior to the legislation.

2.4.4.2 Limiting certain compensation components

Legislation regarding specific kinds of compensation also leaves its traces. Especially the attractiveness of options has been heavily affected by regulation and taxation over the course of the years. In the US, options were subject to legislative changes in the 1934 *Securities Act* (which made options unattractive due to high taxes upon exercise together with an obligation to hold the gained shares for 6 months), the 1950 *Revenue Act* (which allowed the option holder to pay taxes only after selling the shares gained through option exercise and led therefore to an increase in the use of stock options by 50% until 1960) and the 1964 *Revenue Act* (which reduced the attractiveness of options again by obliging the option holder to hold the gained stock for 3 years, forbidding the repricing of options and limiting options to 5 years).

Previous to the 1964 legislative change there was considerable controversy over the $4.2 million in gains from exercising stock options in 1963 and the selling of nearly 200,000 shares acquired through earlier exercises by Chrysler executives (Murphy (2012)). To circumvent tax effects which make certain forms of pay less attractive companies frequently got creative to find other forms of pay. As the SEC ruling of 1976 made stock appreciation rights (SARs) more attractive (by exempting them from the Section 16(b) short-swing profit prohibition), the period between 1976 and 1991 was characterized by widespread use of SARs as executive compensation. However, when the SEC ruling of 1991 eliminated the disadvantage of normal options (until then the option owner had to hold the gained shares for 6 months after the option was exercised but the tax was due immediately) SARs immediately lost their attractiveness and vanished from sight. Hite and Long (1982) observe similar effects for the shift from qualified stock options to non-qualified stock options. Hall and Liebman (2000) reject the hypothesis that the changes in tax advantages influenced the composition of pay.

But also other forms of compensation gained negative attention. As options were less attractive during the 1970's, shareholder-subsidized perquisites "such as low-interest loans, yachts, limousines, corporate jets, club memberships, hunting lodges and corporate retreats at exotic locations" (Murphy (2012), p. 57) gained popularity. The perceived abuses gained opposition from shareholder activists, the SEC and Internal Revenue Service (IRS) (which is the US government agency responsible for tax collection and tax law enforcement) as well as President Carter. This led to the elimination of tax deductions for entertainment facilities in *Revenue Act* of 1978 (furthermore additional disclosure on perks was requested, see section on disclosure enhancements).

McGahran (1988) finds that the disclosure rule of the SEC enabled the IRS to enforce the taxation of perks as income (as intended by the *Internal Revenue Code* of 1954). Perks are still part of the compensation even after the new tax enforcement, but a shift towards more cash compensation was observable.

In the early 1980's, the market for (hostile) takeovers and mergers emerged, forcing companies to improve performance and cutting back overcapacity. Among several other means of hindering takeovers, this gave rise to so-called "golden parachutes" which secured the managers in charge a payment following a successful change in control. Controversies evoked because these payments factually increased the cost of takeovers and bribed the existing management into pursuing a change of control without any involvement of the shareholders. After the $4.1 million payment to William Agee, CEO of Bendix, in 1982 the Congress aimed at discouraging golden parachutes by limiting their tax deductibility by introducing two new sections to the tax code via the *Deficit Reduction Act* in 1984 (Murphy (2012)). Section 280(G) limited the deductibility of golden parachute payments to three times

the average taxable compensation. If the payment exceeded this amount, two things happened: first, only the amount equal to the average taxable compensation could be deducted from taxes. Second, section 4999 imposed a 20% tax on the amount above the average taxable compensation upon the recipient of the change of control payment.

Nonetheless, Alpern and McGowan (2001) observe that the regulation both increased the diffusion of golden parachute agreements in general and spurred innovation as companies started taking on their executives' incurred taxes (the so-called tax gross-up). Furthermore, the three times average taxable income limit for golden parachute payments became the new standard for golden parachutes among companies.

Under the *Emergency Economic Stabilization Act* (EESA) – introduced to stabilize the struggling banks during the financial crisis – executives from companies taking part in the *Troubled Asset Relief Program* (TARP) were forced to waive their rights under the existing compensation plans and already existing golden parachute agreements were cut down to three times the executives' average taxable compensation over the past five years. The bailouts considerably discomfited the taxpayers and additional outrage was spurred when it came to light that the bank Merrill Lynch, just before merging with the Bank of America, had paid a total amount of $3.6 billion in bonuses to its 36,000 employees with nearly one fourth of the amount spent on the top 149 (Cuomo (2009)). This amount seemed inappropriate because Merrill Lynch had lost $27 billion in 2008 and had received substantial government support through the TARP bailout (de la Merced and Story (2009)). It is very likely that this fueled the attempt of further regulating executive pay beyond the financial crisis. In 2010 the *Dodd-Frank Wall Street Reform and Consumer Protection Act*, also called *Dodd-Frank Act*, extended the claw-back claims towards all financial institutions.

The financial crisis also induced legislation in other countries. Following outrage over bankers' compensation and government bailouts, the German government introduced the *Act on the Appropriateness of Executive Compensation* ("Gesetz über die Angemessenheit der Vorstandsvergütung", VorstAG) in 2009, which regulates executive compensation for any company listed on the German stock exchange. The law requires the companies to guarantee a long-term orientation of executive compensation. Further, the compensation has to be adequate regarding the executive's tasks and performance as well as with regards to the company's situation. It must not exceed the prevailing level of compensation. Finally, the law also facilitates the reduction of pay in the case of deteriorated company performance. Following the regulation, companies started introducing bonuses which were based on multi-year periods to guarantee long-term orientation.

2.4.4.3 Limiting the level of pay

After the first attempts at influencing pay via disclosure requirements and the regulation of specific pay components, the US attempted the regulation of overall pay levels. During the 1992 presidential campaign in the USA, all candidates addressed voters' concerns about rising inequality and job losses due to offshoring and relocations of production (Murphy (2012)). CEO pay became again a topic of public debate and all candidates criticized the existence of "excessive" executive pay while at the same time workers lose jobs (Murphy (2012)). In 1992 the newly voted Clinton government proposed a change in tax legislation, which limited the deductibility of compensation and therefore aimed at directly restricting the compensation level. Section 162(m) was approved by Congress in 1993 as part of *Omnibus Budget Reconciliation Act*, which limited the tax-deductible amount of non-performance-based compensation to $1 million (Murphy (2012)). Compensation was only acknowledged as performance-based if the underlying goals were determined by an independent compensation committee consisting of two or more outside directors and if the goals and terms of contracts have been disclosed to and approved by the shareholders previously. Options only qualified as performance-based compensation if their exercise price was not below the market price on the grant date (Murphy (2012)). Furthermore, the Congress enacted tax increases from 31% to 39.6% for income above $250,000 and from 31% to 36% for income between $140,000 and $250,000 (Goolsbee (1997)).

Johnson et al. (1997) find that companies shift compensation away from long-term toward short-term incentive compensation in response to the $1 million pay cap legislation. However, pay-for-performance of cash compensation is not more pronounced nor is the intended goal – reducing CEO pay – achieved. Hall and Liebmann (2000) agree that the level of compensation did not decrease but find at least a minor substitution effect towards more performance-based compensation. Similarly, Perry and Zenner (2001) find no reduced CEO compensation growth. While companies affected by Section 162(m) often reduce CEO salaries to $1 million or below, the total compensation in most of these companies rises. However, performance sensitivity rises. Rose and Wolfram (2002) conclude that there is only a small effect on total compensation levels, growth rates or pay-for-performance sensitivity of CEO compensation.

Over the course of time legislation also aimed at making executives responsible for the outcomes of their management by enabling companies to claim back compensation. The *Sarbanes Oxley Act* of 2002, introduced after the accounting scandals of Enron and WorldCom, allowed claw-backs on the CEO's and CFO's bonuses, equity-based compensation or any other profits realized in the case that financial statements had to be restated. The *Emergency Economic Stabilization Act* of 2009, which was enacted during the financial crisis, extended claw-backs towards the top 5 executives for companies in the

Troubled Asset Relief Program (TARP). Furthermore, it reduced compensation expenditures for executives by limiting the tax deductibility of compensation to only $500,000 for each of the top 5 executives. Murphy (2012) notes that even though compensation regulation over the course of time mainly produced unintended side effects, the "draconian pay restrictions" (Murphy (2012), p.108) indeed led to increased effort to pay back the amounts borrowed from the government as soon as possible to allow higher bonuses. After the crisis was overcome, the *Dodd-Frank Wall Street Reform and Consumer Protection Act* of 2010, also called *Dodd-Frank Act*, established claw-backs for all financial institutions, not only for those taking part in the TARP. Whenever a company is subject to a restatement, any current or former executive may be obliged to pay back compensation received during the previous three years.

As already described in the previous section, Germany introduced the VorstAG as a reaction to the financial crisis and the perceived abuses in executive pay. While the law makes some points about the compensation's adequacy, it does not specifically limit the level of compensation itself. The law only requires compensation not to exceed the usual level. As it does not provide specific guidelines, the new regulation has had more effect on compensation structure than on overall compensation levels (graphs on the development of compensation level and structure in Friedl et al. (2016)). Regulation beyond the two introduced laws has not yet been introduced. Overall, legislative responses to executive compensation seem to be more prevalent in the US than in Germany.

2.5 Is outrage justified or an unwanted interference?

The outrage constraint is effective when compensation is altered in fear of or after the occurrence of outrage. However, there has been an inconclusive debate about whether this activism is perceived as valuable and desirable. Managerial power supporters assume that outrage will make directors more attentive to shareholder interests and negotiations with executives more effective. In theory, this should lead to higher pay-performance-sensitivity and mitigate the growth and excessiveness of executive compensation. While managerial power supporters see outrage as means to limit rent extraction, other researchers view the interference of outsiders more critical. Parties such as employees, labor unions, consumer groups, the media, and politicians are perceived as "uninvited guests", which have "no real stake in the companies" (Murphy (2012), p. 47.) Jensen and Murphy (1990) fear that these hinder the board in setting up individual and innovative incentive contracts (Jensen and Murphy (1990)). Some argue that activism undermines the board's authority (Bainbridge (2008)) and limits the effectiveness of boards and executives in managing the company (Jensen and Murphy (1990)). Furthermore, there is doubt about the shareholders' and outsiders' willingness and ability to identify poorly designed pay packages. Jensen and Murphy (1990) feel that the

media engages rather in sensationalism than in external governance and that labor unions use executive compensation “as emotional justification for increased [union] demands in labor negotiations” (Jensen and Murphy (1990), p. 254). Bainbridge (2008) and Gordon (2009) fear that “Say on Pay” in fact leads to increased power of voting advisors instead of improving compensation contracts.

To provide a substantiated answer to this question, it is vital to identify the deeper rooted question in whose interest managers are governing the company. While the **shareholder maximization theory** emphasizes the satisfaction of shareholders, the **stakeholder value approach** aims to give all interest groups a voice. I elaborate on the two opposing theories in chapter 2.5.1.

If a company concentrates on shareholder value maximization other forms of and reasons for outrage will be perceived as justified than if a company follows the broader approach of stakeholder orientation. Within the justified reasons for outrage, one can identify two groups: one being more concerned about compensation malfunctions, which affect the compensation’s **economic** validity (which is vital for shareholder value maximization) and the other one more concerned about **fairness** issues and distribution of income within the society. While the first one is usually more pronounced among shareholders and finance scholars, the second can often be observed from politicians, labor unions, the media and the society (but something also from shareholders, see Ertimur et al. (2011)). As seen in previous chapters, both shareholders and other stakeholders may express dissent over executive compensation. Stakeholders concerned about social equity may hope for an improvement in the compensation’s fairness. Shareholders, on the other hand, may be more focused on replacing faulty compensation contracts with better incentives. Both groups get upset about lacking pay-performance sensitivity. However, the underlying reason may be a different one. I will elaborate more on this topic in chapter 2.5.2.

Finally, dependent on the outrage’s effect on executive compensation, shareholders will evaluate its occurrence differently. A positive stock market reaction after changes in executive compensation indicates approval by shareholders. On the other hand, if changes in compensation or regulation are perceived to be disadvantageous for shareholders, a negative stock market reaction is to be expected. Therefore, I examine valuation consequences of legislation and compensation changes induced by outrage in chapter 2.5.3.

Figure 1 depictures the framework developed for evaluating outrage based on the purpose of the company.

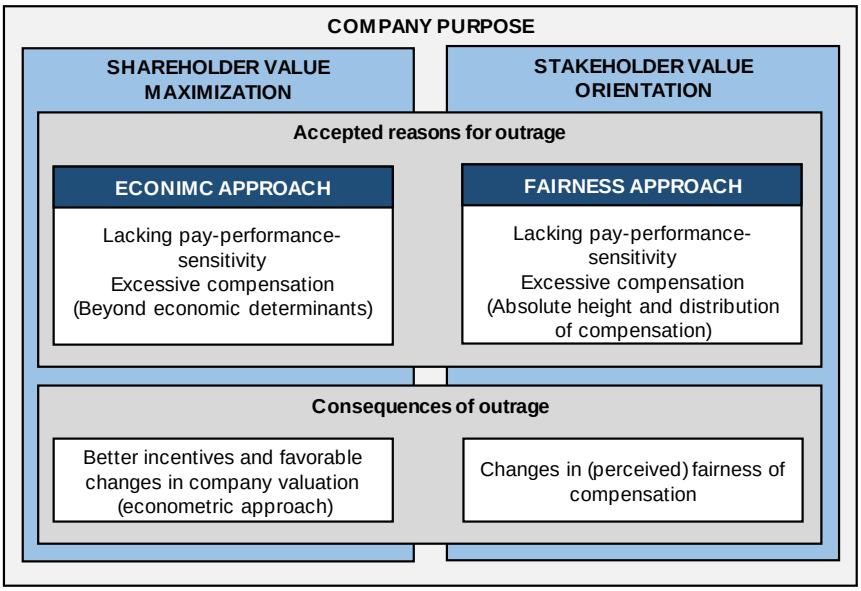

Figure 1: Framework for evaluating outrage

2.5.1 The company purpose – Stakeholder orientation versus shareholder value maximization

Defining the purpose of a company and in whose interest it should be governed has been subject to ongoing debate among scholars, public policy makers, and courts. The finance literature and certain fields of education such as business administration perceive the idea of **shareholder value maximization** as the most convincing goal. Shareholder value maximization follows the idea of Adam Smith's (1776) "invisible hand". According to the idea of the invisible hand, the society benefits more from everyone pursuing their utility maximization instead of actions directly intended at maximizing the overall society's utility. In 1970, Milton Friedman expressed a similar objective for corporations: by following the maximization of shareholder value all other stakeholders are looked after (Friedman (1970)). Scholars see particularly the maximization of multiple corporate goals related to stakeholder theory as a physical impossibility. The partly opposing interests of different stakeholders may leave the organization either without a clear direction or require a clear prioritization between the different interests so to provide a guideline for the management (Jensen (2002)). Sundaram and Inkpen (2004) come therefore to the conclusion that shareholder value maximization is "unambiguously the preferred goal among available alternatives" (Sundaram and Inkpen (2004), p. 359). Fiss and Zajac (2004) find that CEOs with a background in economics or law are more likely and more thoroughly adapting a shareholder value approach within the company than CEOs with other backgrounds.

Freeman et al. (2004) on the other hand understand **stakeholder value orientation** not in opposition to shareholder value maximization, as shareholders are in fact stakeholders themselves. They perceive stakeholder value theory to be the more holistic and broader

perspective which guarantees that no needs are left out. Furthermore, they believe that managers are quite capable of deciding in many people's interests as a sustainable and successful business needs to be aware of customer's needs and public perception anyways. Pure shareholder value maximization, on the other hand, may lead to more short-term oriented behavior. This is why especially after crises and corporate scandals a re-evaluation and questioning of the shareholder maximization theory is more pronounced.

Berman et al. (1999) identify two distinctive perspectives within the stakeholder value approach: 1) the **strategic stakeholder approach** and the 2) **intrinsic stakeholder approach**. The first one, strategic stakeholder approach, acknowledges stakeholders' needs to reach the intended goal of maximizing shareholder value. This view is in line with Jensen's (2002) enlightened value maximization which aims at maximizing the long-run (shareholder) value of the company. By aiming to achieve long-term value maximization, companies are forced to take care of the most strategic stakeholders such as employees and customers to be successful. The single goal enables managers to make the necessary tradeoffs among its stakeholders. The second approach, the intrinsic stakeholder approach, cares about stakeholders from a more normative and moral viewpoint (Berman et al. (1999)).

In the US, the business corporation's objective has been defined in the Dodge vs. Ford Motor Company case of 1919 in which the Michigan Supreme Court stated that a "business corporation is organized and carried on primarily for the profit of the stockholders". Adams et al. (2011) therefore conclude that the law only allows directors to consider other interests as long as they contribute to the long-term interests of shareholders. In Germany, a country which is considered to be less market-oriented but more relationship-oriented (Rose and Mejer (2003)), the corporate objective is more broadly defined. According to the German *Stock Corporation Act* (Aktiengesetz, AktG), executives and directors are obliged to take their decisions to maximize the benefit of the corporation ("zum Wohle der Gesellschaft", § 93 Abs.1 S. 2 AktG and § 116 S.1 AktG together with § 93 Abs.1 AktG). "For the benefit of the corporation" is not exclusively directed towards the satisfaction of shareholders but is often said to include the interests of other stakeholders. The DCGK (which obliges companies via § 161 AktG to comply with the recommendations or explain why they don't) makes this clearer by stating in section 4.1.1 that the "Management Board is responsible for independently managing the enterprise in the interest of the enterprise, thus taking into account the interests of the shareholders, its employees and other stakeholders, with the objective of sustainable creation of value". Additionally, German law allows employees of bigger companies to express a say on corporate decisions. This is institutionalized via the election of employee supported directors (*MitbestimmungsG*, *DrittelbG*). Overall German law is clearly supporting a strategic stakeholder orientation by Berman et al. (1999) as described earlier in this document.

There are numerous attempts to prove whether shareholder value or stakeholder value orientation should be favored (Bottenberg et al. (2017)). Sundaram and Inkpen (2004) gather evidence that the shareholder value-oriented market in the US outperformed stakeholder value oriented countries like Germany or Japan in terms of employment, the allocation of companies with future technologies such as the internet, biotechnology, communications, computers and nanotechnology, and stock market development. Also from a legal perspective, they perceive the US to be more advanced as Germany and Japan: questionable payments abroad have been regulated way earlier, US companies have to provide information on compliance with environmental regulation and lawsuits initiated by foreign stakeholders affected by the conduct of US corporations are enabled by US courts. They also cite findings from other researchers to reinforce their impression that European countries are less likely to use ethics codes (Langlois and Schlegelmilch (1990)), engage in corporate donations (Bennett (1998)) or in corporate social responsibility (Maignan and Ralston (2002)). In practice, shareholder models have dominated for many years (Bottenberg et al. (2017)), and a global convergence toward the Anglo-American model of shareholder orientation was observable (Yoshikawa and Rasheed (2009)). The model of Allen et al. (2015) predicts that shareholder value-oriented companies have higher firm value in industries characterized by demand uncertainties.

On the other hand, stakeholder orientation should lead to higher overall firm value in industries that primarily face marginal cost uncertainties (Allen et al. (2015)). Beltratti and Stulz (2012) state that banks with more shareholder-friendly boards performed significantly worse during the financial crisis and Fahlenbrach and Stulz (2011) find a similar effect for banks with CEOs well aligned with shareholders. Especially for companies “too big to fail”, the pure orientation towards profitability leads to the taking of high risk – at the expense of other stakeholders (namely the state with the taxpayer’s money) who then have to bail out the companies if the risky strategy does not work out (Panageas (2010)). According to Shin and You (2016), CEOs gain higher compensation the more they communicate shareholder value. This is even more pronounced in companies with stronger shareholder activism. Findings from Lorsch and MacIver (1989) and Leblanc and Gillies (2005) suggest that directors in the US, despite clear shareholder value orientation, often account for other stakeholders’ interests.

While the scientific debate has not concluded yet but is distinctly leaning towards long-term shareholder value maximization (similar to the strategic stakeholder approach, Berman et al. (1999)), a look into corporate practice provides further insights. Some CEOs doubt the prevalence of shareholder value maximization. Henry Ford stated he wanted only to make a reasonable profit and rather employ more people with a good wage than maximize shareholder profits and dividends (Nevins and Hill (1957), p. 97). Shareholders sued him for his understanding of business. In the already lawsuit mentioned above, the Michigan Supreme

Court forced Ford to act in the interest of shareholders. Jack Welch, former CEO of General Electric expressed his opinion a little more drastic: "On the face of it, shareholder value is the dumbest idea in the world … Shareholder value is a result, not a strategy … your main constituencies are your employees, your customers, and your products." (Financial Times (2009)). Jack Ma, CEO of Alibaba, prioritizes “customer number one, employee number two, shareholder number three” (Logan (2014)). John Mackey, Co-CEO of Whole Foods Market, and Marc Benioff, Chairman, and CEO of Salesforce, clearly support stakeholder value views and would like to see companies contributing more to improving the state of the world (Mackey and Sisodia (2013) and Benioff (2015)).

According to shareholder value maximization, the only group with a legitimate interest in a company’s compensation practices are shareholders: Compensation expenditures affect shareholder wealth directly and indirectly as the compensation sets certain incentives which affects their investment. If companies follow a stakeholder value view, especially an intrinsic one, they should be interested in criticism from all of their stakeholders. This is particularly true when companies understand themselves as being part of the society they want to contribute to, like for example Wholefoods. But even in a lighter version – coming from a strategic stakeholder value approach – taking stakeholders’ concerns into account might pay off by building trust within the society the companies are embedded in. Nonetheless, the motives behind the criticism have to be evaluated, a topic on which I will shed light in the next section.

2.5.2 Reasons for outrage and the underlying motives

Apart from the question whose outrage is welcome and justified, there is also an inconclusive debate about what one should be outraged about. Research has provided insights into the determinants of dissent as the first step towards understanding outrage. Leaving aside obvious infringements of fairness norms like in the case of option repricing, the compensation characteristics examined in studies can be divided into 1) **level of compensation** (see Thomas and Martin (1999), Morgan, Poulsen and Wolf (2006), Carter and Zamora (2008), Ertimur, Ferri and Muslu (2011), Conyon and Sadler (2010)), 2) **excessive compensation** (see Core, Guay and Larcker (2008), Alissa (2009), Ertimur, Ferri and Muslu (2011) and Fortin et al (2014)) and 3) **composition of compensation** (which may lead to lacking pay-performance-sensitivity, see Carter and Zamora (2008)). All three characteristics have triggered dissent but the underlying motives are very different ones. Especially, the differentiation between high and excessive compensation is an important one as politicians and scholars equally struggle to come up with an amount which marks the line between adequate and excessive. There are two very distinctive approaches to defining excessive compensation, which I call the **economic approach** and the **fairness approach**.

The economic approach understands compensation to be excessive if compensation is not sensitive to corporate performance and other standard economic determinants of pay. To measure compensation beyond the adequate level an econometric model for "just" compensation is defined and calculated with the help of variables such as firm size, growth opportunities, stock return, accounting return, tenure and industry controls. This econometrically estimated compensation is then netted against the actually paid compensation to receive the excessive compensation as the remaining residual. These so-called benchmark models follow models used in Coughlan and Schmidt (1985), Smith and Watts (1992), Core, Holthausen and Larcker (1999) and Murphy (1999). In recent years the use of this variable has become ever more prevalent as it offers a way to distinguish between sheer height and excessiveness of compensation. The findings are mixed. Results from Core et al. (2008), Alissa (2009) and Fortin et al. (2014) suggest that press and shareholders are capable of distinguishing between justified and excessive compensation. On the other hand, Core et al. (2008) also state that option exercises attract major negative attention in the year of exertion even though their value is linked to multiple years throughout the option program. Ertimur et al. (2011) find that shareholder activists target companies for higher CEO pay without distinguishing whether this pay is excessive or not. The authors call this an unsophisticated approach and assume that "many activist regard high levels of CEO per se as "excessive" from a social equity standpoint" (Ertimur et al. (2011), p. 537).

This leads to the second approach, the fairness approach, which perceives compensation to be excessive from a distributive, equity and moral perspective. Setting a threshold for excessive compensation is more difficult in this setting. Is it a multiple of average employee income that should not be crossed? Or a multiple of the lowest earning worker income? Is there an absolute amount that can be identified as "too much"? Anecdotal evidence suggests that stakeholders seem to get particularly unhappy about high compensation if they perceive a double standard to be applied. A flight attendant complained about compensation policies at the US Airways towards the New York Times: "It's outrageous that when they receive their large salaries and bonuses and when the airline continues to prosper in a strong economy, they expect us to take a pay cut and accept concessions." (Greenhouse (2000), also cited by Kuhnen and Niessen (2009) p.12-13). Outrage over executive pay peaked in Germany, especially after the financial crisis. During the crisis, banks had to be bailed out by the state with taxpayers' money, but bonuses started to pick up barely after the crisis had been overcome (Die Zeit (2010)). Justice research provides further insights into this phenomenon. It defines the concept of moral outrage as "anger provoked by the perception that a moral standard – usually a standard of fairness or justice – has been violated." (Batson et al. 2007). Executive pay can infringe fairness norms by either harming the equity or the equality principles (Rost and Weibel (2013)). While the equity principle manifests itself in the request for pay for

performance (those who perform better deserve higher payment), the equality principle asks for the equal treatment of everybody (Rost and Weibel (2013)). Cook and Hegtvedt (1983) break it down into equity, distributive and procedural justice. While the first one is concerned about the fair exchange, the second requests fair allocation and the latter fair procedures.

Outrage over executive compensation can usually be explained by the economic and or the fairness approach. On the one hand, the compensation's composition can lead to lacking pay-performance sensitivity. The pay, therefore, fails to be adequate from an economic point of view. On the other hand, compensation can be unfair in the sense of social equity, for example, due to extremely dispersed income distribution. Other components may be perceived as frivolous, such as a private airplane for example. Both can lead to moral outrage from a fairness perspective.

Empirical evidence is mixed whether current pay is linked to performance and therefore effectively sets incentives (see Core et al. (1999), Mehran (1995), Perry and Zenner (2001), Yermack (2006), Carpenter and Sanders (2002), Hall and Knox (2004)). Often enough incentive pay leads to misalignment, as the performance indicators are manipulated rather than improved through sustainable business actions (see for example literature stream on causes of the financial crisis: Adams (2009), Bebchuk et al. (2010), Fahlenbrach and Stulz (2011), Murphy and Jensen (2011)). Especially options or equity pay are often mentioned in the same breath with earnings management (Bergstresser and Philippon (2006), Burns and Kedia (2006), Peng and Röell (2014), Cornett et al. (2008)). This leads to disapproval from both the economic as well as the fairness perspective. Rost and Weibel (2013) show that higher CEO performance increases pay acceptance, but even if CEOs deliver on all performance indicators, participants in experiments still judge their pay to infringe social norms. 64% of all judgments are still negative (Rost and Weibel (2013)). Results provided by Tannenbaum et al. (2011) show that participants in experiments preferred to hire a more expensive CEO when the alternative candidate requested a frivolous perk as part of his compensation package. This clearly shows that not economic reasoning but fairness is the motivation for disapproving compensation.

While criticism about excessive compensation with an economic background is usually regarded as sophisticated criticism and therefore perceived as justified by scholars supporting shareholder value maximization, criticism about the sheer level of compensation is mostly seen as a result of a poor assessment or understood as sensationalism or envy. Especially parties leaning towards shareholder value maximization, support outrage over compensation only if it is excessive from an economic point of view and a change in compensation benefits the shareholders (see Murphy (2012). It is vital to shed further light on the underlying motives of outrage. Envy indeed is not adding value, whereas concerns about fairness may very well be

a valuable factor for functioning societies. Overall, it will remain a task of researchers – especially in the field of finance – to gain a better understanding of the motives behind the seemingly "unsophisticated" outrage. The differing underlying motivation for outrage may have a significant impact on the outrage's consequences.

Harris calls it the "most consistent, convergent idea […] that the *process* must be fair" (Harris (2009), p. 151), which would satisfy the procedural justice mentioned by Cook and Hegtvedt (1983). However, compensation practices have not always been transparent and defensible. Increasing regulation regarding the process of director selection and compensation setting aim to minimize "backscratching" issues and are therefore themselves part of the outrage lifecycle.

2.5.3 Consequences for corporate valuation

Apart from identifying whether outrage is effective in limiting compensation, it is also important to understand its consequences for company valuation. While the economic reasoning for a change in compensation with a background in shareholder value maximization may lead to a more efficient compensation and therefore to increased company value, successful intervention rooted in fairness concerns may be viewed as unnecessary interference and therefore perceived negatively by the stock market. By looking into the valuation consequences of both the outrage itself as well as the compensation changes implemented after the outrage one can derive information about how the outrage is perceived by the stock market.

Event studies are an effective way of measuring the market reactions to corporate events, legislative changes or towards the occurrence of outrage. A positive market reaction means that other investors change their expectations about the company's value because they believe that the regarding the event will affect the company positively. To capture longer-term effects, one may examine long-term performance measures like the operating performance or returns to shareholders. However, in this setting, it is more difficult to guarantee that the valuation effect actually stems from the outrage and not from some other overlapping factors and events.

2.5.3.1 Compensation related shareholder activism

In the following sections, I examine the stock market reactions for measures of dissent that were introduced in chapter 2.3 to see whether there is evidence on the consequences of outrage for the company valuation. I keep the structure of chapters 2.3 and 2.4 for the ease of comparison and readability. Unfortunately, only very few papers examine stock market reactions, and even fewer apply this methodology on the setting of changes in executive compensation. Consequently, this means that many of the sections are very short.

Shareholder Proposals

Even though there is a considerate amount of studies examining the stock market reaction after governance-related shareholder proposals (see Karpoff, Malatesta and Walkling (1996), Del Guercio and Hawkins (1999), Gillan and Starks (2000), Prevost and Rao (2000), Prevost, Rao and Williams (2006), Thomas and Cotter (2007), Cai and Walkling (2011)) there is a lack of papers examining stock market reactions of proposals related to compensation. Only Fortin et al. (2014) have a closer look at abnormal stock return at the filing date of performance-focused shareholder proposals. Positive cumulative abnormal stock returns for firms targeted with these proposals give the impression that the market anticipates the potential benefit which is derived from improved manager-shareholder alignment. The missing examination of consequences of general pay-related proposals in the short and long term make it impossible to say whether this form of activism should be evaluated positively or not.

"Just Vote No" campaigns

Fischer et al. (2009) examine only the stock market reactions towards CEO turnover after the voting support for directors being low. They find that companies with a lower voting support face higher stock price reactions around CEO turnover events, suggesting that shareholders view the action taken positively. Unfortunately, there is no paper yet examining stock market reactions after changes in compensation.

Management sponsored proposals

Martin and Thomas (2005) find significantly negative cumulative abnormal returns in the 3-day period surrounding the proxy date on which the dilutive management-sponsored, executive-only stock option plan is announced. However, they do not examine the stock market reaction after the dilutive stock option plan has been voted down.

Investor activism via SEC Schedule 13D

As this form of shareholder activism has not yet been used often enough to influence executive compensation actively, there are no findings on how it is perceived by the stock markets.

"Say on Pay"

Cai and Walkling (2011) have a closer look at market reactions around the introduction of the "Say on Pay" Bill in the US. They find positive abnormal returns for companies with high abnormal CEO compensation and low pay-performance sensitivity after the announcement of the "Say on Pay" legislation. Furthermore, they examine the market reaction after a company receives a "Say on Pay" shareholder proposal. While there is on average an insignificant market reaction towards the proposals, the market reaction is significantly more negative if a

labor union proposes the change. This might be because the targeted companies were not overpaying their CEOs and the labor union's proposal was therefore perceived as interference of a special interest group with no economic background. Accordingly, voting support towards these proposals is not overwhelming and when they are voted down the market reacts positively. Ferri and Maber (2013) also examine the stock market reaction around the introduction of "Say on Pay", albeit they concentrate on the British market. Similar to Cai and Walkling (2011) they find that the regulation's announcement triggered a positive stock price reaction at firms with controversial pay practices, which weaken penalties for poor performance. Ertimur, Ferri, and Oesch (2013) investigate the market reaction towards compensation changes after proxy advisors recommend to vote against the compensation system and shareholders express their dissent in "Say on Pay" votes. Companies become more responsive the stronger the dissent is. Nonetheless, the authors do not find any market reaction to the announcement of compensation changes.

2.5.3.2 Public campaigns

So far ther is no paper examining stock market reactions around public campaigns targeting executive pay.

2.5.3.3 Media coverage

Even though there is a vast amount of papers investigating stock market reactions to media coverage in a number of settings (see for example Tetlock (2007), Fang and Peress (2009), Engelberg and Parsons (2011) and Scheufele et al. (2011) for the examination of media coverage and stock market prices, Pollock and Rindova (2003) and Liu et al. (2014) for the role of the media during IPOs, and Joe et al. (2009) for the stock market reaction after media exposure of weak governance), there is no paper so far examining the market reactions towards media coverage targeting executive compensation. The results from other research areas suggest an impact of media on coverage on stock market prices.

2.5.3.4 Indirect effects – The effect of legislation on compensation

Larcker et al. (2011) investigate the market reaction to 18 key events related to the regulation of executive pay from March 2007 to June 2009 and find that the regulations are on average perceived negatively by the market. The reaction is even more negative for companies with high CEO pay, large blockholders, staggered boards and companies whose governance will be affected by the regulation. The authors see this as proof that the legislation hinders governance to be the result of value-maximizing contracts between shareholders and management. The intrusion is perceived negatively by the market. Similarly, Hitz and Müller-

Bloch (2015) find negative stock markets reactions for companies particularly affected by the introduction of the German compensation legislation (VorstAG) in 2009. Kim (2010) affirms that the market reacts negatively to limiting executive pay by looking into the reaction towards the announcement of the $500,000 salary cap for companies taking part in the TARP.

Very different reactions were observed for regulation that expands shareholder rights or insights. Cai and Walkling (2011) and Ferri and Maber (2013) examine the stock market reactions around the introduction of “Say on Pay” in the US and Great Britain respectively and both find positive stock market reactions at companies with questionable pay practices. Positive stock market reactions are also observed by Lo (2003), who investigates companies which had lobbied against the increased disclosure regulation of 1992. Both exhibit excessive stock returns between announcement and adoption of the regulation and abnormal stock returns around events which increased the likelihood of regulation. This supports the hypothesis that the regulation is expected to improve corporate governance.

Overall the valuation effects of activism and outrage are very unclear as very few papers examine these. This research gap offers opportunities for researchers.

2.6 Conclusion

This article gathers evidence from empirical, experimental and analytical research to create a clearer picture of outrage, a phenomenon that is supposed to limit compensation excesses as described by Bebchuk et al. (2001). The article covers four areas: It examines1) the plausibility of the underlying assumptions of the managerial power theory, 2) possible ways how to measure outrage, 3) the effectiveness of outrage to actually limit compensation, 4) the evaluation of outrage from a shareholder and stakeholder perspective.

Even though the theoretical basis is sound and a few findings suggest that a moderating effect of outrage on governance exists, empirical evidence on the effects on compensation is scarce and results are inconsistent. While outrage over lacking pay-performance-sensitivity is effective in changing the structure of pay, in most of the cases outrage does neither directly nor indirectly lead to sustainable reductions in executive pay. The history of compensation regulation shows that companies find ways to circumvent regulation which aims at fundamental changes regarding the level of executive compensation. When outrage is not spiked by lacking pay-performance-sensitivity, it is ignored even if the media is capable of distinguishing between excessive and adequate compensation. This is surprising as excessive compensation is a measure rooted in an economic understanding of pay. A reduction in excessive pay actually benefits the shareholders.

Furthermore, major research gaps in the evaluation of outrage by shareholders are identified. Findings from shareholder activism suggest that the reaction of shareholders depends on the type of shareholders (Joe et al. (2009)), the initiators of the dissent (Cai and Walkling (2011)) and the motivation behind the dissent (Fortin et al. (2014)). Examining the stock market reactions for different forms of stakeholder outrage might be worthwhile to understand how different kinds of outrage are perceived. These findings might also be linked to the underlying motives of outrage. Legislation aiming to change the level of executive compensation fundamentally is generally evaluated negatively by shareholders as it is limiting the freedom of contracts between management and shareholders.

Over the last decades, compensation has been a vigorously discussed topic of public interest, and it is likely to remain topical in the near future as the upward trend in executive compensation is not losing pace. In a broader perspective, research can also contribute to the public discussion. Experimental research may provide further insights into justice and inequity concerns triggered by executive compensation. Companies will have to consider whether these concerns are important to them and then act accordingly. If companies perceive the public outrage to be relevant, gaining trust in the company's compensation system can be a countermeasure. This can mean both changes in the compensation systems as well as changes in the way they communicate their compensation system to the public.

2.7 Appendix

Shareholder proposals					
Study	**Sample Period**	**Measure of Outrage**	**Data**	**Measure of Success**	**Results**
Johnson and Shackell (1997)	1992-1995	Executive compensation proposals	169 proposals by 74 sponsors at 106 companies (US data)	Voting outcomes; Changes in the level of compensation;	Find no effect of proposals on executive compensation
Johnson, Porter, and Shackell (1997)	1992-1995	Executive compensation proposals; negative press coverage; targeted by institutional investors; legislation	186/ 184 companies (US data)	Changes in the level of compensation; an increase of pay-performance-sensitivity	Find no effect of proposals on executive compensation; negative coverage leads to a smaller subsequent increase of total compensation and larger pay-performance-sensitivity; targeting by institutional investors reduces total compensation as well as pay-performance-sensitivity of cash compensation
Thomas and Martin (1999)	1993-1997	Executive compensation proposals	168 proposals at 145 companies (US data)	Changes in level and composition of executive compensation	Find no statistically significant effect of proposals on executive compensation.
Subramaniam and Wang (2009)	1996-2006	Performance-oriented and other pay proposals	312 performance-oriented and 356 other pay proposals at 191 companies (US Data)	Voting outcome; Changes in the level of compensation	Performance-oriented proposals and proposals sponsored by pension or union funds receive higher support. One year after proposal compensation shifts weakly towards equity-based pay.
Ferri and Sandino (2009)	2003-2004	Proposals to expense employee stock options	153 proposals at 131 companies (US Data)	Changes in management decisions and governance practices	Targeted companies are more likely to adopt requested a change (executive stock option expensing). Companies implementing the requested change show a decreased level of CEO compensation but no change in the composition of pay observable.
Burns and Minnick (2010)	2006-2008 proposals, 2003-2008 compensation data	Say on Pay Proposals	108 proposals at 76 companies (US data)	CEO compensation changes (height and composition)	Receiving an SOP proposal is enough to have an impact: total compensation increases insignificantly less for SOP companies (in comparison to non-SOP companies). SOP companies use less cash-based compensation and more incentive-based compensation, offsetting the reduction in bonus.
Ertimur, Ferri, and Muslu (2011)	1997-2007	Executive compensation proposals; Just Vote No campaign	134 vote-no-campaigns; 1,198 shareholder proposals	Implementation of compensation-related shareholder proposals; Changes in excessive CEO pay	Implementation is more likely for proposals with high and majority voting support. Companies with excessive pay targeted by vote-no campaigns experience a 38% decrease in total CEO pay, whereas shareholder proposals only have a moderating effect on CEO pay when proposals are sponsored by institutional investors calling for higher pay-performance-sensitivity.
Cai and Walkling (2011)	2007 Event study; 2006-2008	Say on Pay legislation; Say on Pay Proposals;	Event study 1,270 companies; 113 shareholder proposals	Abnormal returns around SOP legislation introduction as well as	Companies with the highest abnormal CEO pay and low pay-performance-sensitivity show significant, positive abnormal stock returns with the introduction of Say on Pay bill. The stock reaction is

	SOP proposals; 2003-2008 management-sponsored proposals	Management sponsored proposals	at 81 companies; 2,511 management-sponsored proposals (US data)	around receiving a Say on Pay proposal	even stronger for companies with weak governance or for companies with "vote-no" mutual funds. On average insignificant returns on the announcement of shareholder proposal – if sponsored by labor union, significantly more negative though. If labor-sponsored proposals are rejected the market reacts positively. Shareholders support management-sponsored proposals if pay-performance-sensitivity is higher, but not if abnormal CEO pay is higher.
Fortin et al. (2014)	1996-2006	performance-focused shareholder proposals	136/ 51 companies with performance-focused/ non-performance focused compensation shareholder proposals (US data)	Changes in pay-performance-sensitivity; abnormal stock return at proposal filing date; bondholders' returns	Shareholders react positively, but bondholders negatively surrounding the proxy filing dates of proposals. No significant change in expected future cash flows but significant increase in total firm risk following proposals (consistent with the differential reaction of shareholders and bondholders). After performance proposal companies with excessive CEO pay tend to increase pay-performance sensitivity.

Table 1: Literature on shareholder proposals

"Just Vote No" campaigns					
Study	**Sample Period**	**Measure of Outrage**	**Data**	**Measure of Success**	**Results**
Cai et al. (2009)	2003-2005	Director Election Votes	13,384 director elections at 2,488 shareholder meetings	Change in excessive CEO compensation	Fewer votes lead to lower "abnormal" CEO compensation and a higher probability of removing poison pills, classified boards, and CEOs
Fischer et al. (2009)	2000-2004	Percentage of affirmative votes	1,497 annual election observations	Change in excessive CEO compensation	Firms with low vote approval are more likely to experience CEO turnover, greater board turnover, lower CEO compensation, fewer and better-received acquisitions, and more and better-received divestitures in the future.
Ertimur et al. (2011)	1997-2007	Dummy variable when targeted by vote no campaign	134 Vote No Campaigns	Change in excessive CEO compensation	While activists target firms with high CEO pay (whether excessive or not), voting support is higher only at firms with excessive CEO pay. Firms with excessive CEO pay targeted by vote-no campaigns experience a significant reduction in CEO pay ($7.3 million).
Armstrong et al. (2013)	2003-2010	Director Election Votes	102,534 director elections from 4,043 distinct firms (18,598 firm-years)	Level and structure of CEO compensation	Find no evidence that shareholder voting for directors (and equity pay plans) is an effective mechanism for influencing executive compensation

Table 2: Literature on "Just Vote No" campaigns

Management sponsored proposals					
Study	**Sample Period**	**Measure of Outrage**	**Data**	**Measure of Success**	**Results**
Martin and Thomas (2005)	1998-1999	Percent vote against stock option proposal	635 stock option proposals by 553 different companies	Percentage change in executive pay	Find evidence of a significantly negative relationship between the percentage vote against the option proposal and the percentage change in executive pay from the 1998 to 1999 compensation years
Armstrong et al. (2013)	2003-2010	Voting upon management sponsored compensation plans	102,534 director elections from 4,043 distinct firms (18,598 firm-years)	Level and structure of CEO compensation	Find no evidence that shareholder voting for equity pay plans (and directors) is an effective mechanism for influencing executive compensation

Table 3: Literature on management sponsored proposals

Investor Activism via SEC Schedule 13D					
Study	**Sample Period**	**Measure of Outrage**	**Data**	**Measure of Success**	**Results**
Klein and Zur (2009)	2003-2005	All kinds of filing reasons, no real measure for outrage over compensation	305 Schedule 13D and 13D/A filings (US data)	Percentage change in executive pay	Significantly positive market reaction for the target firm around the initial Schedule 13D filing date, significantly positive returns over the subsequent year, and the activist's high success rate in achieving its original objective

Table 4: Literature on investor activism

"Say on Pay"					
Study	**Sample Period**	**Measure of Outrage**	**Data**	**Measure of Success**	**Results**
Carter and Zamora (2008)	2001-2006; 2002-2006 compensation data	"Say on Pay" Votes	1,669 CEO-years at 410 companies (GB data)	CEO compensation changes (level and composition)	Boards react selectively rather than consistently to shareholder disapproval as it relates to potential dilution from equity grants and, to a lesser extent, bonus PPS.
Alissa (2009)	2002-2008	"Say on Pay" Votes	204 companies and 913 CEO-years (GB data)	Reduction in excessive CEO pay; CEO turnover	Shareholders vote more against the compensation report when excessive compensation is high. Evidence that boards change CEOs' excessive compensation if excessive compensation is above the mean (no overall effect). Increased CEO turnover.
Conyon and Sadler (2010)	2002-2007; 2006 compensation data	"Say on Pay" Votes	200 companies in compensation sample (GB data)	CEO compensation changes (level and composition)	Little evidence that CEO pay is lower or fraction of equity pay higher in companies with high voting dissent. On average, limited evidence that "Say on Pay" changes level and composition of CEO pay.
Sheehan (2010)	2003-2007	"Say on Pay" Votes against + Votes withheld = outrage	73 companies (GB data); 109 companies (Australian data)	Content Analysis of announced compensation changes in annual reports	Voting dissent in the first year was considerably higher than in Australia. British companies show a lot more changes than Australian companies but this may also be due to a credible threat of new governance legislation in GB. Author is inconclusive whether observed changes really led to better remuneration practices.

Thomas et al. (2011)	2011	ISS Vote recommendations and "Say on Pay" Votes	2,200 companies (US data)	Changes in disclosure filings	The raw data show 20% swing in shareholder support for management say-on-pay proposals associated with a negative ISS recommendation. When taking into account different recommendations by management and ISS, net effect of negative ISS recommendation on the shareholder vote is relatively small at most companies. All 37 companies failing to obtain majority support had received negative ISS recommendations. Results also show companies modifying their disclosure filings after having received negative "Say on Pay" recommendations by ISS.
Cai and Walkling (2011)	2007 Event study; 2006-2008 SOP proposals; 2003-2008 management-sponsored proposals	"Say on Pay" legislation; "Say on Pay" Proposals; Votes on management-sponsored proposals	Event study 1,270 companies; 113 shareholder proposals at 81 companies; 2,511 management-sponsored proposals (US data)	Abnormal returns around "Say on Pay" legislation introduction as well as around receiving a "Say on Pay" proposal	Companies with the highest abnormal CEO pay and low pay-performance-sensitivity show significant, positive abnormal stock returns with introduction of "Say on Pay" bill. Stock reaction is even stronger for companies with weak governance or for companies with "vote-no" mutual funds. On average insignificant returns on announcement of shareholder proposal – if sponsored by labor union, significantly more negative though. If labor-sponsored proposals are rejected the market reacts positively. Shareholders support management-sponsored proposals if pay-performance-sensitivity is higher, but not if abnormal CEO pay is higher.
Ferri and Maber (2013)	Event Study 2002; voting dissent in years 2003 and 2004	"Say on Pay" Votes	Event Study 2002: 301 companies; 283 companies with voting dissent (both years) (GB data)	Abnormal market return with introduction of legislation; changes to compensation following voting dissent	Positive market reaction to the announcement of say on pay regulation for firms with controversial CEO pay practices and weak penalties for poor performance. Controversial provisions are removed after high voting dissent. Significant increase in the sensitivity of CEO pay to poor performance at companies with high voting dissent and high prior excessive pay.
Ertimur, Ferri, and Oesch (2013)	2011	"Say on Pay" Legislation; Proxy advisor recommendations; "Say on Pay" Votes	1,275 companies with "Say on Pay" votes; 1,195 companies for event study (US Data)	Abnormal market return after recommendation; Firms' response to proxy advisor recommendation; Firms' response to "Say on Pay" votes; Market reactions to "Say on Pay" induced compensation changes	Proxy advisor recommendations have significant impact on voting outcome. More than half of firms with negative recommendation report compensation changes in response to recommendation and the following "Say on Pay" vote. Firms' responsiveness increases with the extent of "Say on Pay" voting dissent. There is no market reaction to the announcement of such changes.
Burns and Minnick (2013)	2006-2008; 2003-2008 compensation data	"Say on Pay" Proposals	108 proposals at 76 companies (US data)	CEO compensation changes (height and composition)	Receiving an "Say on Pay" proposal has an impact: "Say on Pay" companies use less cash-based compensation and more incentive-based compensation, offsetting the reduction in bonus and total compensation increases insignificantly less in comparison to non-SOP companies.
Monem and Ng (2013)	2011-2012	Dummy for 1st and 2nd strike (more than 25% no votes in "Say on Pay")	105 first strike companies and 22 second strike	Change in total CEO compensation	Pay-performance link of the firms receiving 'first strike' in 2011 increasing (and even also for the control firms, votes as a signal to overall market). Firms receiving 'two strikes' in two consecutive years had a weaker pay-performance link. Strength of pay-performance-link

			companies (Australian data)		decreasing in current level of shareholder dissent compared with 'first-strike' firms in 2012.
Faghani et al. (2015)	2011-2013	Dissent votes change	117 firms with first but no second strike (treatment) and 117 matched control companies (receiving two strikes) (Australian data)	Change in total CEO pay and change in performance-based CEO pay	For 'first-strike' firms avoiding a 'second strike' (treatment firms), reduction in CEO total remuneration is positively associated with a lower consecutive level of shareholder dissent votes. Treatment firms increased the proportion of CEO's performance-based pay in the year following the 'first strike' (unlike firms receiving two strikes). Such an increase is negatively related to change in shareholders' dissent level. Descriptive analysis suggests 'first-strike' firms to make relatively more frequent and larger pay reductions.
Larcker et al. (2015)	2011-2012	Percentage of approving votes	2,008 firms (US data)	Change in compensation	Substantial number of firms change their compensation programs in the time period before formal shareholder votes in a manner consistent with the features known to be favored by proxy advisory firms in an effort to avoid negative voting recommendations.
Iliev and Vitanova (2015)	2009-2011	"Say on Pay" vote & exemption regulation	1,692 firms (US data)	Change in level and structure of pay; Market reaction	Regulation increased the level of CEO pay and led to higher use of cash bonuses and change of control payments. Negative market reaction to exemption from Say-on-Pay rule suggests general support for "Say on Pay" votes.
Brunarski et al. (2015)	2011	Indicator variable for voting support below 70%	679 to 822 firms (US data)	Change in level of total and excessive compensation	Overcompensated managers with low voting support tend to react by increasing dividends, decreasing leverage and increasing corporate investment. Excessive compensation increases for managers that were substantially overpaid prior to the vote, regardless of the outcome of the vote.
Balsam et al. (2016)	2000-2010	Percentage of votes against = number of votes against executive compensation divided by total shares eligible to vote	981 firms (US data)	Compensation test variable(s) = 1) estimated change in CEO compensation 2) log of total CEO compensation 3) percentage change in total CEO compensation 4) excessive compensation 5) % salary, % bonus, % non-equity incentive, % options, % restricted shares, % pensions, % other	Firms reduced compensation and made it more performance-based in advance of the initial 2011 vote, with decrease being greater for firms previously overpaying their CEOs. Percentage of votes cast against executive pay is lower when firm reduced executive compensation in advance of that initial vote, but higher when firm pays higher total compensation has large increase in compensation, has larger amount of excessive compensation or has higher amount of ''other compensation," a category which includes perks.
Kimbro and Xu (2016)	2011-2012	% of "Say on Pay" reject votes	4,619 firm-year observations	Percentage change in total compensation	Boards respond to "Say on Pay" rejection votes by reducing the growth of CEO compensation and shareholders respond positively to these changes by voting to approve "Say on Pay", regardless of firm performance

Table 5: Literature on "Say on Pay"

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3 Essay 2: The media and executive compensation – Sensationalism or investigative journalism?

Abstract

I empirically investigate whether the structure, adequacy, and level of executive compensation are associated with higher media coverage of executive compensation in Germany from 2006 to 2014. I find support for the hypothesis that the media distinguishes between economically justifiable compensation and compensation beyond this level (excessive compensation). Coverage also increases with higher income inequity across the company. The higher the ratio of the executive's pay is in comparison to the average employee's income the more attention there is. However, the coverage does not lead to the expected result: compensation, as well as the share of excessive compensation, even rise after media attention. At the same time, the pay-performance-sensitivity rises as fixed compensation is reduced and incentive compensation increases. The stock market reacts positively to the media coverage for companies with positive excessive compensation.

JEL classification: G34; J33; M52; M12

Keywords

Executive compensation; Press; Media; Corporate governance; External corporate governance.

3.1 Motivation

On February 13th, 2013, Martin Winterkorn, CEO of Volkswagen AG since 01/01/2007, gave an interview to German news magazine Spiegel regarding the European automobile crisis. However, the reporter, apparently not primarily interested in the automotive crisis, started the interview by investigating Martin Winterkorn's compensation for 2012 which was estimated to be around €20 million. Across companies listed in the DAX (an index of the 30 biggest companies listed in Germany), median executive compensation in 2012 was only €2.8 million. Martin Winterkorn admitted: "If I really received €20 million, it would certainly be difficult to explain that to people. No matter how successful a company is, increases in compensation cannot be unlimited" (Hawranek and Mahler (2013)). This interview is remarkable in two ways: first, the media likes directing their readers' attention towards the prominent topic of management compensation and second, how defensive a successful manager reacts when being asked about his compensation. In the end, Martin Winterkorn's income added up to only €14.5 million - the board of directors had reexamined the parameters for the calculation of his short-term bonus.

A second illustrative example of media coverage of compensation is Josef Ackermann, CEO of Deutsche Bank from 2006 to 2012. When the subprime crisis hit the banks hard in 2008, Mr. Ackermann and all other members of the top management team decided to forego their annual bonuses " on behalf of social harmony" (FAZ (2009)) as Josef Ackermann put it. It remained unclear how high the annual bonus would have actually been, but his income fell from approximately €14 million in 2007 to €1.4 million in 2008. It is remarkable how hostile the public reactions towards this voluntary sacrifice were. Peter Struck, fraction leader of the German party SPD at that time, dismissed the step as "pure show-act" and asked for an end of bankers' arrogance (Die Welt (2008)). Extensive coverage of Josef Ackermann's compensation continued even after he left the office in 2012.

The anecdotal evidence of these two examples poses important questions on the media's role in evaluating and influencing executive compensation. What drives the media's interest in certain executives? And what consequences does the media coverage have on the compensation? Finally, how do shareholders perceive this public attention? Are these "uninvited guests", as Murphy (2012) calls them, an undue intrusion into the shareholder's business or does the investigative journalism actually help the shareholders?

Previous literature only partly answers these questions. Core et al. (2008) examine the coverage decision of the media with regards to executive compensation. Their findings suggest that the media is capable of distinguishing between expected compensation, which accounts for a company's size, performance, industry and prospects, and excessive compensation, which is the pay beyond the explainable levels. This indicates that the media is indeed capable

of investigative journalism. However, at the same time, their findings also support the idea that the media engages in sensationalism as the media covers companies with high option payouts more. Bednar (2012) finds an (unstable) positive impact of compensation level on positive CEO coverage, while he fails to find an impact on negative coverage.

Findings from research confirm that media attention can serve as a disciplining device for corporate malfunctions like pollution (Dyck and Zingales (2002)) or fraud (Miller (2006)). Bebchuk and Fried (2002) assume public outrage to be an effective limit to self-serving managers. Media coverage might, therefore, create a limitation to excessive executive pay. However, coverage on compensation does not seem to change the level (Bednar (2012), Kuhnen and Niessen (2012)) or the adequacy of pay, as Core et al. (2008) do not find a reduction in excessive compensation subsequent to negative coverage. According to Bednar (2012), the percentage of at-risk compensation rises with negative coverage and falls with positive coverage. Kuhnen and Niessen (2012) observe a decrease in the much-criticized option pay.

To the best of my knowledge, no paper so far has examined the shareholders' reaction to media interference regarding executive pay. However, research of Liu et al. (2014), Fang and Peress (2009), as well as Tetlock (2007), suggest an impact of media on stock prices, even if it is soft news. This analysis will provide valuable insights into how the interference from outsiders is perceived by the company's shareholders.

Overall, the few existing findings only examine the US setting, even though previous research pointed out that governance differs greatly across countries (La Porta et al. (2000)). Mentality differences might play a role in the amount and tonality of media coverage (Schmidt et al. (2013), Wu (2000)). Furthermore, Dyck et al. (2008) show that the media's effectiveness to initiate change varies greatly across countries. It is, therefore, worthwhile to extend the current literature by findings from a German dataset. Germany is an interesting setting for generalizing findings from the US because it is an economically strong country with distinct governance and socio-cultural features. While in the US the saying "from rags to riches" indicates a general approval of success and earned riches, the "German envy culture" ("Deutsche Neidkultur") is often said to begrudge wealth and success. Historically, Germany is furthermore often cited as "the classical case of a non-shareholder orientation" (Fiss and Zajac (2004)). German companies have two-tier boards with worker participation and companies are committed towards their stakeholders rather than only their shareholders. Crossland and Hambrick (2007) find robust evidence that CEOs in Germany have a substantially lower impact on firm outcomes than CEOs in the US. All these factors might have a significant impact on both the media agenda as well as the media's impact on board decisions.

I examine a sample of hand-collected German top executives' compensation (German "Vorstand", the Executive Board) in DAX companies from 2006 to 2014 and more than 26,000 manually coded media observations. I find support for the hypothesis that the media distinguishes between economically justifiable compensation and excessive compensation. Coverage also increases with higher income inequality across the company. The higher the ratio of the executive's pay is in comparison to the average employee's income, the more attention there is. However, the coverage does not lead to the expected result: compensation, as well as the share of excessive compensation, even rise after media attention. At the same time, the pay-performance-sensitivity rises as fixed compensation is reduced and incentive compensation increases. The stock market reacts positive to the media coverage if a company features positive excessive compensation.

This paper extends the literature stream on media coverage on executive compensation by providing further insights on the coverage decision as well as consequences of this coverage. Additionally, it contributes to research on the applicability of theories across different research settings. The assumptions of the managerial power theory, developed in the US, are tested in a German setting with differing socio-economic parameters. Finally, as scholars have long since argued over the usefulness of public interest in executive compensation, this paper aims to understand the impact of media coverage on compensation on a firm's market valuation. To the best of my knowledge, it is the first paper examining the shareholder reaction to media coverage of compensation.

The paper proceeds as follows. Chapter 3.2 reviews the existing literature and hypotheses are developed. Chapter 3.3 describes the data sources and sample selection. Chapter 3.4 provides an overview of the applied methodology and identified variables. Results are presented in chapter 3.5 before chapter 3.6 concludes.

3.2 Literature review and hypotheses

This paper is related to the literature examining the determinants of media coverage and the relation between media coverage and corporate governance changes. Furthermore, it is linked to the literature on the relation between media and stock returns. It also provides insights on the applicability of theories across different research settings as it applies the assumptions of the managerial power theory to a German setting.

3.2.1 The mechanisms of media coverage

The managerial power theory developed by Bebchuk et al. (2001) assumes managers to be able to extract rents above the optimal level due to the limited power of boards, market forces and shareholders. However, the authors believe that neither directors nor managers have

interest in compensation arrangements “that might be viewed by observers as outrageous” (Bebchuk et al. (2001), p. 32). The outrage constraint is crossed when the costs associated with the negative reactions are significant enough to “deter the adoption of arrangements that managers would otherwise favor” (Bebchuk and Fried (2004), p. 5). Bebchuk et al. (2002) assign the media an important role in this phenomenon as outrage costs, like reputation loss, only arise when the rent extraction is clearly apparent to outsiders. The authors consider the media to be one of the relevant groups.

Indeed, media coverage is a promising way of measuring public outrage and testing the managerial power theory’s assumptions. This is because executives and directors care about their reputation, which may be affected by media coverage. I will elaborate on that in the next chapter. Furthermore, the media plays an important role when providing and evaluating information. They reduce the cost of acquiring information immensely (Dyck and Zingales (2002)) and therefore inform an increased number of people on a given topic (Dyck et al. (2008)). This may also reduce agency costs resulting from information asymmetry between a company’s management and its stakeholders. Business journalists, for example, enable investors to gather a broader picture of companies without investing the time in research themselves.

However, as the attention of readers and the pages of newspapers are limited, journalists have to decide which stories to concentrate on and how to cover them. This poses the question how the media chooses the stories that are awarded these scarce resources. Research from Niven (2001) provides evidence that the media covers bad outcomes far more than good, suggesting a negativity-bias. This is supported by Kuhnen and Niessen’s (2012) anecdotal evidence on a random subsample of articles on executive compensation. As the business model of publishing houses depends on the sales of newspapers, entertainment is likely to be a crucial part of the media as scandals simply sell better. Commonly discussed problems of media coverage are agenda-setting, a selection bias of subjects covered, and framing, where the setup of the story gives the information a frame which influences the readers’ opinion (such as information from experts) (Scheufele and Tewksbury (2007)).

Not surprisingly, studies question the media’s capability of providing expert judgement. Bednar (2012) finds that symbolic changes and window dressing appease newspapers, without real changes being implemented. Core et al. (2008) provide evidence that the media focuses negative attention on large option exercises even though these result from accumulated multi-year compensation programs. However, they also show that the media distinguishes between high and excessive (meaning economically not justifiable) pay. Miller (2006) finds similar opposing results when looking at the coverage of accounting fraud. Companies with a larger public following will be more likely picked for coverage.

To understand whether the media fulfills a valuable role in the corporate governance process or rather engages in sensationalism with regards to compensation coverage, it is vital to identify the variables driving the media's coverage decision.

Based on the assumption that the media is indeed acting as external governance device, it should act in the best interest of shareholders and identify pay packages that are excessive. Media applying a sophisticated approach to coverage should take into account the manager's task and performance as well as the company's economic situation. All compensation that cannot be explained by task, performance, and situation is consequently excessive. By covering managers with such pay packages, the media can draw public attention to this deficiency and initiate change, as intended by the managerial power approach.

H1a: *Media coverage on compensation is positively related to excessive compensation, but not to expected compensation.*

On the other hand, if the media is mainly interested in covering executive compensation to engage in sensationalism, it remains irrelevant whether the compensation is actually adequate or excessive. Executive compensation fulfills all five factors a newsworthy event needs according to Jamieson and Campbell (2001): (1) it can be personalized, (2) it is controversial, (3) it is concrete as everyone can compare the pay to his or her own, (4) it is novel as it informs the public about renowned people's income, and (5) it is an issue of ongoing concern in terms of social equity. Correspondingly, Brettschneider and Vollbracht (2010) observe rising personalization and entertainment in the corporate coverage in Germany. Executive pay makes a newsworthy event independent of how the pay is perceived by the shareholders owning the company. And while in the US the saying "from rags to riches" indicates a general approval of success and earned riches, the "German envy culture" ("Deutsche Neidkultur") is often said to begrudge wealth and success. A company paying millions to its CEO may, therefore, be perfectly in line with shareholders' will as the company performs extraordinarily but will nonetheless be covered by the media as the extraordinarily high number triggers public interest. Covering companies for the sheer level of executive compensation, not accounting for performance or other adequate determinants of pay, is likely enough to satisfy the uneducated reader's curiosity.

H1b: *Media coverage on compensation is positively related to both expected as well as excessive compensation without taking into account whether the pay is excessive or adequate.*

Finally, the media may also follow a social equity agenda when covering executive compensation. Especially in Germany, a country perceived to be less shareholder and more stakeholder-oriented (Fiss and Zajac (2004)), executive pay may trigger media coverage especially for reasons of breaching social equity norms and feelings of unjust income distribution among employees. A representative survey conducted by the German foundations Bertelsmann Stiftung, Heinz Nixdorf Stiftung and Ludwig-Erhard-Stiftung in 2007 concluded that only 15% of Germans believe the distribution both in income and wealth to be fair. 66% were in favor of increased governmental activity to increase social equity (Vehrkamp and Kleinsteuber (2007)). And that was even before the financial crisis. Even a thoroughly shareholder friendly market like the US just recently developed a bigger interest in income distribution across the company and obliges companies to disclose the pay ratio of average executive pay to average employee income in the annual report (see the *Dodd-Frank Act*). As the topic of social equity fulfills all the five factors of a newsworthy event, companies with higher inequality might be covered for executive pay more often.

H1c: *Media coverage on compensation is positively related to the ratio between executive pay and average employee compensation.*

3.2.2 The media's impact on reputation and corporate valuation

Regardless of the underlying motivation for the coverage of executive compensation, it remains unclear how companies actually react to the public attention. The managerial power theory by Bebchuk et al. (2002) and Bebchuk and Fried (2004) assumes that public outrage has the power to impose costs on wrongdoing managers and directors due to its impact on corporate and individual reputation.

And indeed reputation is an important factor in competitive markets. Reputation is an intangible good hard to imitate and can, therefore, serve as a competitive advantage (Dierickx and Cool (1989), Hall (1992), Schwaiger (2004)). Companies with high reputation are more attractive as employers (Cable and Turban (2003), Collins and Han (2004)), call more satisfied and loyal customers their own (Fombrun and van Riel (1997), Hall (1992)) and gain advantages on the financial market (Diamond (1989), Gomes (2000)). Evidence from Mohan et al. (2015) shows that consumers perceive companies with lower pay dispersion as more attractive than those with high verticality between CEO and worker pay.

Personal reputation is a positive signal to the labor market and creates social acceptance and prestige within the social community. Reputation is a powerful incentive for directors to pursue that job according to Masulis and Mobbs (2014). Directors benefit from holding seats in larger and better-performing companies (Yermack (2004), Ferris et al. (2003)) and acting in the

interest of shareholders (Coles and Hoi (2003), Harford (2003)). On the other hand, directors serving at companies with accounting restatements (Srinivasan (2005)), financial distress (Gilson (1990)) or a financial fraud lawsuit (Fich and Shivdasani (2007)) lose their board seats frequently. Consequently, directors leave companies with struggles ahead to contain damage to their reputations (Fahlenbrach et al. (2014)).

The unfavorable news may damage the important good of a reputation. As the media spreads news and forms public opinion by bringing information to light, it plays a significant role in the creation and destruction of institutional and individual reputation. The persuasion theory assumes that cumulative coverage, repeating arguments or messages, is shaping the recipient's perception (Brosius (2003) and Enikolopov, Petrova, and Zhuravskaya (2011)). Cohen (1963) on the other hand believes that the press „(…) may not be successful much of the time in telling the people what to think, but it is stunningly successful in telling its readers what to think about" (Cohen (1963), p. 13). Previous research provides insights that this public pressure does influence company behavior with regards to company's environmental policy (Dyck and Zingales (2002), accounting malfeasances (Miller (2006)) and governance violations (Dyck et al. (2008)). Joe et al. (2009) show that media exposure of board ineffectiveness forces the targeted parties to take corrective actions, which then enhance shareholder wealth. Liu and McConnell (2013) provide evidence that the media plays a role in aligning managers' and shareholders' interests as value-reducing acquisition attempts are more likely abandoned.

Advancing from these insights one could conclude that the media can indeed serve as a watchdog for governance weaknesses. In the case of compensation that would mean that the media's coverage imposes negative reactions significant enough to "deter the adoption of arrangements that managers would otherwise favor" (Bebchuk and Fried (2004), p. 5).

Coverage of compensation could consequently impact compensation level, structure, and adequacy. The already existing empirical evidence is mixed. Johnson et al. (1997) find strong evidence of decreased executive compensation levels and increased performance sensitivity following negative financial press coverage. The study from Core et al. (2008) concludes that the Johnson et al. (1997) study suffers from mean reversion (when a manager earns a high pay in year t, there is a natural tendency for pay to be lower in year t+1). After controlling for this effect, they cannot find evidence that press coverage affects CEO compensation. Kuhnen and Niessen (2009) and Kuhnen and Niessen (2012) find that firms lower the most criticized pay components but increase less controversial types of pay, therefore rather changing the structure of pay than its sheer height. This is also in line with findings from Bednar (2012).

So far, the existing literature relies entirely on data from the US. This may be critical because Dyck et al. (2008) show how crucial media characteristics are for the impact of the media.

When investigating the effect of media on the reversion of questionable governance decisions in Russia, they only find effects related to coverage in US newspapers, domestic Russian newspapers, on the other hand, were irrelevant. Additionally, the implemented governance system plays a significant role – only if governance is incapable of limiting corporate excesses the "outrage constraint" proposed by Bebchuk et al. (2001, 2004) becomes relevant. Germany with its stakeholder orientation and employee representation in the supervisory board might exhibit weaker governance in terms of shareholder value orientation. This void might be filled by the media. On the other hand, the society's stakeholder orientation might also be prevalent in the media's agenda, making the media's impact on matters of pay even less pronounced.

Even though research based on US data has not found evidence in favor of the media's impact on inadequate executive pay, the German setting might provide different results due to its distinct media, societal and governance features. Indeed, there is anecdotal evidence for managers forgoing parts of their compensation due to public pressure such as Anshu Jain (Rexer (2013)), Josef Ackermann (Handelsblatt (2008)) and Martin Winterkorn (Manager Magazin (2013)). I therefore conclude:

H2a: *Media coverage on compensation has a negative impact on excessive compensation.*

The findings from Kuhnen and Niessen (2012) as well as Bednar (2012) suggest that media coverage may not lead companies to actually decrease executive pay or increase its adequacy (by reducing excessive pay) but at least they observe a change in structure. Bednar (2012) finds an increased percentage of at-risk compensation after negative coverage and Kuhnen and Niessen (2012) report a decrease in the highly criticized option pay. Boards seem at least to incorporate steps to address the public criticism. I therefore conclude:

H2b: *Media coverage on compensation has a positive impact on variable executive compensation.*

H2c: *Media coverage on compensation has a negative impact on fixed executive compensation.*

Finally, in order to understand the effectiveness of public outrage over executive compensation, it is vital to understand how the shareholders perceive the media coverage of compensation. While Murphy (2012) describes the media as "uninvited guests" (Murphy (2012), p. 112) to the bargaining table, Bebchuk et al. (2001) attribute an important role in the governance process to the media. To the best of my knowledge, so far the stock market reactions to media coverage on compensation have not yet been examined. However, recent

studies suggest that media coverage – and even soft coverage on business unrelated topics – can make a difference to firm evaluation (Liu et al. (2013), Tetlock (2007), Tetlock et al. (2008)). And furthermore, there are a few findings for shareholders' reactions towards other forms of dissent such as shareholder proposals or legislative changes. Shareholders seem to evaluate outrage positively when it is expected to serve the compensation's improvement from an economic point of view. Fortin et al. (2014)) find positive cumulative abnormal stock returns for firms targeted with pay-performance-focused proposals. Cai and Walkling (2011) and Ferri and Maber (2013) report positive abnormal returns for companies with high abnormal CEO compensation and low pay-for-performance sensitivity and firms with controversial pay practices respectively after the announcement of "Say on Pay" legislation in the US and UK. If the governance weaknesses are already known to the shareholders, they might hope for changes due to a broader audience and the therewith associated increased pressure.

The market reaction is both dependent on the intention behind the attention towards executive compensation as well as the type of investor. Sheer capping of executive compensation, for example, leads to a negative market reaction (Kim (2010). Similarly, proposals to change executive compensation posed by labor unions are followed by a significantly more negative market reaction than proposals by other sponsors (Cai and Walkling (2011)). Joe et al. (2009) show that individual investors react negatively to the media exposure of weak governance, whereas investment firms act as if they anticipate the targeted firms' corrective actions. As they heavily invest, the stock price reacts positively to the company's listing in the "Worst Board List".

Possible are therefore two reactions: If shareholders perceive the media as an experienced watchdog for governance weaknesses, the tackling of the media can be interpreted as a signal for bad compensation practices in the company. On the one hand, this can be interpreted negatively by the market, if the lacking governance standard is new information and investors do not believe in change. On the other hand, especially if the governance weakness is already known, the increased pressure may give hope to investors that change is about to come. This leads to the following two contradicting hypotheses:

H3a: *The media is perceived as an external governance authority identifying governance weaknesses not known before. This leads to a negative stock market reaction for companies with positive excessive compensation.*

H3b: *The media is perceived as an external governance authority identifying governance weaknesses already known to the shareholders. The public pressure related to the*

coverage gives hope for improvement and is therefore evaluated positively by the stock market for companies with positive excessive compensation.

3.3 Data

3.3.1 Data sources and scope

I test my hypotheses empirically using panel data. My initial sample contains 1,349 person-year observations from publicly traded German DAX companies between 2006 and 2014. I concentrate on DAX companies as the media coverage is likely to concentrate on the bigger companies anyways (Jensen (1979), (Miller (2006)).

The novel media coverage dataset is provided by the company Media Tenor. It applies a continuous content analysis of the leading media in Germany (see appendix 1 for a complete list of all included media) as a tool for public relations consulting and political media research. The analysis includes national daily (e.g., “Süddeutsche Zeitung”) as well as national weekly newspapers (e.g., “Die Zeit”), magazines (e.g., “Der Spiegel”), TV news (e.g. “ARD Tagesschau”) and political TV shows (e.g., “Monitor”). Coded are all persons, to whom the article dedicates more than 5 lines, who are mentioned in the caption or are depicted in the picture or – with regards to TV coverage – who are mentioned, cited or shown for more than 5 seconds.

Due to the fact that Media Tenor applies a continuous analysis instead of a project-related content analysis, the dataset is distinctive in many ways.

In contrast to many other content studies, the dataset does not rely on a database, like Lexis-Nexis or Factiva. These sources are not reproducing the media content in its entirety and structure and make it more difficult to decipher the intelligible patterns in which events and topics appear and disappear from the media. An assessment of the media’s impact on public opinion is only possible with an uninterrupted analysis of the media content (Kolmer (2008)). Furthermore, while working with databases, the data retrieval is dependent on a search string. Consequently, the composition of the search string is a critical success factor. First, it can suffer from incompleteness due to the researcher’s ex-ante imperfect knowledge of all relevant aspects of the regarding research topic. Second, the search string might misclassify as it can only rely on certain buzzwords but does not fully understand the text. This also leads to a more polarized characterization as a small surplus of positive or negative information is enough to overrule the mainly neutral or ambivalent information given throughout the whole story.

Core et al. (2008) for example use a PERL search string which classifies articles as negative-toned if there are certain buzzwords on compensation in the range of 25 words around the CEO’s name. To be classified as a negative-toned article it is sufficient to find the words “high”

or “big” (among other more clearly negative-toned vocabulary) in the range of 7 words around compensation related words like “salary” or “bonus”. Media Tenor on the other hand codes with the help of human media analysts. After 12-week long training for comprehensive content analysis, the analyst will start working with a 22-paged codebook, which is systematically updated to adapt to the continuously changing media world. As compliance with the coding rules is vital to reliable content analysis, Media Tenor continuously monitors analysts’ performance with a monthly standard test and spot checks. The monthly standard tests require the analyst to code articles with pattern solution provided by the training department. The spot checks draw random examples of coded material, which is then checked by staff from the training department. Media Tenor aims at an average rate of correspondence of 90% and envisages additional training with an average rate of correspondence below 85%. External validation of the coding system is improved by the discussion and presentation of results to editorial teams and journalists, as well as to Media Tenor clients with the political or corporate background.

The dataset at hand differentiates between coverage related to compensation and coverage not related to compensation. The articles’ tonality is divided into positive, negative and neutral. To organize the coding of valuations stringently, Media Tenor only codes only the valuation of the protagonists. In this case, this is the valuation of persons. The valuation therefore only relates to the description of the protagonist, not to the event described. (Kolmer (2008)).

The initial dataset contains more than 49,000 media observations. After matching these with the required control variables, the media dataset still comprises 26,144 single media observations with 957 single media observations covering the topic of compensation. For the purpose of the analysis, the media observations are aggregated to count variables on a person-year level (more in section 3.4.2).

To answer the stated hypothesis, several other variables are needed. Compensation data has been hand-collected from the companies’ annual reports for the years 2006 to 2015 for all top management team members (German “Vorstand”). A descriptive study of the hand-collected data is published annually (see for example Friedl et al. (2016) and Friedl et al. (2015)) and publicly discussed in the media (for example Cabras (2015)). Companies opting out from reporting personal level compensation data are excluded from the sample. The same holds for companies changing their fiscal year dates in the respective years.

Control variables were retrieved from Thomson Reuters Datastream service (see section 3.4 for a detailed introduction to all variables and the regressions models). If control variables are missing, the observation is excluded from the respective analysis.

The final data samples for the regressions vary between 1,349 and 1,209 person-year observations, depending on the data needed for the respective regression and the hypothesis to be confirmed. The data for the event study will be explained in more detail in section 3.4.3.2. The final sample for the event study contains 308 events.

3.3.2 Descriptive statistics and illustrations from the sample

As the media dataset is a proprietary dataset and, to the best of my knowledge, new to the public, even the descriptive statistics offer interesting new insights on media coverage in Germany. Figure 1 to 5 as well as Table 1 and 2 provide information on the distribution of media coverage. General coverage of managers went down when the subprime crisis hit the markets. Apparently, personalized storytelling is less pronounced when the overall market struggles. Media coverage of compensation seems to fluctuate even more over time. This is in line with observations from US data (Kuhnen and Niessen (2012)). The little interest in the subject in the years 2008 to 2011 could stem from increased coverage of the banking and consecutive crises.

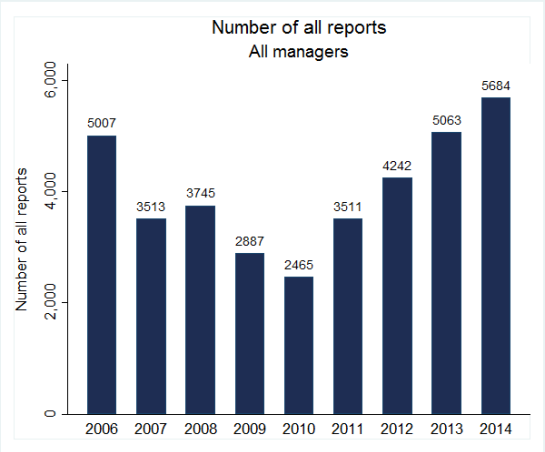

Figure 1: General media coverage

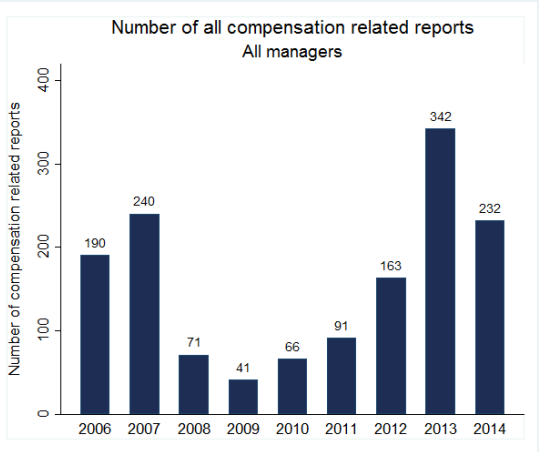

Figure 2: Compensation related media coverage

Most of the compensation coverage is neutral. This distinctive difference from US newspaper datasets is probably due to the different method of identifying negative media coverage already mentioned in section 3.3.1: Core et al. (2008) for example use a PERL search string which classifies articles as negative-toned if there are certain buzzwords on compensation in the range of 25 words around the CEO's name. To be classified as negative-toned it is sufficient to find the words "high" or "big" (among other more clearly negative-toned vocabulary) in the range of 7 words around compensation related words like salary or bonus. This may lead to an overestimation of negative-toned articles as the mere description of compensation levels is labeled as negative. In the dataset provided by Media Tenor, a negative valuation is only given if the subject, i.e., the manager, is described negatively. Beyond this technical aspect, it may

also be that the German media uses more neutral description when writing about compensation than US media. This could serve as the first indication of differences between the two countries and give way to the assumption that the German media merely describes compensation policies rather than engaging in sensationalism.

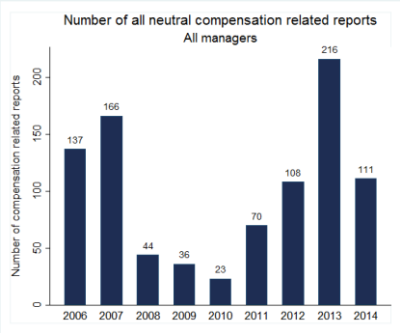

Figure 3: Neutral coverage

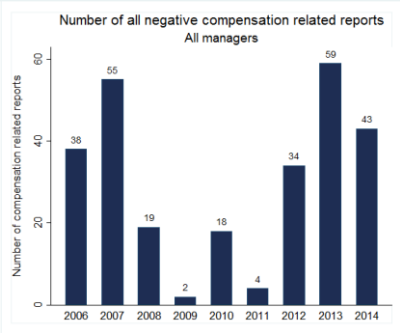

Figure 4: Negative coverage

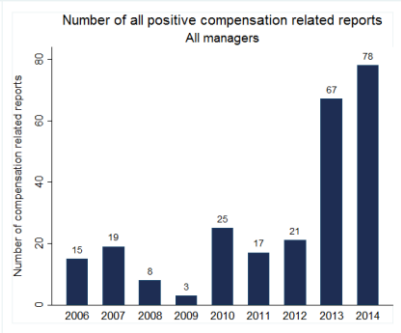

Figure 5: Positive coverage

Table 1 lists the 20 executives with the greatest amount of coverage on compensation in any given year during the sample period. All managers in the top 20 are CEOs. Managers with a large number of compensation-related reports often seem to be subject to longer-term media attention. This can be seen in the total amount of coverage these managers receive over the sample period (see column 8 of table 1). A high disparity between the coverage of the first and the 20th manager is observable. Former Deutsche Bank CEO Josef Ackermann and former Volkswagen CEO Martin Winterkorn are clearly leading with regards to cumulated coverage over the years. Consistent with findings from research conducted with US data (Malmendier and Tate (2009), Core et al. (2008)) German media also concentrates on very few people and then covers them extensively. This is also illustrated in column 7 of table 1: The coverage on Martin Winterkorn makes up nearly one-third of all reports in 2013. Adding up all 4 observations from the year 2013 cited in the table makes clear that the top 4 are subject to nearly half of all reports on compensation in 2013 (42%). One can also observe that compensation coverage on Josef Ackermann peaks over consecutive years and is “inherited” to his successor: In 2008, 2009, 2010, 2011 Josef Ackerman is featured in the top 20 list, in 2012 Anshu Jain takes over (see table 1).

Company Name	Manager	Year	TotalComp (in thsd. €)	Yearly coverage (CompCov[1])	% of coverage concentration[2]	Cumulated coverage[3]
Volkswagen	Winterkorn	2013	15,006	98	26%	199
Volkswagen	Winterkorn	2012	14,511	53	31%	199
Siemens	Kleinfeld	2007	6,082	33	8%	68
Deutsche Bank	Ackermann	2008	1,390	29	28%	360
Siemens	Kleinfeld	2006	3,624	28	12%	68
Daimler	Zetsche	2013	8,398	28	7%	93
Deutsche Bank	Ackermann	2012	2,550	24	14%	360
Siemens	Löscher	2013	5,688	24	6%	62
Deutsche Post	Zumwinkel	2007	4,311	20	5%	49
Linde	Reitzle	2007	8,059	16	4%	40
Deutsche Bank	Ackermann	2011	9,531	14	11%	360
Commerzbank	Blessing	2013	1,381	13	3%	50
Deutsche Telekom	Obermann	2007	2,658	13	3%	25
Daimler	Zetsche	2006	7,153	12	5%	93
Deutsche Bank	Ackermann	2009	9,552	12	11%	360
Daimler	Zetsche	2007	10,014	12	3%	93
Volkswagen	Winterkorn	2011	16,596	12	10%	199
Deutsche Bank	Jain	2012	5,493	11	6%	68
RWE	Roels	2006	6,898	11	5%	49
Commerzbank	Blessing	2012	1,392	10	6%	50

1 CompCov is a count variable of yearly coverage summing up all observations between the first and the last day of the fiscal year whenever the report mentions the manager's compensation.

2 Relates an individual manager's coverage to the yearly coverage on all managers with regards to compensation. Calculated as: % of coverage concentration = $\frac{CompCov_i}{\sum_{i=1}^{n} CompCov_i}$

3 Cumulated coverage sums up a manager's compensation related coverage two fiscal years before and after he is part of the management board.

Table 1: Ranking of yearly observations

Most featured managers' compensation is quite high, with the exception of Josef Ackermann's compensation in 2008 and Commerzbank's CEO Martin Blessing's compensation. When the subprime crisis hit the banks hard in 2008, Joseph Ackermann and all other members of the top management team decided to forego their annual bonuses " on behalf of social harmony" (FAZ (2009)) as Joseph Ackermann put it. The financial crisis also had a huge impact on Martin Blessing's pay: due to financial struggles after the acquisition of Dresdner Bank, the German government had to bail the bank out with € 18.2 billion. Legal regulation limited the fixed part of the executive compensation for bailed out companies to 500,000 €. In 2012, the supervisory board allowed a pay raise to 1.3 million € in fixed compensation.

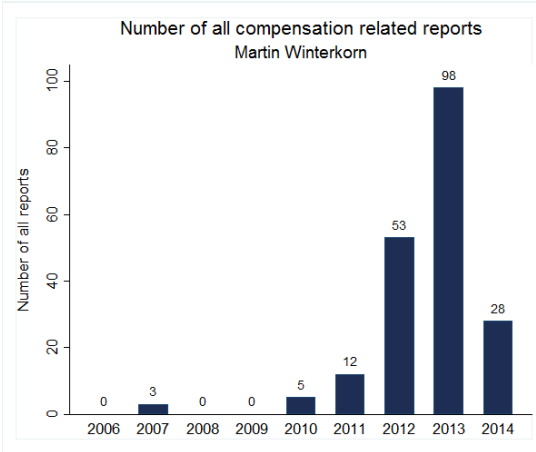

Figure 6: Coverage regarding compensation – Winterkorn

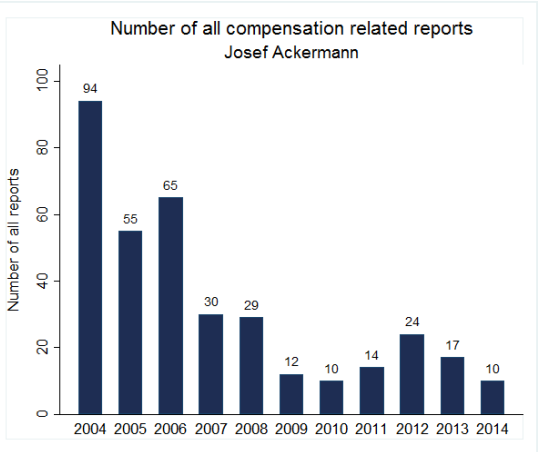

Figure 7: Coverage regarding compensation – Ackermann

When looking more into detail, one can identify different coverage patterns. Some managers are just mentioned once in a while, others are constantly covered (like former Deutsche Bank CEO Joseph Ackermann), and some gain sudden attention (like former Volkswagen CEO Martin Winterkorn). The data reveals that the debate regarding Martin Winterkorn's compensation only started picking up when his compensation suddenly skyrocketed (see figure 6). While he was earning € 6.5 million in 2009, his total compensation in 2011 already amounted to € 16.5 million and was expected to be approximately € 20 million in 2012. Due to the public interest, the board of directors reexamined the compensation contract and corrected the number down to € 14.5 million. Even though compensation in 2013 is in the same order of magnitude with €15 million, media attention in 2014 was considerably lower. This may be due to the fact that the high compensation didn't surprise any longer and Volkswagen was performing really well. Josef Ackermann's compensation, on the other hand, remained an interesting topic for the media even after he left his position as CEO of Deutsche Bank in 2012 (see figure 7). His compensation gained media attention even in 2014.

VARIABLES	N	mean	sd	min	max	p25	p50	p75
$CompCov_{t+1}$	1349	0.800	4.026	0	98	0	0	0
CovRatiot+1	1349	0.00901	0.0364	0	0.500	0	0	0
CovDummyt+1	1349	0.122	0.328	0	1	0	0	0
PVerticality	1349	46.74	33.08	0	349.2	26.37	40.60	56.29
ExpComp	1349	2536	978.3	569.4	7365	1873	2381	3047
ExcessComp	1349	155.1	1208	-2882	9771	-508.2	46.10	578.1
TotalComp	1349	2691	1702	0	16596	1674	2432	3377
$OtherCov_{t+1}$	1349	17.14	58.37	0	642	0	0	0
AllCovt+1	1349	20.45	65.72	0	656	0	0	0
ROAt1	1349	3.742	4.803	-35.92	22.96	0.870	3.620	6.170
ROA	1349	4.176	5.950	-35.92	78.81	1.030	3.750	6.520
TSRt1	1349	0.0813	0.344	-1.567	0.891	-0.0888	0.0954	0.293
TSR	1349	0.112	0.365	-1.567	0.891	-0.0815	0.124	0.372
TobinsQ	1349	1.330	0.591	0.774	5.559	1.014	1.128	1.394
CEO	1349	0.170	0.376	0	1	0	0	0
LnTenure	1349	1.299	1.036	-3.335	3.136	0.695	1.487	2.080
FirmSize	1349	17.29	1.074	14.07	19.10	16.47	17.71	18.10
excBoardSize	1349	0.860	4.600	-9.500	12.93	-1.222	0.673	3.243
CurrentExec	1349	0.134	0.0726	0	0.400	0.0833	0.136	0.182
FormerExec	1349	0.0556	0.0449	0	0.286	0	0.0500	0.0833
NumberMeetings	1349	6.019	1.661	4	13	5	6	7

$CompCov_{t+1}$ indicates the yearly number of reports covering the executive's compensation in year t+1. CovRatiot+1 is the ratio of reports covering the executive's compensation among the coverage that is about other topics in year t+1. CovDummyt+1 is a dummy variable which exhibits a 1 if the executive's compensation is covered by the media in t+1. ExpComp is the estimated expected compensation resulting from the regression in table 2. ExcessComp is TotalComp minus ExpComp or in other words the residual of the compensation regression described in section 3.4.1. PVerticality is the ratio between the executive's compensation and the average employee's compensation. TotalComp is salary, short-term and mid-term bonus, option and share-based compensation, as well as other annual pay for the manager. All compensation is reported in thousands of Euro. $OtherCov_{t+1}$ is counting the media observations for an executive with general coverage (not including coverage on compensation) in period t+1. $AllCov_{t+1}$ is counting all media observations for an executive (also including coverage on compensation) in period t+1. ROA and ROA_{t+1} is income before extraordinary items divided by average total assets for year t and year t+1. TSR and TSR_{t+1} is total stock return in the year t and t+1 respectively. TSR is the ending stock price minus the initial stock price plus dividends divided by the initial stock price. Tobin's Q is total assets minus common stock plus the market value of equity deflated by total assets. CEO indicates whether a manager has been CEO. LnTenure is the logarithm of an executive's tenure in years at the end of the year. FirmSize is the logarithm of the company's sales. excBoardSize is measured as the residual of regressing the number of directors on the number of employees and industry dummies. This residual variable indicates how much larger (smaller) a board is in comparison to companies in the same size and according company size. CurrentExec and FormerExec is the share of former/ current executives serving on the supervisory board. NoMeetings is the number of meetings the supervisory board conducts during a given year.

Table 2: Descriptive statistics

Table 2 presents the summary statistics of the sample. The variation among sample firms in terms of the number of media observations is sufficiently large for the purpose of this study. On average, about 20 articles are dedicated to one executive per year, with less than one about compensation. These numbers are very similar to previous studies from the US (Core et al. (2008)).

Table 3 reports the correlations between the main determinants of media coverage on executive compensation. Consistent with hypothesis H1a, H1b and H1c there is a positive correlation between the media variables $CompCov_{t+1}$, $CovRatio_{t+1}$ and $CovDummy_{t+1}$ and the pay variables *TotalComp*, *ExpComp*, *ExcessComp* as well as *PVerticality*. The regression table suggests that there is little impact of corporate governance variables on media coverage on executive compensation. However, the dummy for *CEO*s and the variable for general coverage are exhibiting high correlation to the media variables.

According to Cohen (1992), correlation coefficients higher than 0.3 might indicate multicollinearity. There are a couple of variables with correlations above this critical value, for example between *ROA* and *TobinsQ* (0.51), among the different pay variables (for example between *ExcessComp* and *TotalComp* 0.83) or *FirmSize* and *ExpComp* (0.57). I solve the high correlation among pay variables by including them in separate models. I calculate the VIFs of my three identified models to understand whether the dataset indeed suffers from multicollinearity. The highest VIF of model 1, including *ExpComp* and *ExcessComp* as well as all control variables exhibited, is 9.30, which is just below the threshold of 10 (Chatterjee (2006)). The second highest is 5.50 for *FirmSize*. The average VIF is 2.58 with all other VIFs below 5. Model 2, including *PVerticality* and all the control variables, exhibits a mean VIF of 1.89 with the highest value being 2.86. Model 3, including *TotalComp* and all the control variables, shows a mean VIF of 1.92 with 2.86 as the highest value. Multicollinearity for these models can, therefore, be ruled out as the VIFs are well below the conventional critical level of 10 (Chatterjee (2006)).

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	**$CompCov_{t+1}$**	1																			
2	**$CovRatio_{t+1}$**	0.49	1																		
3	**$CovDummy_{t+1}$**	0.54	0.62	1																	
4	**ExcessComp**	0.31	0.16	0.2	1																
5	**Expcomp**	0.42	0.28	0.53	0.2	1															
6	**TotalComp**	0.46	0.27	0.44	0.83	0.72	1														
7	**Pverticality**	0.4	0.27	0.39	0.66	0.58	0.8	1													
8	**$GenCov_{t+1}$**	0.57	0.35	0.6	0.16	0.49	0.39	0.31	1												
9	**ROA_{t+1}**	0	0.07	0.03	0.12	0.13	0.16	0.15	-0.03	1											
10	**ROA**	0	0.05	0.01	0.08	0.14	0.14	0.18	-0.04	0.51	1										
11	**TSR_{t+1}**	0.05	0.02	0.01	-0.03	0.06	0.01	0.02	0.03	0.19	-0.06	1									
12	**TSR**	0.02	0.05	0.05	0.02	0.18	0.12	0.11	-0.02	0.25	0.21	-0.12	1								
13	**TobinsQ**	-0.03	0.06	0.04	0.07	0.06	0.09	0.05	-0.04	0.6	0.49	-0.08	0.14	1							
14	**CEO**	0.43	0.49	0.77	0.15	0.58	0.45	0.4	0.59	0.03	0.03	-0.01	-0.01	0.04	1						
15	**lnTenure**	0.14	0.16	0.21	0.25	0.3	0.34	0.32	0.16	0.08	0.09	0.02	0.02	0.07	0.29	1					
16	**FirmSize**	0.08	-0.09	0.01	0	0.57	0.33	0.28	0.1	-0.14	-0.19	0.13	0.12	-0.35	-0.08	-0.08	1				
17	**excBoardSize**	0.01	-0.01	-0.02	0	-0.25	-0.14	-0.18	0.06	-0.12	-0.1	-0.08	-0.11	-0.02	0.03	-0.09	-0.26	1			
18	**CurrentExec**	0.04	0	0	0.05	-0.04	0.01	-0.02	0.03	-0.08	-0.03	-0.04	0.06	0.02	0.02	-0.05	-0.08	0.15	1		
19	**FormerExec**	-0.03	0.02	0	-0.03	0.14	0.06	0.05	-0.04	0.22	0.13	0.1	0.1	0.19	-0.02	0.13	0.13	-0.4	-0.02	1	
20	**NumberMeetings**	0.01	-0.03	-0.01	-0.01	0.03	0.01	-0.09	0.1	-0.11	-0.14	0	-0.16	-0.05	0	-0.07	0.03	0.22	-0.02	-0.16	1

Table 3: Correlation matrix

3.4 Methodology

3.4.1 The calculation of excessive compensation

This section introduces the calculation of the variable *ExcessComp*, which is needed to answer hypothesis H1a. It clarifies the media's coverage choice with regards to executive compensation. Excessive compensation is measured as actual compensation minus the econometrically predicted expected compensation (*ExpComp*) and therefore equals the compensation beyond economically explainable levels. The following regression model is used to estimate the logarithm of total compensation:

$$Ln(TotalComp_{it}) = \beta_0 + \beta_l \sum_{l=1}^{L} Firm_{lit} + \beta_m \sum_{m=1}^{M} Manager_{mit} + \varepsilon_{it}$$

Equation 1: Regression model for estimating expected compensation

With the results of the regression above, the variable *ExpComp* can be econometrically predicted.

Model. My model for expected compensation follows prior research (Core et al. (2008), Kuhnen and Niessen (2012), Core et al. (1999), Murphy (1999), Smith and Watts (1992)). I use a cross-sectional ordinary least squares (OLS) with Huber-White standard errors to account for heteroscedasticity. In the following, I will explain the variables included in the regression model.

Dependent variable. The dependent variable is the natural logarithm of total compensation, *ln(TotalComp$_{it}$)*. I measure total compensation as the sum of fixed pay, short-term incentive (cash boni over one year), mid-term incentive (cash boni over more than one year), long-term incentive (option and share plans) as well as any other annual pay in the year t. This is the most common measure of total pay in academic literature. Total compensation amounts are given in thousands of Euros. I use the natural logarithm of total compensation to account for the skewed distribution of the variable.

Independent variables. The variables used in the regression can be divided into two categories: firm characteristics and manager characteristics.

Firm characteristics. According to previous empirical work larger companies pay higher compensation. For reasons of complexity, these companies ask for better qualified and therefore more expensive managers (Rosen (1982)). In my model, I use *FirmSize* measured via the natural logarithm of sales. Same holds for companies with greater growth opportunities (Smith and Watts (1992)), which will be proxied by *TobinsQ*. Results remain robust for the use of market to book ratio as well. According to optimal contracting theory, compensation schemes are set in a way to mitigate information asymmetry problems arising in a principal-

agent setting. Following this assumption, companies should link their managers' compensation to firm performance (Jensen and Murphy (1990)). Firm performance is represented by total stock return (*TSR*) and accounting return, here return on assets *(ROA).* To cover long-term pay components, the firm performance of the past three years is used.

Manager characteristics. I control for tenure (years the manager is already part of the board) and whether the executive is CEO, as both characteristics lead to higher compensation (e.g., Finkelstein and Hambrick (1989)).

Fixed effects. Year and industry fixed effects are included.

After the regression is estimated, expected compensation can be econometrically predicted. With the help of expected compensation, the variable *ExcessComp* can be calculated as follows:

$$ExcessComp_{it} = Residual(TotalComp_{it}) = TotalComp_{it} - ExpComp_{it}$$

Equation 2: Excessive Compensation

I compute the percentage of the excessive compensation the same way as Core et al. (2008):

$$PctExcessComp_{it} = log(TotalComp_{it}) - log(ExpComp_{it})$$

Equation 3: Percentage of excessive compensation

3.4.2 Determinants of media coverage of compensation

In this section, I introduce the model that is employed to understand better the determinants of compensation related media coverage related to hypotheses 1a to 1c.

$$CompCov_{it+1} = \alpha_i + \gamma_t + \beta_l \sum_{l=1}^{L} Compensation_{lit} + \beta_m \sum_{m=1}^{M} Manager_{mit} + \beta_n \sum_{n=1}^{N} Firm + \beta_k \sum_{k=1}^{K} Market_{kit} + \varepsilon_{it}$$

Equation 4: Regression model for media coverage on executive compensation

Dependent variable. Three different media variables are created to understand how robust the results are. The first dependent variable used in this model, *CompCov*, is the number of negative or neutral press reports received by an executive with regards to his compensation in year t. The company Media Tenor provides the daily media coverage for each executive in general as well as on the topic of executive compensation. By summing up all daily observations covering the executive's compensation between the first and the last day of the fiscal year, a count variable is generated. The second variable to measure media attention is *CovRatio*, a variable measuring the percentage of coverage on executive compensation within

general coverage. Finally, the third measure, *CovDummy*, is a dummy variable that equals 1 when the executive receives negative or neutral coverage for his compensation.

Model. In the regressions employing *CompCov* as the dependent variable, I use Poisson regression to account for the skewness of the count variable's distribution. The regressions with *CovRatio* apply a generalized linear model with a logit link and binomial distribution family. Finally, the regressions with *CovDummy* are run with a probit model. I choose standard errors clustered at the company level to meet econometric problems arising due to the panel structure of the data like autocorrelation and cross-sectional correlation in the residuals (Rogers (1993), Williams (2000)). In the following, I explain the variables included in the regression model.

Independent Variables. The variables used in the regressions can be divided into three categories: compensation, executive and company characteristics. The category of main interest is compensation characteristics.

Compensation characteristics. The variable *TotalComp* is the sum of fixed and incentive compensation an executive received in a given year. Incentive compensation comprises short and mid-term cash based bonuses as well as an option- or share-based pay. Fixed pay includes the salary as well as supplement payments and fringe benefits. *ExpComp*, the expected compensation, is estimated by regressing standard determinants of pay on *TotalComp*. *ExpComp* can be predicted econometrically after the regression. My model for predicting expected compensation follows prior research (Core et al. (2008), Kuhnen and Niessen (2012), Core et al. (1999), Murphy (1999), Smith and Watts (1992)) and was introduced in more detail chapter 3.4.1. *ExcessComp* is calculated as actual compensation, *TotalComp*, minus expected compensation, *ExpComp*. The variable *PVerticality* measures the distribution of pay across the company. It divides the executive's compensation by the average employee's compensation. The average employee's compensation is calculated by dividing personnel expenses by the company's number of employees.

Manager characteristics. *Tenure* is the number of years an executive is already serving in the board. Very new executives might receive more attention. Additionally, executives do change their behavior over time. *OtherCov* measures the coverage an executive gets apart from coverage on his compensation. This way the analysis takes into account that some executives are more interesting to the media than others. The variable is built analogously to the dependent variable *CompCov*: It is a count variable counting all articles about an executive in a given financial year on topics other than his pay. I expect coverage to be focused more on CEOs than on other executives as they represent the company to the public. Brettschneider and Vollbracht (2010) show that company news have become more personalized in recent years which makes it more likely that CEOs are covered as representative of their company.

Firm characteristics. A bad performing company is important news to stake- and shareholders. Performance is therefore expected to influence the press coverage of a company. I include return on assets (*ROA*) for accounting performance and total stock return (*TSR*) as market-based performance for the current as well as the previous year. *TobinsQ* is used to measure the company's growth opportunities. First, growing firms might be more interesting to the media than stable or declining firms, second, growing firms may face higher costs for withholding information (see Core et al. (2008)). Tobin's Q is total assets minus common stock plus the market value of equity deflated by total assets. *Leverage* is a proxy for the company's riskiness. Finally, I also control for *FirmSize,* measured as log of sales, as bigger companies receive more attention (Miller (2006)). The managerial power theory suggests that weak corporate governance within a company might be offset by public outrage. As most of the established variables for governance are tailored to the US market, not all of them apply to the German setting. Common variables from US-based research, such as CEO and board chair duality or independence of directors, are regulated by law as the executive board ("Vorstand") and the supervisory board ("Aufsichtsrat") are strictly separated. Nonetheless, board size and meeting frequency, both established governance variables from US research, can be applied in the German setting as well. Additionally, I control for the number of (former) CEOs in the supervisory board. CEOs are regularly those with the greatest number of external directorships (Ferris et al. (2003)), and in Germany, former executives often join the supervisory board after leaving the executive board (Andres et al. (2014)). This fact raises the question whether these (former) executives sympathize with the company CEO or executives due to similar positions, backgrounds, and experiences. This may ease rent extraction as supervisory directors with high similarities to the executives may be more hesitant to go into opposition. Consistent with that assumption, Andres et al. (2014) observe higher executive pay in companies with former CEOs in the supervisory board and Li and Qian (2011) find higher excess compensation for companies with more outside CEOs in the compensation committee. Additionally, executive directors already have a busy schedule which might limit the effort they can put into governing the other company (Perry and Peyer (2005), Loderer and Peyer (2002)).

I consequently control for corporate governance by accounting for board size (*excBoardSize*), the meeting frequency of the board (*NumberMeetings*), and how many (former) CEOs sit in the supervisory board (*CurrentExec*, *FormerExec*). As both the number of current and former executives are heavily influenced by the number of directors on the board, I calculate *CurrentExec* and *FormerExec* as the share of directors in the supervisory board. Board size itself is also highly influenced by the company size. To mitigate the arising multicollinearity in the regressions, *excBoardSize* is measured as the residual of regressing the number of directors on the number of employees and industry dummies. The residual variable indicates

how much larger (smaller) a board is in comparison to companies in the same industry and according company size.

Endogeneity. A common problem of empirical research in the area of governance and executive pay is endogeneity due to simultaneity. This is especially obvious in this setting as the media both reflects and influences firm action. This paper aims to understand both pay as a determinant of media coverage as well as media coverage as a determinant of consecutive executive compensation. The media paper of Core et al. (2008) solved this problem with lagged variables. Sanders and Hambrick (2007), Chatterje and Hambrick (2011) as well as Martin, Gomez-Mejia, and Wiseman (2013) suggest to include a variable that controls for the endogeneity. The endogeneity control variable is created by regressing the respective endogenous variable on its main drivers. The predicted value is then lagged by one period and included in the regression. I follow both approaches and examine the results. All endogeneity controls were calculated by regressing the respective pay variable on *FirmSize* (measured via log(sales)), performance (*ROA* and *TSR* in t and t-1), a dummy for *CEO*s, industry and year fixed effects.

Fixed effects. Industry controls and year fixed effects are included as well.

3.4.3 Impact of media coverage

The main objective of the following section is to understand the consequences of compensation related media coverage better. I examine consequences on the compensation with the help of multivariate regressions and consequences on the company value with the help of an event study.

3.4.3.1 Impact of media coverage on changes in compensation: Multivariate Regressions

To understand whether media coverage on compensation has an impact on compensation, I employ the following regression model.

$$Change\ in\ compensation_{it+1} = \beta_0 + \beta_l\, Comptenor_t + \beta_m \sum_{m=1}^{M} Firm_{mit+1} + \beta_n Compensation_{t-1} + \varepsilon_{it}$$

Equation 5: Model for changes in compensation

Model. I use a pooled cross-sectional OLS regression. Again, the panel dataset helps mitigating the problem of endogeneity as the change in compensation is the dependent variable. This reduces the likelihood of endogeneity. I choose standard errors clustered at the firm level to account for the fact that there are multiple executives per company. In the following, I will explain the variables included in the regression model.

Dependent variables. To answer the question whether the media exercises enough pressure to change compensation practices after coverage, I look at the change in total compensation *(Change in TotalComp*). Additionally, I check whether the percentage of excess compensation *(Change in PctExcessComp*) or the percentage of incentive compensation *(Change in PctIncentiveComp)* or fixed compensation *(Change in PctFixedComp)* changed in the two-year period after the coverage as the dependent variable. I use percentage variables as these account for the overall level of compensation. The percentage variables *PctIncentiveComp* (*PctFixedComp*) are calculated as *IncentiveComp* (*FixedComp*) divided by *total compensation*. Change is calculated by subtracting *TotalComp (PctFixedComp*, *PctIncentiveComp*) in the period before the coverage of *TotalComp (PctFixedComp* / *PctIncentiveComp*) in the period after the coverage.

To account for the skewness of the variable *ExcessComp* and the fact that it possesses positive and negative values (which forces me to abandon the option to use the variable's logarithm), *PctExcessComp* is calculated as the logarithm of total compensation minus the logarithm of expected compensation (see formula (3) in section 3.4.1) and *Change of PctExcessComp* is calculated by subtracting the variable *PctExcessComp* the period before the coverage of the variable *PctExcessComp* after the coverage (see Core et al. (2008)).

Independent variables. The explaining variables can be divided into three categories, media characteristics, company characteristics and compensation characteristics.

Media characteristic. The variable of main interest is public attention measured by *CompCov*, *CovRatio,* and *CovDummy*. The first variable is a count variable summing up all negative or neutral media observations between the first and the last day of the fiscal year in period t whenever the report mentions compensation. The second is a percentage variable that measures the share of coverage on compensation within all coverage on the manager. The third variable, *CovDummy*, is a dummy variable that equals 1 when the executive receives negative or neutral coverage for his compensation.

Company characteristics. To rule out that the compensation changes were induced by changes in the main determinants of pay, the change of these major influence factors over the two-year-period are included as well. A significant change in company performance over time influences the incentive part of the compensation directly. If the company size or the growth opportunities change, companies may readjust their compensation system. To avoid omitted variable bias, I include the following change variables: *ChangeROA*, *ChangeTSR*, *ChangeTobinsQ*, *ChangeFirmSize*. All variables are calculated by subtracting the value one period before the coverage of the value one period after the coverage. For the regression on *Change in PctExcessComp,* these control variables are not needed as *ExcessComp* accounts for the main determinants of pay anyways.

Compensation characteristic. Core et al. (2008) found evidence for mean reversion, a natural tendency for pay to be lower in year t+1 when a manager has earned a high pay in year t. I proceed like Core et al. (2008) by adding the respective pay component of the previous period to the regression (for example $TotalComp_{t-1}$).

Fixed effects. Year fixed effects are included in the models.

3.4.3.2 Stock market reaction after media coverage on compensation: Event Study

This section introduces the methodology applied to analyze the impact of compensation related media coverage on a company's market valuation. The analysis is conducted with the help of an event study.

Event study methodology. Event studies analyze stock market behavior around announcements measuring and testing the significance of abnormal returns of a security as a direct response to the new information. To define abnormal returns one first needs to come up with an estimate of normal returns, which hypothetically would have been realized without the event. In other words, abnormal return is defined as the actually realized return minus the estimated normal return:

$$e_{it} = Rit - E[R_{it}|X_t]$$

with e_{it} as abnormal return, R_{it} as actual return and $E[R_{it}|X_t]$ the estimated normal return

Equation 6: Abnormal return

Most commonly, the market model and the constant-mean-return model are applied. The market model regresses historical firm performance on market performance (i.e., an index) and uses the resulting linear relationship to predict the hypothetical performance for the time of the event. The constant-mean-return model assumes that the average of historically observed returns remains constant over time and can therefore also be used for the time of the event (Campbell et al. (1997), Kothari and Warner (2007)). Consequently, for both methods, past data is needed and an estimation window (the period used for estimation) has to be defined. Estimation windows can lie between 60 to 250 days. The longer the estimation period is, the more stable is the estimation. To take all event-related stock price movements into account, often not only the day of the event but also a short period before and after the actual event, called event window, is examined. This helps if the information is not priced in by the market on the official publishing date but a little earlier or later. The first case may occur for example if the market suspects changes in legislation before the government is actually voting for such a change. The second case may occur if information needs time to spread before the market can react to it. Commonly three to five days are interpreted as adequate.

The estimation period ends some days before the event window starts, so to make sure there are no confounding effects.

Setting of this event study. Most studies use the stock market reactions around distinct corporate events or legislative changes. In my case, the stock market reaction would be induced by the media coverage. However, the characteristics of media coverage make an event study a little more complicated. Usually, the triggering events are scarce and do not occur several times in a row. This does not hold for media coverage: very few managers are covered extensively, often every few weeks or even some days in a row. Once again I refer to the examples of Josef Ackermann and Martin Winterkorn to illustrate the sample. Martin Winterkorn has not been featured very often in the newspapers before 2012. The average period between two compensation related articles was roughly 132 days before 2012. After the peak in compensation in 2012, the average period between two articles shrank to roughly 7 days. In some periods, he received multiple articles per day some days in a row. The vast majority of observations is therefore eliminated as there is no period long enough to estimate normal returns. Josef Ackermann is an even more extreme example. There is no year between 2006 and 2013 where he has not been subject to major coverage. The average period between two articles of the whole sample lies at 19 days. Once again, it is hard to keep the observations with multiple coverage days in a row in the sample.

Multiple events per security become critical if the events are so close to each other that separating the market reactions to the different events gets impossible. An overlapping of the first event's event window and the second event's estimation window leads to the so-called event clustering bias as the underlying orthogonality condition between normal and abnormal returns no longer holds (Christodoulou (2012)). The alternative of excluding events too close to the first one also bears a downside as the sample then lacks an identical and independent distribution (sample selection bias). According to Christodoulou (2012), both settings have to be seen critically.

Especially in the case of the media, some consideration must be applied. Firstly, it is likely that the effect of coverage is only palpable if a certain amount of pressure adds up. One newspaper article alone is unlikely to induce change as only a few people can be reached with the specific article. But if a group of newspapers join the first newspaper and put the subject into focus, too, the company's public relations department and the supervisory directors will likely examine their criticism. Hence, systematic elimination of securities with multiple overlapping observations from the sample means excluding exactly these observations, where a stock market reaction is more probable. On the other hand, if coverage becomes constant, the impact of the next article adds no longer new information to the market and is therefore likely to be ignored.

Estimation of abnormal returns.

The sample underlying this event study consists of the roughly 30 companies listed in the DAX between 2006 and 2013. The majority of executives do not get covered at all. Therefore their observations cannot be considered. To check the proximity of the multiple events, I calculate the period length between the event dates. Newspaper articles being published on public holidays or at the weekend have to be shifted to the next trading day. I apply an estimation window of 130 days. (Cumulative) abnormal returns will be estimated for the single day event windows -1, 0, 1, 2, and 3 of the publishing date of a newspaper article as well as for the multi-day event windows [-1;1], [-1;2], [0;2] and [-1;3]. I use the market model to estimate abnormal returns. Daily stock prices refer to closing prices.

Regression Analysis. To identify whether the coverage has an impact on the abnormal returns, regression analysis is employed with the following model.

$$CAR_i = \beta_0 + \beta_l \, comptenor_i + \beta_m \sum_{m=1+l}^{m} Firm_{mit} + \varepsilon_{it}$$

Equation 7: Regression model for cumulative abnormal returns

Model. I use a pooled cross-sectional OLS regression with Huber-White robust standard errors. In the following, I will explain the variables included in the regression model.

Dependent variable. The dependent variable is the cumulative abnormal return (*CAR*) over the days [-1;2] generated through the above-explained event study.

Independent variables. To control for the effect of media coverage on the cumulative abnormal returns I include a count variable which sums up the number of compensation related reports on the event day (*CompCov_daily*). In a second model, I will test a similar variable counting all compensation related reports for the event month (*CompCov_monthly*). As firm controls, I include *FirmSize* measured as Log(sales) and company riskiness measured via *Leverage*.

3.5 Results and discussion

3.5.1 Excessive compensation

This section provides the regression results for calculating excessive compensation (see Table 4). Consistent with prior research I find a positive influence of *FirmSize* (measured with the help of the variable ln(Sales)), the company riskiness (measured via *Leverage*) and stock returns of the past two years on compensation (*TSR, TSR_{t-1}*).

Due to German regulation requiring longer-term oriented compensation, I further included *TSR_{t-2}*, which also exhibits a significant positive coefficient. The negative coefficient of *ROA_{t-1}*

is counter-intuitive but in line with findings of Core at al. (2008). Maybe this is due to mean reversion, a natural tendency for pay to be lower after a year with very high pay (Core et al. (2008)). The better the performance was in the previous year, the higher the compensation should have been. In line with the assumptions, *CEO*s and more senior managers (measured via *Ln(Tenure)*) receive higher compensation. The predicted compensation resulting from this regression, *ExpComp*, is deducted from the actually paid compensation (*TotalComp*) to receive an estimate for excessive compensation (*ExcessComp*).

VARIABLES	Ln(total compensation)$_t$
Ln(Tenure)$_t$	0.0510***
	(0.00804)
FirmSize$_{t-1}$	0.278***
	(0.00518)
ROA$_t$	0.00586***
	(0.00187)
ROA$_{t-1}$	-0.00443**
	(0.00203)
ROA$_{t-2}$	-0.00135
	(0.00168)
Tobin's Q$_{t-1}$	0.172***
	(0.0171)
Leverage$_{t-1}$	0.132**
	(0.0514)
CEO$_t$	0.518***
	(0.0206)
Stock Return$_t$	0.0525***
	(0.0155)
Stock Return$_{t-1}$	0.121***
	(0.0299)
Stock Return$_{t-2}$	0.0751**
	(0.0296)
Constant	2.565***
	(0.100)
Observations	3,531
Adjusted R-squared	0.551

The column represents the results of a pooled cross-sectional OLS. The sample consists of 3,531 observations for German DAX members of the executive board from fiscal years 2006 to 2015. Total compensation$_t$ is salary, short-term incentive, midterm incentive and long-term incentive (here meaning stock-based compensation) as well as other annual pay for the manager in the year t in thousands of Euros. Tenure$_t$ is the manager's tenure in years at the end of the fiscal year. Log(sales)$_{t-1}$ is the logarithm of a firm's sales for the year t-1. ROA$_t$, ROA$_{t-1}$ as well as ROA$_{t-2}$ are income before extraordinary items divided by average total assets for year t and year t-1 and t-2 respectively. Leverage$_{t-1}$ is the company's leverage in period t-1. TobinsQ$_{t-1}$ is the market value of a company's assets divided by the replacement cost of the company's assets at the end of the year t-1. CEO$_t$ is a dummy indicating whether a manager has been CEO in the year t. TSR$_t$, TSR$_{t-1,}$ and TSR$_{t-2}$ are share price appreciation and dividends paid meaning the total return to the shareholder in the year t, t-1 and t-2 respectively. Industry and year fixed effects are included but not tabulated for reasons of brevity. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4: *Firm-level regression to predict expected compensation*

3.5.2 Determinants of media attention towards management compensation

The results from regressing compensation and company variables on compensation coverage can be found in Table 5. The results suggest that the media applies a sophisticated approach when covering executive compensation. It distinguishes reliably between expected and excessive compensation independent of the fact whether media coverage is measured with the help of $CompCov_{t+1}$, $Compratio_{t+1}$ or $CovDummy_{t+1}$. However, the significance differs between the three variables. H1a can therefore be accepted and H1b rejected. Media coverage can also be explained by $TotalComp_{t+1}$, which is not surprising as *ExcessComp* and *TotalComp* are correlated with a value of 0.83. The results so far support the findings from Core et al. (2008) which indicates that this part of the managerial power theory is applicable both to the more shareholder-oriented US and the more stakeholder-oriented Germany. According to the results, the German media can provide valuable insights to shareholders. Media coverage does also pick up with higher verticality, which means a higher inequality between the executive's compensation and the average employee's compensation. I cannot compare this result to the US as, to the best of my knowledge, this is the first evidence with regards to that pay ratio. Future research might want to test the proposition with US data, once it is available. US companies are obliged to report the pay ratio (which I call *PVerticality* in my analysis) by 2017. Noteworthy is that neither corporate governance nor firm performance plays a role when executive compensation is covered. This suggests that the media does not increase coverage for weakly governed companies but rather concentrates on compensation. As predicted, general interest in the executive (measured via the number of other media coverage $OtherCov_{t+1}$) and the executive being a CEO do have a very strong influence on media attention.

VARIABLES	(1) $CompCov_{t+1}$	(2) $CompCov_{t+1}$	(3) $CompCov_{t+1}$	(4) $CovRatio_{t+1}$	(5) $CovRatio_{t+1}$	(6) $CovRatio_{t+1}$	(7) $CovDummy_{t+1}$	(8) $CovDummy_{t+1}$	(9) $CovDummy_{t+1}$
ExcessComp	0.000162***			0.000134*			0.000123**		
	(3.61e-05)			(7.22e-05)			(5.96e-05)		
ExpComp	8.65e-05			0.000134			-0.000262		
	(0.000150)			(0.000342)			(0.000221)		
PVerticality		0.00650***			0.00716**			0.00593**	
		(0.00126)			(0.00285)			(0.00281)	
TotalComp			0.000154***			0.000134*			9.86e-05
			(3.07e-05)			(7.79e-05)			(6.08e-05)
CEO	4.009***	3.884***	3.910***	3.771***	3.791***	3.771***	3.535***	3.000***	2.975***
	(0.430)	(0.492)	(0.490)	(0.755)	(0.483)	(0.478)	(0.443)	(0.293)	(0.292)
$OtherCov_{t+1}$	0.00345***	0.00408***	0.00346***				0.0139***	0.0135***	0.0138***
	(0.000467)	(0.000503)	(0.000475)				(0.00268)	(0.00246)	(0.00259)
ROA_{t+1}	-0.00998	-0.0141	-0.0102	0.0237	0.0267	0.0237	0.00765	0.00590	0.00478
	(0.0320)	(0.0309)	(0.0312)	(0.0331)	(0.0356)	(0.0334)	(0.0212)	(0.0223)	(0.0209)
ROA	-0.00641	-0.0105	-0.00914	-0.0178	-0.0220	-0.0178	-0.0148	-0.0257**	-0.0227*
	(0.0131)	(0.0126)	(0.0128)	(0.0182)	(0.0162)	(0.0162)	(0.0112)	(0.0123)	(0.0120)
TSR_{t+1}	0.164	0.0267	0.142	-0.176	-0.241	-0.176	-0.341	-0.386	-0.382
	(0.347)	(0.340)	(0.343)	(0.609)	(0.591)	(0.574)	(0.522)	(0.506)	(0.505)
TSR	0.0176	0.103	0.00464	-0.128	-0.122	-0.128	0.0484	-0.0255	0.00863
	(0.277)	(0.296)	(0.271)	(0.342)	(0.347)	(0.332)	(0.378)	(0.378)	(0.371)
TobinsQ	-0.0580	-0.0414	-0.0867	-0.164	-0.156	-0.164	0.260	0.148	0.115
	(0.162)	(0.137)	(0.147)	(0.392)	(0.284)	(0.308)	(0.261)	(0.199)	(0.228)
LnTenure	0.157	0.210*	0.133	-0.0173	-0.0285	-0.0173	-0.0653	-0.140	-0.139
	(0.119)	(0.114)	(0.114)	(0.365)	(0.284)	(0.287)	(0.126)	(0.101)	(0.102)
FirmSize	0.113	0.0814	0.0439	-0.373	-0.358***	-0.373***	0.245	-0.0363	-0.0497
	(0.154)	(0.0757)	(0.0853)	(0.381)	(0.117)	(0.137)	(0.196)	(0.0955)	(0.0996)
excBoardSize	0.00934	0.0268	0.00944	-0.0135	0.000324	-0.0135	-0.0188	-0.00833	-0.0160
	(0.0168)	(0.0172)	(0.0168)	(0.0187)	(0.0225)	(0.0190)	(0.0242)	(0.0232)	(0.0217)
CurrentExec	0.810	0.693	0.778	-0.613	-0.414	-0.613	-1.975*	-2.049**	-2.133**
	(0.822)	(0.825)	(0.831)	(1.768)	(1.504)	(1.687)	(1.022)	(0.950)	(1.013)
FormerExec	-1.677	-0.992	-1.694	2.489	3.037	2.489	1.278	1.409	1.202
	(1.480)	(1.507)	(1.485)	(2.320)	(2.389)	(2.376)	(2.535)	(2.443)	(2.389)
NoMeetings	-0.00670	-0.0125	-0.00975	-0.00654	0.0122	-0.00654	-0.0144	-0.0148	-0.0296
	(0.0432)	(0.0445)	(0.0440)	(0.0808)	(0.0738)	(0.0778)	(0.0668)	(0.0640)	(0.0653)
Constant	-5.072**	-4.735***	-3.886**	0.107	-0.379	0.107	-5.917*	-1.519	-1.078
	(2.567)	(1.607)	(1.806)	(7.395)	(2.981)	(3.388)	(3.473)	(1.824)	(1.895)
Observations	1,349	1,349	1,349	1,349	1,349	1,349	1,349	1,349	1,349
Pseudo R-squared	0.763	0.761	0.763				0.766	0.765	0.763
Log-Likelihood				-39.42	-39.29	-39.42			

The table represents the results of a Poisson regression (column 1, 2 and 3), a general linear model regression with a logit link and a binomial distribution family (column 4, 5 and 6) as well as a Probit regression (column 7, 8 and 9). The sample consists of 1,349 observations for members of the executive board of German DAX companies from fiscal years 2006 to 2014. $CompCov_{t+1}$ indicates the yearly number of reports covering the executive's compensation in year t+1. CovRatiot+1 is the ratio of reports covering the executive's compensation among the coverage that is about other topics in year t+1. CovDummyt+1 is a dummy variable which exhibits a 1 if the executive's compensation is covered by the media in t+1. ExpComp is the estimated expected compensation resulting from the regression in table 2. ExcessComp is TotalComp minus ExpComp or in other words the residual of the compensation regression described in section 3.4.1. PVerticality is the ratio between the executive's compensation and the average employee's compensation. TotalComp is salary, short-term and mid-term bonus, option and share-based compensation, as well as other annual pay for the manager. All compensation is reported in thousands of Euro. $OtherCov_{t+1}$ is a count variable controlling for the general amount of an executive's coverage (not including coverage on compensation) in period t. CEO indicates whether a manager has been CEO. LnTenure is the logarithm of an executive's tenure in years at the end of the year. FirmSize is the logarithm of the company's sales. ROA and ROA_{t+1} is income before extraordinary items divided by average total assets for year t and year t+1. TSR and TSR_{t+1} is total stock return in the year t and t+1 respectively. TSR is the ending stock price minus the initial stock price plus dividends divided by the initial stock price. BoardSize is measured as the residual of regressing the number of directors on the number of employees and industry dummies. This residual variable indicates how much larger (smaller) a board is in comparison to companies in the same size and according company size. FormerExec and CurrentExec is the share of former/ current executives serving on the supervisory board. NoMeetings is the number of meetings the supervisory board conducts during a given year. Industry and year fixed effects are included but not tabulated. Huber-White standard errors clustered by company in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5: Determinants of compensation related media coverage

VARIABLES	(1) $CompCov_{t+1}$	(2) $CompCov_{t+1}$	(3) $CompCov_{t+1}$	(4) $CovRatio_{t+1}$	(5) $CovRatio_{t+1}$	(6) $CovRatio_{t+1}$	(7) $CovDummy_{t+1}$	(8) $CovDummy_{t+1}$	(9) $CovDummy_{t+1}$
ExcessComp	0.000141***			0.000115*			9.87e-05		
	(3.65e-05)			(6.59e-05)			(6.69e-05)		
ExpComp	6.37e-06			-7.36e-05			-0.000441		
	(0.000170)			(0.000187)			(0.000290)		
PVerticality		0.00620***			0.00661***			0.00699**	
		(0.00132)			(0.00188)			(0.00316)	
TotalComp			0.000145***			8.55e-05			8.56e-05
			(3.42e-05)			(6.87e-05)			(6.90e-05)
CEO	3.533***	3.564***	3.488***	4.555***	4.264***	4.218***	2.957***	2.909***	2.799***
	(0.551)	(0.600)	(0.561)	(0.772)	(0.780)	(0.785)	(0.672)	(0.389)	(0.412)
$OtherCov_{t+1}$	0.00375***	0.00431***	0.00354***				0.0144***	0.0122***	0.0127***
	(0.000676)	(0.000762)	(0.000655)				(0.00275)	(0.00224)	(0.00254)
ROA_{t+1}	-0.0347	-0.0539***	-0.0397**	-0.0231	-0.0279	-0.0229	-0.00341	-0.0225	-0.0193
	(0.0232)	(0.0196)	(0.0190)	(0.0214)	(0.0204)	(0.0212)	(0.0161)	(0.0163)	(0.0156)
ROA	0.0191	0.0287	0.0173	0.00940	0.00242	0.00418	-0.0256	-0.00890	-0.00712
	(0.0284)	(0.0250)	(0.0247)	(0.0249)	(0.0262)	(0.0256)	(0.0231)	(0.0169)	(0.0169)
TSR_{t+1}	0.278	0.152	0.258	0.779	0.590	0.689	-0.621	-0.639	-0.684
	(0.310)	(0.321)	(0.312)	(0.572)	(0.559)	(0.567)	(0.596)	(0.536)	(0.573)
TSR	0.259	0.171	0.150	0.310	0.185	0.314	0.557	0.258	0.387
	(0.310)	(0.314)	(0.288)	(0.360)	(0.392)	(0.376)	(0.396)	(0.427)	(0.409)
TobinsQ	-0.398**	-0.0625	-0.364**	0.269	0.324	0.131	0.371	0.279	0.0253
	(0.195)	(0.178)	(0.178)	(0.421)	(0.333)	(0.407)	(0.370)	(0.282)	(0.315)
LnTenure	-0.175	0.152	-0.0958	0.277	0.214	0.133	-0.168	-0.101	-0.282
	(0.185)	(0.149)	(0.173)	(0.253)	(0.214)	(0.273)	(0.206)	(0.200)	(0.192)
FirmSize	0.0532	0.0689	-0.151	-0.0471	-0.210*	-0.296**	0.0847	-0.0634	-0.244
	(0.224)	(0.0965)	(0.142)	(0.198)	(0.110)	(0.148)	(0.286)	(0.112)	(0.172)
excBoardSize	0.0120	0.0325*	0.0131	-0.00591	0.00639	-0.00850	-0.0294	-0.0109	-0.0241
	(0.0190)	(0.0191)	(0.0191)	(0.0235)	(0.0245)	(0.0236)	(0.0219)	(0.0210)	(0.0194)
CurrentExec	-0.0602	0.114	0.465	-0.0781	-0.228	-0.228	-2.539*	-2.199*	-2.352**
	(0.984)	(1.004)	(0.920)	(1.617)	(1.446)	(1.582)	(1.333)	(1.133)	(1.158)
FormerExec	-1.046	-1.154	-0.481	-1.884	-1.698	-1.957	1.210	1.293	1.598
	(1.797)	(1.858)	(1.681)	(2.385)	(2.281)	(2.376)	(2.776)	(2.911)	(2.751)
NoMeetings	0.0302	-0.0158	0.00633	0.0445	0.0475	0.0412	0.0225	-0.000487	-0.0124
	(0.0485)	(0.0510)	(0.0472)	(0.0735)	(0.0727)	(0.0759)	(0.0652)	(0.0624)	(0.0633)
$ExcessEndo_{t-1}$	0.000608**						0.000464		
	(0.000297)						(0.000483)		
$ExpEndo_{t-1}$	0.000161						0.000597**		
	(0.000175)						(0.000262)		
$PVerticalityEndo_{t-1}$		0.00127						0.00495	
		(0.00379)						(0.00852)	
$TotCompEndo_{t-1}$			0.000147			0.000103			0.000261
			(0.000107)			(0.000128)			(0.000228)
Constant	-4.942	-6.073***	-1.740	-7.992**	-5.717***	-3.840	-6.359	-3.911*	-0.273
	(3.684)	(2.036)	(2.762)	(3.751)	(1.941)	(3.219)	(4.838)	(2.338)	(2.891)
Observations	980	980	980	980	980	980	980	980	980
Pseudo R-squared	0.763	0.752	0.758				0.775	0.764	0.762
Log-Likelihood				-27.99	-27.84	-28			

The table represents the results of a Poisson regression with industry and year fixed effects. The sample consists of 980 observations for members of the executive board of German DAX companies from fiscal years 2006 to 2014. $CompCov_{t+1}$ indicates the yearly number of reports covering the executive's compensation in year t+1. CovRatiot+1 is the ratio of reports covering the executive's compensation among the coverage that is about other topics in year t+1. CovDummyt+1 is a dummy variable which exhibits a 1 if the executive's compensation is covered by the media in t+1. ExpComp is the estimated expected compensation resulting from the regression in table 2. ExcessComp is TotalComp minus ExpComp or in other words the residual of the compensation regression described in section 3.4.1. PVerticality is the ratio between the executive's compensation and the average employee's compensation. TotalComp is salary, fringe benefits, short-term and mid-term bonus, option and share-based compensation, as well as other annual pay for the manager. All compensation is reported in thousands of Euro. $OtherCov_{t+1}$ is a count variable controlling for the general amount of an executive's coverage (not including compensation coverage) in period t+1. CEO indicates whether a manager is CEO. LnTenure is the logarithm of an executive's tenure in years at the end of the year. FirmSize is the logarithm of the company's sales. ROA and ROA_{t+1} is income before extraordinary items divided by average total assets for year t and year t+1. TSR and TSR_{t+1} is total stock return in the year t and t+1 respectively. TSR is the ending stock price minus the initial stock price plus dividends divided by the initial stock price. BoardSize is measured as the residual of regressing the number of directors on the number of employees and industry dummies. This residual variable indicates by how much larger (smaller) a board is in comparison to companies in the same size and according company size. FormerExec and CurrentExec is the share of former/ current executives serving on the supervisory board. NoMeetings is the number of meetings the supervisory board conducts during a given year. Industry and year fixed effects are

included but not tabulated. Huber-White standard errors clustered by company in parentheses. ExcessEndot-1, ExpEndot-1, PVerticalityEndot-1 and TotCompEndot-1 are the predicted results of regressing ExcessComp, ExpComp, PVerticality and TotalComp on standard determinants of pay (see sectionDeterminants of media coverage of compensation). . Industry and year fixed effects are included but not tabulated. Huber-White standard errors clustered by company in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 6: Determinants of compensation related media coverage – Endogeneity control

Table 6 provides the results of the same regressions including the endogeneity controls. The main results remain the same in most of the columns. *ExcessComp* loses the previous (already low) significance in column 7 though. *TotalComp* loses the significance in column 6 and 9. *PVerticality* remains significant across all regressions which suggests a very robust positive relationship to compensation related media coverage. The results show again that CEOs and executives with higher general interest receive more coverage on compensation. Other variables are only inconsistently significant.

3.5.3 Impact of media coverage on compensation

The results provided in Table 7 clarify whether changes in the level or composition of pay are adopted after the media's attention towards compensation. Hypothesis 2a assumes that excessive compensation decreases after public pressure following the managerial power theory. However, column 1 shows a positive, slightly significant coefficient for the media coverage variable. This indicates an increase in *ExcessComp* between the year before the coverage and the year after the coverage for companies with more coverage on compensaiton. Consequently, the share of pay that cannot explained by standard determinants of pay is not reduced as intended by the managerial power theory, it even rises.

Column 2 shows an even more significant positive coefficient for total compensation. This means that more compensation related coverage leads to higher overall compensation over the three-year period. Hypothesis 2a has, therefore, to be rejected: the assumption that public attention can serve as limiting power for excessive or simply high compensation does not hold.

Previous research conducted with US datasets also fails to find the effect predicted by the managerial power theory (Core et al. (2008), Kuhnen and Niessen (2012)). They find no significant coefficient that indicates decreased compensation after coverage. This could be due to various reasons. First, pursuing the "backscratching" theory further, supervisory directors may not have increased interest to adjust compensation just because of media coverage. Reputational concerns may be of less importance than the positioning within the tightly-knit network to remain successful. Second, directors might also fail to understand that the media's criticism is justified as the compensation cannot be explained by standard economic determinants. By misunderstanding the outrage as part of the "German envy culture" or a symptom of social equity concerns, boards might not feel the need to incorporate change. Third, one has to keep in mind that the contracts concluded with the respective executives run between 3 to 5 years. During these years, the supervisory boards can reduce executive compensation only if the company performance deteriorates significantly (& 87, Abs. 2 S. 1 AktG), the executive agrees to waive his contractual rights, or the evaluation of the executive's target achievement is subject to a certain subjectivity.

VARIABLES	(1) Change in PctExcessComp	(2) Change in TotalComp	(3) Change in PctFixedComp	(4) Change in PctIncentComp
CompCov	0.00967**	81.23***	-0.00273***	0.00285***
	(0.00418)	(26.33)	(0.000821)	(0.000941)
ChangeROA		27.94	-0.00505***	0.00524***
		(16.59)	(0.00157)	(0.00171)
ChangeTSR		137.9	-0.0532***	0.0581***
		(100.9)	(0.0128)	(0.0141)
ChangeTobinsQ		503.6***	0.0133	-0.0110
		(160.9)	(0.0208)	(0.0221)
ChangeFirmSize		1,813***	-0.239***	0.260***
		(592.9)	(0.0778)	(0.0797)
$MRPctExcess_{t-1}$	-0.692***			
	(0.0727)			
$MRTotalComp_{t-1}$		-0.350***		
		(0.0657)		
$MRPctFixComp_{t-1}$			-0.512***	
			(0.0597)	
$MRPctIncentComp_{t-1}$				-0.607***
				(0.0712)
Constant	-0.136	801.6***	0.182***	0.386***
	(0.0938)	(187.7)	(0.0333)	(0.0556)
Observations	1,209	1,209	1,209	1,209
Adjusted R-squared	0.265	0.262	0.400	0.413

The table presents the results of pooled cross-sectional OLS regressions with year fixed effects. The sample consists of 1,209 observations for German DAX members of the executive board from fiscal years 2006 to 2014. The dependent variable is Change in PctExcessComp, Change in TotalComp, Change in PctFixedComp, Change in PctIncentComp respectively from year t-1 to t+1 (one year previous to coverage vs. one year after coverage). TotalComp is salary, fringe benefits, short-term and mid-term bonus, option and share-based compensation, as well as other annual pay for the manager in the year t. PctExcessComp is log(TotalComp)-log(ExpComp). Change in PctExcessComp is calculated as $PctEcessComp_{t+1}$ minus $PctExcessComp_{t-1}$. CompCov is a count variable measuring the number of all compensation related reports in period t. ChangeROA, ChangeTSR, ChangeTobinsQ, ChangeFirmSize are ROA, TSR, TobinsQ and FirmSize one period after the coverage minus the respective variables one period before the coverage. FirmSize is the logarithm of the company's sales. ROA is income before extraordinary items divided by average total assets. TSR is total stock return and therefore the ending stock price minus the initial stock price plus dividends divided by the initial stock price. Tobin's Q is total assets minus common stock plus the market value of equity deflated by total assets. Year fixed effects are included but not tabulated. $MRPctExcess_{t-1}$, $MRTotalComp_{t-1}$, $MRPctFixComp_{t-1}$, $MRPctIncentComp_{t-1}$ is PctExcess, TotalComp, PctFixComp, PctIncentComp in period t-1 in order to control for mean reversion similar to Core et al. (2008). Huber-White robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 7: Impact of media coverage on changes in pay

However, in comparison to US-based findings, the results provided in Table 7 are the first ones to actually report increased (excessive) compensation. None of the above-mentioned theories explains why compensation and its excessiveness are rising. First, this could be explained by unaddressed endogeneity even though this paper tried to address this issue by applying lagged variables and the two-year-change between t-1 and t+1 as the dependent variable. Already high executive compensation in t-1 may induce major coverage in t. The question remains why (excessive) compensation rises in t+1. This leads me to a second theory, the "superstar executive". Previous literature by Wade et al. (2006), Malmendier and Tate (2009), and Bültel (2010) finds that executives with (positive) press coverage can use that public attention to request a compensation premium. As the coverage on compensation is highly linked to general coverage, I examine this idea further. The results can be found in Table 8.

VARIABLES	(1) Change in PctExcessComp	(2) Change in TotalComp	(3) Change in PctFixedComp	(4) Change in PctIncentComp
CompCov	0.00723	48.30**	-0.00292**	0.00321**
	(0.00495)	(20.30)	(0.00120)	(0.00141)
OtherCov	0.000264	4.451***	2.06e-05	-3.86e-05
	(0.000344)	(1.500)	(7.90e-05)	(9.40e-05)
ChangeROA		25.98	-0.00505***	0.00525***
		(15.88)	(0.00158)	(0.00172)
ChangeTSR		135.1	-0.0532***	0.0581***
		(101.6)	(0.0128)	(0.0141)
ChangeTobinsQ		492.9***	0.0133	-0.0111
		(156.6)	(0.0208)	(0.0221)
ChangeFirmSize		1,893***	-0.239***	0.259***
		(606.8)	(0.0782)	(0.0802)
$MRPctExcess_{t-1}$	-0.693***			
	(0.0730)			
$MRTotalComp_{t-1}$		-0.382***		
		(0.0616)		
$MRPctFixComp_{t-1}$			-0.512***	
			(0.0596)	
$MRPctIncentComp_{t-1}$				-0.607***
				(0.0709)
Constant	-0.137	834.3***	0.181***	0.386***
	(0.0941)	(182.2)	(0.0334)	(0.0555)
Observations	1,209	1,209	1,209	1,209
Adjusted R-squared	0.265	0.277	0.400	0.412

The table presents the results of pooled cross-sectional OLS regressions with year fixed effects. The sample consists of 1,209 observations for German DAX members of the executive board from fiscal years 2006 to 2014. The dependent variable is Change in PctExcessComp, Change in TotalComp, Change in PctFixedComp, Change in PctIncentComp respectively from year t-1 to t+1 (one year previous to coverage vs. one year after coverage). . TotalComp is salary, fringe benefits, short-term and mid-term bonus, option and share-based compensation, as well as other annual pay for the manager in the year t. PctExcessComp is log(TotalComp)-log(ExpComp). Change in PctExcessComp is calculated as $PctEcessComp_{t+1}$ minus $PctExcessComp_{t-1}$. CompCov is a count variable measuring the number of all compensation related reports in period t. OtherCov is counting the media observations for an executive with general coverage (not including coverage on compensation) in period t. ChangeROA, ChangeTSR, ChangeTobinsQ, ChangeFirmSize are ROA, TSR, TobinsQ and FirmSize one period after the coverage minus the respective variables one period before the coverage. FirmSize is the logarithm of the company's sales. ROA is income before extraordinary items divided by average total assets. TSR is total stock return and therefore the ending stock price minus the initial stock price plus dividends divided by the initial stock price. Tobin's Q is total assets minus common stock plus the market value of equity deflated by total assets. Year fixed effects are included but not tabulated. $MRPctExcess_{t-1}$, $MRTotalComp_{t-1}$, $MRPctFixComp_{t-1}$, $MRPctIncentComp_{t-1}$ is PctExcess, TotalComp, PctFixComp, PctIncentComp in period t-1 in order to control for mean reversion similar to Core et al. (2008). Huber-White robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 8: Impact of media coverage on changes in pay – General media coverage

Indeed, the compensation is significantly positively correlated to general media coverage which supports the "executive superstar" theory. The significance of the coefficient of *CompCov* on the other hand vanished. Even though general media coverage is already included in the analysis, coverage on compensation remains fairly significant for increases in total compensation (see column 2).

Column 3 and 4 of Table 7 and Table 8 provide the findings to answer hypothesis 2b and 2c. While the percentage of fixed compensation falls after media coverage, the share of incentive compensation rises. This result is robust as it appears in both models. This indicates that in

the short term, German boards rather change the compensation structure than the level or adequacy, similarly to boards in the US.

According to the results, total compensation is mostly influenced by a change in *FirmSize* and *TobinsQ*, while the share of fixed compensation is negatively related to changes in *ROA* and *TSR* which seems very straightforward. At the same time, an increase in *FirmSize* (measured via the log of sales) should lead to a smaller share of fixed compensation. It could be that larger companies put more emphasis on pay-performance sensitivity than smaller firms. The share of incentive compensation exhibits reversed signs in comparison to the share of fixed compensation, which seems logical.

For matters of completeness, I repeat the analyses for the alternative measurements of coverage, *CovRatio* and *CovDummy*. The results can be found in Table 9. While *CovRatio* already accounts for the amount of general coverage (it measures the share of coverage focused on compensation within all coverage), *CovDummy* does not. The second set of models (column 5 to 8) consequently includes a dummy variable which equals 1 when the executive faces general media coverage (*OtherCovDummy*).

All previously described results remain the same. *CovRatio* and *CovDummy* exhibit no significant coefficient for the change in excessive compensation. These findings match the results in table 8 and previous findings from the US. Media coverage can therefore not increase the adequacy of executive pay in the short term. Similar to results from table 7 and 8, overall compensation rises. Total pay is also linked to general coverage. In all models, the share of fixed compensation falls, and the share of incentive compensation rises. Overall the alternative measures indicate robust results. Hypothesis 2a has to be rejected, hypotheses 2b and 2c can be accepted.

VARIABLES	(1) Change in PctExcessComp	(2) Change in TotalComp	(3) Change in PctFixComp	(4) Change in PctIncentComp	(5) Change in PctExcessComp	(6) Change in TotalComp	(7) Change in PctFixComp	(8) Change in PctIncentComp
CovRatio	0.609	2,943**	-0.116*	0.125*				
	(0.451)	(1,183)	(0.0581)	(0.0734)				
CovDummy					0.119	715.7**	-0.0295*	0.0288
					(0.0956)	(268.7)	(0.0166)	(0.0206)
OtherCovDummy					0.0190	369.7*	0.00656	-0.00913
					(0.0887)	(199.2)	(0.0159)	(0.0190)
ChangeROA		28.38*	-0.00504***	0.00523***		26.09	-0.00501***	0.00520***
		(16.47)	(0.00157)	(0.00171)		(15.90)	(0.00157)	(0.00170)
ChangeTSR		142.0	-0.0534***	0.0583***		144.8	-0.0533***	0.0581***
		(104.4)	(0.0130)	(0.0143)		(104.2)	(0.0129)	(0.0142)
ChangeTobinsQ		524.5***	0.0135	-0.0112		460.3***	0.0131	-0.0107
		(162.8)	(0.0205)	(0.0219)		(153.0)	(0.0207)	(0.0220)
ChangeFirmSize		1,746***	-0.239***	0.259***		1,798***	-0.239***	0.259***
		(604.6)	(0.0779)	(0.0799)		(610.4)	(0.0770)	(0.0788)
$MRPctExcess_{t-1}$	-0.691***				-0.696***			
	(0.0728)				(0.0729)			
$MRTotalComp_{t-1}$		-0.298***				-0.378***		
		(0.0632)				(0.0837)		
$MRPctFixComp_{t-1}$			-0.511***				-0.511***	
			(0.0601)				(0.0599)	
$MRPctIncentComp_{t-1}$				-0.605***				-0.605***
				(0.0715)				(0.0714)
Constant	-0.138	713.4***	0.181***	0.386***	-0.149	758.1***	0.182***	0.385***
	(0.0952)	(200.0)	(0.0334)	(0.0562)	(0.0947)	(214.5)	(0.0334)	(0.0562)
Observations	1,209	1,209	1,209	1,209	1,209	1,209	1,209	1,209
Adjusted R-squared	0.264	0.244	0.398	0.411	0.267	0.287	0.399	0.411

The table presents the results of pooled cross-sectional OLS regressions with year fixed effects. The sample consists of 1,209 observations for German DAX members of the executive board from fiscal years 2006 to 2014. The dependent variable is Change in PctExcessComp, Change in TotalComp, Change in PctFixedComp, Change in PctIncentComp respectively from year t-1 to t+1 (one year previous to coverage vs. one year after coverage). . TotalComp is salary, fringe benefits, short-term and mid-term bonus, option and share-based compensation, as well as other annual pay for the manager in the year t. PctExcessComp is log(TotalComp)-log(ExpComp). Change in PctExcessComp is calculated as $PctEcessComp_{t+1}$ minus $PctExcessComp_{t-1}$. CovRatio is the percentage of compensation related coverage within general coverage. CovDummy is 1 if the executive is covered for his compensation. OtherCovDummy is 1 if the executive is covered for topics other than his compensation. ChangeROA, ChangeTSR, ChangeTobinsQ, ChangeFirmSize are ROA, TSR, TobinsQ and FirmSize one period after the coverage minus the respective variables one period before the coverage. FirmSize is the logarithm of the company's sales. ROA is income before extraordinary items divided by average total assets. TSR is total stock return and therefore the ending stock price minus the initial stock price plus dividends divided by the initial stock price. Tobin's Q is total assets minus common stock plus the market value of equity deflated by total assets. Year fixed effects are included but not tabulated. $MRPctExcess_{t-1}$, $MRTotalComp_{t-1}$, $MRPctFixComp_{t-1}$, $MRPctIncentComp_{t-1}$ is PctExcess, TotalComp, PctFixComp, PctIncentComp in period t-1 in order to control for mean reversion similar to Core et al. (2008). Huber-White robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 9: Impact of media coverage on changes in pay – Alternative coverage measures

3.5.4 Impact of media coverage on corporate valuation

I perform an event study around the occurrence of media coverage on compensation. Executives subject to compensation coverage are investigated in the full sample (Panel A) as well as discriminated by the existence of positive (Panel B) and negative excess compensation (Panel C). Table 10 shows the mean abnormal returns and cumulated abnormal returns for the different event days and event windows applied and their corresponding robust standard errors. Looking at the full sample, positive abnormal returns can be found two days after the media coverage as well as for the event windows [-1;2] and [0;2]. More insight can be gained by looking at the subsamples of 183 observations with positive excess compensation in panel B and the 68 observations with negative excess compensation in panel C. Panel B shows significant positive stock price reactions on a 1 % level on day two and three after the coverage as well as for the event windows [0;2], [-1;2] and [-1;3]. Slightly less significant are the positive abnormal returns within the event window [-1;1]. This fits the hypothesis that shareholders react positively to the coverage of compensation because they know about their company's excess pay and hope for changes due to public pressure. This would be in line with the outrage theory propagated by Bebchuk et al. (2002) and Bebchuk and Fried (2004) and findings from Cai and Walkling (2011), who found positive stock price reactions following the introduction of say on pay legislation in companies with weak governance. Similarly, Joe et al. (2009) found a positive stock market reaction in companies exposed on a "Worst Board List" by the media. Hypothesis 3b can therefore be accepted.

Panel C exhibits negative abnormal returns one day before and after the coverage as well as within the event window [-1;1]. At first glance the results could support the hypothesis expressed when analyzing panel B: It assumes that shareholders know about their company's compensation policy and react negatively if the company gets mentioned for their compensation even though it lies below economically sensible levels. Nevertheless, the result on day two shows a positive coefficient with high significance (1 % level). This is not a consistent result and may suggest the existence of confounding events two days after the coverage.

Panel A: All companies				Panel B: Companies with positive Excess compensation				Panel C: Companies with negative excess compensation			
Event window	**No. days**	**N**	**Mean AR/ CAR**	**Event window**	**No. days**	**N**	**Mean AR/ CAR**	**Event window**	**No. days**	**N**	**Mean AR/ CAR**
-1	1	308	0.0002 [0.001]	-1	1	183	0.0008 [0.001]	-1	1	68	-0.0047* [0.003]
0	1	308	0.0019 [0.001]	0	1	183	0.0028* [0.002]	0	1	68	-0.0029 [0.003]
1	1	308	0.0001 [0.001]	1	1	183	0.0021 [0.001]	1	1	68	-0.0048* [0.003]
2	1	308	0.0038*** [0.001]	2	1	183	0.0039*** [0.001]	2	1	68	0.0052** [0.002]
3	1	308	0.0020 [0.001]	3	1	183	0.0035*** [0.002]	3	1	68	0.0019 [0.003]
[-1;1]	3	308	0.0022 [0.002]	[-1;1]	3	183	0.0057** [0.003]	[-1;1]	3	68	-0.0012* [0.007]
[-1;2]	4	308	0.0059** [0.003]	[-1;2]	4	183	0.0096*** [0.003]	[-1;2]	4	68	-0.0072 [0.008]
[0;2]	3	308	0.0058*** [0.002]	[0;2]	3	183	0.0088*** [0.003]	[0;2]	3	68	-0.0025 [0.006]
[-1;3]	5	308	0.0061 [0.003]	[-1;3]	5	183	0.0099*** [0.003]	[-1;3]	5	68	-0.0072 [0.008]

This table exhibits mean returns/ cumulative abnormal returns and their pertaining p-values obtained by pooled cross-sectional OLS regressions. Panel A consists of the full sample of events (308 observations) for German DAX members of the executive board from fiscal years 2006 to 2013. Panel B contains the 183 observations where excess compensation is positive. Sample C comprises the 68 observations where excess compensation is negative. Huber-White robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 10: Abnormal and cumulated abnormal returns

I further examine the cumulative abnormal returns (CAR) in a cross-sectional regression with firm size, leverage and the amount of coverage as control variables. Results remain robust for the application of different event windows. Table 11 shows results for the event window [-1;2]. Columns (1) and (2) show results for the full sample of 308 observations, columns (3) and (4) for the 183 observations with positive excess compensation and columns (5) and (6) for the 68 observations with negative excess compensation.

My analysis shows that there is no impact on cumulative abnormal returns in the pooled sample. However, Table 11 column (3) shows that the number of compensation related reports on the event day (t=0) has a positive impact on cumulative abnormal returns for companies with positive excess pay (significant at the 5 % level). A negative impact can be discovered for companies with negative excess pay (significant on a 1 % level). I further test whether the monthly amount of coverage predicts cumulative abnormal returns, assuming that companies with higher coverage are bigger and better known and therefore expect public outrage to mount up after the first few articles. The coefficients show the same sign for the number of reports in the event month as for the number of reports on the event day. However, only the positive impact on cumulative abnormal returns in panel B, companies with positive excess compensation, is significant (on a 5 % level). Results remain robust without the control variables.

VARIABLES	(1) CAR	(2) CAR	(3) CAR	(4) CAR	(5) CAR	(6) CAR
	Full sample		Sample positive excess compensation		Sample negative excess compensation	
CoverageDayly		-0.0104		0.0128**		-0.00925***
		(0.00845)		(0.00626)		(0.00333)
CoverageMonthly	0.000683		0.00291**		-0.00206	
	(0.00128)		(0.00115)		(0.00210)	
Log(sales)		0.00354		0.00576**		-0.000778
	(0.00308)	(0.00295)	(0.00289)	(0.00290)	(0.0134)	(0.0132)
Leverage	-0.00865	-0.0100	-0.0255	-0.0233	-0.0242	-0.0245
	(0.0179)	(0.0180)	(0.0212)	(0.0211)	(0.0512)	(0.0510)
Constant	-0.00746	-0.00964	-0.0538	-0.0678	0.0260	0.0580
	(0.0487)	(0.0474)	(0.0453)	(0.0450)	(0.214)	(0.212)
Observations	308	308	183	183	68	68
Adjusted R-squared	0.173	0.190	0.180	0.183	0.548	0.562

The table shows the results of pooled cross-sectional OLS regressions. The sample in columns (1) and (2) consists of 308 observations for German DAX members of the executive board from fiscal years 2006 to 2013 with coverage on compensation. The sample in columns (3) and (4) and (5) and (6) are subsamples of panel A (featured in columns (1) and (2)). Panel B (featured in columns (3) and (4)) consists of 183 observations where excess compensation is positive. Panel C (featured in columns (5) and (6)) consists of 68 observations where excess compensation is negative. The dependent variable is the cumulative abnormal return estimated by applying the market model. Log(sales) is a proxy for firm size and is the logarithm of Sales. Leverage measures the company's leverage. Comptenor_daily is a count variable counting all compensation related reports on the event day. Comptenor_monthly is a count variable counting all compensation related reports in the event month. Year and industry fixed effects are included but not tabulated. Huber-White robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 11: Cross-sectional regression on CAR

These results suggest that shareholders do pay attention to media echo. On first glance, the result is surprising though. Companies with positive excess compensation do react positively to the coverage of compensation and negative if the excess compensation is negative. This is consistent with the findings for the abnormal returns/ cumulative abnormal returns in Table 10. As already elaborated, shareholders may know about the company's weaknesses and hope for change when these are addressed in public. Cai and Walkling (2011) find a similar effect with regards to legislative changes: in companies with weak governance, the introduction of say on pay legislation is followed by positive stock price reactions. And Joe et al. (2009) show a positive market reaction for companies that are exposed in the media for weak governance. Hypothesis 3b can therefore be accepted. There is a negative reaction of stock prices in companies with negative excessive compensation. This may be due to reputational concerns of shareholders. The pay is below the expected levels and yet there is media coverage. A possible explanation would be that the low pay indicates problems in the company's performance which is negatively perceived by shareholders. Depending on how the media covers these specific companies, the negative reaction might also be evoked by unjustified media attention. This would indicate a similar setting as in Cai and Wlakling (2011): stock markets react negatively to say-on-pay proposals that target companies without excessive CEO pay, poor governance, or poor performance.

3.6 Conclusion

This paper examines both determinants and consequences of media coverage on compensation in the context of big stock listed German companies. The results provided by the analyses suggest that the media indeed covers managers for their pay and not for their tenure or the company's performance, size, prospects or governance. Both the level of compensation as well as high verticality (the ratio between the executive's compensation and average employee compensation) drive higher coverage on compensation. The results of my analysis suggest further that the media is capable of distinguishing between excessive and adequate compensation as only *ExcessComp* exhibits a significant coefficient. This finding is in line with previous research from Core et al. (2008).

The findings suggest that, similarly to US boards, German supervisory boards rather change the structure than the adequacy of executive pay after the media attention. The analysis shows an increase in the share of incentive compensation and a decrease in fixed compensation, therefore increasing the pay-performance-sensitivity. The excessiveness of compensation is not significantly influenced and overall pay even rises after the coverage. Therefore the media cannot serve as external governance device as intended by the managerial power theory. The findings may be influenced by various factors.

First, supervisory directors may not be incentivized by the media coverage to reduce compensation or increase its adequacy because reputational damage is unlikely but networking and "backscratching" are key to future success. On the other hand, supervisory directors may also act in all conscience believing their counteraction to be the right one: They increase the pay-performance-sensitivity while not being aware of the compensation's excessiveness. The increased total compensation may be the result of the increased incentive pay. Incentive pay imposes a risk on the executive but also enables higher overall compensation due to the risk premium requested by the respective executive. By misunderstanding the outrage as part of the "German envy culture" or a symptom of social equity concerns, boards might not feel the need to incorporate change. Furthermore, the measurement of excessive pay has a significant impact on the results. Even though the model for predicting *ExpComp* is well-established in research by now, it is unclear how boards perceive compensation to be adequate and whether that matches what I measure. Consequently, it might be not apparent to the directors that the pay is excessive nor that the media is capable of identifying the companies suffering from excessive compensation. The model may also miss out important factors and therefore measure *ExcessComp* faulty.

Second, companies conclude a multi-year contract with the executives. Therefore changes in compensation are difficult to enforce. As long as the performance has not suffered significantly, the executive has to waive his contractual rights, or the supervisory directors have to apply

subjectivity in measuring the executive's performance to down-correct the bonus. The second option is not desirable for anyone interested in fair and predictable bonus payments.

Third, as the increased compensation is also related to general coverage, another theory provides explanatory approaches. According to previous findings on superstar CEOs (Malmendier and Tate (2009), Bültel (2010)), executives with increased media coverage may be capable of requesting a pay premium.

Finally, the paper at hand cannot rule out endogeneity issues despite the counter-actions taken. Results may be influenced by simultaneity issues in the data where compensation influences coverage and vice versa.

The third part of analyses in this paper examines stock market reactions to the compensation-related media coverage. The stock market reacts positively to compensation related coverage in firms with positive excess compensation and negatively in companies with negative excess compensation. Both positive ans negative reaction is observed similarly in the settings of Cai and Walkling (2011) and Joe et al. (2009)). A possible interpretation is that shareholders hope for change once the excessive compensation is discovered and addressed. Future research may provide deeper insights into the dynamics of the stock market reactions. First, media coverage may be analyzed in more depth to understand how the media covers companies with negative and positive excessive compensation. Second, a differentiated view on different shareholder groups' reactions may provide a better understanding of the phenomenon. Finally, also the event study faces limitations due to the nature of media coverage. When a topic gains public interest, media coverage is characterized by multiple reports within a few days. One therefore has to decide between overlapping events and estimation windows on the one hand and exclusion of the regarding observations on the other hand. Additional research may be able to generalize the findings to other settings.

Overall, this study contributes to the governance literature and enhances the understanding of the media's role as a governance control mechanism. This study provides valuable evidence on the coverage decision of the German media and its influence on management compensation and stock market prices. Even though this paper tests the propositions with a German dataset, the findings mostly match the results provided by papers with US datasets. The mentioned socio-cultural differences between Germany and the US may therefore not be relevant in this setting. This suggests that theories developed for the US market may also be applied in the German market.

3.7 Appendix

Coded is all coverage related to politics and economy in

- The national daily newspapers
  BILD, FRANKFURTER ALLGEMEINE ZEITUNG, FRANKFURTER RUNDSCHAU, SÜDDEUTSCHE ZEITUNG and WELT,
- The national weekly newspapers
- BILD AM SONNTAG, FRANKFURTER ALLGEMEINE SONNTAGSZEITUNG, RHEINISCHER MERKUR, WELT AM SONNTAG and ZEIT,
- The magazines
- FOCUS, SPIEGEL, STERN and SUPER ILLU;
- The tv news
- ARD TAGESSCHAU, ARD TAGESTHEMEN, ZDF BERLIN DIREKT, ZDF HEUTE, ZDF HEUTE JOURNAL (on days without HEUTE JOURNAL the late edition of HEUTE evening news), PROSIEBEN NEWSTIME, RTL AKTUELL and SAT.1 18:30,
- The tv magazines
- BERICHT AUS BERLIN, BERLIN DIREKT, FAKT, FRONTAL, KONTRASTE, MONITOR, PANORAMA, PLUSMINUS, REPORT, and WISO.

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4 Essay 3: Compensation report transparency – Evidence of camouflage?

Abstract

Using a hand-collected dataset of 429 observations I assess which governance, ownership and compensation variables influence the quality of disclosure in compensation reports from 2006 to 2014. The choice of a German dataset offers high variability of disclosure in a country with relatively unspecific requirements and very distinct governance characteristics such as a two-tier board system and employee representation in the supervisory board. The focus on compensation disclosure presents a setting in which a conflict of interest between shareholders and managers can be expected. The manually collected disclosure data is based on a self-developed and extensive disclosure index, a distinct feature of the paper. The index shows a highly significant negative relation to the company's bid-ask spread, a common measure of information asymmetry. The overall findings suggest that companies refrain from more detailed disclosure because it means additional effort. Evidence for camouflage as proposed by the managerial power theory cannot be found. The empirical analyses reveal four major disclosure determinants: company size, age, family members in the boards and verticality, which is the ratio between average employee compensation and average executive compensation. Other variables such as proprietary costs, governance variables, and performance show no or no stable influence.

JEL Classifications: M52; G32; G38; M48; M12; J33

Keywords

Executive compensation; excessive compensation; compensation disclosure; corporate governance

"*Publicity is justly commended as a remedy for social and industrial diseases. Sunlight is said to be the best of disinfectants; electric light the most efficient policeman*."
Brandeis (1913)

4.1 Motivation

Executive compensation is a controversially discussed topic both in the public media as well as in research publications. While the quest for the determinants of pay has occupied researchers for about two decades, the question of how compensation is actually disclosed only just recently gained interest. This is even more surprising as disclosure itself (and the resulting data availability) is the main reason for research on compensation in the first place.

One might assume that due to regulation there is little variation to examine. Alas, disclosure depends highly on the country and the point in time chosen. The first mover in regulating disclosure was the United States of America (US) where the Securities Exchange Commission (SEC) started demanding disclosure of the three highest-paid executives' names and all compensation received as early as 1934. Many amendments and regulations in other countries followed. Germany and its *Executive Compensation Disclosure Act* ("Gesetz zur Offenlegung der Vorstandsvergütung", VorstOG) in 2006 were one of the late-adopters. Nonetheless, enforcement of disclosure seems to be rather weak, and the requirements leave considerable discretion how to actually disclose the requested information.

Looking closer at German compensation reports, one can easily observe different approaches. While some companies explain their compensation system very well, other reports are difficult to understand and sometimes present redundant or even contradictory information. Surely one of the reasons why regulation has become ever more demanding. The *German Corporate Governance Code* ("Deutscher Corporate Governance Kodex", DCGK; a code of conduct) for example advanced its disclosure requirements further in 2014, supplying the companies with model tables to make compensation more comparable among the company's peers.

But even in countries with more precise disclosure requirements companies seem to follow the regulation rather reluctantly. Evidence from the US indicates that not even legislation guarantees compliance as the SEC identified many disclosure defects when examining the listed companies' reports (Robinson et al. (2011)).

Reviewing the literature on disclosure reveals that a unifying theory explaining all branches of the research stream is lacking. Core (2001) and Verrecchia (2001) propose the common basis of disclosure to be its impact on the cost of capital. While this seems to work for the branches of association-based disclosure, examining effects of exogenous disclosure on investors' behavior and asset equilibrium prices or trading volume, and efficiency-based disclosure,

which is in search of the most efficient form of disclosure independent of the disclosed information itself, within the literature on discretionary-based disclosure it is only partly applicable. It is less likely for disclosure of compensation information to influence the cost of capital than for disclosure on general financials or products. Other theories similarly struggle to explain the discrete decision of companies how to disclose compensation. Managers will less likely be perceived as more capable or reduce litigation risk with voluntary disclosure on compensation as they do with voluntary disclosure on financials (Trueman (1986)) and Skinner (1997) respectively). Often companies refer to competitive disadvantages (proprietary costs) when justifying their decision to not disclose certain compensation information (Robinson et al. (2011)).

Another hypothesis for withheld disclosure is provided by the literature on opportunistic behavior. It suggests that disclosure is often a strategic choice of managers, for example when they benefit from increased stock-based compensation (Noe (1999), Aboody and Kasznik (2000), Miller and Piotroski (2000)). Similarly, the managerial power theory by Bebchuk et al. (2001, 2002, 2004) assumes that non-disclosure is a consequence of weak governance and managerial rent extraction. To hide their weakness and prevent public outrage over the rent extraction, boards engage in camouflaging activities. This would be supported by weak law enforcement. Robinson et al.'s (2011) evidence from the US shows that it is unlikely that companies fear sanctions for lacking compensation disclosure.

Finally, without advantages to be expected or sanctions to be feared, companies will likely choose the option with the lowest effort. As collecting information and preparing it for the public imposes additional effort onto the company, non-disclosure might simply be motivated by pragmatism. This efficiency hypothesis would be the alternative explanation.

This research paper aims to understand the reasons behind the companies' struggle by examining the determinants of (non-)disclosure. The few results in this field of research so far are inconclusive.

Using data on large German firms for the years 2002 through 2005, the study of Chizema (2008) shows that institutional ownership, dispersed ownership and state ownership are positively and significantly associated with the disclosure of individual executive compensation.

Robinson et al. (2011) find evidence that excessive CEO compensation is positively associated with disclosure defects identified by the SEC. Similarly, Coulton et al. (2001) observe that remuneration disclosures are significantly less transparent for CEOs who have relatively high remuneration in Australia. However, governance and ownership characteristics, which are often said to have an impact on compensation itself, do not impact compensation disclosure according to Coulton et al. (2001). Laksmana (2008), as well as Ben-Amar and Zeghal (2011)

on the other hand, find that board independence has a positive impact on transparency. Yet, Muslu's (2010) results based on European data support the contracting theory. Companies with more executives in the board and CEOs as board chairs provide more disclosure. He finds this effect is more durable for companies with strong investor protection.

Overall, the findings from countries shaped by the Anglo-American system seem to support the managerial opportunism hypothesis. The small number of results leaves space for additional research that covers a broader set of variables so to understand a fuller picture of disclosure. Furthermore, the country chosen for this study offers a setting with distinct compensation, governance and legislation characteristics which enable the researcher to gain valuable insights on the disclosure decision within its cultural context.

German executive compensation is more often cash-based than share- or option-based and is overall lower than in the US. Germany additionally exhibits a different governance system with two-tier boards and employee representation in supervisory boards. Crossland and Hambrick (2007) describe Germany as a medium discretion context compared to the US. They find robust evidence that CEOs in Germany have a substantially lower impact on firm outcomes than CEOs in the US. Germany is also said to be rather stakeholder oriented than shareholder oriented (Fiss and Zajac (2004)) and social equity concerns play a big role in the public discussion about management compensation. Not surprisingly, the German government passed the *Act on the Appropriateness of Executive Compensation* ("Gesetz zur Angemessenheit der Vorstandsvergütung", VorstAG). All these characteristics help to generalize the findings from the US, Canada and Australia within Anglo-American governance systems. Finally, the setting offers optimal circumstances for examining voluntary disclosure as the law requires companies to disclose the executive's compensation components individually and separately, but leaves everything else at the company's discretion. This leads to high variation in pay disclosure, a feature that seems to be missing in datasets from the US (Muslu (2010)).

The disclosure index and the effort that went into hand-collecting vast amounts of data are another unique feature of this study. To quantify the extent of compensation-related information given in the companies' annual reports, I construct a detailed disclosure index that encompasses three major information categories: 1) information on compensation components, 2) readability and 3) information about the pay-setting process and adequacy of pay. The index data was hand collected for more than 80 companies over 9 years yielding 752 observations. After excluding companies with missing control variables, 429 observations remain. The index itself is the first index that allows for examining voluntary disclosure as it is independent of the country's requirements.

In the first part of this study, I relate the disclosure index score to widely used measures of information asymmetry: bid-ask-spread and stock return volatility. This analysis serves a dual purpose: finding a significant relationship between the disclosure index and information asymmetry measures indicates the validity of the former, which, like other disclosure indexes, may be subjective. Indeed I document a negative relation between the extent of disclosure and both the bid-ask spread and stock return volatility, suggesting that a lower index value is mirrored in higher information asymmetry.

In the second part of the paper, I provide empirical evidence on disclosure determinants. By looking into various explaining variables jointly, I contribute to the literature, which so far has concentrated on aspects only. Especially pay as a determinant for lacking transparency has been utterly underrepresented in research until now. Overall, the results of this study extend and complement the existing research.

While previous studies found evidence for the managerial power theory's assumption that opaque compensation reports are the result of camouflaging excessive pay (Robinson et al. (2008), Coulton et al. (2001)) and weak governance (Laksmana (2008) as well as Ben-Amar and Zeghal (2011)) my paper indicates that mainly social equity issues and pragmatism keep German companies from disclosing. From all compensation variables, only verticality (meaning the ratio between average employee compensation and average executive compensation) is negatively significant. Consistent with the efficiency hypothesis larger companies invest more into disclosure than smaller companies. Older companies and companies with family members in one of the boards (either supervisory or executive board) are less forward coming with compensation disclosure. The findings on other variables such as proprietary cost are inconclusive.

This paper extends the literature stream on disclosure in general and compensation disclosure in specific. Additionally, it contributes to research on the applicability of theories across different research settings.

The paper proceeds as follows. In section 4.2 I review the existing literature and develop the hypotheses. Section 4.3 describes the sample selection and provides examples from the collected dataset. Section 4.5 introduces the methodology and the used variables. In section 4.6 the results are presented before section 4.7 concludes the paper.

4.2 Institutional background – Compensation disclosure in Germany and the US

Most of the existing research on executive compensation stems from the US as datasets were available in a standardized way early on. However, datasets from other countries often offer distinctive advantages, not only to verify findings from the US in a broader context but also

because the setting allows for more variance in certain variables. Disclosure on executive compensation is such a research field. Germany offers a setting with low disclosure regulation, distinctive corporate governance features (two-tier board with employee representatives in the supervisory board ("Aufsichtsrat")) and an active public discussion about executive compensation.

In the following, the differences between disclosure legislation in the US and Germany are pointed out. In Germany, there are two sources for disclosure regulation, the *Stock Corporation Act* ("Aktiengesetz", AktG) and the *German Corporate Governance Code* ("Deutscher Corporate Governance Kodex", DCGK), which is only indirectly binding. Figure 1 illustrates the evolution of disclosure legislation in Germany.

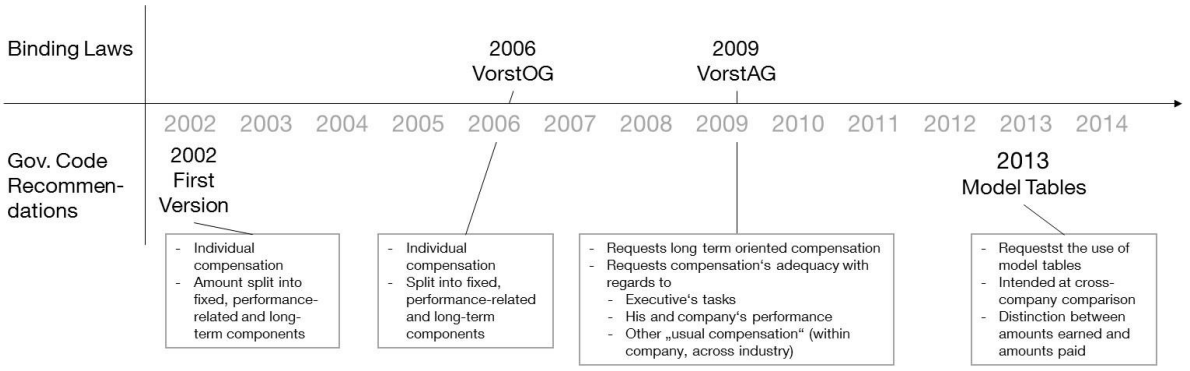

Figure 1: Evolution of executive compensation disclosure legislation in Germany.

Source: own illustration

The US, in contrast, is featured by a one-tier board, more pronounced shareholder orientation and a long history of disclosure regulation. With the SEC supervising disclosure since 1934, additional laws and amendments extended the disclosure requirements over time.

4.2.1 The German Corporate Governance Code

The DCGK is a set of rules compiled by a commission, whose members are leading industry representatives as well as scholars. The DCGK was first published in 2002. It is updated nearly every year and published by the German Federal Gazette. Through §161 of the German *Stock Corporation Act* ("Aktiengesetz", AktG) the DCGK is legally binding to a certain extent: companies have to either comply with the DCGK's requirements and recommendations or explain why they don't. Even in its earliest version, the DCGK requested individual disclosure of management compensation in the annual report. Compensation had to be split into the components fixed, performance-related and long-term incentive pay. However, as there was de facto no legal obligation to disclose compensation, as long as the company stated a reason why they did not conform to the rules, only a few companies elaborated on their compensation

systems in the annual report. Because the German government thought compensation to be important information to investors, disclosure became mandatory through the *Executive Compensation Disclosure Act* ("Gesetz über die Offenlegung der Vorstandsvergütungen", VorstOG) in 2006, which brought substantial changes to the AktG.

4.2.2 The Executive Compensation Disclosure Act

Due to low adoption of disclosure and inconsistent handling of the matter within Europe, the European Commission increased pressure on the local governments. Finally, the German parliament passed the *Executive Compensation Disclosure Act* ("Gesetz über die Offenlegung der Vorstandsvergütungen", VorstOG) on August 3rd 2005, becoming effective on January 1st of 2006. The German parliament stated three reasons for the introduction of the new legislation: 1) The disclosure enables the verification of the granted compensation's adequacy with regards to a manager's tasks and the company's current situation, 2) the granted compensation is important information to the shareholders and therefore helps protecting them, 3) the voluntary commitment towards disclosure, as proposed by the DCGK, has been ignored by a considerate amount of companies. The legal obligation is supposed to encounter this.[4]

The law obliges stock listed firms to reveal the compensation of each executive board member individually. Compensation has to be divided into fixed and variable compensation components as well as components with long-term incentives. Pension and pay-off agreements have to be disclosed as well. However, in case of a three-quarter majority reached in the general annual meeting, the company can also "opt out" for a maximum of five years. This leaves the companies with discretion regarding the disclosure decision but with the distinct improvement that non-disclosure is due to the shareholders' will.

4.2.3 The Act on the Appropriateness of Executive Compensation

Due to perceived compensation excesses and risky behavior incentivized by short-term oriented pay, the German government passed further compensation legislation in 2009, in the wake of the financial crisis. The *Act on the Appropriateness of Executive Compensation* ("Gesetz zur Angemessenheit der Vorstandsvergütung", VorstAG) changed parts of the AktG

[4] Introductory text to the VorstOG: „Die Angabe der auf jedes Vorstandsmitglied entfallenden Vergütung bei börsennotierten Aktiengesellschaften erleichtert die Feststellung, ob – den Anforderungen des § 87 Abs. 1 des Aktiengesetzes entsprechend – die Bezüge in einem angemessenen Verhältnis zu den Aufgaben des Vorstandsmitglieds und zur Lage der Gesellschaft stehen. Zugleich ist die Information für den Anleger wichtig und verbessert den Anlegerschutz. Entsprechenden Anforderungen des auf dem Prinzip der freiwilligen Selbstverpflichtung beruhenden Corporate Governance Kodex entzieht sich nach wie vor eine nicht unbeachtliche Zahl von Unternehmen. Dem soll mit Schaffung einer gesetzlichen Verpflichtung begegnet werden."

requiring the supervisory board to guarantee long-term oriented compensation. Compensation has to be adequate with regards to an executive's tasks as well as his and the company's performance. Further, it should not exceed the usual compensation. If the company's situation worsens critically, directors are asked to reduce executive compensation to an adequate level. While the law did not request further disclosure, it may have had an indirect effect as the supervisory board might have increased disclosure to show their fulfillment of the new legal requirements.

4.2.4 Recent developments in Germany

As compensation information in Germany was still perceived as being difficult to understand and compare, the DCGK Commission introduced new disclosure requirements in 2013. Companies are now asked to use model tables to disclose their compensation information to enable readers to compare the compensation between different companies directly. Model table 1 (see Figure 2) is supposed to provide information on the benefits granted for the year under review, whereas model table 2 (see Figure 3) is supposed to give information on the amount allocated to and disbursed in the year under review. Table 1 and 2 consequently state the same values for fixed compensation, fringe benefits and pension expenses (as amounts granted and allocated are the same), but different values for the one-year and multiple-year bonus. While table 1 states the target bonus of yearly bonuses, table 2 states the actual disbursed amount. Multi-year bonuses are broken down into the different bonus plans in both tables. Table 1 states the amount granted in the respective year or the fair value of the share-based compensation at grant date. Furthermore, information on minimum and maximum amounts are requested for all compensation components. Table 2 gives information on the actually disbursed amounts for each plan.

The DCGK requests caps for compensation components and overall compensation as well as demanding and relevant compensation parameters. It also asks for elaboration on compensation dispersion within the company and its development over time. Companies still have the possibility to not comply with these regulations as long as they explain the reasons in the annual report. However, companies might fear renewed legal interaction if they don't comply.

		I	II	III	IV				
a	**Benefits granted**	Name				Name			
b		Function				Function			
c		Date joined/left				Date joined/left			
d		**n-1**	**n**	**n (min)**	**n (max)**	**n-1**	**n**	**n (min)**	**n (max)**
1	Fixed compensation								
2	Fringe benefits								
3	**Total**								
4	One-year variable compensation								
5	Multi-year variable compensation								
5a	Plan description (plan term)								
...	Plan description (plan term)								
6	**Total**								
7	Service cost								
8	**Total**								

Notes:

a Name of the Management Board member

b Function of the Management Board member, e.g. CEO, CFO

c Date on which the member joined/left the Management Board, if in the financial year under consideration n (year under review) or n-1

d Financial year under consideration n (year under review) or n-1

I Benefits granted in financial year n-1

II Benefits granted in financial year n (year under review)

III Minimum value of granted compensation components that can be achieved in financial year n (year under review), e.g. Zero

IV Maximum value of granted compensation components that can be achieved in financial year n (year under review)

1 Non-performance-based components, e.g. fixed salary, fixed annual one-off payments (amounts correspond to amounts in "Allocation" table); values in columns II, III and IV are identical

2 Non-performance-based components, e.g. benefits in kind and fringe benefits (amounts correspond to amounts in "Allocation" table); values in columns II, III and IV are identical

3 Total of non-performance-based components (1+2) (amounts correspond to amounts in Allocation table); values in columns II, III and IV are identical

4 One-year variable compensation, e.g. bonus, short-term incentive (STI), share in profits, without deferred components

5 Multi-year variable compensation (total of rows 5a-...), e.g. multi-year bonus, deferred components from one-year variable compensation, long-term incentive (LTI), subscripton rights, other share-based compensation

5a-... Multi-year variable compensation, broken down into plans and stating the period of time

6 Total of non-performance-related and variable components (1+2+4+5)

7 Service cost in accordance with IAS 19 from pension schemes and other benefits (amounts correspond to amounts in "Allocation" table); values in colums II, III and IV are identical

8 Total of non-performance-related and variable components and service cost (1+2+4+5+7)

Figure 2: Model Table 1 – Benefits Granted. Source: DCGK

a	**Allocation**	Name		Name		Name		Name	
b		Funcion		Function		Function		Function	
c		Date joined/left		Date joined/left		Date joined/left		Date joined/left	
d		**n**	**n-1**	**n**	**n-1**	**n**	**n-1**	**n**	**n-1**
1	Fixed compensation								
2	Fringe benefits								
3	**Total**								
4	One-year variable compensation								
5	Multi-year variable compensation								
5a	Plan description (plan term)								
...	Plan description (plan term)								
6	Other								
7	**Total**								
8	Service								
9	**Total**								

Notes:

a Name of the Management Board member

b Function of the Management Board member, e.g. CEO, CFO

c Date on which the member joined/left the Management Board, if in the financial year under consideration n (year under review) or n-1

d Financial year under consideration n (year und review) or n-1

1 Non-performance-related components, e.g. fixed salary, fixed annual one-off payments (amounts correspond to amounts in the "Benefits granted" table)

2 Non-performance-related components, e.g. benefits in kind and fringe benefits (amounts correspond to amounts in the "Benefits granted" table)

3 Total of non-performance-related components (1+2) (amounts correspond to the amounts in "Benefits granted" table)

4 One-year variable compensation, e.g. bonus, short-term incentive (STI), share in profits, without deferred components

5 Multi-year variable compensation (total of rows 5a-...), e.g. multi-year bonus, deferral, long-term incentive (LTI)

5a-... Multi-year variable compensation, broken down into plans (amounts correspond to the amounts in the column IX of the "Multi-year variable compensation" table)

6 Other, e.g. clawbacks, which are entered as a negative amount with reference to previous disbursements

7 Total of non-performance-related components and variable components (1+2+4+5+6)

8 Service cost in accordance with IAS 19 from pension schemes and other benefits (amounts correspond to amounts from row 4 of the "Commitments in the case of normal termination of employment" table and row 7 of the "Allocation" table); this is not an allocation in the financial year

9 Total of non-performance-related and variable components and service cost (1+2+4+5+6+8)

Figure 3: Model Table 2 – Allocation. Source: DCGK

4.2.5 The Securities and Exchange Commission's disclosure requirements

The Securities Exchange Commission (SEC) is an agency of the US federal government established through the *Securities Exchange Act* of 1934. It is regulating the US stock and options exchanges and overviews the disclosure requirements for listed companies. In the earliest version companies listed were required to disclose the compensation of the three

highest-paid executives. In the 1970s, increased perquisite disclosure was added to the requirements. The further extended disclosure rules of 1992 requested a table summarizing the pay components over the past three years, tables for option grants, holdings and exercises, a description of the compensation philosophy employed and a graph providing insight into the company's stock performance in comparison to the overall market and the company's peers (Murphy (2012)). While the report didn't ask for the specific KPIs, it requested an explanation on how to make compensation performance-related (Laksmana (2008)). The *Sarbanes Oxley Act* of 2002, the consequence of the accounting scandals, obliged executives to disclose new stock options grants within two business days of the grant. In 2006, the SEC undertook major disclosure changes after the option-backdating scandal came to light. In a section called ''Compensation Discussion and Analysis'' (CDA) companies now had to provide more specific information on underlying KPIs and targets and provide insight into the compensation differences between CEO, CFO and the next three highest-paid executives as well as directors. However, companies had the chance to opt out if they were able to show probable cause that the disclosure causes proprietary costs such as disadvantages in comparison to competitors (Robinson et al. (2011)). Finally, the *Dodd-Frank Wall Street Reform and Consumer Protection Act*, also called *Dodd-Frank Act*, of 2010 further increased disclosure demands. Covering all financial institutions, it asked for additional information on the link between financial performance and the resulting compensation, as well as a ratio measuring the relation between CEO compensation and the median pay of all other employees. Furthermore, it introduced an advisory "Say on Pay" vote to guarantee that shareholders were informed about the implemented compensation system and to give them a formal means of expressing concerns. While "Say on Pay" was immediately put to work, the CEO pay ratio provoked major discussion with regards to its costs and benefits. The regulation comes into effect in 2017, many years later than intended (Parrino (2016)).

4.3 Literature review

Disclosure has been a topic of extensive research in the areas of finance, accounting, and economics covering a wide array of different topics. Verrecchia (2001) identifies three branches within, research on **association-based disclosure**, **discretionary-based disclosure,** and **efficiency-based disclosure**. While association-based disclosure research examines the effect of exogenous disclosure on investors' behavior and asset equilibrium prices or trading volume, discretionary-based disclosure research studies companies' discretionary choices in disclosing information. Finally, the efficiency-based disclosure research is in search of the most efficient form of disclosure (independent of the disclosed information itself, see Verrecchia (2001) for more detail). As companies in Germany have considerable discretion how to disclose the information on executive compensation within the

annual report, this paper falls into the second category within the field of the introduced literature streams.

So far, the greater part of discretionary-based disclosure research has focused on the determinants of a company's financial disclosure such as earnings forecasts. Only recently discretionary disclosure of management compensation has gained more attention. This is because compensation and incentives themselves have become a more relevant topic to shareholders and especially the public over the years. The increased availability of data funneled this effect. Additionally, the setting of management compensation offers distinctive advantages for researchers which makes it a worthwhile subtopic of disclosure research. First of all, in contrast to settings of joint interests, the disclosure decision reflects a possible conflict of interest between inside managers and outside shareholders (Coulton et al. (2001)). Second, it offers the opportunity to examine aspects of governance as the information to be disclosed (i.e., executive compensation) is itself related to the effectiveness of corporate governance, rather than settings where (assumed) effects of boards on management decisions are examined. And finally, it is relatively easy to determine which part of the disclosure is voluntary. This is especially true for the German setting as there are few requirements how to disclose.

Even within the established literature branch of financial disclosure, no unifying theory has been found yet (Verrecchia (2011), Core (2001)). Healy and Palepu (2001) for example identify as many as six different theories which could explain voluntary financial disclosure: the **capital markets transaction hypothesis**, the **corporate control contest hypothesis**, the **stock compensation hypothesis**, the **litigation cost hypothesis**, the **management talent signaling hypothesis** and the **proprietary cost hypothesis**. Further theory for the specific context of managerial compensation disclosure is offered by Bebchuk et al.'s (2001) **managerial power theory**.

While some of the theories emphasize advantages of voluntary disclosure, others explain disclosure as preferred alternative when sanctions are the consequences of non-disclosure. Some theories add to both categories. Finally, the third group rather explains why companies refrain from disclosure.

Advantages of disclosure. Voluntary disclosure can be used as a strategic device to signal a manager's capabilities (management talent signaling hypothesis) and to build trust. Trueman (1986) finds that it is favorable for managers to publish earnings forecasts because it creates trust in the manager's ability to anticipate economic environment changes and to adjust production plans accordingly. The capital markets transactions hypothesis assumes that managers who anticipate capital market transactions have incentives to provide voluntary disclosure to reduce the information asymmetry between the company and the market. This way the firm's cost of external financing is reduced (Healy and Palepu (2001), Lang and

Lundholm (1996)). Forthcoming information management is also rewarded in the setting examined by Skinner (1997). If adverse information like negative earnings is pre-disclosed, litigation costs are lower (litigation cost hypothesis). The stock compensation hypothesis assumes that executives with stock compensation have incentives to disclose more to prevent misevaluation and increase the liquidity of the firm's stock (Healy and Palepu (2001), Noe (1999), Aboody and Kasznik (2000), Miller and Piotroski (2000)). Finally, the corporate control contest hypothesis suggests that increased disclosure, especially in the case of poor stock and earnings performance, might be used to justify the company's situation and explain away unfavorable developments in order to prevent a job loss due to turnover (Healy and Palepu (2001)).

Sanctions for non-disclosure. Theoretical models of economists like Grossman and Hart (1980), Grossman (1981) and Milgrom (1981) explain why companies disclose voluntarily when they fear market sanctions. The adverse-selection problem assumes that investors interpret withheld information to be unfavorable – otherwise, it would have been disclosed. The investor will, therefore, reduce the price he is willing to pay for the respective security. In theory, this price will be so low that eventually disclosure is the better option however unfavorable the truth may be. This is similar to the assumptions of the aforementioned capital markets transaction hypothesis. Sanctions also play a role when disclosure is mandatory and companies or managers fear legal enforcement, penalties, and legal charges. According to one aspect of the stock compensation hypothesis, stock compensation may increase disclosure due to regulation regarding insider trading (Healy and Palepu (2001)). In any case, the threat of sanctions has to be plausible for the mechanism to work.

Advantages of non-disclosure. The proprietary cost hypothesis explains why companies might refrain from disclosure. It assumes that disclosure induces a loss in proprietary information. This imposes costs on the disclosing companies. For example, the disclosure can lead to a loss of a competitive edge which has an adverse impact on the company's future success (Healy and Palepu (2001), Verrecchia (2001), Robinson et al. (2011), Laksmana (2008)). The managerial power theory, on the other hand, explains lacking disclosure in the specific context of managerial compensation. Bebchuk et al. (2001) view lacking disclosure as camouflaging technique to hide excessive rent extraction from the public.

Non-disclosing companies consequently either see no advantages (or even disadvantages) in disclosure or are not expecting sufficient sanctions to be forced to disclose. By structuring the theories according to the underlying motivation of (non-)disclosure, one can also find significant differences. While in some of the cited hypotheses the decision between disclosure and non-disclosure is taken in the best interest of the shareholders (for example in the capital markets transactions hypothesis or proprietary cost hypothesis), others result from the

opportunistic behavior of managers (such as the managerial power theory or partly the stock compensation theory). Developing this further, I arrive at two explanations for non-disclosure of compensation rooted in different understandings of the effectiveness of a company's governance and management.

The first addresses the often raised doubt regarding companies' and managers' integrity and is what I would call the **managerial opportunism theory**. It is rooted in the managerial power theory by Bebchuk et al. (2001, 2002, 2004), which argues that corporate boards are in a weak position to limit rent extraction due to board dynamics, managements' influence on director appointment, and future career concerns within tightly knit networks where people know each other. However, the theory acknowledges the public interest in compensation and assumes that outrage over excessive compensation may limit pay due to reputational concerns. To prevent outrage and harm to their careers, directors will engage in camouflage. In other words, the real amount of the compensation is hidden either by installing less transparent and more difficult compensation components (e.g., pensions) or by publishing opaque compensation reports. Earlier papers have already shown that disclosure is often a strategic choice of managers, for example when they benefit from increased stock-based compensation (Noe (1999), Aboody and Kasznik (2000), Miller and Piotroski (2000)).

The second is what I would call the **efficiency theory**. The efficiency theory trusts in the company's disclosure decisions and assumes non-disclosure to be the more efficient way for the company. As preparing data for the public requires a lot of resources, time and effort, it makes sense that companies only invest in disclosure, if it promises advantages or sanctions are feared for withholding information. Furthermore, there are situations in which it may be favorable for the company and its investors to not disclose (for example due to proprietary or reputational costs (Verrecchia (2001), Robinson et al. (2011), Laksmana (2008)) or to await further information before disclosing only parts of the news (Teoh and Hwang (1991)). In the US, where the disclosure of underlying KPIs is mandatory and the requirements are more demanding than in Germany, companies have the explicit option to hold back information on KPIs by referring to proprietary costs. Such companies are obliged to explain how a competitor could gain a competitive advantage with the respective information in the proxy statement. Another stream of work shows that non-disclosure in the context of managerial compensation may be advantageous for the company as more transparency leads to higher compensation (Hermalin and Weisbach (2012) and Schmidt (2012)).

For shareholders with limited information, it remains difficult to understand the motivation behind lacking transparency. Legislators see compensation disclosure as a remedy for information asymmetry between a company's board and its (potential) shareholders, similar to the mandatory disclosure of a company's financials. This is supposed to limit corporate

excesses at the expense of shareholders and provides investor protection. When undertaking major changes to the disclosure regulation in 2006, the SEC stated that the "amendments […] are intended to provide investors with a clearer and more complete picture of compensation [...]". Similarly, the German government cited investor interests and protection as a reason for introducing the *Executive Compensation Disclosure Act* in 2006. The German government further observed: "A significant number of companies is evading to implement the German Corporate Governance Code's requirements based on voluntary self-commitment." (Gesetzesentwurf VorstOG (2005), p. 1).

The few existing findings from Anglo-American settings seem to rather support the managerial opportunism theory (Coulton et al. (2001), Robinson et al. (2008), Laksmana (2008), Ben-Amar and Zeghal (2011)). However, it remains unclear whether these observations hold in other settings too. Crossland and Hambrick (2007) identify three institutions that have significant impact on executives' discretion, namely national values, corporate ownership and board governance. As these institutions differ greatly between Germany and the Anglo-American system, the following sections introduce the research streams regarding compensation, governance and ownership variables as explaining variables for compensation disclosure. Hypotheses will be developed regarding the variables' influence on disclosure in the German setting. This will help to answer the question whether companies in Germany decide against transparency due to economic reasoning and pragmatism or due to opportunistic behavior and lacking governance. In a broader perspective, this will also contribute to the literature stream examining whether theory from the US can be applied to other settings (Hofstede (1980), (1993)).

4.4 Hypotheses

In the following three sections findings from previous research are gathered to derive hypotheses linked to the theories introduced in the previous chapter. More specifically, this chapter develops predictions regarding the influence of compensation, governance, and ownership on compensation report disclosure. These three areas are chosen because they were identified as having a significant impact on executives' discretion (Crossland and Hambrick (2007)).

4.4.1 Executive compensation

One of the main assumptions of the managerial power theory is that managers try to camouflage compensation to prevent public outrage over corporate excesses. Outrage may be costly to managers and directors due to reputation loss on the labor market and social community (Dyck and Zingales (2002), Masulis and Mobbs (2014)) which limits future career

options. Directors serving at a company experiencing accounting restatements (Srinivasan (2005)), financial distress (Gilson (1990)) or a financial fraud lawsuit (Fich and Shivdasani (2007)) lose their board seats more frequently and directors are tempted to leave companies with struggles ahead in order to contain damage to their reputations (Fahlenbrach et al. (2014)). On the other hand, directors benefit from seats held in larger and better-performing companies (Yermack (2004) and Ferris et al. (2003)) and directors, who act in the interest of shareholders, are rewarded with additional board seats (Coles and Hoi (2003) and Harford (2003)).

Following the proposition of the managerial power theory, disclosure should be less forthcoming in companies with excessive compensation.[5] Accordingly, prior research from Robinson et al. (2011) finds that excessive CEO compensation is positively associated with disclosure defects identified by the SEC. One could expect to find similar effects in Germany. However, Germany is a very different setting than the US. Due to a more collectivistic and risk-averse society, stakeholder orientation and powerful board governance, Crossland and Hambrick (2007) describe Germany as a medium discretion context as compared to the US with one tier boards, an individualistic and venturesome society and sheer shareholder value orientation. They find strong, robust evidence that CEOs in Germany have a substantially lower impact on firm outcomes than CEOs in the US. This may mean that German executives have less possibility to extract rents to the same extent as CEOs in the US. This would clearly reduce the need for camouflage. To clarify the impact of the national context on drivers of (non-)disclosure, the following hypothesis is tested:

H1a: *The level of disclosure is negatively associated with excessive compensation.*

The managerial power theory believes public outrage to be the only means of limiting excessive pay if the existing governance is not capable of doing so. However, public outrage is discussed controversially and sometimes perceived as unwanted interference from people who have “no real stake in the company” (Murphy (2012), p. 47). Even though the executives’ compensation might not be excessive from a shareholders’ point of view, the public might get upset about high executive compensation from a social equity perspective. The higher the compensation, the more likely it will create envy within parts of the society earning less. To prevent "an undue intrusion into the internal affairs of the company" (SEC (1992), p. 1980), companies might withhold compensation information even though the compensation itself

[5] Excessive compensation is the residual compensation which cannot be explained by economic determinants (similar to Core et al. (2008) and Kuhnen and Niessen (2012), see 4.6.4 for more detail).

might not be excessive. In a more stakeholder-oriented country such as Germany, intrusion from parties other than the shareholders is even more likely.

On the other hand, one can also expect that disclosure rises with the level of compensation. This is due to the fact that larger companies tend to pay higher executive compensation (Rosen (1982)) while they also face higher public attention (Core et al. (2008)). This public attention might exert additional pressure to increase disclosure. Furthermore, larger companies have more resources available to the disclosure process.

I conclude with the following undirected hypothesis:

H1b: *The level of disclosure is associated with the level of compensation.*

To shed more light on the aspect of social equity concerns, I am furthermore interested in the explanatory power of income distribution within the company. This is even more worthwhile as the *Dodd-Frank Act* obliges companies listed in the US to disclose a pay ratio which provides insight into the relation between average employee income and average executive compensation. The *Dodd-Frank Act* was already enacted in 2009, but due to extensive discussion about the regulation's benefits and costs, companies will only start disclosing such a ratio from 2017 onwards.

Empirical work shows that individual and organizational performance (Bloom (1999), Pfeffer and Langton (1993)), cooperative behavior (Harder (1992), Pfeffer and Langton (1993)) and group cohesion (Levine (1991)) as well as product quality (Cowherd and Levine (1992) suffer when pay is widely dispersed across the company's hierarchy. High inequality between low-income employees and executives results furthermore in higher absence (Dittrich and Carrell (1979)), turnover rate (Summers and Hendrix (1991), Dittrich and Carrell (1979), Wade et al. (2006)) as well as theft within the organization (Greenberg (1993)). Experimental research additionally suggests that participants have an inequality aversion which leads them to boycotting products or solutions (Mohan et al. (2015), Rost and Weibel (2013) and even give up own benefits in order to punish the norm infringer (Güth et al. (1982), Fehr and Gächter (2002), Charness and Rabin (2002), Andreoni and Miller (2002)). Executives and directors have therefore good reasons to fear public outrage more if the ratio between low-income employees and executives is higher.

I therefore expect that companies with higher inequality are less transparent so to make it more difficult for employees to compare their own pay with their company's executives' pay. I call the ratio between executive and average employee compensation verticality.

H1c: *The level of disclosure will be negatively associated with the verticality of pay.*

4.4.2 Governance

Another important assumption of the managerial power theory is that the Board of Directors is not capable of limiting managerial excesses. The weaker the governance, the more compensation the manager can extract. At the same time reputation is vital to directors as serving at companies experiencing accounting restatements (Srinivasan (2005)), financial distress (Gilson (1990)) or a financial fraud lawsuit (Fich and Shivdasani (2007)) harms their future career options. Weak directors might therefore have an incentive to engage in camouflage to prevent a public discussion about compensation and to hide their weakness. Albeit, measuring weak governance is a challenge itself. While some of the established governance variables from US research can be applied in Germany as well (board size and meeting frequency for example) others are irrelevant as the German law prohibits certain practices. Common variables such as CEO and board chair duality as well as the independence of directors are guaranteed by law as an executive board ("Vorstand") and a supervisory board ("Aufsichtsrat") are strictly separated. In the following, I will go into more detail how to possibly measure board effectiveness in Germany.

Supervisory board size

In Germany, a supervisory board consists of at least three directors. The company can assign more directors as long as the number of directors can be divided by three and doesn't exceed the maximum number assigned to different company sizes.[6] The role of board size for the effectiveness of governance has been examined frequently. On the one hand, firm performance has been proven to be worse with larger boards (Yermack 1996, Eisenberg at al. (1998), Mak and Kusnadi (2005)) and Cheng's (2008) findings support the view that larger boards need more time to compromise and to reach consensus. This is in line with organizational behavior research such as Hackman (1990). Core et al. (1999) furthermore find evidence that executive compensation is higher in companies with larger boards. The same result is provided by Rapp and Wolf (2010) for the German market. The work of Vafeas (2000) suggests that firms with the smallest boards in the sample are perceived as being more informative by market participants.

Cole et al. (2008) on the other hand find that the simple rule smaller is better does not hold for all companies. Complex firms actually increase in value with larger boards. Larger boards have more possibility to be diverse and split up into committees. Klein (2002) for example provides evidence that larger boards have a higher chance to form independent committees. As larger boards do take more time to compromise, their decisions are less extreme than the ones of

[6] With a capital stock below 1.5 Mio. €, the maximum is 9 directors, with a capital stock above 1.5 Mio. €, it is 15 directors and a capital stock beyond 10 Mio €, it is 21 directors.

smaller boards. The companies are therefore taking fewer risks (Nakano and Nguyen (2012) and Cheng (2008)). Additionally, there is evidence that companies with larger boards have a lower cost of debt (Anderson et al. (2004) and provide more earnings forecast updates (Karamanou and Vafeas (2005)). It remains therefore unclear whether larger or smaller boards provide better governance or higher transparency.

However, due to the German *Codetermination Act* of 1976 ("Gesetz über die Mitbestimmung der Arbeitnehmer", MitbestG) boards in smaller companies act more likely in shareholders' interests than larger ones: Companies with more than 500 employees are obliged to assign one third of the supervisory board seats to employee representatives, in companies with more than 2000 employees the number even rises to half of the seats. This affects companies of the sample employed in this paper as the number of employees varies roughly between 500 and 600,000 employees. Larger boards' decisions are therefore more complicated to predict as the employee representative directors' votes might not necessarily be in favor of shareholders. Kim et al. (2014) and Lin et al. (2016) find that the German employee representation indeed leads to a shift in focus. Petry's (2017) results show a negative stock market reaction when the codetermination law was introduced. However, codetermination seems not to have an impact on executive compensation according to Rapp and Wolf (2010).
Given the ambiguity, I conclude with the following undirected hypothesis:

H2a: *The level of disclosure will be associated with board size.*

Meeting frequency of the supervisory board

The number of meetings mirrors the time the directors invest to monitor the management. Therefore, one can assume that more dedicated boards meet more often in order to make sure they govern the company adequately. This is why supervisory directors are often provided with financial incentives tied to the number of meetings attended (Brick et al. (2006), Adams and Ferreia (2008)). Andreas et al. (2012) find that also German companies link director compensation to meeting frequency. Research further shows that board meeting frequency rises with delicate corporate events such as share price drops (Vafeas (1999)), acquisitions or earnings restatements (Brick and Chidambaran (2010)). After increased board activity Vafeas (1999) finds improved operating performance and Brick and Chidambaran (2010) increased firm value. There is also evidence that earnings management is less pronounced when audit committees meet more often (Xie et al. (2003) and Ebrahim (2007)). The results form Liu et al. (2016) show that high levels of board activity have a significant positive effect on disclosure quality. Consequently, I assume that boards meeting more frequently provide more transparent compensation reports.

H2b: *The level of disclosure is positively associated with board meeting frequency.*

(Former) CEOs in the supervisory board

Multiple surveys find that a high share of outside directors in US boards serve as CEOs in other companies (Bacon and Brown (1974), Lorsch and MacIver (1989), Pellet (1998), Spencer Stuart Board Index (2016)). Furthermore, CEOs are regularly those with the greatest number of external directorships (Ferris et al. (2003)). In Germany, where the company is led by two strictly separate boards, the supervisory board ("Aufsichtsrat") and the executive board (*Vorstand*), former executives often join the supervisory board after leaving the executive board (Andres et al. (2014)). The question arising from this fact is whether these (former) executives sympathize with the company CEO or executives as they share similar positions, backgrounds and experiences. Especially in Germany, where executives were allowed to switch from being an executive to being a supervisory director without interruption until 2009. In 2009 a "cooling-off" period of two years was introduced, but nonetheless, an immediate transfer is possible if 25% of rights to vote agree (§ 100 Abs. 2 Satz 1 Nr. 4 AktG). If directors sympathize with the executives, it might be expected that these have higher chances of extracting rents. Consistent with that assumption Andres et al. (2014) observe higher executive pay in companies with former CEOs in the supervisory board and Li and Qian (2011) find higher excessive compensation for companies with more outside CEOs in the compensation committee. Additionally, executives already have a busy schedule which might limit the effort they can put into governing the other company (Perry and Peyer (2005), Loderer and Peyer (2002)). German evidence shows that busy supervisory directors are found in companies with higher executive compensation (Rapp and Wolf (2010)).

On the other hand, executives can enhance shareholder value with their knowledge gained in leading a company (Kaplan and Reishus (1990), Fahlenbrach et al. (2010)) and the network which comes along with working for multiple companies (Carpenter and Westphal (2001)). Former executives of the same company accumulate firm and industry expertise and therefore, can provide the management with valuable advice (Andres et al. (2014)). Not surprisingly, shareholders react positively to the announcement of a CEO joining the supervisory board (Andres et al. (2014)). Fich (2005), who finds similar results for the appointment of CEOs as outside directors, concludes that CEOs are believed to enhance firm value. Finally, Fahlenbrach et al. (2010) do not find support for the hypothesis that CEO compensation increases with CEO directors.

It remains therefore unclear whether the appointment of (former) executives bears more costs or benefits for the appointing company. However, it seems that the benefits of former

executives in the board sometimes come at the cost of higher executive compensation. This leads to the assumption that camouflage is higher with more (former) executives on the board.

H2c: *The level of disclosure is negatively associated with the number of (former) CEOs in the board.*

4.4.3 Ownership

Ownership structure is an important determinant of a company's governance as research has shown. Not only do large blockholders and institutional investors engage more often in successful shareholder activism (e.g. Del Guercio et al. (2008), Hadani et al. (2008), Hartzell and Starks (2003), Wu (2004)), in Germany shareholders also decide whether a company follows the disclosure rules or "opts out". Hence, it is a promising approach to investigate the ownership structure further.

According to Baums and Scott (2005), the executives' discretion highly depends on whether the company is a publicly held company with a widely dispersed free float or a corporation with one or more dominant shareholders. Companies with a widely dispersed free float suffer more likely from reciprocal "back scratching" between members of the management and supervisory boards. Research by Schmid (1997) and Elston and Goldberg (2003) finds that total compensation is lower in firms with high ownership concentration and Kaserer and Wagner (2004) confirm that German companies with dispersed ownership exhibit higher executive compensation, even after adjusting for size, performance and other firm and industry effects. The findings suggest that companies with dispersed ownership suffer from weaker governance. Andreas et al. (2010) confirm this impression as German supervisory directors in companies with more concentrated ownership receive less incentive compensation. They assume this is because more concentrated ownership is linked to more effective monitoring. It is more important for companies without such additional monitoring authority to provide incentives to the supervisory board to perform the monitoring adequately. Due to the higher cost of organizing, finding consensus and taking action, it is more challenging for individual shareholders of companies with wider dispersed ownership to initiate shareholder activism (the common free-rider problem, see for example Maug (1998)). Assuming that weaker governance by owners results in higher rent extraction and therefore more camouflage, I conclude with the following hypothesis:

H3a: *The level of disclosure will be negatively associated with wider dispersed ownership.*

Apart from ownership concentration, the composition of owners matters as well. German companies have a tradition of family ownership (Chizema (2008)). According to findings from Chen et al. (2008), voluntary disclosure is heavily influenced by family ownership, more than by insider or concentrated ownership. They find that family firms provide fewer earnings forecasts and conference calls, but more earnings warnings. The authors argue that this is due to a longer investment horizon, better monitoring of management, and lower information asymmetry between owners and managers while facing bigger reputational costs in times of struggles. Similarly Ali et al. (2007) state that family firms are more likely to warn for bad news. Additionally, they find that family firms report better quality earnings, but make fewer disclosures about their corporate governance practices. Family companies might have less need to disclose management compensation in the annual report as they govern managers tighter and suffer less from information asymmetry. This assumption would be in line with the finding that family companies disclose less about their corporate governance practices. According to Fernandez and Nieto (2006), firms with high proportions of family ownership are more likely to have family members and friends as directors. This is another reason why compensation disclosure may not be in their best interest.

H3b: *The level of disclosure will be negatively associated with family influence.*

The introduced theory and respective hypotheses enable the researcher to understand whether the managerial opportunism theory can be confirmed for the German dataset. Besides the three areas and the regarding hypotheses introduced above, further firm and industry controls are included in the empirical analyses without formal hypothesizing. These variables aim to capture alternative explanation for non-disclosure, namely pragmatism and higher efficiency. Company size, performance and industry rivalry, which may lead to competitive advantages when withholding information, will be part of the analysis. The variables are introduced in more detail in chapter 4.6.5. The next chapter introduces the datasets employed to test the hypotheses.

4.5 Data sources and scope

I test my hypotheses empirically using panel data of German public corporations listed in German Stock Exchange's DAX and MDAX as these are the two most important indices of the prime standard. By including the MDAX, a higher cross-sectional variation in industries and firm size is guaranteed. This is important to increase the likelihood of cross-sectional variation in disclosure levels as Lang and Lundholm (1993) found disclosure to be related to firm size and Botosan (1997) states that disclosure patterns differ between industries. To guarantee

consistency, companies changing their fiscal year dates in the regarding years have been removed from the sample.

The sample identifying determinants of disclosure contains 429 company-year observations with transparency, compensation, governance, ownership and firm variables.

Governance, compensation and transparency data was hand-collected from the annual reports for the years 2006 to 2014 for all companies and their executive board members (German "Vorstandsmitglieder").

In addition to annual reports, governance data has also been collected from BoardEx, a database for biographical information on most board members and senior executives around the world, and supervisory directors' CVs on the company's web page.

Executive compensation was hand-collected from the annual report's compensation reports for the years 2006 to 2014. A descriptive study of the hand-collected data is published annually (see for example Friedl et al. (2016) and Friedl et al. (2015)) and publicly discussed in the media (for example Cabras (2015)). Companies opting out from reporting personal level compensation data are excluded from the sample as the calculation of excessive compensation (compensation beyond economically explainable levels) is an important explanatory variable examined in this paper.

Transparency data has been collected with the help of a self-developed index and the annual reports. The index consists of three parts, the first one collecting information on the compensation components, the second examining the compensation report's readability and the third shedding light on the compensation's adequacy (see more information on the index development in 4.6.1 and 4.6.2).

Ownership data is derived from Hoppenstedt Aktienführer. Hoppenstedt Aktienführer is a yearly publication that provides detailed information (e.g., ownership structure, board composition, balance sheet information) on German listed firms.

Data on analyst forecasts is derived from I/B/E/S, other firm and industry control variables are retrieved from Thomson Reuters Datastream service. If control variables are missing, the observation is excluded from the regarding analysis. See 4.6.5 for a detailed introduction to all variables and the regressions models.

4.6 Methodology

The following section provides an overview of the methods employed to test the introduced hypotheses with the collected data. The section begins with the calculation and measurement of two critical variables, the variables that measure disclosure and excessive compensation.

To understand the disclosure variable, it is vital to understand how the index is set up (chapter 4.6.1), how the index values are transformed into a measure of disclosure (chapter 4.6.2) and whether this measure is reliable and viable (chapter 4.6.3). After providing the regression model for calculating excessive compensation (chapter 4.6.4), chapter 4.6.5 introduces the empirical model and variables that are used to answer the hypotheses.

4.6.1 Setting up the disclosure index

One of the biggest challenges within the field of disclosure research is to come up with a meaningful measure for disclosure itself. Researchers on voluntary financial disclosure frequently use the number of management forecasts, metrics based on the AIMR database or self-constructed indices to measure voluntary disclosure (see Healy and Palepu (2001) for a research overview). In the German setting and the case of management compensation, there is no existing precalculated measure provided by any kind of database I can draw on. I am therefore applying a self-developed disclosure index to measure the amount of disclosure with regards to executive compensation similar to existing literature on financial disclosure (Botosan (1997), Miller (1999)) as well as product-related disclosure (Guo et al. (2004)). This approach is also common in the specific field of executive compensation disclosure (Coulton et al. (2001), Laksmana (2008)). An index can be used both to understand compliance with existing regulation as well as the level of voluntary disclosure, depending on how the index items are determined (Marston and Shrives (1991)). Other than Coulton et al. (2001), who derive the index items from Australian law, and Laksmana (2008), who follows a list of SEC recommendations, the index of this paper includes both voluntary and required disclosure items so to examine all disclosure decisions by directors and managers. Consequently, there are as many index items as are needed to understand the current compensation system fully and to gain insight into how much is spent for each executive. This way I can identify which companies “drop out” on the way to full disclosure.

The result is an index consisting of three parts and 111 index items: The first part of the questionnaire collects information on the compensation components, the second examines the report’s overall readability and the third analyzes whether there is information given on the compensation system’s adequacy. Each part consists of multiple index items asking whether a certain piece of information is provided in the compensation report. A description of the index items and a full example of the index can be found in Appendix 1 and 2.

In the first part of the index all possible **compensation components** are included as distinctive sections: salary, consultancy contracts, one-off payments, fringe benefits, salary, short-term incentive (cash-based compensation over one year), mid-term incentive (cash-based compensation over more than one year) and long-term incentive (all share-based

compensation and options) as well as pensions. Simple compensation components consist only of a few index items. The section salary for example only checks whether this component is disclosed individually and separately from other components. Additionally, I check whether the company has disclosed any target compensation so to understand the compensation's intended compensation structure. The index items within the sections control whether there is all necessary information to fully understand the pay components and the resulting financial outcomes for the managers and shareholders. Therefore it builds an important block of the information available about the installed compensation system. In this part, every index item can yield a maximum amount of 1 point.

In the second part of the index, the report's **readability** is examined. This is to understand whether the company uses tables and graphs to ease the reading or whether footnotes or contradictory information are confusing the reader. This part is important so to understand whether companies indeed engage in camouflaging activities. Most index items gain a maximum point of 1. However, there are multiple index items on the readability of the compensation numbers: If for a given executive all numbers can be found in one table and therefore be gathered at one glance, the index assigns 3 points to the company. If compensation has to be gathered from footnotes or is hidden in long texts, the number of points is reduced accordingly.

The third part of the index aims to understand how the company explains the **adequacy** of its compensation system and pay-setting process. The compensation report should enable the shareholder to understand whether the compensation is adequate and what measures have been taken to reach this goal. Thereore the index items aim to understand whether the company is comparing its pay to peers, other employees and performance for example. All index items yield a maximum of 1 point.

4.6.2 Calculating the index score

The index score can be calculated by either adding up the achieved points or by building a relative score. As proposed by Marston and Shrives (1991), I chose a relative score which is calculated by the following:

$$Score = \frac{\sum Achieved\ points}{\sum Maximum\ points\ achievable}$$

Equation 1: Index Score

By applying a relative score, the index can account for the fact that not all companies have the same compensation components. Sections or index items that are not applicable to a certain company (because this company, for example, does not have share-based compensation) are

excluded. This ensures that companies without specific pay components (such as share-based compensation as in the previous example) are not disadvantaged and guarantees that each company can reach a disclosure score (*Score*) of 100%.

A full example of the index items can be found in Appendix 2. The distribution of the resulting index scores can be found in the descriptive statistics in chapter 4.7.1. The appendix also provides a graph of the disclosure score's development and its three parts, compensation components, readability, and adequacy, over time (Appendix 3).

4.6.3 Reliability and validity of the created index score

To confidently use a self-developed index, it is important to analyze whether it actually measures what it is supposed to measure. According to Marston and Shrives (1991), social sciences usually consider two criteria to evaluate measures for their effectiveness, reliability, and validity.

Reliability

Marston and Shrives (1991) call index scores reliable if "the results can be replicated by another researcher" (Marston and Shrives (1991), p. 197). As the data is collected with the help of compensation reports in annual reports (which remain constant over time) and this paper provides a guide for the data collection (see appendix 1), the score should be replicable both for the setting applied in this paper as well as within other settings allowing for cross-country comparisons. The original data was collected with the help of bachelor and master students. In a second step, the collected data was checked by another group of bachelor and master students and marked if they disagreed with the rating of the previous student. In a third step a student researcher of the chair examined the collected data and all the remarks. Finally, the author of the study controlled all the marked areas (where students disagreed) and applied a random sample test to gain an idea whether the data was collected correctly. The random sample test showed that the three-step process was successful in eliminating mistakes. This procedure should help to make the index results more reliable.

Validity

According to Marston and Shrives (1991) the index scores "can be considered valid if they mean what the researchers intended" (Marston and Shrives (1991), p.198). The index score aims to provide a measure of disclosure quality of executive compensation. It is also a measure of information asymmetry between shareholders and directors/ managers within the company. The more information is given and the better this information is provided in the compensation

report, the better informed the shareholders are regarding executive compensation in the company and the lower is the information asymmetry.

To test the validity of the developed index, I follow Laksmana (2008) and Guo et al. (2004). They both use established measures of information asymmetry, stock return volatility and bid-ask spread (Gloston and Milgrom (1985) and French (1986)), to test how well the developed index measures information asymmetry. If the score has a significant impact on the observed information asymmetry between shareholders and the company, the score can be considered valid (see Laksmana (2008) and Guo et al. (2004)).

I regress bid-ask spreads (*Spread*) on my disclosure score (*Score*), firm size (measured via the market value of equity, *MarketCap*), trade volume (*Volume*) and stock return volatility (*Volatility*). These variables were identified by previous studies to have an impact on bid-ask spreads (Stoll (1978), Chiang and Venkatesh (1988), Glosten and Harris (1988), Heflin and Shaw (2000), Leuz and Verrecchia (2000), Guo et al. (2004) and Laksmana (2008)).

This following section introduces the models testing whether the disclosure index is a valid measure of information asymmetry.

$$Ln(Spread) = \beta_0 + \beta_1 \text{Score} + \beta_2\, ln(MarketCap) + \beta_3\, ln(Volume) + \beta_3\, ln(Volatility) + \varepsilon_{it}$$

Equation 2: Index validity – Bid-ask-spread

Model. The introduced model follows prior research from Guo et al. (2004) and Laksmana (2008). I use cross-sectional ordinary least squares (OLS) with industry and time fixed effects and Huber-White standard errors to account for heteroscedasticity. In the following, I explain the variables included in the regression model.

Dependent variable. *Spread* is the bid-ask spread measured as the mean of the daily relative bid-ask spread over one year, with the relative bid-ask spread being the absolute difference between the closing bid and ask prices scaled by the mean of the bid and ask prices. I use the logarithm of *spread* to account for its skewness.

Independent variables. *Score* is the amount of points gained in the disclosure index divided by the maximum reachable points for each company (see the previous section for more detail). *Volatility* is the standard deviation of daily stock returns over the fiscal year following the disclosure. Due to their skewed distribution, I use the logarithm of *Volatility*, *Volume,* and *MarketCap.* Additionally, I regress the return volatility on the company's disclosure score with size and volume as control variables.

$$Ln(Volatility) = \beta_0 + \beta_1 \text{Scoret} - 1 + \beta_2\, ln(Marketcap) + \beta_3\, ln(Volume) + \varepsilon_{it}$$

Equation 3: Index validity - Volatility

Model. The introduced model follows prior research from Guo et al. (2004) and Laksmana (2008). I use cross-sectional ordinary least squares (OLS) with industry and time fixed effects and Huber-White standard errors to account for heteroscedasticity. In the following, I explain the variables included in the regression model.

Dependent variable. *Volatility* is the standard deviation of daily stock returns over the fiscal year following the disclosure. I use the logarithm of *Volatility* to account for the variable's skewness.

Independent variables. *Score* is the number of points gained in the disclosure index divided by the maximum achievable points for each company (see the previous section for more detail). *Volatility* is the standard deviation of daily stock returns over the fiscal year following the disclosure. Due to their skewed distribution, I use the logarithm of *Volatility*, *Volume,* and *MarketCap.*

4.6.4 The calculation of excessive compensation

In the following, I introduce the calculation of the variable *AvgExcessComp*, which is needed to understand whether excessive compensation is a motivation for lacking disclosure. Excessive compensation is measured as actual compensation minus the econometrically predicted expected compensation and therefore equals the compensation beyond economically explainable levels. The regression model for the adjusted total compensation (A*djTotalComp*) is:

$$Ln(AdjTotalComp_{it}) = \beta_0 + \beta_l \sum_{l=1}^{L} Manager_{lit} + \beta_m \sum_{m=1+l}^{M} Firm_{mit} + \varepsilon_{it}$$

Equation 4: Regression model for expected compensation

With the results of the regression above, the variable expected compensation (*ExpComp*) can be econometrically predicted.

Model. My model for expected compensation follows prior research (Core et al. (2008), Kuhnen and Niessen (2012), Core et al. (1999), Murphy (1999), Smith and Watts (1992)). I use cross-sectional ordinary least squares (OLS) with Huber-White standard errors to account for heteroscedasticity. In the following, I explain the variables included in the regression model.

Dependent variable. The dependent variable is the natural logarithm of adjusted total compensation, *ln(AdjTotalComp$_{it}$)*. I measure total compensation as the sum of fixed pay, short-term and mid-term boni, option and share compensation as well as any other annual pay in the year t. This is the most common measure of total pay in academic literature. Total

compensation amounts are given in thousands of Euros. To account for managers joining or leaving the company during the financial year, total compensation is adjusted to 365 days. Executive compensation is divided by the number of days the executive was part of the executive board to receive a hypothetical daily amount. The daily amount is then multiplied by the number of days of a full year (in general 365 days). Therefore the dependent variable becomes adjusted total compensation. I use the natural logarithm of adjusted total compensation to account for the skewed distribution of the variable.

Independent variables. The variables used in the regression can be divided into two categories: company characteristics and manager characteristics.

Company characteristics. According to previous empirical work larger companies pay higher compensation. For reasons of complexity, these companies ask for better qualified and therefore more expensive managers (Rosen (1982)). In my model, I use *FirmSize* measured via the natural logarithm of sales. Same holds for companies with greater growth opportunities (Smith and Watts (1992)), which will be proxied by *TobinsQ*. *TobinsQ* is total assets minus common stock plus the market value of equity deflated by total assets. According to optimal contracting theory, compensation schemes are set in a way to mitigate information asymmetry problems arising in a principal-agent setting. Following this assumption, companies should have their managers' compensation linked to firm performance (Jensen and Murphy (1990)). Firm performance is represented by total stock return (*TSR*) and accounting return, here return on assets *(ROA). TSR* is the ending stock price minus the initial stock price plus dividends divided by the initial stock price. To cover long-term pay components, firm performance of the past three years are used.

Manager characteristics. I control for how many years the manager is already part of the board and whether he is CEO as both characteristics lead to higher compensation (e.g., Finkelstein and Hambrick (1989)).

Fixed effects. Year and industry fixed effects are included.

After the regression, the expected compensation, *ExpComp*, can be econometrically predicted. With the predicted variable excessive compensation, *ExcessComp*, can be calculated as follows:

$$ExcessComp_t = Residual(TotalComp_{it}) = TotalComp._{it} - ExpComp_{it}$$

Equation 5: Excessive compensation

I compute the % of excessive compensation as:

$$PctExcessComp_{it} = log(TotalComp_t)\text{-}log(ExpComp_t)$$

Equation 6: Percentage excessive compensation

The variable *AvgExcessComp* is calculated as the mean of all executives' excessive compensation within a board-year at the firm level.

4.6.5 Determinants of (non-)disclosure

This chapter gives an overview of the regression model which provides evidence on the determinants of (non-)disclosure as identified in hypotheses 1 to 3.

The model. I want to identify the determinants of transparency in compensation reports with the following regression model:

$$Score_{it} = \alpha_i + \gamma_t + \beta_l \sum_{l=1}^{L} Compensation_{lit} + \beta_m \sum_{m=1}^{M} Governance_{mit} + \beta_n \sum_{n=1}^{N} Industry_{nit} + \beta_k \sum_{k=1}^{K} Firm_{kit} + \varepsilon_i$$

Equation 7: Regression model for determinants of (non-)disclosure

where i = 1,..., K stands for the company, t = 1,..., T for the period and $Score_i$ for the transparency score the company i receives for its compensation report in period t. α_i is the company specific y-intercept and γ_t the time dependent and company constant time effect of the specific year. The β-coefficients describe the influence of the observed compensation characteristics ($Compensation_{li}$), governance characteristics ($Governance_{mi}$), industry characteristics ($Industry_{ni}$) and firm characteristics ($Firm_{ki}$). ε_i indicates the idiosyncratic error term. As *Score* is a percentage variable I will apply a generalized linear model with a logit link, binomial distribution family and robust standard errors.[7]

Dependent variable. The dependent variable *Score* is a percentage variable. The calculation of *Score* is described in 4.6.1 and 4.6.2 in more detail.

Independent variables. My framework to categorize possible determinants of compensation report transparency leads to the following structuring of variables:

1. Compensation characteristics
2. Governance characteristics
3. Industry characteristics
4. Firm characteristics

[7] *http://www.ats.ucla.edu/stat/stata/faq/proportion.html*

Compensation characteristics. According to the managerial power theory introduced by Bebchuk et al. (2001), compensation reports might be opaque to prevent public outrage over executive compensation. Both *AvgTotalComp* and *AvgExcessComp* are tested as it is unclear whether managers are more afraid of justified outrage over excessive compensation or outrage over high compensation triggered mainly by envy or social equity issues. Total compensation is measured as the sum of fixed pay, short-term as well as mid-term incentive compensation plus compensation based on the option and share plans and any other annual pay in the year t. This is the most common measure of total pay in academic literature. Total compensation amounts are given in thousands of Euros, summed up and divided by the number of days so to arrive at the average total compensation per company-year (*AvgTotalComp*). I use the natural logarithm of total compensation to account for the skewed distribution of the variable. Excessive compensation is measured as actual compensation minus the econometrically predicted expected compensation (*ExpComp* see 4.6.4 for more information). *AvgExcessComp* is the mean of *ExcessComp* across the executive board. Additionally, I control for *CVerticality*, i.e., the ratio between a company's average executive and average employee compensation.

Governance characteristics. The managerial power theory assumes that the corporate governance system within the company is not capable of limiting the managerial rent extraction. I consequently control for the board size (*BoardSize*), the meeting frequency of the board (*NoMeetings*), and how many (former) CEOs sit in the supervisory board (*CurrentExec*, *FormerExec*). As both the number of current and former executives are heavily influenced by the number of directors on the board, I calculate *CurrentExec* and *FormerExec* as the share of directors in the supervisory board. *BoardSize* itself is highly influenced by the company size. To mitigate the arising multicollinearity in the regressions, *BoardSize* is measured as the residual of regressing the number of directors on the number of employees and industry dummies. This residual variable indicates how much larger (smaller) a board is in comparison to companies in the same industry and according company size.

Corporate governance may not only be exerted within the company but also through more indirect channels. Research has shown that owners have a strong influence on firm outcomes (Hartzell and Starks (2003), Wu (2004)), Therefore, I include ownership variables in my analysis. I include a company's *FreeFloat* in the equation. The wider the ownership is spread, the lower is the likelihood of organized shareholder activism as the costs of informing oneself and finding consensus is getting higher. Furthermore, I measure whether a company is under the founding family's influence by including the percentage of family members in the executive or supervisory board (*FamilyBoard*) and the percentage of shares the family holds (*FamilyShares*).

Industry characteristics. An alternative approach to explaining lacking transparency is pursued by research on proprietary costs. In his model on discretionary disclosure Verrecchia (1990) introduces costs associated with disclosing information which may be proprietary in nature. The publication of proprietary information may bear costs for the disclosing company as the information is no longer proprietary after it has been made public. Proprietary costs may exist in some highly competitive industries where certain information can reveal a competitive edge or a strategy to the competitor. In the US, where the disclosure of the compensation's underlying KPIs is mandatory, and the requirements are more demanding than in Germany, companies have therefore the explicit option to hold back information by referring to proprietary costs. The company must then explain in the proxy statement how a competitor could gain an advantage with the respective information. Previous studies have proxied proprietary costs with the help of industry rivalry: Higher industry competition should lead to higher disclosure costs of proprietary information. To control for such an alternative determinant of compensation disclosure, I follow Robinson et al. (2008) and Karuna (2007) by examining product differentiation (*ProductDiff*), relative market size (*MarketSize*) and costs of entering the industry (*EntryCosts*). *ProductDiff* is calculated as total industry sales divided by total operating costs. Total industry sales is the sum of primary industrial segment sales. Total operating costs is the sum of operating costs for firms in a given industry. *MarketSize* is the sum of sales within one industry code. *EntryCosts* is the cost of property, plant, and equipment for firms in a given industry weighted by the company's market share. Market share is obtained by dividing the segment sales of a firm by the market size (the sum of the segment sales of all firms that have this particular industry as their primary industry). All three variables are logarithmized to account for their skewness. The alternative measure of industry rivalry, the *Herfindahl* index, is considered in a robustness test in 4.7.3.1. The index is calculated as the sum of the squared market shares of each firm competing in the market. The market share is the company's sales in comparison to the worldwide sales in the respective industry.

Firm characteristics. Finally, I control for some firm-specific variables. Bigger firms likely have more resources to set up a proper disclosure process and are therefore expected to be more forthcoming. An alternative reason might be that bigger firms have higher agency costs and a wider ownership base which might lead to additional incentives to engage in voluntary disclosure. Evidence with regards to size and disclosure of compensation by Ben-Amar and Zeghal (2011), Muslu (2010), Chizema (2008) and Coulton et al. (2001) support this assumption. *FirmSize* is measured as the logarithm of sales. Older firms might be well experienced with the handling of shareholders and potential investors but on the other hand less willing to adjust established processes to new requirements (Chizema (2008)). *FirmAge* is the number of years from founding year to current fiscal year. Prior studies also suggest that a firm's information environment influences the extent of voluntary disclosure (Lang and

Lundholm (1993, 1996), Healy, Hutton and Palepu (1999)). Therefore, I include proxies for growth opportunities (*TobinsQ*) and analyst following (measured via the number of earnings *Forecasts*). The findings with regards to performance and disclosure of compensation are mixed. While Ben-Amar Zeghal (2011) doesn't find evidence for a relationship, Muslu (2010) and Coulton et al. (2001) find a positive relation between performance and disclosure. I assume that a company is more forthcoming with compensation disclosure if the performance is better because successful companies fear x public scrutiny less than underperforming firms. Performance is measured via return on assets (*ROA*) and total stockholder return (*TSR*).

Endogeneity. A common problem of empirical research in the area of governance and executive pay is endogeneity. While this paper aims to understand the impact of compensation on the company's disclosure decision, the compensation itself might have been influenced by compensation disclosure in the first place. Pay might, for example, rise within a market after increased compensation disclosure due to the "keeping up with the Joneses" phenomenon: no CEO wants to be left behind and earn less than the average (Schmidt (2012), Harris et al. (2008)). To control for these effects, I follow the approach of Sanders and Hambrick (2007), Chatterje and Hambrick (2011) as well as Martin, Gomez-Mejia and Wiseman (2013): an endogeneity control variable was created by regressing the respective endogenous variable on its main drivers. For executive compensation pay in t-1 is regressed on the company and executive characteristics in t-2 and on industry and year dummies. The results are consistent with prior research on the determinants of executive pay and are shown in 4.6.4. The predicted level of pay is included as endogeneity control in all the models containing executive pay or excessive pay. For verticality, I regress *FirmSize*, performance (*ROA* and *TSR*), industry, and year dummies of the previous year on verticality and include the predicted value as endogeneity control in the respective models (*CVerticalityEndo*). Given that the main results did not change when I included the endogeneity controls I omit them in the main analysis to save degrees of freedom. The results can be found in 4.7.3.2, the section providing additional robustness tests.

Fixed effects. The analysis includes year and industry fixed effects for those models that do not include other industry controls.

Table 12 in the appendix sums up the introduced variables and their expected impact on the level of voluntary disclosure on management compensation in the annual report.

4.7 Results

4.7.1 Summary statistics and correlation analysis

Table 1 provides the summary statistics of my sample. On average the disclosure variable *Score* lies around 40 %, so less than half of the information that could be given is actually

provided in the compensation report. The minimum is close to zero while the best companies disclose around 70 % of the information.

variable	N	mean	sd	min	max	p25	p50	p75
Score	429	0.414	0.0945	0.0600	0.670	0.350	0.410	0.460
ScorePart1	429	0.415	0.117	0.0800	0.778	0.333	0.395	0.500
ScorePart2	429	0.771	0.179	0.250	1	0.636	0.857	0.875
ScorePart3	429	0.282	0.114	0	0.571	0.200	0.300	0.350
CVerticality	429	44.19	29.98	2.066	210.5	23.02	36.19	57.24
CVerticalityEndo	429	43.03	15.30	-2.341	93.16	33.40	41.90	51.60
AvgExcessComp	429	-0.184	2.172	-7.054	11.17	-1.268	-0.333	0.906
AvgTotalComp	429	2108	1149	489.9	8419	1265	1867	2758
AvgExpComp	429	5.886	2.807	0	15.12	3.687	5.310	7.515
FormerExec	429	0.0448	0.0483	0	0.286	0	0.0455	0.0769
CurrentExec	429	0.127	0.0873	0	0.400	0.0625	0.129	0.182
BoardSize	429	16.77	5.524	6	33	13	16	21
ExcBoardSize	429	0.220	3.987	-9.822	14.60	-2.345	0.0675	2.313
NoMeetings	429	5.888	1.850	4	18	5	5	7
Freefloat	429	0.560	0.232	0	1	0.368	0.586	0.732
FamilyShare	429	0.105	0.191	0	1	0	0	0.152
FamilyBoard	429	0.261	0.440	0	1	0	0	1
MarketSize	429	7.540e+09	4.700e+09	5.680e+08	1.360e+10	2.980e+09	8.740e+09	1.150e+10
ProductDiff	429	1.125	0.0472	1.036	1.332	1.102	1.113	1.139
EntryCosts	429	1.850e+07	1.010e+07	2.272e+06	6.670e+07	1.500e+07	1.860e+07	2.510e+07
Herfindahl	429	-4.853	0.697	-5.470	-2.395	-5.296	-5.216	-4.604
FirmAge	429	89.91	56.59	-1	255	36	96	134
ROA	429	5.425	6.979	-35.92	78.81	2.710	4.790	7.540
TSR	429	0.142	0.418	-0.901	2.400	-0.105	0.122	0.398
TobinsQ	429	1.484	0.716	0.773	5.975	1.078	1.281	1.577
FirmSize	429	15.90	1.521	12.43	19.13	14.66	15.87	17.12
Forecasts	429	25.23	7.332	2	44	19	25	31

Score is the disclosure score developed to measure the transparency of compensation disclosure. More detail can be found in chapters 4.6.1 and 4.6.2. CVerticality is the ratio between average executive compensation and average employee compensation. CVerticalityEndo is an endogeneity control that is created by regressing FirmSize, performance (ROA and TSR), industry, and year dummies of t-1 on verticality. AvgExcessComp is the average residual of the actually paid compensation minus the predicted compensation for a given company year. AvgTotalComp is the average total compensation across the executive board in t. AvgExpComp is the average of the predicted compensation. FormerExec and CurrentExec is the share of former/ current executives serving on the supervisory board. BoardSize. excBoardSize is measured as the residual of regressing the number of directors on the number of employees and industry dummies. This residual variable indicates by how much larger (smaller) a board is in comparison to companies in the same size and according company size. NoMeetings is the number of meetings the supervisory board conducts during a given year. Freefloat is the proportion of shares of a company that is traded in the stock market. FamilyShare is the share of a company's stock that is owned by the founding family. FamilyBoard is the number of executive or supervisory board members from the founding family. MarketSize is the sum of sales within one industry code. ProductDiff is calculated as total industry sales divided by total operating costs. Total industry sales is the sum of primary industrial segment sales. Total operating costs is the sum of operating costs for firms in a given industry. EntryCosts is the cost of property, plant and equipment for firms in a given industry weighted by the company's market share. Market share is obtained by dividing the segment sales of a firm by the market size (the sum of the segment sales of all firms that have this particular industry as their primary industry). All three variables are logarithmized to account for their skewdness. Herfindahl refers to the Herfindahl-Hirschman Index which is calculated as the sum of the squared market shares of each firm competing in the market. The market share is the company's sales in comparison to the worldwide sales in the respective industry. FirmAge is the number of years from founding year to current fiscal year. ROA is income before extraordinary items divided by average total assets. TSR (total stock return) is the ending stock price minus the initial stock price plus dividends divided by the initial stock price. TobinsQ is total assets minus common stock plus the market value of equity deflated by total assets. FirmSize is the logarithm of sales. Forecasts is the number of earnings forecasts.

Table 1: Descriptive statistics

Interestingly, the variable *AvgExcessComp* exhibits a negative mean, which indicates that German DAX and MDAX companies are on average paid less than would be expected according to performance, company size and future company prospects. While companies in the German DAX exhibit on average positive excessive compensation, I find negative excessive compensation for companies in the German MDAX. However, in both indices, one can find companies with positive and negative excessive compensation. Because the sample contains companies with very high excessive compensation, the estimation of excessive compensation is upwardly biased so that "normal compensation" already seems underpaid. More details on the estimation of excessive compensation can be found in section 4.6.4 and 4.7.2.1.

Table 2 reports correlations between the variables used in the analyses. The table suggests limited issues of multicollinearity. Similar to Robinson et al. (2011) I find a high correlation between the measures of industry rivalry (*ProductDiff*, *MarketSize,* and *EntryCosts*). Also, there is a high correlation between ownership variables (*FamilyShare*, *FamilyBoard,* and *Freefloat*) and between the various compensation variables (*CVerticality*, *AvgTotalComp*, *AvgExcessComp*). Finally forecasts and *FirmSize* exhibit correlation with other explaining variables. To ensure that correlations are within reasonable limits for regression analysis, I computed variance inflation factors (VIF). VIFs were all below 5 with an average of 1.85 and below 4 with an average VIF of 1.99 respectively for the model (1) and (3) of Table 5, depending on whether SIC dummies or industry rivalry variables are included. However, when including *AvgTotalComp*, the VIF of *AvgTotalComp* and *FirmSize* rise to above 10 (the rest of VIFs remaining low). Therefore, I estimated a separate model when including total compensation (column (2) and (4) of Table 5). VIFs for the model (2) and (4) of Table 5 are all below 5 with an average VIF of 1.87 and 2.04 respectively. Consequently, for the models specified in Table 5, the results suggest that the analysis does not suffer from any issues of multicollinearity and that the variables can be used jointly in regression models (Hair (2006)).

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	**Score**	1																				
2	**AvgTotalComp**	0.23	1																			
3	**CVerticality**	0.05	0.64	1																		
4	**AvgExcessComp**	-0.02	0.43	0.47	1																	
5	**FormerExec**	0.05	0.11	0.05	-0.08	1																
6	**CurrentExec**	-0.02	-0.04	-0.05	-0.13	0.06	1															
7	**BoardSize**	-0.13	-0.13	-0.16	-0.1	-0.16	0.09	1														
8	**NoMeetings**	0.04	0.05	0.12	-0.06	-0.06	-0.07	0.04	1													
9	**CompDummy**	-0.06	0.03	0.01	-0.01	-0.21	0.05	0.07	0.14	1												
10	**FamilyShare**	-0.12	0.03	0.05	0.03	0.19	-0.09	0	-0.18	-0.07	1											
11	**FamilyBoard**	-0.14	0.07	0.08	0.09	0.09	-0.07	0.13	-0.11	0.01	0.66	1										
12	**Freefloat**	0.07	0.14	-0.03	0.05	0.05	-0.05	-0.13	0.02	0.02	-0.35	-0.28	1									
13	**MarketSize**	0.13	0.08	-0.01	0	-0.03	0.02	-0.1	-0.01	0.01	0.09	0.14	0.16	1								
14	**ProductDiff**	0	-0.06	-0.09	0.12	-0.03	-0.09	0.06	0.04	-0.05	-0.12	-0.02	0	-0.28	1							
15	**EntryCosts**	0.2	0.07	0.03	0.06	-0.2	-0.04	-0.13	-0.06	0.1	-0.07	-0.02	0.02	0.44	0.23	1						
16	**FirmAge**	-0.03	-0.01	-0.11	-0.06	0.03	0.15	0.13	-0.1	0	-0.05	-0.07	0.1	0.27	-0.27	0.02	1					
17	**ROA**	-0.06	0.14	0.11	0.07	0.09	-0.14	-0.07	-0.11	-0.07	0.24	0.21	0	-0.02	0.2	0.02	-0.1	1				
18	**TSR**	-0.05	0.05	0.02	-0.02	0.01	-0.02	-0.11	-0.08	-0.01	0.04	0.05	0.01	0.01	0.04	0	0.01	0.18	1			
19	**TobinsQ**	-0.11	0.07	0.02	0.03	0.17	-0.09	-0.09	-0.09	-0.04	0.43	0.34	-0.07	-0.09	0.08	-0.01	-0.14	0.44	0.22	1		
20	**FirmSize**	0.27	0.69	0.39	-0.08	0.11	0.18	0	0.04	0.06	-0.11	-0.09	0.07	0.01	-0.17	0.06	0.09	-0.19	-0.04	-0.29	1	
21	**Forecasts**	0.25	0.53	0.21	-0.04	0.22	0.07	-0.02	0.01	0.08	0.03	-0.01	0.18	0.16	-0.03	0.16	0.01	0.03	-0.12	0.04	0.63	1

Table 2: Correlation matrix

4.7.2 Regression analysis

The following chapter provides the results of the regression models introduced earlier. First, the results for estimated variables *ExpComp* and *ExcessComp* are introduced. Second, the indices' validity is verified with the help of a regression analysis. Finally, regression results for answering the introduced hypotheses are conveyed.

4.7.2.1 Excessive compensation

Table 3 presents the results from regressing determinants of compensation on the adjusted total compensation of a company's executives. This regression is needed to calculate excessive pay as the difference between total pay and the predicted expected pay. Similar to previous research, tenure, company size, and an executive's role are important determinants of executive pay. Current performance, as well as the company's prospects, further increase compensation.

VARIABLES	Log(AdjTotalComp)t
Tenure	0.0262***
	(0.00428)
$FirmSize_{t-1}$	0.293***
	(0.00544)
ROA	0.00968***
	(0.00314)
ROA_{t-1}	0.00166
	(0.00370)
ROA_{t-2}	0.000948
	(0.00240)
$TobinsQ_{t-1}$	0.168***
	(0.0167)
$Leverage_{t-1}$	0.0641
	(0.0497)
CEO	0.532***
	(0.0201)
TSR	0.0800**
	(0.0364)
TSR_{t-1}	-0.00862
	(0.0429)
TSR_{t-2}	0.0569
	(0.0356)
Year FE	Yes
Industry FE	Yes
Constant	2.211***
	(0.104)
Observations	3,071
Adjusted R-squared	0.575

The column represents the results of a pooled cross-sectional OLS. The sample consists of 3,071 observations for German DAX and MDAX members of the executive board from fiscal years 2006 to 2014. Total $compensation_t$ is salary, short-term incentive, mid-term incentive and long-term incentive (here meaning stock-based compensation) as well as other annual pay for the manager in the year t. Compensation for executives with less than 365 days of presence in the board has been adjusted by dividing through the number of days and taking the result times 365. Total compensation amounts are given in thousands of Euros. Total adjusted compensation is logarithmized. $Tenure_t$ is the manager's tenure in years at the end of the fiscal year. $Log(Sales)_{t-1}$ is the logarithm of firma sales for the year t-1. ROA_t, ROA_{t-1} and ROA_{t-2} are income before extraordinary items divided by average total assets for year t, t-1 and t-2 respectively. $TobinsQ_{t-1}$ is TobinsQ at the end of the year t-1. TobinsQ is the market value of a company's assets divided by the book value. CEO is a dummy indicating whether a manager has been CEO in the year t. TSR, $TSR_{t-1}$and TSR_{t-2} is total stock return in the year t, t-1 and t-2 respectively. Industry and year fixed effects are included but not tabulated. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3: Firm-level regression to predict expected compensation

4.7.2.2 Index validity

Table 4 presents the results of estimating equation Equation 2 and Equation 3 so to understand whether the index is a valid measure of information asymmetry. In column 1, the dependent variable is the company's bid-ask-spread (*lnSpread*), in column 2, information asymmetry is measured via the company's stock volatility (*lnVolatility*). Consistent with the assumption of a valid measure for information asymmetry, the index score is negatively and significantly related to the bid-ask spread (column 1). Colum 2 shows that the same holds for measuring information asymmetry with the company's volatility. The variable *Score* also exhibits a negative coefficient. However, the significance is much lower. Overall, the results are very similar to findings from Laksmana (2008) and suggest that the disclosure scores are valid.

VARIABLES	(1) lnSpread	(2) lnVolatility
$Score_{t-1}$	-0.800***	-0.417*
	(0.172)	(0.237)
lnVolatility	0.304***	
	(0.0575)	
lnMarketCap	-0.238***	-0.135***
	(0.0158)	(0.0175)
lnTurnover	-0.132***	0.0667***
	(0.0151)	(0.0177)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Constant	-1.538***	0.593***
	(0.205)	(0.196)
Observations	326	326
R-squared	0.864	0.412

This table shows fixed effects regressions on a company's bid-ask-spread and volatility with the transparency score measured in period t-1. Spread is the bid-ask spread measured as the mean of the daily relative bid-ask spread over one year, with the relative bid-ask spread being the absolute difference between the closing bid and ask prices scaled by the mean of the bid and ask prices. I use the logarithm of Spread to account for its skewness. Score is the number of points gained in the disclosure index divided by the maximum reachable points for each company. Volatility is the standard deviation of daily stock returns over the fiscal year following the disclosure. Due to their skewed distribution, I use the logarithm of Volatility, Volume and MarketCap. Industry and year fixed effects are included but not tabulated. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4: Firm-level regressions of information asymmetry on disclosure scores

4.7.2.3 Determinants of (non-)disclosure

Table 5 presents the results of estimating Equation. Columns 1 and 2 examine the impact of governance and compensation as well as company characteristics on a company's disclosure decision. Time and industry fixed effects are included. As some of the industry dummies are significant, column 3 and 4 examine the alternative explanation for withheld information, namely industry rivalry.

The results suggest that overall the Managerial Opportunism theory has to be rejected. Neither *AvgExcessComp* nor governance variables exhibit significant coefficients with the predicted

signs. However, the coefficient of *CVerticality*, the ratio between the average executive officer compensation and the average employee compensation, is significant with a negative sign. This indicates that companies choose to be less transparent in compensation reports so to prevent public discussions on social equity issues. This is a particularly interesting finding as companies listed in the US are obliged to publish such a kind of ratio in the compensation reports from 2017 onwards. Hypothesis 1a and b have therefore to be rejected, while hypothesis 1c can be confirmed. Hypothesis 2a to c have to be rejected, too.
While hypothesis 3a and b have to be rejected – *Freefloat* and *FamilyShare* have no significant influence – both variables exhibit the predicted signs. However, hypothesis H3b cannot be rejected completely: the variable *FamilyBoard* does show a significant and negative coefficient.

As explained in the hypothesis section this may be due to family companies monitoring managers closer and lower information asymmetry between owners and managers, especially when family members are actively involved in the daily business. Overall, this result is line with findings from prior literature (for example Ali et al. (2007)).

All other findings play into the hands of the efficiency theory. Bigger companies seem to disclose more information on compensation (positive and significant coefficient of *FirmSize*). This may be due to increased public attention and more resources available for setting up a proper disclosure process. Interestingly but in line with research on institutional inertia and change (Chizema (2008)), older companies struggle more to disclose executive compensation than younger companies (significant and negative coefficient of *FirmAge*).

Finally, as there are industry effects on executive compensation disclosure, it is worth looking at the industry rivalry variables *MarketSize*, *ProductDiff* and *EntryCosts.* According to Robinson et al. (2011), the competitiveness of a market or industry should increase in *MarketSize* and decrease in *ProductDiff* and *EntryCosts*. If disclosure is indeed inversely linked to industry rivalry (so to maintain a competitive advantage in a setting with strong competition), disclosure should decrease in *MarketSize* and increase in *ProductDiff* and *EntryCosts*. While *MarketSize* exhibits no significant coefficient, *ProductDiff* shows a medium positive coefficient and *EntryCosts* a weak negative impact on disclosure. Results are therefore not fully consistent with the theory, and it remains to understand whether disclosure is indeed linked to industry rivalry.

VARIABLES	(1) Percentage Score	(2) Percentage Score	(3) Percentage Score	(4) Percentage Score
COMPENSATION				
AvgExcessComp	0.0124		0.0143	
	(0.00909)		(0.00920)	
CVerticality	-0.0708**		-0.0875**	
	(0.0336)		(0.0351)	
AvgTotalComp		-3.12e-06		-5.29e-06
		(2.19e-05)		(2.10e-05)
GOVERNANCE				
BoardSize	-0.00447	-0.00389	-0.00396	-0.00342
	(0.00401)	(0.00405)	(0.00417)	(0.00419)
FormerExec	0.0908	0.0331	0.142	0.0646
	(0.361)	(0.360)	(0.351)	(0.348)
CurrentExec	-0.0623	-0.0104	-0.0355	0.0100
	(0.194)	(0.194)	(0.191)	(0.191)
NoMeetings	-0.00295	-0.00580	-0.00406	-0.00799
	(0.00875)	(0.00895)	(0.00907)	(0.00945)
OWNERSHIP				
Freefloat	-0.133	-0.120	-0.0576	-0.0422
	(0.0842)	(0.0848)	(0.0816)	(0.0811)
FamilyShare	-0.176	-0.164	-0.121	-0.117
	(0.154)	(0.156)	(0.144)	(0.146)
FamilyBoard	-0.107**	-0.108**	-0.0913*	-0.0919*
	(0.0485)	(0.0493)	(0.0478)	(0.0483)
INDUSTRY				
MarketSize			0.0350	0.0377
			(0.0284)	(0.0285)
ProductDiff			0.994**	1.276***
			(0.444)	(0.439)
EntryCosts			-0.0543*	-0.0551*
			(0.0308)	(0.0312)
Industry FE	Yes	Yes	No	No
COMPANY				
FirmAge	-0.000733**	-0.000728**	-0.000662**	-0.000574**
	(0.000313)	(0.000315)	(0.000283)	(0.000284)
ROA	0.000414	-0.000482	0.00190	0.000874
	(0.00229)	(0.00216)	(0.00220)	(0.00203)
TSR	-0.0288	-0.0321	-0.0376	-0.0387
	(0.0502)	(0.0501)	(0.0521)	(0.0524)
TobinsQ	-0.0125	-0.0141	-0.00477	-0.00925
	(0.0374)	(0.0372)	(0.0395)	(0.0397)
FirmSize	0.0723***	0.0566***	0.0807***	0.0621***
	(0.0187)	(0.0205)	(0.0184)	(0.0189)
Forecasts	0.00499	0.00508	0.00526*	0.00563*
	(0.00312)	(0.00315)	(0.00315)	(0.00320)
TIME FE	Yes	Yes	Yes	Yes
Constant	-1.416***	-1.406***	-1.615***	-1.704***
	(0.266)	(0.312)	(0.553)	(0.571)
Observations	429	429	429	429

This table shows the results of a generalized linear model with a logit link, binomial distribution family and robust standard errors. The dependent variable, Score, is the number of points gained in the disclosure index divided by the maximum reachable points for each company. AvgExcessComp is the average residual of the actually paid compensation minus the predicted compensation for a given company year. CVerticality is the ratio between average executive compensation and average employee compensation. AvgTotalComp is the average total compensation across the executive board in t. BoardSize is measured as the residual of regressing the number of directors on the number of employees and industry dummies. This residual variable indicates by how much larger (smaller) a board is in comparison to companies in the same size and according company size. FormerExec and CurrentExec is the share of former/ current executives serving on the supervisory board. NoMeetings is the number of meetings the supervisory board conducts during a given year. Freefloat is the proportion of shares of a company that is traded in the stock market. FamilyShare is the share of a company's stock that is owned by the founding family. FamilyBoard is the number of executive or supervisory board members from the founding family. MarketSize is the sum of sales within one industry code. ProductDiff is calculated as total industry sales divided by total operating costs. Total industry sales is the sum of primary industrial segment sales. Total operating costs is the sum of operating costs for firms in a given industry. EntryCosts is the cost of property, plant and equipment for firms in a given industry weighted by the company's market share. Market share is obtained by dividing the segment sales of a firm by the market size (the sum of the segment sales of all firms that have this particular industry as their primary industry). All three variables are logarithmized to account for their skewness. FirmAge is the number of years from founding year to current fiscal year. ROA is income before extraordinary items divided by average total assets. TSR (total stock return) is the ending stock price minus the initial stock price plus dividends divided by the initial stock price. TobinsQ is total assets minus common stock plus the market value of equity deflated by total assets. FirmSize is the logarithm of sales. Forecasts is the number of earnings forecasts. Industry and year fixed effects are included but not tabulated. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5: Determinants of (non-)disclosure

The additional analysis conducted in 4.7.3.1 suggests that companies do not suffer from proprietary costs, as the alternative measure for industry rivalry – the Herfindahl-Hirschman Index, which measures industry concentration – is not significant either.

4.7.3 Robustness checks

The following chapter provides additional analyses to understand how robust the identified results are. Both dependent, as well as independent variables, will be modified.

4.7.3.1 Alternative measure for proprietary costs

As already mentioned earlier, previous literature often employs the Herfindahl-Hirschman Index as variable to measure industry rivalry. The Herfindahl-Hirschman Index is calculated as the sum of the squared market shares of each firm competing in the market. The market share is the company's sales in comparison to the worldwide sales in the respective industry.
As can be observed in Table 6, the alternative use of the Herfindahl-Hirschman Index for measuring proprietary costs does not exhibit a significant coefficient. At the same time, the variable *Herfindahl* changes only a few of the other coefficients in sign or significance. This is a first indicator of how robust the results are towards changing the specifications.

While governance variables and *AvgTotalComp* remain insignificant, the variable *AvgExcessComp* is now slightly significant. Like in previous analyses, the coefficient is positive, which is against the prediction. It implies that companies are more transparent when compensation cannot be explained by standard determinants such as performance, industry and size. Similar to the previous models with industry fixed effects, *Forecasts* exhibits a positive significant coefficient. This means that companies with more earnings forecasts are also more open about their compensation. While the variable *FamilyBoard* was highly significant in the previous analyses, the variable lost its significant coefficient in this model. Nonetheless, the negative signs remain as predicted.

VARIABLES	(1) Percentage Score	(2) Percentage Score
COMPENSATION		
AvgExcessComp	0.0173*	
	(0.00896)	
CVerticality	-0.101***	
	(0.0342)	
AvgTotalComp		5.16e-06
		(2.14e-05)
GOVERNANCE		
BoardSize	-0.00259	-0.00154
	(0.00418)	(0.00419)
FormerExec	0.355	0.279
	(0.317)	(0.309)
CurrentExec	-0.0497	0.00562
	(0.191)	(0.190)
NoMeetings	-0.000737	-0.00553
	(0.00900)	(0.00932)
OWNERSHIP		
Freefloat	-0.0405	-0.0268
	(0.0781)	(0.0786)
FamilyShare	-0.140	-0.149
	(0.143)	(0.146)
FamilyBoard	-0.0756	-0.0770
	(0.0480)	(0.0485)
INDUSTRY		
Herfindahl	0.00448	0.00382
	(0.0223)	(0.0227)
Industry FE	No	No
COMPANY		
FirmAge	-0.000744***	-0.000688**
	(0.000270)	(0.000273)
ROA	0.00300	0.00181
	(0.00202)	(0.00184)
TSR	-0.0295	-0.0299
	(0.0525)	(0.0529)
TobinsQ	-0.0175	-0.0272
	(0.0402)	(0.0414)
FirmSize	0.0734***	0.0428**
	(0.0176)	(0.0180)
Forecasts	0.00597*	0.00671**
	(0.00312)	(0.00321)
TIME FE	yes	yes
Constant	-1.453***	-1.332***
	(0.287)	(0.311)
Observations	429	429

This table shows the results of a generalized linear model with a logit link, binomial distribution family and robust standard errors. The dependent variable, Score, is the number of points gained in the disclosure index divided by the maximum reachable points for each company. AvgExcessComp is the average residual of the actually paid compensation minus the predicted compensation for a given company year. CVerticality is the ratio between average executive compensation and average employee compensation. AvgTotalComp is the average total compensation across the executive board in t. BoardSize is measured as the residual of regressing the number of directors on the number of employees and industry dummies. This residual variable indicates by how much larger (smaller) a board is in comparison to companies in the same size and according company size. FormerExec and CurrentExec is the share of former/ current executives serving on the supervisory board. NoMeetings is the number of meetings the supervisory board conducts during a given year. Freefloat is the proportion of shares of a company that is traded in the stock market. FamilyShare is the share of a company's stock that is owned by the founding family. FamilyBoard is the number of executive or supervisory board members from the founding family. The Herfindahl-Hirschman Index is calculated as the sum of the squared market shares of each firm competing in the market. The market share is the company's sales in comparison to the worldwide sales in the respective industry. FirmAge is the number of years from founding year to current fiscal year. ROA is income before extraordinary items divided by average total assets. TSR (total stock return) is the ending stock price minus the initial stock price plus dividends divided by the initial stock price. TobinsQ is total assets minus common stock plus the market value of equity deflated by total assets. FirmSize is measured via the logarithm of sales. Forecasts is the number of earnings forecasts. Industry and year fixed effects are included but not tabulated. Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Determinants of (non-)disclosure – Alternative industry measure (Robustness check)

4.7.3.2 Endogeneity issues

Due to the endogenous setting of the analysis, doubts may be raised about the unbiasedness of the coefficients. To address this concern, I follow the approach of Sanders and Hambrick (2007), Chatterje and Hambrick (2011) as well as Martin, Gomez-Mejia and Wiseman (2013): an endogeneity control variable was created by regressing the respective endogenous variable on its main drivers. For executive compensation pay in t-1 is regressed on the company and executive characteristics in t-2 and on industry and year dummies. The results are consistent with prior research on the determinants of executive pay and have been calculated in chapter 4.6.4. The predicted level of pay in t-1 is included as endogeneity control in all the models containing executive pay or excessive pay. For verticality, I regress *FirmSize* (log of sales), performance (*ROA* and *TSR*), industry and year dummies of the previous year on *CVerticality* and include the predicted value as endogeneity control in the respective models. The results can be found in Table 7.

Once again, *AvgExcessComp* exhibits a positive slightly significant coefficient, which is quite puzzling. A possible answer could be that such companies face more public scrutiny for their pay and try to mitigate this by providing more information in the report. *FirmSize* and *FirmAge* remain significant with the expected signs. The same holds for *FamilyBoard*, which once again exhibits a significant negative coefficient. In model 1 and 2 also *Freefloat* is significant with the predicted sign. However, that result is not robust across the analyses. Similarly, *Forecasts* once again show significant coefficients with the expected sign. Governance variables remain insignificant once again. The Industry Rivalry variables react similar to the first analyses: *ProductDiff* and *EntryCosts* show significant coefficients. Model 3 additionally presents a moderately significant positive coefficient for *MarketSize*. Given that the competitiveness of an industry should increase in *MarketSize* and decrease in *ProductDiff* and *EntryCosts*, transparency should decrease with higher *MarketSize* and increase with higher *ProductDiff* and *EntryCosts*. This prediction only holds for *ProductDiff*, the other variables show coefficients with signs not predicted. Given the lacking result for the alternative examination of industry rivalry with the help of the Herfindahl index, these results leave doubts whether companies really suffer from proprietary costs when not disclosing compensation data in more detail.

VARIABLES	(1) Percentage Score	(2) Percentage Score	(3) Percentage Score	(4) Percentage Score
COMPENSATION				
AvgExcessComp	0.0188*		0.0196*	
	(0.0102)		(0.0104)	
CVerticality	-0.105**		-0.124***	
	(0.0421)		(0.0451)	
AvgTotalComp		-1.45e-06		-7.17e-06
		(2.37e-05)		(2.25e-05)
GOVERNANCE				
BoardSize	-0.00194	-0.00115	-0.00117	0.000118
	(0.00405)	(0.00417)	(0.00418)	(0.00431)
FormerExec	-0.00708	-0.108	-0.0355	-0.142
	(0.398)	(0.400)	(0.386)	(0.382)
CurrentExec	-0.213	-0.136	-0.200	-0.0986
	(0.205)	(0.204)	(0.206)	(0.202)
NoMeetings	0.000684	-0.00523	-0.000895	-0.00750
	(0.00932)	(0.00963)	(0.00977)	(0.0103)
OWNERSHIP				
FamilyShare	-0.148	-0.120	-0.0684	-0.0293
	(0.168)	(0.167)	(0.157)	(0.154)
FamilyBoard	-0.142***	-0.141***	-0.124**	-0.124**
	(0.0502)	(0.0517)	(0.0500)	(0.0516)
Freefloat	-0.230**	-0.192**	-0.133	-0.0824
	(0.0932)	(0.0932)	(0.0927)	(0.0916)
INDUSTRY				
MarketSize			0.0648**	0.0478
			(0.0327)	(0.0314)
ProductDiff			1.498***	1.402***
			(0.467)	(0.460)
EntryCosts			-0.0865**	-0.0599*
			(0.0338)	(0.0321)
Industry FE	Yes	Yes	No	No
ENDOGENEITY				
$AvgExpComp_{t-1}$	-0.0208	-0.00918	-0.0184	-0.00687
	(0.0160)	(0.0149)	(0.0153)	(0.0149)
$CVerticalityEndo_{t-1}$	0.00391		0.00305	
	(0.00268)		(0.00201)	
COMPANY				
FirmSize	0.0821**	0.0657**	0.0920***	0.0686**
	(0.0340)	(0.0309)	(0.0310)	(0.0280)
Forecasts	0.00684**	0.00701**	0.00768**	0.00813**
	(0.00333)	(0.00336)	(0.00336)	(0.00344)
FirmAge	-0.000907***	-0.000898***	-0.000755**	-0.000771**
	(0.000337)	(0.000338)	(0.000312)	(0.000306)
ROA	-0.00383	-0.00409	-0.00185	-0.00252
	(0.00302)	(0.00304)	(0.00315)	(0.00315)
TSR	-0.0334	-0.0485	-0.0386	-0.0529
	(0.0537)	(0.0539)	(0.0575)	(0.0579)
TobinsQ	0.0117	0.00493	0.0121	0.00649
	(0.0429)	(0.0434)	(0.0458)	(0.0465)
TIME FE	Yes	Yes	Yes	Yes
Constant	-1.387***	-1.400***	-1.803***	-1.854***
	(0.426)	(0.449)	(0.692)	(0.697)
Observations	362	362	362	362

This table shows the results of a generalized linear model with a logit link, binomial distribution family and robust standard errors. The dependent variable, Score, is the number of points gained in the disclosure index divided by the maximum reachable points for each company. AvgExcessComp is the average residual of the actually paid compensation minus the predicted compensation for a given company year. AvgExpComp is the average of the predicted compensation. CVerticality is the ratio between average executive compensation and average employee compensation. AvgTotalComp is the average total compensation across the executive board in t. BoardSize is measured as the residual of regressing the number of directors on the number of employees and industry dummies. This residual variable indicates by how much larger (smaller) a board is in comparison to companies in the same size and according company size. FormerExec and CurrentExec is the share of former/ current executives serving on the supervisory board. NoMeetings is the number of meetings the supervisory board conducts during a given year. Freefloat is the proportion of shares of a company that is traded in the stock market. FamilyShare is the share of a company's stock that is owned by the founding family. FamilyBoard is the number of executive or supervisory board members from the founding family. MarketSize is the sum of sales within one industry code. ProductDiff is calculated as total industry sales divided by total operating costs. Total industry sales is the sum of primary industrial segment sales. Total operating costs is the sum of operating costs for firms in a given industry. EntryCosts is the cost of property, plant and equipment for firms in a given industry weighted by the company's market share. Market share is obtained by dividing the segment sales of a firm by the market size (the sum of the segment sales of all firms that have this particular industry as their primary industry). All three variables are logarithmized to account for their skewness. Endogeneity controls are calculated by regressing common determinants of pay and verticality on the variables AvgTotalComp and verticality. FirmAge is the number of years from founding year to current fiscal year. ROA is income before extraordinary items divided by average total assets. TSR (total stock return) is the ending stock price minus the initial stock price plus dividends divided by the initial stock price. TobinsQ is total assets minus common stock plus the market value of equity deflated by total assets. FirmSize is the logarithm of sales. Forecasts is the number of earnings forecasts. Industry and year fixed effects are included but not tabulated. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 7: Determinants of (non-)disclosure – Endogeneity controls (Robustness check)

4.7.3.3 Alternative index measure

The index introduced earlier excludes index items that are not applicable for the respective company, e.g., items posing questions on short-term incentives, when the company does not pay any short-term incentive. This may lead to biased results as companies with more components have higher chances of gaining points than companies without certain components. An alternative approach is to give companies without certain components the full amount of points in the respective area. However, this similarly leads to a bias. Companies with very few compensation components can gain high overall disclosure values even though they might disclose very little about the compensation components they have actually installed. The full percentage gained in the areas of non-existing compensation components may outweigh the low disclosure they provide for components they have. Nonetheless, I pursue the analysis to see how robust the results are to an alternative measure of disclosure.

I recalculate the index score by giving the full amount of points for compensation components not used in the respective companies. First of all, one can see that the new index has a higher overall mean. Without knowing which index comes closer to the reality, it is hard to tell whether the original measurement of the index was underestimating the disclosure of companies or whether the new index is overestimating the disclosure. The standard deviation of the new index is a little lower than for the original index. This means that the new measurement evens out differences between the companies, likely because the new index score overestimates due to the aforementioned problem: Companies with simple compensation systems and low disclosure for these components receive a higher overall score as the points given for components not in use outweigh the few points given for the actually used components.

To shed more light on the new index, I rerun the analysis on the relationship between information asymmetry and the index score. The results can be found in Table 8.

The variable, *ScoreRobust* shows negative coefficients both for bid-ask spread and volatility. However, only in the model for estimating volatility the coefficient of *ScoreRobust* is significant. The original score was highly significant in the model for *bid-ask spread* and only moderately significant for the *volatility* model. While this makes the original score a little superior, it is still hard to tell which score is more valid overall. Both can be connected to information asymmetry to a certain extent. None of the two exhibits a 1 %-level-significance on both information asymmetry variables.

VARIABLES	(1) lnSpread	(2) lnVolatility
$ScoreRobust_{t-1}$	-0.245	-0.714***
	(0.195)	(0.217)
lnVolatility	0.317***	
	(0.0616)	
lnMarketCap	-0.239***	-0.138***
	(0.0161)	(0.0167)
lnTurnover	-0.144***	0.0629***
	(0.0154)	(0.0180)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Constant	-1.668***	0.924***
	(0.225)	(0.214)
Observations	326	326
R-squared	0.856	0.426

This table shows fixed effects regressions on a company's bid-ask-spread and volatility with the transparency score measured in period t-1. Spread is the bid-ask spread measured as the mean of the daily relative bid-ask spread over one year, with the relative bid-ask spread being the absolute difference between the closing bid and ask prices scaled by the mean of the bid and ask prices. I use the logarithm of Spread to account for its skewness. ScoreRobust is the number of points gained in the disclosure index divided by the maximum reachable points for each company. Volatility is the standard deviation of daily stock returns over the fiscal year following the disclosure. Due to their skewed distribution, I use the logarithm of Volatility, Volume and MarketCap. Industry and year fixed effects are included but not tabulated. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 8: Validity of alternative score (Robustness check)

As the new index cannot fully be dismissed as being less valid than the original index, I also rerun the analysis on disclosure determinants. The results can be found in Table 9. Overall, a number of results differ significantly from the results with the original index score.

Nonetheless, *CVerticality* remains highly significant with a negative coefficient, which indicates that this result is very robust. The same holds for *FirmSize* (measured via the log of sales) and *FirmAge*. Interestingly, *AvgTotalComp* becomes slightly significant in the new model. The coefficient of *AvgExcessComp* is still positive like in the previous models but lost its significance once again.

Surprisingly, the new results show significant coefficients for governance variables. *FormerExec* exhibits a strongly significant, positive coefficient. This would mean that a higher share of former executives on the supervisory board leads to rising transparency. For *CurrentExec*, on the other hand, a negative coefficient can be observed. It is moderately and slightly significant in models 1 and 3 respectively. This indicates that disclosure is less detailed with a higher share of current executives on the board. While there might be a reasoning for that observation (executives who still serve on executive boards may feel closer to the role as an executive than executives that already left that role quite a while ago) the results were not robust across analyses. *CVerticality* remains highly significant with a negative coefficient. Once

again also *FirmSize* and *FirmAge* remain significant. However, *FirmAge* changes its sign for the first time – now younger companies are less forward coming than older ones. *FamilyBoard* similarly remains stable with a negative sign but only a slight significance. The result for *Forecasts* is only slightly significant but changed sign, which is counter-intuitive. Finally, *ProductDiff* still shows the predicted sign with a significant coefficient.

It is not surprising that results differ more for the introduced setting than before as the new score differs significantly from the original one. Companies with few compensation components are very likely to gain considerably higher overall scores. Nonetheless, I want to stress the fact that *CVerticality*, *FirmSize,* and *ProductDiff* remained stable across all analyses.

VARIABLES	(1) ScoreRobust	(2) ScoreRobust	(3) ScoreRobust	(4) ScoreRobust
COMPENSATION				
AvgExcessComp	0.0109		0.00909	
	(0.00802)		(0.00806)	
CVerticality	-0.133***		-0.119***	
	(0.0336)		(0.0325)	
AvgTotalComp		-3.26e-05*		-3.26e-05*
		(1.91e-05)		(1.87e-05)
GOVERNANCE				
BoardSize	0.00254	0.00391	0.00409	0.00493
	(0.00442)	(0.00440)	(0.00451)	(0.00448)
FormerExec	1.048***	0.956**	1.153***	1.050***
	(0.382)	(0.376)	(0.360)	(0.353)
CurrentExec	-0.397**	-0.291	-0.306*	-0.238
	(0.178)	(0.177)	(0.173)	(0.173)
NoMeetings	0.00465	0.000636	0.00403	-0.000136
	(0.00793)	(0.00812)	(0.00824)	(0.00855)
OWNERSHIP				
FamilyShare	0.110	0.133	0.188	0.189
	(0.125)	(0.126)	(0.117)	(0.119)
FamilyBoard	-0.0973*	-0.101*	-0.0918*	-0.0928*
	(0.0548)	(0.0548)	(0.0545)	(0.0546)
Freefloat	-0.135*	-0.115	-0.0740	-0.0584
	(0.0809)	(0.0822)	(0.0810)	(0.0808)
INDUSTRY				
MarketSize			0.0411	0.0515**
			(0.0266)	(0.0259)
ProductDiff			0.927*	1.346***
			(0.500)	(0.492)
EntryCosts			-0.000148	-0.00828
			(0.0295)	(0.0296)
Industry FE	Yes	Yes	No	No
COMPANY				
FirmSize	0.0520***	0.0388*	0.0505***	0.0411**
	(0.0172)	(0.0200)	(0.0169)	(0.0190)
Forecasts	-0.00573*	-0.00546*	-0.00601*	-0.00545*
	(0.00298)	(0.00298)	(0.00308)	(0.00313)
FirmAge	0.000810**	0.000806**	0.000641**	0.000749**
	(0.000335)	(0.000338)	(0.000305)	(0.000301)
ROA	0.00314	0.00184	0.00341	0.00245
	(0.00245)	(0.00221)	(0.00231)	(0.00210)
TSR	-0.0147	-0.0175	-0.0296	-0.0282
	(0.0459)	(0.0463)	(0.0470)	(0.0474)
TobinsQ	-0.000843	0.00577	0.0118	0.0149
	(0.0311)	(0.0304)	(0.0314)	(0.0315)
TIME FE	Yes	Yes	Yes	Yes
Constant	0.193	-0.0221	-0.947	-1.330**
	(0.276)	(0.318)	(0.579)	(0.568)
Observations	429	429	429	429

This table shows the results of a generalized linear model with a logit link, binomial distribution family and robust standard errors. The dependent variable, Score, is the number of points gained in the disclosure index divided by the maximum reachable points for each company. AvgExcessComp is the average residual of the actually paid compensation minus the predicted compensation for a given company year. CVerticality is the ratio between average executive compensation and average employee compensation. AvgTotalComp is the average total compensation across the executive board in t. BoardSize is measured as the residual of regressing the number of directors on the number of employees and industry dummies. This residual variable indicates by how much larger (smaller) a board is in comparison to companies in the same size and according company size. FormerExec and CurrentExec is the share of former/ current executives serving on the supervisory board. NoMeetings is the number of meetings the supervisory board conducts during a given year. Freefloat is the proportion of shares of a company that is traded in the stock market. FamilyShare is the share of a company's stock that is owned by the founding family. FamilyBoard is the number of executive or supervisory board members from the founding family. MarketSize is the sum of sales within one industry code. ProductDiff is calculated as total industry sales divided by total operating costs. Total industry sales is the sum of primary industrial segment sales. Total operating costs is the sum of operating costs for firms in a given industry. EntryCosts is the cost of property, plant and equipment for firms in a given industry weighted by the company's market share. Market share is obtained by dividing the segment sales of a firm by the market size (the sum of the segment sales of all firms that have this particular industry as their primary industry). All three variables are logarithmized to account for their skewness. FirmAge is the number of years from founding year to current fiscal year. ROA is income before extraordinary items divided by average total assets. TSR (total stock return) is the ending stock price minus the initial stock price plus dividends divided by the initial stock price. TobinsQ is total assets minus common stock plus the market value of equity deflated by total assets. FirmSize is the logarithm of sales. Forecasts is the number of earnings forecasts. Industry and year fixed effects are included but not tabulated. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 9: Determinants of (non-)disclosure - Alternative score (Robustness check)

4.8 Conclusion

I examine voluntary disclosure of companies in compensation reports in a setting with relatively low regulation with the help of a disclosure index. I find that the developed index can be related to information asymmetry which provides evidence that the developed index is valid and compensation report transparency is translated into the market's perception of a company's information asymmetry.

The results of my main analysis suggest that companies with lower transparency in the compensation report do not suffer from excessive compensation or weak governance. Therefore, the assumption made by the managerial power theory can be rejected for the German setting. This is an interesting finding as previous studies from the US like Robinson et al. (2011), Coulton et al. (2001), Laksmana (2008) and Ben-Amar and Zeghal (2011) found support for the managerial power theory. My finding seems to be in line with Muslu's (2010) results for the European market as he found evidence for the optimal contracting approach.

All my other findings also indicate that companies decide for higher quality disclosure due to an efficiency-driven approach: *FirmSize* (measured via the logarithm of sales) strongly influences the amount of disclosure, a fact that indicates that companies with fewer resources simply don't invest that much effort. A company's information environment (measured by the company's forecasts) and company age seem to have a pretty robust impact on disclosure as well.

However, companies with higher verticality disclose less detailed compensation reports. This result is extremely robust across all analyses. This may indicate that companies are mainly worried about social equity issues because these create higher public scrutiny. As this is the first finding with regards to such a pay ratio, it will remain particularly interesting to compare the results to future research. Especially research from the US, where the disclosure of such a ratio is obligatory from 2017 onwards, may provide valuable new insights in comparison to German data.

Additional analysis might shed more light on the role of industry rivalry as a motivation to retain information. While one of the variables exhibits a robust significant coefficient with the predicted sign, all the other variables trying to capture industry rivalry fail at providing consistent and significant results. The findings so far leave doubt about the assumption that companies indeed suffer from proprietary costs regarding compensation disclosure.

The results provide new insights on disclosure as they indicate cross-country differences because the results differ significantly from findings from Anglo American based studies. The possible concern about infringing social equity norms also fits the description of Germany as a more stakeholder-oriented country.

The findings are of interest to the legislator. First, they suggest that, by making disclosure easier and less time consuming, more companies will provide the requested information. Second, the dismissal of the managerial power theory's assumption indicates that current disclosure requirements do not necessarily need to be tightened. No malpractice induced by lax requirements could be observed. Third, the companies' fear of disclosing better due to higher pay inequality needs to be examined further. Social inequity concerns are a very dominant topic in polls and elections. However, they are not a major issue for shareholders who might benefit from increased information availability. Companies might need encouragement to pursue a more shareholder-friendly disclosure policy. Overall, the observable shift towards model tables might address the mentioned issues. Companies can provide and shareholders retrieve the information of interest in a more standardized and faster way.

4.9 Appendix

1 Data collection guideline

General remarks on the index composition and item evaluation

This guideline explains how to evaluate and rate the information found in the compensation report. The collected data from the compensation report is then used to calculate the disclosure score.

The compensation reports of each company, downloaded from the respective company website or the Bundesanzeiger, have to be read completely and the information retrieved manually. The index is structured into 3 parts: (1) the first part collects information on the disclosure of the different **compensation components**, (2) the second part examines the report's **readability**, and (3) the last part collects information disclosed on the **adequacy** of the installed compensation system. The first part, disclosure on compensation components, contains 9 sections covering all known compensation components from fringe benefits, over short-term incentives and pensions to target compensation (see Friedl et al. (2016) and Friedl et al. (2015) for a description of each compensation component). The sections readability and adequacy are not subdivided.

Within the parts and sections, the index items ask whether certain information is disclosed. Is the information disclosed, usually one point is given. In some cases, more than one point can be achieved. This guide explains for each index item how many points can be achieved and for what piece of information the respective points are given. If the respective information is not disclosed in the compensation report, zero points are given. However, if a company's compensation system does not include a certain pay component, the index items in the respective section are not rated but excluded from the analysis. This is achieved by marking the respective index item with a "." as Stata can process this information. There are also singular index items that may not apply to all companies as not all companies link their bonus to the relative performance of other companies for example. These index items can be identified easily as they are colored differently and always start with the word "If". Similar to the sections on compensation components, these items are marked with "." if the respective index item cannot be applied in the company's case.

In a next step, two numbers are aggregated: the sum of all achievable points and the sum of all achieved points. By summing up all achievable points for all applicable index items, a maximum score per company can be calculated. The company's achieved points, on the other hand, are calculated by summing up all points gained. The company's disclosure score is then calculated by dividing the achieved points by the achievable points.

$$Score = \frac{\sum Achieved\ points}{\sum Maximum\ points\ achievable}$$

Equation 8: Index score calculation

Additionally sub-scores for the three parts of the disclosure index, 1) compensation components, 2) readability and 3) adequacy, can be calculated. The following chapters introduce the three parts with the respective index items in more detail.

The data is collected in excel files. Each year is represented in one excel file with one excel sheet for each company listed in the DAX or MDAX for at least one day during the respective fiscal year. To make the data collection clearer, there is one example file for the fiscal year 2014. Sheet1 is for Adidas, Sheet2 for Allianz and so on. Please do not rename the sheets. Please do also not enter, change or relocate index items or other items in the excel sheets. Please use the company name as introduced in the company databank (Excel file "cname.xls"). All these measures are necessary. Otherwise Stata cannot work with the data. Make sure you do not add blanks after your entry,

because Stata is case sensitive and will treat the blank as a sign. This leads to the effect that two identical company names (or other values or variables) are not recognized as the same.

To make it easier to review the data a color code should be applied to index items that you feel insecure about. Mark index items where you are in doubt in yellow, and index items where you are very uncertain in red. This way the reviewer knows where to put emphasis on.

Doubt about correctness
High uncertainty about correctness

Description of index items

Part A: Disclosure of compensation components

1. Salary

This category is considered with points, if one or more members of the executive board receive a fixed salary by the company. The maximum score is 1 point.

1. Does the company disclose the full yearly amount of the salary individually and separately?
One point, if the company discloses full yearly amount of the salary individually and separately. Otherwise, zero points.

2. Consultancy

This category is considered with points if one or more members of the executive board have a consultancy contract with the firm. The maximum score is 3 points.

1. Does the company disclose the tasks and conditions of the consultancy job?
One point, if the company discloses the tasks and conditions of the consultancy job. Otherwise, zero points.

2. Does the company disclose the remuneration policy for the consultancy job?
One point, if the remuneration report contains information on the composition of the compensation for the consultancy job (Example: Any information on how compensation is structured? Fixed/variable/monthly/daily/hourly fees?). Otherwise, zero points.

3. Does the company disclose the full yearly amount individually and separately?
One point, if gained amount for consultancy jobs is disclosed for each person and separately from other components (not mixed or combined with other pay components). Otherwise, zero points.

3. One-off payment

This category is applicable if the firm provides a one-off payment to any of its executives. The maximum score is 1 point.

1. Does the company disclose the yearly amount individually and separately?
One point, if the company provides the amount for each person and separately from other pay components in the remuneration report. Otherwise, zero points.

4. Fringe benefits

Included in the calculation of the final score, if a company grants fringe benefits to the members of the executive board. The maximum score is 3 points.

1. Does the company disclose the components of fringe benefits (plane, car, insurances)?
One point, if the company gives information on the granted fringe benefits' single components. Otherwise, zero points. (Give one point if some examples are named, question 3 will check whether we know about all of the components).

2. Does the company disclose the full amount of fringe benefits individually and separately from rest of compensation?
One point, if the company provides the value of fringe benefits paid to each board member (without adding this value to other components so that it remains unclear how high fringe benefits are). Otherwise, zero points.

3. Does the company disclose the value of the different components separately?
One point, if the company breaks the value of granted fringe benefits down to its single components. Otherwise, zero points.

5. Short-Term Incentive (STI)

This section is considered with points if the company grants a short-term incentive (STI) to one or more members of the executive board. According to the convention of this paper, an STI is a variable cash compensation based on incentives with a period under review of 1 year or less which is not exclusively based on share performance (see share-based compensation). **See the compensation files if you are unsure about the assessment**. The maximum score in this category is 14 points.

1. Does the company disclose the yearly amount individually and separately?
One point, if the company provides the amount for each person and separately from other pay components in the remuneration report. Otherwise, zero points.

2. Does the company disclose the type of the underlying KPIs (nonfinancial vs. financial)?
One point, if the basic types (nonfinancial vs. financial) of underlying KPIs for the STI are revealed in the remuneration report. Otherwise, zero points. If specific KPIs are mentioned one point (one can then assess whether these are financial or non-financial).

3. Does the company disclose the specific KPIs?
One point, if all KPIs for calculation of STI bonus are mentioned in the remuneration report. Otherwise, zero points.

4. Does the company disclose the KPIs' calculation?
One point, if it is clear how the KPIs for the calculation of STI bonus are calculated themselves. Otherwise, zero points.

5. Does the company disclose the weighting of each KPI?
One point, if it is obvious how the different KPIs are weighted against each other (example: 30% ROI, 70% EBIT). Full point if only one KPI is used. Otherwise, zero points.

6. Does the company disclose the performance targets for each KPI?
One point, if report mentions the performance goals for each KPI in remuneration report (example: manager has been asked to achieve an ROI of 15% and an EBIT of 2 million). Otherwise, zero points.

7. Does the company disclose the actually achieved performance for each KPI?
One point, if report mentions the achieved performance for each KPI in remuneration report (example: manager has achieved an ROI of 10% and an EBIT of 1.5 million). Otherwise, zero points.

8. Does the company disclose whether the performance evaluation of KPIs is subjective or formula based?
One point, if remuneration report contains information on whether the KPI performance is assessed formula based or subjective (example: formula based might be goal ROI/actual ROI or goal ROI-actual ROI; subjective might be "he did a good job, let's pay him his full bonus"). Otherwise, zero points. If this question cannot be answered, the following two questions have to be rated with 0.

9. If formula-based: Does the company disclose the formula for evaluating KPIs? Or does the company explain how the performance outcome affected the bonus?
One point, if remuneration report contains any information on how the KPI performance is assessed if assessment is done formula based (example: formula based might be goal ROI/actual ROI or goal ROI-actual ROI). Otherwise, zero points. If it is unclear whether a KPI's performance is assessed subjective or formula based zero points.

10. If subjective compensation component: Does the company give information on the process of assessing the performance?
One point, if remuneration report contains any information on how the KPI performance is assessed if the assessment is done subjective (example: process of discussing performance within committee). Otherwise, zero points. If it is unclear whether a KPI's performance is assessed subjective or formula based zero points.

11. Does the company disclose a minimum amount or a hurdle?
One point, if a specific minimum or hurdle (at least 80% of KPI goal otherwise no bonus) are given by the company. Otherwise, zero points.

12. Does the company disclose a maximum amount or a cap?
One point, if a specific maximum or cap are given by the company (example: relative: max 120% of target STI bonus; absolute: max €3M in STI bonus). Otherwise, zero points.

13. If relative performance evaluation: Does the company disclose the peer group?
Relative performance evaluation (RPE) makes the compensation dependent on the company's performance in comparison to its peers. This is supposed to prevent that managers are compensated for luck instead of own performance. Example: Company A and B operate in the same market. Company A performs as well as its peers and pays the CEO a bonus based on company performance. Company B performs as well as its peers and pays the CEO an RPE bonus. Suddenly the overall market for both companies booms due to a government subsidy. Company A has to pay a high bonus as the company's performance rises due to the subsidy. But the manager had not increased his efforts to be better than his peers. Company B, on the other hand, pays the same bonus as before the subsidy because the manager is only increasing his bonus if he performs better than his peers.
This section is only added to the index if the company applies RPE for its bonuses.
One point, if underlying peer group is disclosed in the remuneration report. Otherwise, zero points.

14. If relative performance evaluation: Does the company disclose the average value of the peer group?

Relative performance evaluation (RPE) makes the compensation dependent on the company's performance in comparison to peers. This is supposed to prevent that managers are compensated for luck instead of own performance. Example: Company A and B operate in the same market. Company A performs as well as its peers and pays the CEO a bonus based on company performance. Company B performs as well as its peers and pays the CEO an RPE bonus. Suddenly the overall market for both companies currently booms due to a government

subsidy. Company A has to pay a high bonus as the company's performance rises due to the subsidy. But the manager had not increased his efforts to be better than his peers. Company B, on the other hand, pays the same bonus as before the subsidy because the manager is only increasing his bonus if he performs better than his peers. This section is only added to the index if the company applies RPE for its bonuses.
One point, if the company gives information on the underlying peer group's performance. Otherwise, zero points.

6. Mid Term Incentive

This section is considered in the final score if the company grants a midterm incentive (MTI) to one or more members of the executive board. According to the convention of this paper, an MTI is a variable cash compensation based on incentives with a period under review of more than 1 year which is not exclusively based on share performance (see share-based compensation). **See the compensation files if you are unsure about the assessment**. The maximum score in this category is 18 points.

1. Does the company disclose the yearly amount paid out individually and separately?
One point, if the company provides the amount paid out for each person and separately from other pay components in the remuneration report. Otherwise, zero points.

2. If deferred payout: Does the company disclose the yearly amount earned individually and separately? (accruals)
One point, if the company provides the amount earned by each person and separately from other pay components in the remuneration report (If it is a system with deferred payout rule the number given may be an accrual). Otherwise, zero points.

3. If accrual: Is the accounting standard for the accruals disclosed?
One point, if the company provides the accounting standard used to calculate the accrual. Otherwise, zero points.

4. Does the company disclose the type of the underlying KPIs? (nonfinancial vs financial) (If specific KPI's known =1 pt.)?
One point, if the basic types (nonfinancial vs financial) of underlying KPIs for the MTI are revealed in remuneration report. Otherwise, zero points. If specific KPIs are mentioned, one point (one can then assess whether these are financial or non-financial).

5. Does the company disclose the specific KPIs?
One point, if all KPIs for calculation of MTI bonus are mentioned in the remuneration report. Otherwise, zero points.

6. Does the company disclose the KPIs' calculation?
One point, if it is clear how the KPIs for the calculation of MTI bonus are calculated themselves. Otherwise, zero points.

7. Does the company disclose the weighting of each KPI?
One point, if it is obvious how the different KPIs are weighted against each other (example: 30% ROI, 70% EBIT). Otherwise, zero points.

8. Does the company disclose the performance targets for each KPI?
One point, if report mentions the performance goals for each KPI in remuneration report (example: manager has been asked to achieve an ROI of 15% and an EBIT of 2 million). Otherwise, zero points.

9. Does the company disclose the actually achieved performance for each KPI?
One point, if report mentions the achieved performance for each KPI in remuneration report (example: manager has achieved an ROI of 10% and an EBIT of 1.5 million). Otherwise, zero points.

10. Does the company disclose whether the performance evaluation of KPIs is subjective or formula based?
One point, if remuneration report contains information on whether the KPI performance is assessed formula based or subjective (example: formula based might be goal ROI/actual ROI or goal ROI-actual ROI; subjective might be "he did a good job, let's pay him his full bonus"). Otherwise, zero points.

11. If formula-based: Does the company disclose the formula for evaluating KPIs? Or does the company explain how the performance outcome affected the bonus?
One point, if remuneration report contains any information on how the KPI performance is assessed if assessment is done formula based (example: formula based might be goal ROI/actual ROI or goal ROI-actual ROI). Otherwise, zero points. If it is unclear whether a KPI's performance is assessed subjective or formula based zero points.

12. If subjective compensation component: Does the company give information on the process of assessing the performance?
One point, if remuneration report contains any information on how the KPI performance is assessed if assessment is done subjective (example: process of discussing performance within committee). Otherwise, zero points. If it is unclear whether a KPI's performance is assessed subjective or formula based zero points.

13. Does the company disclose the number of years the program runs?
One point, if remuneration report provides the number of years of the MTI program. Otherwise, zero points.

14. Does the company disclose in which year the payout will take place?
One point, if remuneration report provides the concrete year of payout of the MTI program or when it is obvious which year will be the year of payout. Otherwise, zero points.

15. Does the company disclose a minimum amount or a hurdle?
One point, if a specific minimum or hurdle (at least 80% of KPI goal otherwise no bonus) are given by the company. Otherwise, zero points.

16. Does the company disclose a maximum amount or a cap?
One point, if a specific maximum or cap are given by the company (example: relative: max 120% of target MTI bonus; absolute: max €3M in MTI bonus). Otherwise, zero points.

17. If relative performance evaluation: Does the company disclose the peer group?
Relative performance evaluation (RPE) makes the compensation dependent on the company's performance in comparison to peers. This is supposed to prevent that managers are compensated for luck instead of own performance. Example: Company A and B operate in the same market. Company A performs as well as its peers and pays the CEO a bonus based on company performance. Company B performs as well as its peers and pays the CEO an RPE bonus. Suddenly the overall market for both companies currently booms due to a government subsidy. Company A has to pay a high bonus as the company's performance rises due to the subsidy. But the manager had not increased his efforts to be better than his peers. Company B, on the other hand, pays the same bonus as before the subsidy because the manager is only increasing his bonus if he performs better than his peers. This section is only added to the index if the company applies RPE bonuses.
One point, if underlying peer group is disclosed in the remuneration report. Otherwise, zero points.

18. If relative performance evaluation: Does the company disclose the average value of the peer group?
Relative performance evaluation (RPE) makes the compensation dependent on the company's performance in comparison to peers. This is supposed to prevent that managers are compensated for luck instead of own performance. Example: Company A and B operate in the same market. Company A performs as well as its peers and pays the CEO a bonus based on company performance. Company B performs as well as its peers and pays

the CEO an RPE bonus. Suddenly the overall market for both companies currently booms due to a government subsidy. Company A has to pay a high bonus as the company's performance rises due to the subsidy. But the manager had not increased his efforts to be better than his peers. Company B, on the other hand, pays the same bonus as before the subsidy because the manager is only increasing his bonus if he performs better than his peers. This section is only added to the index if the company applies RPE bonuses.
One point, if the company gives information on the underlying peer group's performance. Otherwise, zero points.

7. Share-based compensation

This section is considered in the final score if the company grants share-based compensation to one or more members of the executive board. Share-based compensation is every component of remuneration, which is exclusively based on shares or paid in shares. Mixed components belong to the Mid Term Incentive. The maximum score of this section is 9 points.

1. Does the company explain whether it is a real or a virtual share-based system?
One point, if the company explains whether the share-based compensation is based on real shares or whether the share's development is only projected onto a virtual component. Otherwise, zero points.

2. Does the company disclose the yearly amount paid out individually and separately?
One point, if the company provides the amount paid out for each person and separately from other pay components in the remuneration report. Otherwise, zero points.

3. Does the company disclose the yearly amount earned individually and separately?
One point, if the company provides the amount earned for each person and separately from other pay components in the remuneration report. Otherwise, zero points.

4. Does the company disclose the number of shares/ share-based compensation items granted in period?
One point, if a specific amount of shares or share-based compensation items granted in period is given in remuneration report. Otherwise, zero points. Only points if the information is given on individual basis.

5. Does the company disclose the total number of shares/ share-based compensation items held?
One point, if a specific amount of the total shares or share-based compensation items held is disclosed in the remuneration report. Otherwise, zero points. Only points if the information is given on individual basis.

6. Does the company disclose the fair value at grant date of shares/ share-based compensation items?
One point, if a fair value at grant date of the shares ore share-based compensation items is disclosed in the remuneration report. Otherwise zero points. Only points if the information is given on individual basis or if it is clear that fair value is the same for every manager.

7. Does the company disclose the total value of the managers' accumulated shares and equivalent equity holdings?
One point, if a specific number of total shares or equivalent equity holdings is disclosed in remuneration report or if it is clear that the number granted and the number of total items held is the same (for example if it is the first year of a share-based compensation system), and is therefore not disclosed. Otherwise zero points.

8. Are vesting conditions and restrictions (performance hurdles) disclosed?
One point, if information on performance hurdles and/or vesting conditions are clear after reading the remuneration report or, if it is obvious or disclosed, that there are no vesting conditions or performance hurdles. Otherwise, zero points.

9. Is the lock-up period disclosed?

One point, if the lock-up period of shares or share-based items is disclosed in remuneration report or if it is obvious or disclosed, that there is no lock-up period for these items. Otherwise, zero points.

8. Option programs

This section is considered in the final score if the company grants options to one or more members of the executive board. The maximum score is 14 points.

1. Does the company explain whether it is a real or a virtual share-based system?
One point, if the company explains whether the share-based compensation is based on real shares or whether the share's development is only projected onto a virtual component. Otherwise, zero points.

2. Does the company disclose the yearly amount paid out individually and separately?
One point, if the company provides the amount paid out for each person and separately from other pay components in the remuneration report. Otherwise, zero points.

3. Does the company disclose the yearly amount earned individually and separately?
One point, if the company provides the amount earned for each person and separately from other pay components in the remuneration report. Otherwise, zero points.

4. Does the company disclose the fair value at grant date of options?
One point, if a fair value at grant date of options granted to members of the executive board is disclosed in remuneration report. Otherwise, zero points.

5. Does the company disclose the total numbers of option held?
One point, if company provides a specific number of options held by members of the executive board in remuneration report. Otherwise, zero points. Only points if information is given on individual basis.

6. Does the company disclose the total value of the accumulated options?
One point, if a specific number of accumulated options held, is provided by the company in remuneration report. Otherwise, zero points. Only points if information is given on individual basis.

7. Does the company disclose the valuation method (for options)?
One point, if valuation method of underlying options revealed remuneration report. Otherwise, zero points.

8. Does the company disclose the underlying assumptions for valuation (of options)?
One point, if underlying assumptions for valuation of options is clear after reading remuneration report. Otherwise, zero points.

9. Does the company disclose exercise date, price, and expiry date of newly granted options?
One point, if remuneration report contains all three aspects of newly granted options in the period: exercise date, price, and expiry date. Otherwise, zero points.

10. Does the company disclose exercise date, price, and expiry date of total number of options held?
One point, if remuneration report contains all three aspects of total options held: exercise date, price, and expiry date. Otherwise, zero points.

11. Does the company disclose the vesting conditions and restrictions (performance hurdles)?
One point, if vesting conditions, restrictions, and performance hurdles are clear after reading remuneration report. Also, one point, if it is obvious or disclosed, that there are no vesting conditions, restrictions or performance hurdles. Otherwise, zero points

12. Does the company disclose the lockup period?

One point, if lock-up period of all options is disclosed in the remuneration report. Also, one point, if lock-up period obviously does not exist. Otherwise, zero points.

9. Pensions

This section is considered in the final score if the company grants any form of retirement provision to one or more members of the executive board. The maximum score is 9 points.

1. Does the company disclose the retirement age for each person?

One point, if the retirement age is clear after reading the remuneration report. Otherwise, zero points. Also, one point if it is clear that the generally given retirement age is valid for all management board members.

2. If defined benefit obligation: Does the company disclose the granted yearly pension?

One point, if the future yearly pension is revealed in remuneration report for each manager. Otherwise, zero points.

3. If defined benefit obligation: Does the company disclose the yearly amount added to pension accruals individually?

One point, if the company discloses the accrual (Pensionsrückstellung) in remuneration report for each manager (this is the "cost" to the company). Otherwise, zero points.

4. If defined benefit obligation: Does the company disclose the accumulated pension accruals individually?

One point, if the company discloses the accumulated accrual (Pensionsrückstellung) in remuneration report for each manager (this is the "cost" to the company). Otherwise, zero points.

5. If defined contribution plan: Does the company disclose the granted yearly pension?

One point, if the future yearly pension is revealed in remuneration report for each manager. Otherwise, zero points.

6. If defined contribution plan: Does the company disclose the yearly amount paid to service provider individually?

One point, if the company discloses the amount paid to service providers in remuneration report for each manager (this is the "cost" to the company). Otherwise, zero points.

7. If defined contribution plan: Does the company disclose the already collected amount on the pension account individually?

One point, if the company discloses the accumulated amount paid to service providers in remuneration report for each manager (this is the "cost" to the company). Otherwise, zero points.

8. Does the company disclose how much an additional year contributes to the pension?

One point, if the company discloses the amount by which the pension rises with every year in the board (example: each year +2% of fixed income, each year module of xyz€ is paid into account) Otherwise, zero points.

9. Does the company disclose accounting standard?

One point, if the accounting standard is disclosed (example: IFRS). Otherwise, zero points.

10. Does the company disclose a pension maximum?

One point, if a maximum is disclosed or when it is obvious that there is no such thing. Otherwise, zero points.

11. Does the company explain what obligations have to be met for surviving dependents?

One point, if the report gives information on the obligations for surviving dependents for each manager (example: 20% of pension). Otherwise zero.

12. Does the company disclose a value which reflects the obligations to surviving dependents per manager?
One point, if the report gives information on the amount reserved for surviving dependents for each manager. Otherwise zero.

10. Target compensation

This category is applicable to all companies. Target compensation is the compensation the company pays if the set goals are reached by 100%. The maximum score is 6 points.

1. Does the company disclose an overall target compensation? (Amount of total compensation)
One point, if remuneration report contains a specific amount of total compensation as target compensation for each member of the executive board. Otherwise, zero points.

2. Does the company disclose an STI target compensation? (for short-term incentive)
One point, if remuneration report contains a specific amount of short-term incentive as target compensation for each member of the executive board. Otherwise, zero points.

3. Does the company disclose an MTI target compensation? (for mid-term incentive)
One point, if remuneration report contains a specific amount for mid-term incentive as target compensation for each member of the executive board. Otherwise, zero points.

4. Does the company disclose an LTI target compensation? (for long-term incentive)
One point, if remuneration report contains a specific amount for long-term incentive (option based and share-based compensation) as target compensation for each member of the executive board. Otherwise, zero points.

5. Does the company explicitly disclose a target compensation structure?
One point, if the company provides a specific ratio of the compensation mix. Otherwise, zero points.

6. Does the company disclose a target ratio between pay and pensions?
One point, if the company provides a specific ratio of the amount spent on pensions and the amount spent for compensation. Otherwise, zero points.

Part B: Readability

Since this section rates the remuneration report in total and not a specific component, it is applicable for all firms of the sample. The maximum score is 9 points.

1. Are the names used for all components self-explanatory or explained if not?
One point, if all components wear self-explanatory names or if the non-self-explanatory names are explained in such way that it is clear what is meant by it. Otherwise, zero points.

2. Does the company use consistent names for compensation plans so to be able to track descriptions throughout the report?
One point, if all components of the compensation are indicated with the identical name throughout the entire remuneration report. Otherwise, zero points.

3. Does the company use clear language and limit texts to the necessary amount? (Instead of legalistic and confusing wording and too much irrelevant info)
One point, if the remuneration report can be understood after the first reading. If several paragraphs have to be read again to be understood or cannot be understood clearly and unambiguously at all, zero points.

4. Are the used tables clear or do they tables confuse due to deviating values?
One point, if the remuneration report explains the difference between the different values so to understand which one might be more relevant in which situation. (example: accounting standard differences which change results). Otherwise, zero points.

5. Does the company disclose all compensation components in one table so that a value of total compensation/total amount spent is clear?
Three points, if all components of compensation are given in one table, allowing the reader to see absolute amount at one glance. Otherwise, zero points, the next questions give points for other forms of disclosure.

6. Does the company give all information clearly but in different tables so that total compensation/total amount spent has to be calculated?
Two points, if components of compensation are given in different tables, yet these provide clear and easily accessible information. The total value spent has to be calculated. Example: pension amounts are given in extra table. Otherwise, zero points, the next questions give points for other forms of disclosure.

7. Does the company disclose some compensation amounts in footnotes?
One point, if components of compensation are given in the footnotes of the compensation table. This is not clear and easily accessible information but at least the information is close to the rest of compensation. The data has to be collected and the total value spent has to be calculated. Example: one-off payment in the footnote. Otherwise, zero points, the next questions give points for other forms of disclosure.

8. Does the company disclose some compensation amounts in the text?
Zero points in question 5 to 8, if components of compensation have to be searched within the text. The information is not clear and easily accessible. The data has to be collected and the total value spent has to be calculated. Example: pension number somewhere in the text.

9. Does the report improve readability using tables and graphs?
One point, if tables and/or graphs to improve the readability are provided in the remuneration report. If graphs and tables do not clarify the compensation system, zero points.

Part C: Adequacy

This section is applicable for all firms of the sample, since all companies are amenable to the law governing the appropriateness of the management board remuneration (VorstAG). The maximum score is 5 points.

1. Does the company disclose measures to guarantee adequacy of pay based on tasks? (similar tasks in peer companies, time consumption/ complexity of tasks)
One point, if the company gives any information about how they guarantee the appropriateness of compensation with regards to the executive's tasks. Otherwise, zero points.

2. Does the company disclose measures to guarantee adequacy of pay based on performance? (own performance in comparison to peers)
One point, if the company gives any information about the appropriateness of compensation with regards to the performance of the executives. Otherwise, zero points.

3. Does the company disclose measures to guarantee adequacy of pay based on the situation of the company? (own performance in comparison to peers)

One point, if the company gives any information about the appropriateness of compensation with regards to the situation of the company. Otherwise, zero points.

4. Does the company disclose measures to guarantee adequacy of pay based on usual compensation? (own compensation in comparison to peers)
One point, if the company gives any information about the appropriateness of their compensation with regards to usual compensation regarding a vertical and horizontal comparison. Otherwise, zero points.

5. Does the company explain pay differences between different board members?
One point, if the company explains the pay spread between the different executives (example: explaining the differences in tasks responsibility). Otherwise, zero points.

6. Does the company disclose reasons for the choice of each compensation component? (fixed, STI, MTI, LTI, pension, fringe, payoff, consulting)
Two points, if the company explains the reason behind every pay component. One point if the company explains the majority of pay components (example: The short-term bonus is used to set short-term incentives, this is important because…). Otherwise, zero points.

7. Does the company explain reasons for the choice weighting of each compensation component? (fixed, STI, MTI, LTI, pension, fringe, payoff, consulting)
Two points, if the company explains all weightings. One point if the company explains the majority of weightings (example: The short-term bonus is smaller than the mid-term bonus as we want to guarantee long-term orientation. This is important because…). Otherwise, zero points.

8. Does company compare itself to peers in terms of performance?
One point, if the company gives information on its own performance in comparison to peer companies. Not enough if there is only written that there is a peer group. Otherwise, zero points.

9. If peer group: Does the company explain the rationale for the used peer groups?
One point, if the company gives information how the peer group is composed and why it is a good benchmark for own performance. Otherwise, zero points.

10. Does the company disclose the total cost of compensation as a percentage of total profit or total shareholder return for the year?
One point, if the company compares cost for compensation to financial performance of the company in any way. Otherwise, zero points.

11. Does the company include a table or graph that compares total executive compensation to financial performance over the last years?
One point, if the company compares the development of compensation costs to the development of financial performance of the company in any way. Otherwise, zero points.

12. Does the company disclose the verticality of pay within his organization?
The verticality of pay is the ratio of the highest compensation and either the lowest income or the average income of the respective company. One point, if such an information is provided. Otherwise, zero.

13. Does the company disclose the development of executive pay in comparison to average pay?
One point, if the company provides information on the development of the average income versus the development of the highest income. Otherwise, zero.

14. Does the company disclose a peer group to explain overall compensation levels?

One point, if the company gives information on its compensation in comparison to peer companies. Otherwise, zero points.

15. If peer group: Does the company explain the rationale for the used peer groups?
One point, if the company gives information how the peer group is composed and why it is a good benchmark for own compensation. Otherwise, zero points.

16. Does the company disclose a peer group to explain compensation levels for several components?
One point, if the company gives information on its compensation components in comparison to peer companies. Otherwise, zero points.

17. If peer group: Does the company explain the rationale for the used peer groups?
One point, if the company gives information how the peer group is composed and why it is a good benchmark for own compensation components. Otherwise, zero points.

18. Does the company disclose the use of a compensation consultant?
One point, if the company gives information on the use of compensation consultants. Otherwise, zero points.

19. Does the company disclose information about an increase/decrease of compensation in comparison to prior year?
One point, if remuneration report contains an explanation on the change of the executive compensation. Otherwise, zero points.

20. Does the company explain the processes of pay-setting and the roles of the different people in task?
One point, if a description of the compensation setting process is contained in the remuneration report. One point if involved persons and their tasks are explained. Otherwise, zero points.

2 Index example

Adidas	2014				
Description	Part	Section	Item	Max. points	Achieved points
Part 1: Disclosure of compensation components					
1. Salary					
Does the company disclose the yearly amount individually and separately?	1	1	1	1	1
2. Consultancy contracts					
Does the company disclose the tasks and conditions of a consultancy job?	1	2	1	1	.
Does the company disclose the remuneration policy for the consultancy job?	1	2	2	1	.
Does the company disclose the full yearly amount individually and separately?	1	2	3	1	.
3. One-off payment					
Does the company disclose the yearly amount individually and separately?	1	3	1	1	1
4. Fringe benefits					
Does the company disclose the components of fringe benefits?	1	4	1	1	1
Does the company disclose the full amount of fringe benefits individually and separately from rest of compensation?	1	4	2	1	1
Does the company disclose the value of the different components separately?	1	4	3	1	0
5. Short term incentive					
Does the company disclose the yearly amount individually and separately?	1	5	1	1	1
Does the company disclose the type of the underlying KPIs?	1	5	2	1	1
Does the company disclose the specific KPIs?	1	5	3	1	1
Does the company disclose the KPIs' calculation?	1	5	4	1	0
Does the company disclose the weighting of each KPI?	1	5	5	1	0
Does the company disclose the performance targets for each KPI?	1	5	6	1	0
Does the company disclose the actually achieved performance for each KPI?	1	5	7	1	0
Does the company disclose whether the performance evaluation of KPIs is subjective or formula based?	1	5	8	1	1
If formula based: Does the company disclose the formula for evaluating KPIs?	1	5	9	1	1
If subjective compensation component: Does the company give information on the process of assessing the performance?	1	5	10	1	.
Does the company disclose a minimum amount or a hurdle?	1	5	11	1	1
Does the company disclose a maximum amount or a cap?	1	5	12	1	1
If relative performance evaluation: Does the company disclose the peer group?	1	5	13	1	.
If relative performance evaluation: Does the company disclose the average value of the peer group?	1	5	14	1	.
6. Mid term incentive					
Does the company disclose the yearly amount paid out individually and separately?	1	6	1	1	1
If deferred payout: Does the company disclose the yearly amount earned individually and separately?	1	6	2	1	0
If accrual: Is the accounting standard for the accruals disclosed?	1	6	3	1	.
Does the company disclose the type of the underlying KPIs?	1	6	4	1	1
Does the company disclose the specific KPIs?	1	6	5	1	1
Does the company disclose the KPIs' calculation?	1	6	6	1	0
Does the company disclose the weighting of each KPI?	1	6	7	1	0
Does the company disclose the performance targets for each KPI?	1	6	8	1	0
Does the company disclose the actually achieved performance for each KPI?	1	6	9	1	0
Does the company disclose whether the performance evaluation of KPIs is subjective or formula based?	1	6	10	1	1
If formula based: Does the company disclose the formula for evaluating ?	1	6	11	1	1
If subjective compensation component: Does the company give information on the process of assessing the performance?	1	6	12	1	.
Does the company disclose the number of years the program runs?	1	6	13	1	1
Does the company disclose in which year the payout will take place?	1	6	14	1	1
Does the company disclose a minimum amount or a hurdle?	1	6	15	1	1
Does the company disclose a maxnimum amount or a cap?	1	6	16	1	1
If relative performance evaluation: Does the company disclose the peer group?	1	6	17	1	.
If relative performance evaluation: Does the company disclose the average value of the peer group?	1	6	18	1	.
7. Share-based programs (long term incentive)					
Does the company explain whether it is a real or a virtual sharebased system?	1	7	1	1	.
Does the company disclose the yearly amount paid out individually and separately?	1	7	2	1	.
Does the company disclose the yearly amount earned individually and separately?	1	7	3	1	.
Does the company disclose the number of shares/ sharebased compensation items granted in period?	1	7	4	1	.
Does the company disclose the total number of shares/ sharebased compensation items held?	1	7	5	1	.
Does the company disclose the fair value at grant date of shares/ sharebased compensation items?	1	7	6	1	.
Does the company disclose the total value of the CEO's accumulated shares and equivalent equity holdings?	1	7	7	1	.
Does the company disclose the vesting conditions and restrictions (performance hurdles)?	1	7	8	1	.
Does the company disclose the lock-up period?	1	7	9	1	.
8. Option programs (long term incentive)					
Does the company explain whether it is a real or a virtual option-based system?	1	8	1	1	.
Does the company disclose the yearly amount paid out individually and separately?	1	8	2	1	.
Does the company disclose the yearly amount earned individually and separately?	1	8	3	1	.
Does the company disclose the number of options granted in period?	1	8	4	1	.
Does the company disclose the fair value at grant date of options?	1	8	5	1	.
Does the company disclose the total number of options held?	1	8	6	1	.
Does the company disclose the total value of the accumulated options?	1	8	7	1	.
Does the company disclose the valuation method (for options)?	1	8	8	1	.
Does the company disclose the underlying assumptions for valuation (of options) ?	1	8	9	1	.
Does the company disclose the exercise date, price and expiry date of the newly granted options?	1	8	10	1	.
Does the company disclose the exercise date, price and expiry date of total number of options held?	1	8	11	1	.
Does the company disclose the vesting conditions and restrictions (performance hurdles)?	1	8	12	1	.
Does the company disclose the lock-up period?	1	8	13	1	.

Continued next page

9. Pensions					
Does the company disclose the retirement age for each person?	1	9	1	1	1
If defined benefit obligation: Does the company disclose the future yearly pension?	1	9	2	1	0
If defined benefit obligation: Does the company disclose the yearly cost/accrual for the pension system?	1	9	3	1	1
If defined benefit obligation: Does the company disclose the accumulated pension account/accrual?	1	9	4	1	1
If defined contribution plan: Does the company disclose an estimate for the expected yearly pension individually and separately?	1	9	5	1	.
If defined contribution plan: Does the company disclose the yearly amount paid to service provider individually and separately?	1	9	6	1	.
If defined contribution plan: Does the company disclose the already collected amount on the pension account?	1	9	7	1	.
Does the company disclose how much an additional year contributes to the pension?	1	9	8	1	1
Does the company disclose accounting standard?	1	9	9	1	0
Does the company disclose a pension maximum?	1	9	10	1	1
Does the company explain what obligations have to be met for surviving dependents?	1	9	11	1	1
Does the company disclose a value which reflects the obligations to surviving dependents per manager?	1	9	12	1	0
10. Target compensation					
Does the company disclose an overall target compensation?	1	10	1	1	0
Does the company disclose a sti target compensation?	1	10	2	1	0
Does the company disclose a mti target compensation?	1	10	3	1	0
Does the company disclose a lti target compensation?	1	10	4	1	.
Does the company explicitly disclose a target compensation structure?	1	10	5	1	1
Does the company disclose a target ratio between pay and pensions?	1	10	6	1	0
Part 2: Readability					
Are the names used for all components self-explanatory or explained if not?	2	1	1	1	1
Does the company use consistent names for compensation components so to be able to track descriptions throughout the report?	2	1	2	1	1
Does the company use clear language and limit texts to the necessary amount?	2	1	3	1	1
Are the used tables clear or do they tables confuse due to deviating values?	2	1	4	1	1
Does the company disclose all compensation components in one table so that a value of total compensation/total amount spent is clear?	2	1	5	3	3
Does the company give all information clearly but in different tables so that total compensation/total amount spent has to be calculated?	2	1	6	2	.
Does the company disclose some compensation amounts only in foot notes?	2	1	7	1	.
Does the company disclose some compensation amounts only in the text?	2	1	8	0	.
Does the report improve readability using tables and graphes?	2	1	9	1	1
Part 3: Adequacy					
Does the company disclose measures to guarantee adequacy of pay based on tasks?	3	1	1	1	1
Does the company disclose measures to guarantee adequacy of pay based on performance?	3	2	2	1	1
Does the company disclose measures to guarantee adequacy of pay based on the situation of the company?	3	3	3	1	1
Does the company disclose measures to guarantee adequacy of pay based on usual compensation?	3	4	4	1	1
Does the company explain pay differences between different board members?	3	1	5	1	0
Does the company disclose reasons for the choice of each compensation component?	3	1	6	2	0
Does the company explain reasons for the choice weighting of each compensation component?	3	1	7	2	0
Does company compare itself to peers in terms of performance?	3	2	8	1	0
If peer group: Does the company explain the rationale for the used peer groups?	3	2	9	1	.
Does the company disclose the total cost of compensation as a percentage of total profit or total shareholder return for the year?	3	2	10	1	0
Does the company include a table or graph that compares total executive compensation to financial performance over the last years?	3	2	11	1	0
Does the company disclose the verticality of pay within his organization?	3	3	12	1	0
Does the company disclose the development of executive pay in comparison to average pay?	3	3	13	1	0
Does the company disclose a peer group to explain overall compensation levels?	3	4	14	1	0
If peer group: Does the company explain the rationale for the used peer groups?	3	4	15	1	.
Does the company disclose a peer group to explain compensation levels for the several components?	3	4	16	1	0
If peer group: Does the company explain the rationale for the used peer groups?	3	4	17	1	.
Does the company disclose the use of a compensation consultant?	3	4	18	1	1
Does the company disclose reasons for an increase/decrease of compensation in comparison to prior year?	3	4	19	1	1
Does the company explain the processes of pay-setting?	3	4	20	1	1
Does the company give information what happens if a manger leaves the company early?	3	4	21	1	1

Table 10: Index example

3 Example calculation index score

The example Adidas 2014 provided in the screenshot in Appendix 3 leads to the following index score:

Adidas	**2014**			
Index parts	Component used	Max. points	Achievable points	Achieved points
Part 1: Disclosure of compensation components		80	44	27
1. Salary	yes	1	1	1
2. Consultancy contracts	no	3	0	.
3. One-off payment	yes	1	1	1
4. Fringe benefits	yes	3	3	2
5. Short term incentive	yes	14	11	7
6. Mid term incentive	yes	18	14	9
7. Share-based programs (long term incentive)	no	9	0	.
8. Option programs (long term incentive)	no	13	0	.
9. Pensions	yes	12	9	6
10. Target compensation		6	5	1
Part 2: Readability		8	8	8
Part 3: Adequacy		23	18	8
		111	**70**	**43**

Table 11: Disclosure points awarded

The maximum score for the company is 70. Adidas reached 45 points. Consequently the final score is calculated as follows:

$$SCORE = \frac{\sum 27 + 8 + 8}{\sum 44 + 8 + 18} = \frac{45}{70} = 64.29\%$$

Equation 9: Index score calculation

Therefore, Adidas achieves a final score of 64.29% in 2014. That means that the company discloses 64.29% of all the information that could be provided on the existing compensation system in the compensation report.

4 Development of compensation disclosure over time

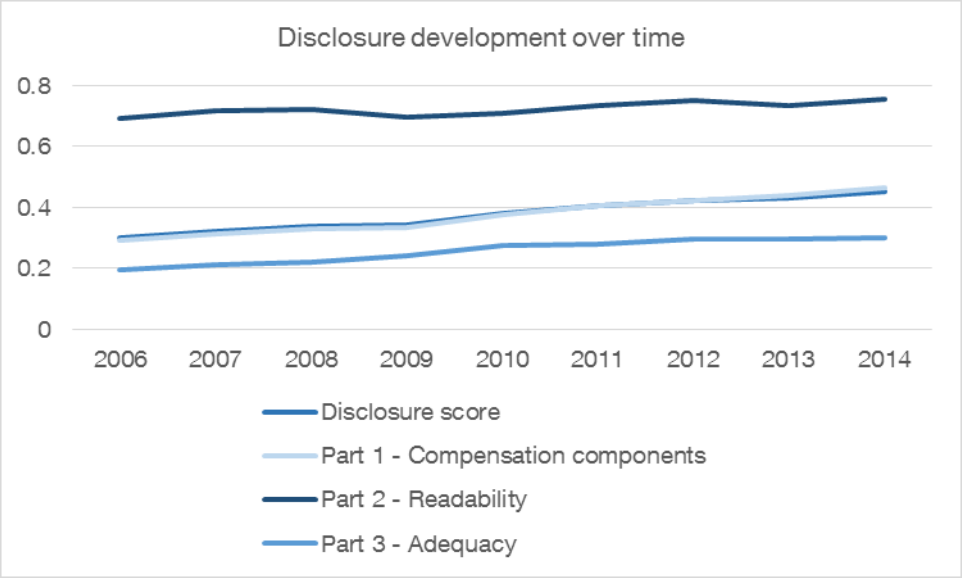

Figure 4: Development of compensation disclosure over time

5 Expected signs for variables

Determinants	Influence on (non-)disclosure
Compensation characteristics	
AvgTotalComp	-
AvgExcessComp	-
CVerticality	-
Governance characteristics	
BoardSize	?
CurrentExec	-
FormerExec	
NoMeetings	?
Freefloat	-
FamilyShare	-
FamilyBoard	
Firm characteristics	
TSR	+
ROA	+
FirmSize	+
FirmAge	?
Forecasts	+
TobinsQ	-
Industry characteristics	
Herfindahl index	-
MarketSize	+
EntryCosts	+
ProductDiff	+

Table 12: Predicted signs of disclosure determinants

4.10 References

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5 Summary and conclusion

This dissertation is motivated by the public discussion on management compensation. More specifically, this thesis set out to gather empirical evidence on two assumptions of the managerial power theory (Bebchuk et al. (2001)), a theory that aims to explain executive compensation. Even though the theory itself has sparked intensive scholarly discussions on the adequacy and performance-sensitivity of executive pay, two major assumptions of the theory, the existence of public outrage and camouflage, have been utterly underrepresented in research. By addressing these research gaps within a setting with distinct governance, legislative and societal features, this thesis expands the literature in more than one way.

Essay 1 focuses on outrage on a theoretical level and reviews the existing literature. To manifest whether the described phenomenon is likely to exist, the paper first examines the theoretical basis of the managerial power theory. In a second step, the paper identifies possible ways to measure outrage. This step is vital as a clear definition for measuring outrage is missing in theory. The paper then gathers empirical findings on the existence and effectiveness of outrage with the help of the identified proxies. Finally, the paper introduces a framework, which sheds light on the question whether outrage is a useful governance device or an unwanted interference by stakeholders other than the company's owners. Even though the theoretical basis is sound and a few findings suggest that a moderating effect of outrage on governance exists, empirical evidence on the effects on compensation is scarce, and results are inconsistent. Furthermore, major research gaps in the evaluation of outrage by shareholders are identified. It remains therefore unclear how shareholders react to stakeholder activism regarding executive pay. Observations from research on shareholder activism show that the reaction of shareholders is dependent on three factors: the type of shareholders (Joe et al. (2009)), the initiators of outrage (Cai and Walkling (2011)) and the motivation behind the outrage (Fortin et al. (2014)). This suggests that stock market reactions are a worthwhile avenue for future researchers.

Using German panel data, essay 2 and 3 test the propositions of outrage as a constraint to executive compensation and camouflage as a means to evade public outrage (Bebchuk et al. (2001)).

Essay 2 examines media coverage as a proxy for outrage and covers three areas of analysis. First, the German media's coverage decision is analyzed. This analysis helps to understand whether the media can indeed engage as external governance instance. Second, media coverage is investigated as a determinant of changes in level and structure of executive compensation. This clarifies the coverage's effectiveness in altering executive pay. Third, stock market reactions after media coverage on compensation are examined. The results of this analysis provide first evidence on the shareholders' perception of media coverage on

compensation. While the media seems to distinguish between excessive and adequate executive compensation when covering executives, subsequent executive pay rises. There is no observable effect on the compensation's adequacy. However, a shift away from fixed compensation towards a higher percentage of incentive compensation can be observed. The coverage does also increase for executives whose compensation exhibits a stronger inequality from the average employee's income. This suggests a concern about social equity. Finally, shareholders in companies with positive excessive compensation react positively to the media coverage. This positive reaction can be interpreted as hope for change as the corporate malpractice is addressed. This result is similarly found around legislation changes (Cai and Walkling (2011), pay-performance oriented shareholder proposals (Fortin et al. (2014)), and exposure of weak governance in the media (Joe et al. (2009)).

Essay 3 analyzes the determinants of disclosure in compensation reports. In contrast to previous research from Anglo-American settings, the disclosure decision in German companies seems not to be influenced by the excessiveness or level of executive compensation. Evidence for camouflage as proposed by Bebchuk et al.'s (2001) highly discussed managerial power theory can therefore not be found. Four determinants shape the disclosure decision: company size, age, family members in the boards and verticality, which is the ratio between average employee compensation and average executive compensation. Lacking disclosure seems to be a combination of company resources (company size and forecasts increase disclosure), owners' interests (family members in the board decreases disclosure) and concerns about social equity infringement (higher inequity leads to lower disclosure).

While the results from paper 2 match findings from the US, findings from paper 3 show cross-country differences. Overall, Germany exhibits a strong concern about social equity. The findings emphasize the importance of generalizing findings with datasets from different countries. This is not only of importance for researchers but also for the legislator as these differences have to be taken into account when applying theories across different countries and introducing laws.

While the thesis at hand offers valuable new insights, it also faces some limitations. First, the German dataset is comparably small which makes the data analysis less stable than bigger datasets. This may be addressed by adding further companies from other indices into the sample. Second, empirical data analysis in the setting of corporate governance often imposes problems of endogeneity. This setting makes it difficult to tell which of two variables is the influenced one and which the influencing one. While measures were taken to address this problem, the results may nonetheless be biased due to this fact. Valid instruments replacing the endogenous variables could not be identified in the setting at hand, a task that might be

taken on by future researchers. Third, the variables identified to measure both excessive compensation as well as outrage and camouflage may be faulty. Future researchers setting can confirm or reject the findings provided by this thesis by finding alternative ways of measuring these variables in the German setting.

6 References (Introduction and Conclusion)

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