

Tröger, Tobias H.; Walz, Uwe

Working Paper

Does say on pay matter? Evidence from Germany

SAFE Working Paper, No. 125 [rev.]

Provided in Cooperation with:

Leibniz Institute for Financial Research SAFE

Suggested Citation: Tröger, Tobias H.; Walz, Uwe (2019) : Does say on pay matter? Evidence from Germany, SAFE Working Paper, No. 125 [rev.], Goethe University Frankfurt, SAFE - Sustainable Architecture for Finance in Europe, Frankfurt a. M., <https://doi.org/10.2139/ssrn.2723792>

This Version is available at:

<https://hdl.handle.net/10419/203297>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Tobias H. Tröger – Uwe Walz

Does Say on Pay Matter? Evidence from Germany

SAFE Working Paper No. 125

SAFE | Sustainable Architecture for Finance in Europe

A cooperation of the Center for Financial Studies and Goethe University Frankfurt

House of Finance | Goethe University
Theodor-W.-Adorno-Platz 3 | 60323 Frankfurt am Main

Tel. +49 69 798 30080 | Fax +49 69 798 33910
info@safe-frankfurt.de | www.safe-frankfurt.de

Non-Technical Summary

Shareholder involvement in compensation decisions has evolved as the patent remedy that regulators choose to apply across jurisdictions when they aim to cure perceived deficits in executive pay. The latest add-on to this already impressive track record can be found in the revised European Shareholder Rights Directive.

However, this relative uniformity in the general approach should not disguise the considerable variation in the respective institutional arrangements. A more granular analysis indicates that while some jurisdictions opt for mandatory shareholder voice others leave shareholder involvement to managerial discretion, a result which sometimes also hinges on the pertinent rules character as non-compelling self-regulation. While sometimes the shareholder vote is binding, it is only consultative in other cases with varying degrees of soft coercion. Differences also pertain to how often shareholders have to be approached and on what exactly they are asked to vote on (remuneration policy, individual compensation packages ex post etc.).

At least in part the observed differences can be traced to disagreement on say on pay's merits in general and its adequate design in particular. Furthermore, in comparative perspective, say on pay's potential to add value may also hinge on existing institutional alternatives: corporate law may either provide other governance arrangements that seek to align managements' remuneration packages with shareholder interests or – more broadly – pursue different strategies to prevent executive rent seeking. As we will present, from a corporate governance vantage, Germany represents a particularly interesting example in several respects.

This paper investigates the potential implications of say on pay on management remuneration in Germany. Therefore, we try to shed light on some key aspects by presenting quantitative data that allows us to gauge the pertinent effects of the German regulatory experiment that originates with the 2009 amendments to the Stock Corporation Act of 1965. In order to do this, we analyze a hand-collected data set for Germany's major firms, i.e. those included in the main stock market index, the DAX 30, for the years 2006-2014. Rather than focusing exclusively on CEO remuneration we collected data for all members of the management board for the whole period under investigation.

We conclude with several findings. First, we observe that the compensation packages of management board members of Germany's DAX30-firms are closely linked to key performance measures such as return-on-assets and EBIT. Second, we find that say on pay votes which occurred in the time period under investigation had a negative effect on compensation of board members, be it fixed or variable pay. Our analysis also shows that this effect is mainly driven by the compensation payment of newly entering board members. When we consider only compensation contracts, which had been concluded before say on pay votes occurred, the effect of shareholder involvement is rather weak. This finding is not at all surprising given the rather rigid contractual framework for the compensation of management board members. Yet, it is important because it informs our understanding of the channels through which say on pay works. Our observations carry over to the general analytical

approach for say on pay-regimes. Any evaluation of a shareholder voice-strategy in regulating executive remuneration has to pay close attention to the limits contract law stipulates for the adaptation of existing remuneration agreements and thus has to take a medium to long-term view that ideally extends to a full turnover-period for board-members. For Germany, we find that the supervisory board is indeed responsive to say on pay-votes when it comes to the design of remuneration packages for newly entering appointees to the management board.

DOES SAY ON PAY MATTER? EVIDENCE FROM GERMANY

Tobias H. Tröger* & Uwe Walz**#

Abstract: We analyze a hand-collected dataset of 1682 executive compensation packages at 34 firms included in the main German stock market index (DAX) for the years 2009-2017 in order to investigate the impact of the 2009 say on pay legislation. The findings provide important insights beyond the German case, not only for the impending implementation of the revised European Shareholder Rights Directive. First, we observe that the compensation packages of management board members of Germany's DAX30-firms are closely linked to key performance measures such as return-on-assets and size. Second, and most important for our topic, our findings suggest that it is essential to take a closer look at the contractual set-up for the compensation schemes and their structure. When we only consider the compensation packages of all board members, the hypothesis that remuneration is decreased if shareholder support for compensation schemes is low in say on pay-votes finds only weak support, if any at all. However, we find that the supervisory board is responsive to say on pay-votes when it comes to the design of compensation packages for newly entering candidates, i.e. within the binding restrictions of contract law, it reacts as envisioned by policy makers. It is a consequence of the way say on pay is supposed to work that our results are driven by the rather few pronouncedly discontent say on pay-votes in corporate Germany – only where disapproval is voiced supervisory boards have reason to change compensation packages. They leave matters unaffected where shareholders show rather strong support for the proposed schemes as is the case in most of the observations in our dataset. Yet, it is important because it informs our understanding of the channels through which say on pay works. Our observations carry over to the general analytical approach for say on pay-regimes. Any evaluation of a shareholder voice-strategy in regulating executive remuneration has to pay close attention to the limits contract law stipulates for the adaptation of existing remuneration agreements and thus has to take a medium to long-term view that ideally extends to a full turnover-period for board-members.

JEL classification: D23, G30, G34, J33, K22.

Keywords: executive compensation, say on pay, Germany

* Professor of Private Law, Trade and Business Law, Jurisprudence, Goethe University, Frankfurt am Main. Program Director Corporate Finance and Corporate Governance, Research Center Sustainable Architecture for Finance in Europe (SAFE). Research Member European Corporate Governance Institute (ECGI). troeger@jur.uni-frankfurt.de.

** Professor of Economics, Chair for Industrial Economics, Goethe University, Frankfurt am Main. Director Center for Financial Studies and Research Center Sustainable Architecture for Finance in Europe (SAFE). Research Member ECGI. uwalz@econ.uni-frankfurt.de

The authors are thankful for comments and critique provided by friends and colleagues as well as two anonymous referees. Input by Arnoud Boot, Paul Davies, Jeff Gordon and Kin Lo as well as participants at the annual Oxford-LSE law and finance conference, the SAFE workshop on say on pay, and the ETH-NYU banking and finance conference were particularly beneficial. We gratefully acknowledge financial support of the LOEWE Research Center Sustainable Architecture for Finance in Europe (SAFE).

A. INTRODUCTION

Shareholder involvement in compensation decisions has evolved as the patent remedy that regulators choose to apply across jurisdictions when they aim to cure perceived deficits in executive pay. The latest add-on to this already impressive track record can be found in Articles 9a and 9b of the revised European Shareholder Rights Directive.¹ We take the impending implementation of the European legislation as occasion to test some hypothesis regarding the impact of say on pay-legislation empirically.

The relative uniformity in the general legislative approach should not disguise the considerable variation in the respective institutional arrangements. A more granular analysis² indicates that while some jurisdictions opt for mandatory shareholder voice others leave shareholder involvement to managerial discretion. The assessment sometimes hinges on the pertinent rules' character as non-compelling self-regulation where at the outset managers choose to either opt-in or reject the say on pay-regime. While in some cases the shareholder vote is binding,³ it is only consultative in others with varying degrees of soft coercion. Differences also pertain to how often shareholders have to be approached and on what exactly they are asked to vote on (remuneration policy, individual compensation packages *ex post* or *ex ante* etc.).

At least in part, the observed differences can be traced to disagreement on say on pay's merits in general and its adequate design in particular. Furthermore, in comparative perspective, say on pay's potential to add value may also hinge on existing institutional alternatives: corporate law may either provide other governance arrangements that seek to align managements'

¹ Directive (EU) 2017/828 of the European Parliament and of the Council of 17 May 2017 amending Directive 2007/36/EC as regards the encouragement of long-term shareholder engagement, 2017 O.J. (L 132) 1.

² The most comprehensive comparative survey encompassing eight jurisdictions is Randall S. Thomas & Christoph Van der Elst, *The International Scope of Say on Pay* 92 Wash. U. L. Rev. 653, 658-711 (2015). A shorter overview for 11 European countries can be found in Roberto Barontini, Stefano Bozzi, Guido Ferrarini & Maria-Cristina Ungureanu, *Directors' remuneration before and after the crisis: measuring the impact of reforms in Europe*, in *BOARDS AND SHAREHOLDERS IN EUROPEAN LISTED COMPANIES* 251, tbl.1 (Massimo Belcredi & Guido Ferrarini eds., 2013). Ricardo Correa & Ugur Lel, *Say on Pay Laws, Executive Compensation, CEO Pay Slice, and Firm Value Around the World* 122 J. Fin. Econ. 500, 504 (2016) present data reflecting the status of say on pay-regulation in 38 jurisdictions, yet cannot account for the intricacies of the legal regimes they survey because coding requires the authors to make distinct decisions also in cases of doubt. They thus sacrifice many mezzanine-levels of distinction; for further criticism with regard to specific findings see Thomas & Van der Elst *id.*, at 655 note 5.

³ We consider the vote binding only if it determines individual compensation packages within its scope.

remuneration packages with shareholder interests or—more broadly—pursue different strategies to prevent executive rent seeking.⁴

This paper tries to shed light on some of these key aspects by presenting quantitative data that allows us to gauge the pertinent effects of the German legislative experiment that originates with the 2009 amendments⁵ to the Stock Corporation Act of 1965. From a comparative corporate governance vantage, Germany is by no means a unique example, but has interesting characteristics in several respects.

First, in its say on pay-regime Germany has opted for a voluntary,⁶ non-binding shareholder consultation that pertains only to the general compensation scheme and attaches practically no legal sanctions to the vote.⁷ Hence, in pertinent part German corporate law relies purely on market discipline as a function of negative cost of capital-effects that poor corporate governance should entail in efficient markets once the issuer deviates from revealed shareholder preferences.⁸ It therefore differs from those institutional set-ups that provide for rather rigid legal consequences in case of shareholder discontent and thus bolster shareholder voice with law's momentum.⁹

⁴ For a taxonomy of potential strategies to counter vertical agency conflicts within the firm see John Armour, Henry Hansmann & Reinier Kraakman, *Agency Problems and Legal Strategies*, in THE ANATOMY OF CORPORATE LAW 29, 31-38 (Reinier Kraakman et al. eds., 3d ed. 2017).

⁵ Gesetz zur Angemessenheit der Vorstandsvergütung (VorstAG) [Act on Adequate Executive Compensation], July 31, 2009, BGBl. I at 2509.

⁶ For a shareholder vote on compensation to occur, the topic has to be put on the agenda of the general meeting. This usually occurs through a management board initiative, see Aktiengesetz [AktG, Stock Corporation Act], Sept. 6, 1965, BGBl. I at 1089, § 121, para. 2 sentence 1, para. 3 sentence 1, but can also be achieved by minority shareholders who hold 5% of the corporation's legal capital or a fraction of it that amounts to EUR 500.000 in nominal value, AktG § 122, para. 2, sentence 1. Not even the self-regulatory German Corporate Governance Code that relies on a comply-or-explain-mechanism contains a recommendation to consult the shareholder meeting in compensation matters (see also *infra* note 66).

⁷ AktG, § 120, para. 4 provides that the shareholder meeting of a listed company may resolve on the approval of the compensation scheme. The resolution shall not give rise to any rights or obligations; in particular, the obligations of the supervisory board pursuant to AktG, § 87 shall remain unaffected. The resolution shall not be voidable pursuant to AktG, § 243.

⁸ The same holds true for instance for Spain, see Ley 2/2011 de Economía Sostenible (LES), art. 27.

⁹ The most extreme example in this regard currently is Switzerland, see Alexander F. Wagner & Christoph Wenk, *Agency versus Hold-up: On the Impact of Binding Say-on-Pay on Shareholder Value* 9-12 (Eur. Corp. Gov. Fin. Working Paper 500, 2017) available at <http://ssrn.com/abstract=1793089>.

Second, direct shareholder involvement in compensation decisions represents a legal transplant, which runs counter to the German tradition that vests the right to determine executive compensation with shareholder—and labor¹⁰—representatives on the supervisory board (two tier system). Hence, say on pay may either improve a deficient arrangement or constitute a redundant, cost-hiking institution. More dramatic, the shift of competences from the supervisory board to the shareholder meeting that say on pay implies may even corrupt a well-functioning and theoretically sound governance arrangement.¹¹ In this regard, our findings are relevant for all jurisdictions that adhere to a two-tier structure in organizational law.¹²

Finally, looking at Germany is also rewarding insofar as the rather concentrated ownership structure of its firms¹³ allows assessing, whether a formal say on pay-regime is nothing but a (superfluous) substitute for the influence a large blockholder usually has at hand through informal channels.¹⁴ In the latter case, the impact of the regime's introduction should vary across firms depending on their ownership structure and be stronger in firms without a dominant shareholder. Again our findings are immediately relevant for policy makers in jurisdictions where

¹⁰ Large German firms are subject to codetermination, *i.e.* the supervisory board is filled with parity by shareholder and employee representatives. For a detailed description of the statutory foundations see Herbert Wiedemann, *Codetermination by Workers in German Enterprises*, 28 AM. J. COMP. L. 79 (1980); for a brief overview see Katharina Pistor, *Codetermination in Germany: A Socio Political Model with Governance Externalities*, in EMPLOYEES AND CORPORATE GOVERNANCE 163, 174-5 (Margareth Blair & Mark J. Roe eds., 1999).

¹¹ On the theory that demands a strong bargaining agent for shareholders to negotiate proper incentive contracts with management see *supra* B.I.

¹² For a comparative overview of board structures in Europe see Paul Davies, Klaus J. Hopt, Richard G.J. Nowak & Gerard van Solinge, *Boards in Law and Practice: A Cross-Country Analysis in Europe*, in: CORPORATE BOARDS IN LAW AND PRACTICE 3, 15-23 (Paul Davies, Klaus J. Hopt, Richard G.J. Nowak & Gerard van Solinge, eds., 2013).

¹³ For comparative observations at the turn of the last century see Rafael LaPorta, Florencio Lopez-de Silanes, Robert Vishny & Andrej Shleifer, *Corporate Ownership Around the World*, 54 J. Fin. 471 (1997); Marco Becht & Ailsa Röell, *Blockholdings in Europe: An International Comparison*, 43 Eur. Econ. Rev. 1049 (1999); specifically for Germany Jeremy Edwards & Marcus Nibler, *Corporate governance in Germany: The role of banks and ownership concentration*, 32 ECON. POL'Y 239 (2000); Julian R. Franks & Colin P. Mayer, *Ownership and control of German corporations*, 14 REV. FIN. STUD. 943 (2001); Jeremy Edwards & Alfons J. Weichenrieder, *Ownership Concentration and Share Valuation: Evidence from Germany* 16 (CESifo Working Paper No. 193, 1999) available at <http://ssrn.com/abstract=272627>. For evidence that ownership concentration in Germany—despite a declining trend—remains considerable see Anke Weber, *An empirical analysis of the 2000 corporate tax reform in Germany: Effects on ownership and control in listed companies*, 29 INT'L REV. L. & ECON. 57 (2009).

¹⁴ For this view cf. for instance Thomas & Van der Elst *supra* note 2, at 656.

large public firms have comparable ownership structures which seems to be the case in most economies around the world.¹⁵

The remainder of this paper is structured as follows. We first briefly survey the theoretical and empirical scholarship on the merits of direct shareholder involvement in compensation decisions and thus position our contribution in relation to the existing literature (*infra* B). We start our own investigation with a short description of the institutional changes that characterize the German legislative experiment (*infra* C). The paper continues with a description of our sample and the variables we design. In this section we also develop the hypotheses for our empirical analysis (*infra* D). In the latter we provide descriptive statistics and estimate regressions (*infra* E). We finally conclude (*infra* F).

B. SHAREHOLDER INVOLVEMENT IN BOARD REMUNERATION: THEORY AND EVIDENCE

I. INCENTIVE COMPENSATION AS SOLUTION TO AGENCY CONFLICTS AND THE SIGNIFICANCE OF DIRECT SHAREHOLDER INVOLVEMENT

At first glance, the rationale underpinning the success story of say on pay-regimes across jurisdictions is straightforward and intuitive. The optimal contracting approach to executive compensation considers adequately designed incentive compensation as a powerful tool to attenuate the principal agent conflict between (dispersed) shareholders and managers.¹⁶ The substantial criticism that was voiced, particularly during the last decade, does not challenge the basic presumptions of the approach that incentive compensation may align managers' interest with shareholder preferences. Yet, it posits that executives in public firms without dominant blockholders may have the power to influence compensation decisions in their favor and thus hamper

¹⁵ See LaPorta, Lopez-de Silanes, Vishny & Shleifer, *supra* note 13.

¹⁶ Formative contributions to this momentous school of thought include Stephen A. Ross, *The Economic Theory of Agency: The Principal's Problem*, 63 AM. ECON. REV. 134 (1973); James A. Mirrlees, *The Optimal Structure of Incentives and Authority Within an Organization*, 7 BELL. J. ECON. 105 (1976); Bengt Holmstrom, *Moral Hazard and Observability*, 10 BELL. J. ECON. 74 (1979); Stephen Shavell, *Risk Sharing and Incentives in the Principal and Agent Relationship*, 10 BELL. J. ECON. 55 (1979); Bengt Holmstrom, *Moral Hazard in Teams*, 13 BELL. J. ECON. 324 (1982); Sanford J. Grossman & Oliver D. Hart, *An Analysis of the Principal Agent Problem*, 51 ECONOMETRICA 7 (1983); Dilip Mookherjee, *Optimal Incentive Schemes with many Agents*, 51 REV. ECON. STUD. 433 (1984); Michael C. Jensen & Kevin J. Murphy, *Performance pay and top-management incentives*, 98 J. POL. ECON. 225 (1990); the article that shaped the dominant mindset during the 1990s is Michael C. Jensen & Kevin J. Murphy, *CEO Incentives – Its Not How Much You Pay, But How*, 68 HARV. BUS. REV. 138 (May/June 1990). For an overview cf. William Bratton, *Agency Theory and Incentive Compensation*, in RESEARCH HANDBOOK ON EXECUTIVE PAY 101 (Randall S. Thomas & Jennifer G. Hill eds., 2012).

optimal contracting from a shareholder perspective.¹⁷ From this vantage, a plausible route to trim managers' *de facto* control over remuneration decisions would alleviate small shareholders' collective action and information problems by putting executive compensation schemes or even individual compensation packages up for properly informed voting at the shareholder meeting.¹⁸ Indeed surveys show that institutional investors exhibit a great interest in proper incentive compensation.¹⁹ They should thus benefit from the voting rights they become vested with,²⁰ although the guidance they receive from information intermediaries will play a pivotal role in their compensation decisions as well.²¹ However, diverging risk-preferences among

¹⁷ Lucian A. Bebchuk, Jesse M. Fried & David Walker, *Managerial Power and Rent Extraction in the Design of Executive Compensation*, 69 U. CHI. L. REV. 751 (2002); Lucian A. Bebchuk & Jesse M. Fried, *Stealth Compensation as an Agency Problem*, 17 J. ECON. PERSPECT. 71 (2003); LUCIAN A. BEBCHUK & JESSE M. FRIED, *PAY WITHOUT PERFORMANCE: THE UNFULFILLED PROMISES OF EXECUTIVE COMPENSATION* (2004); William W. Bratton, *The Academic Tournament Over Executive Compensation*, 93 CAL. L. REV. 1557 (2005); Arthur Levitt, *Corporate Culture and the Problem of Executive Compensation*, 30 J. CORP. L. 749 (2005). For a critical review of the main posits of this strand of literature see John E. Core, Wayne R. Guay & Randall S. Thomas, *Is U.S. CEO Compensation Inefficient Pay Without Performance?*, 103 MICH. L. REV. 1142 (2005).

¹⁸ For statements of this position see for instance BRIAN CHEFFINS, *COMPANY LAW* 678 (1997); Mark J. Loewenstein, *The Conondrum of Executive Compensation*, 35 WAKE FOREST L. REV. 1, 25 et seq. (2000); BEBCHUK & FRIED, *supra* note 17, at 195; Lucian A. Bebchuk & Jesse M. Fried, *Pay without Performance: Overview of the Issues*, 30 J. CORP. L. 647, 672 (2005); Randall S. Thomas, Alan R. Palmiter & James F. Cotter, *Dodd-Frank's Say on Pay: Will it Lead to a Greater Role for Shareholders in Corporate Governance?*, 97 CORNELL L. REV. 1213, 1232 (2012).

¹⁹ Cf. Joseph A. McCahery, Zacharias Sautner & Laura T. Starks, *Behind the Scenes: The Corporate Governance Preferences of Institutional Investors*, 71 J. FIN. 2905, 2924-5 (2016) (reporting that in a survey of various institutional investors 88% of respondents conceive excessive compensation practices as trigger for active engagement); Axel Herbert Kind, Marco Poltera & Johannes Zaia, *The Value of Say on Pay* (Working Paper, 2019) available at <https://ssrn.com/abstract=3337192> (showing that the value of voting rights – extracted from stock option prices – increases after the introduction of say on pay at firms with excessive CEO compensation in 10 major European economies).

²⁰ See also John Armour, *Enforcement Strategies in UK Corporate Governance: A Roadmap and Empirical Assessment* 6 (Eur. Corp. Governance Inst. Law Working Paper 106, 2008) available at <http://ssrn.com/abstract=1133542>, noting that shareholder voting may constitute a form of informal private enforcement of standards of conduct expected to be observed by the firm's management.

²¹ On the importance of proxy advisors' input for institutional investors in pertinent respect across jurisdictions see Thomas and Van der Elst *supra* note 2, at 657. With regard to the U.S. situation post Dodd-Frank and the relevance of ISS-recommendations in particular Thomas, Palmiter & Cotter, *supra* note 18 at 1255. For empirical evidence on the general influence of proxy advisors see Stephen J. Choi, Jill E. Fisch & Marcel Kahan, *Who Calls the*

shareholders and the costs of bargaining between managers and shareholders have been brought forward early in the debate as arguments against direct shareholder involvement and in favor of establishing strong bargaining agents instead.²²

II. SAY ON PAY AND POLICY GOALS NOT PRIMARILY ROOTED IN SHAREHOLDER INTERESTS

Say on pay's merits in attenuating agency conflicts between managers and shareholders are one thing. In the view of policy makers, say on pay represents an institutional arrangement that is not only supposed to align investors' and executives' interests but to serve a broader distributive agenda that seeks to curb total compensation levels in the interest of other corporate stakeholders.²³ Yet, even where low approval rates or outright rejections of compensation packages may be regarded as shareholder "outrage",²⁴ such insurrection may have nothing to do with total compensation levels—as long as they do not reach proportions that would divert a noticeable slice of corporate profits into managers' pockets. It is indicative that prominent proponents of high-powered incentive compensation as a tool to mitigate vertical agency problems posited in the title of one of their articles that executive compensation "is not about how much you pay,

Shots? How Mutual Funds Vote on Director Elections, 3 HARV. BUS. L. REV. 35, 55-63 (2013); Ryan Bubb & Emiliano Catan, *The Party Structure of Mutual Funds* 13 (Working Paper, 2018) available at <https://ssrn.com/abstract=3124039>

²² Jeffrey N. Gordon, *Executive Compensation: If There's A Problem, What's the Remedy? The Case for "Compensation Discussion and Analysis*, 30 J. Corp. L. 675, 699 (2005); Jeffrey N. Gordon, "Say on Pay": *Cautionary Notes on the U.K. Experience and the Case for Shareholder Opt-In*, 46 HARV. J. ON LEGIS. 323, 329 et seq. (2009). For another opposing position denying say on pay's benefits Stephen M. Bainbridge, *Is Say on Pay Justified*, 32 REG. 42 (2009).

²³ For a critical assessment of common regulatory strategies other than say on pay to decrease the level of executive compensation (disclosure, taxation) see Kevin J. Murphy, *The Politics of Pay: A Legislative History of Executive Compensation*, in THE RESEARCH HANDBOOK OF EXECUTIVE PAY 11, 11 (Randall S. Thomas & Jennifer G. Hill eds., 2012). For the political reasons that militate in favor of such regulatory initiatives that may include say on pay Thomas & Van der Elst *supra* note 2, at 656-7.

²⁴ The term was coined by Paul Krugman, *The Outrage Constraint*, N.Y. TIMES, August 23, 2002, at A17 and later taken-up in the literature, see for instance Bebchuk & Fried, *supra* note at 65; Kym Sheehan, *Is the Outrage Constraint an Effective Constraint on Executive Remuneration? Evidence from the UK and Preliminary Results from Australia* (Working Paper, 2007) available at <http://ssrn.com/abstract=974965>.

but how”.²⁵ In fact, sophisticated shareholders seem to adhere to this motto.²⁶ Hence, the introduction of a say on pay-regime should not necessarily have a significant effect on total compensation levels.

III. PRIOR EMPIRICAL ANALYSES

Most empirical surveys test the impact of say on pay in the U.K., certainly not least because this jurisdiction was the front-runner of the movement.²⁷ These analyses are mainly concerned with the driving forces behind shareholder dissent and/or low approval rates²⁸ and their effect on executive compensation. Some studies investigate the direct link between negative voting turnouts and changes to individual employment contracts.²⁹ Others look at general and persistent changes in remuneration practices that could indicate a closer alignment of managers’ incentives with shareholder interests as a result of the introduction of the U.K. say on pay-regime. These studies generally find (weak) evidence for such a link.³⁰

²⁵ See Jensen & Murphy, *supra* note 16.

²⁶ Thomas, Palmiter & Cotter, *supra* note 18 at 1257 report that U.S. shareholders, despite the popular criticism took no offence at the level of executive compensation in the 2011 proxy season, the first with a say on pay vote as prescribed by Dodd-Frank.

²⁷ Fabrizio Ferri & David A. Maber, *Say on Pay Votes and CEO Compensation: Evidence from the U.K.*, 17 REV. FIN. 527, 532-35 (2013).

²⁸ Mary Ellen Carter & Valentina L. Zamora, *Shareholder Remuneration Votes and CEO Compensation Design* (Working Paper 2009) available at <http://ssrn.com/abstract=1004061>; Walid Alissa, *Boards’ Response to Shareholders’ Dissatisfaction: The Case of Shareholders’ Say on Pay in the UK* (Working Paper 2009) available at <http://ssrn.com/abstract=1412880>; Martin Conyon & Graham Sadler, *Shareholder Voting and Directors’ Remuneration Report Legislation: Say on Pay in the UK*, 18 CORP. GOVERNANCE 296, 303-4 (2010); Kym Sheehan, *Say on Pay and the Outrage Constraint*, in RESEARCH HANDBOOK ON EXECUTIVE PAY 255, 276-8 (Randall S. Thomas & Jennifer G. Hill eds., 2012).

²⁹ Ferri & Maber, *supra* note 27 at 535-47.

³⁰ Ferri & Maber, *supra* note 27 at 547-59; Conyon & Sadler, *supra* note 28 at 304-8; Carter & Zamora, *supra* note 28; Alissa, *supra* note 28; Sheehan, *supra* note 28 at 265-9; for a survey that distinguishes the effects of the introduction of an advisory vote in 2003 and those of the 2014 reforms that made the vote binding see Betty H.T. Wu, Ian MacNeil & Katarzyna Chalaczekiewicz-Ladna, *‘Say on Pay’ Regulations and Director Remuneration: Evidence from the UK in the Past 15 Years* (Working Paper, 2019) available at <https://ssrn.com/abstract=3321328>.

Similar research also scrutinizes the Australian and U.S. situation, looking at both the reasons for low approval rates and observable changes in compensation practices in response to the introduction of a say on pay-regime.³¹

Event studies that seek to determine shareholders' assessment of say on pay-regimes by investigating cumulative abnormal returns for the date of the pertinent rule's announcement were first conducted for the U.S.³² Subsequent contributions in this line were motivated by the U.K. experience³³ and the Swiss policy experiment of 2008 with its introduction of a binding say on pay-vote in a referendum.³⁴ Methodologically related research scrutinizes the effect of the introduction of say on pay through precatory shareholder proposals in the U.S.³⁵ This strand of literature forms a subsection of surveys that seek to determine the general effect of shareholder empowerment on firm value.³⁶

An empirical study³⁷ that tries to find the determinants that drive negative votes in U.S. say on pay-decisions considers *inter alia* total stock returns as performance measure, but does not analyze a time-series to gauge the medium-term effects that the introduction of the say on

³¹ Sheehan, *supra* note 28 at 265-9 (Australia); Andrea Pawliczek, *Say-on-Pay Voting and CEO Compensation Structure* (Working Paper, 2018) available at <https://ssrn.com/abstract=3233886> (U.S.); see also Yimeng Liang, Robyn Moroney & Michaela Rankin, *Say-on-Pay Judgments: The Two-Strikes Rule and the Pay-Performance Link*, 59 ACC'T. & FIN. (2019) (forthcoming) (showing in an experiment how the Australian two-strikes rule influences voting behavior).

³² Jie Cai & Ralph A. Walkling, *Shareholders' Say on Pay: Does it Create Value?*, 46 J. FIN. & QUANTITATIVE ANALYSIS 299 (2011); David Larcker, Gaizka Ormazabal & Daniel Taylor, *The Market Reaction to Corporate Governance Regulation*, 101 J. Fin. Econ. 431, 441-2 (2011).

³³ Ferri & Maber, *supra* note 27 at 532-35.

³⁴ Wagner & Wenk, *supra* note 9.

³⁵ Vicente Cuñat, Mireia Giné & Maria Guadalupe, *Say Pays! Shareholder Voice and Firm Performance*, 20 Rev. Fin. 1799 (2015).

³⁶ E.g. David F. Larcker, Gaizka Ormazabal & Daniel J. Taylor, *The Market Reaction to Corporate Governance Regulation*, 101 J. FIN. ECON. 431 (2011); Bo Becker, Daniel Bergstresser & Guhan Subramanian, *Does Shareholder Proxy Access Improve Firm Value? Evidence From the Business Roundtable Challenge*, 56 J. L. & ECON. 127 (2013); Jonathan B. Cohn, Stuart Gillan & Jay C. Hartzell, *On Enhancing Shareholder Control: A (Dodd-) Frank Assessment of Proxy Access* (Working Paper, 2013) available at <http://ssrn.com/abstract=1742506>.

³⁷ James F. Cotter, Alan R. Palmiter & Randall S. Thomas, *The First Year of Say-on-Pay Under Dodd-Frank: An Empirical Analysis and Look Forward*, 81 GEO. WASH. L. REV. 967 (2013).

pay-regime under Dodd-Frank may entail. Earlier studies also investigate the drivers of voting support for pay-related (non-binding) shareholder proposals in the U.S. and also specify their effect on CEO compensation.³⁸

Finally, a comprehensive study that surveys 38 jurisdictions also looks specifically at the correlation between say on pay and the design of compensation packages, thereby distinguishing carefully between the remuneration of CEOs and that of ordinary board members.³⁹ The analysis delineates a deceleration in the growth of CEO pay and its consequential approximation to that of ordinary board members.

Our study is similar to the strand of research that tries to measure say on pay's medium term effect on general compensation practices⁴⁰ and goes thus beyond surveys in the legal literature that only present descriptive statistics on voting outcomes.⁴¹ We use a hand-collected dataset to analyze the German legislative experiment. Limiting ourselves to one jurisdiction allows us to proxy some of its relevant characteristics in more detail and thus shed new light on key hypotheses articulated in the debate. We pay particular attention to the link between say on pays' impact on executive compensation as well as firm performance measures. The specificity of our data that distinguishes between several features in board members' compensation packages and accounts for executives' tenure allows us to significantly extend and challenge more general findings in similar research on Germany that show that say on pay has an effect on directors' remuneration if lagged over the years following the vote.⁴² As already indicated, despite our close attention to German firms' specific corporate governance characteristics, our

³⁸ Yonca Ertimur, Fabrizio Ferri & Volkan Muslu, *Shareholder Activism and CEO Pay*, 24 REV. FIN. STUD. 535 (2011).

³⁹ Correa & Lel, *supra* note 2.

⁴⁰ It is a common feature of all these studies that they consider principal-agent-conflicts between managers and (dispersed) shareholders. A recent study turns to the Israeli experience with a majority-of-the minority vote for compensation packages paid to the controlling shareholder or their relatives, i.e. a horizontal agency conflict between large and small equityholders. It finds the rule to be a relevant constraint for tunneling, Jessie Fried, Ehud Kamar & Yishay Yafeh, *Empowering Minority Shareholders and Executive Compensation: Evidence from a Natural Experiment* (Working Paper, 2016) available at https://pdfs.semanticscholar.org/3b9e/ece1e8edd825a9f65b5841a70189375b86f9.pdf?_ga=2.133628877.2120248944.1553696099-141616630.1553696099.

⁴¹ Marvin Vesper-Gräske, "Say On Pay" In Germany: The Regulatory Framework And Empirical Evidence, 14 GERMAN L.J. 749, 783-94 (2013).

⁴² Daniel Powell & Marc Steffen Rapp, *Non Mandatory Say-on-Pay Votes and AGM: Participation: Evidence from Germany* 25-6 (SAFE Working Paper No. 107, 2015) available at <http://ssrn.com/abstract=2613406>. The paper mainly seeks to determine the reasons for low approval rates and the effect of say on pay on shareholder participation in annual meetings.

findings extend well beyond the German context, because many firms around the world have similar organizational and ownership structures (two-tier system, dominant blockholders).

C. THE GERMAN LEGISLATIVE EXPERIMENT: THE 2009 AMENDMENTS TO THE STOCK CORPORATION ACT

This section briefly describes the legislative changes Germany promulgated in 2009 (infra I) and puts them into a broader context that also highlights the main features of their implementation in practice (infra II). In particular the latter information should also help recognize why and to what extent the findings of the paper are relevant for other jurisdictions that are similarly situated.

I. THE 2009 AMENDMENTS TO THE AKTG

The amendments to the German AktG that constitute the point of reference for our analysis were part of a broader reform package that purportedly reacted to the financial crises of 2007/2008. Yet, in an act of political overreaching it brought about new rules for all German stock corporations despite a lack of resilient evidence of pervasive deficits. Across industries, the legislative intervention sought to enhance managers' incentives to pursue sustainable growth strategies. In order to achieve this goal, the main changes were directed towards the supervisory boards' broad discretionary power to determine executive directors' compensation,⁴³ without withdrawing the power as such. Prior to the 2009 reform, the AktG only prescribed that the supervisory board should set management board members' remuneration in adequate relation to their respective duties and the overall situation of the firm.⁴⁴ The new law specifies the pivotal adequacy-criterion, also by introducing an explicit duty to reduce managers' compensation if the situation of the firm deteriorates.⁴⁵ However, the substance of the new regime does not go materially beyond the determinants that were derived under the old regime

⁴³ In addition, the reform also introduced a minimum deductible of 10% of total losses if managers' personal liability is covered by a D&O insurance policy taken out by the corporation, AktG, § 93, para. 2, sentence 3, and a cooling-off period of two years if members of the management board intend to switch to the supervisory board, AktG, § 102, para. 2 sentence 1 No. 4.

⁴⁴ AktG, § 87, para. 1 sentence 1 as in force until 2009.

⁴⁵ AktG, § 87, para. 1 stipulates that compensation should be performance based, be in line with usual compensation practices, aim at a sustainable development of the firm, use multi-annual determinants, and provide for caps in extraordinary circumstances. The duty to seek a reduction of the compensation in reaction to adverse developments for the corporation is laid down in AktG, § 87, para. 2.

by means of statutory interpretation.⁴⁶ The same can be said *mutatis mutandis* with regard to the now explicit stipulation of the liability of the members of the supervisory board who breach their duties in setting management board members' remuneration packages:⁴⁷ prior to the reform, the liability was derived from the general provision in AktG, § 116, para. 1 and attached to a violation of the respective duties that were largely identical in substance under the old legal regime.

As a consequence, the introduction of the voluntary, non-binding say on pay-vote⁴⁸ constitutes the only true institutional innovation of the VorstAG. Studying its effects thus seems promising. Although it cannot be ruled out that the general political, manager-hostile attitude that triggered and supported the regulatory initiative also carries over to the reactions of German supervisory boards in the vicinity of the reform, at least the medium term effects that occur after the public discontent has abated, should be attributable to the regulatory overhaul.

II. CONTEXT AND IMPLEMENTATION

The VorstAG is yet another instance in a line of legislative interventions that respond to the persistent and widespread sentiment among many voters that executive compensation in Germany is broken because it is out of line with shareholder preferences. Similar motivations were given for a 2005 amendment of the relevant accounting laws that sought to enhance the transparency of executive compensation⁴⁹ and an attempt to tighten the say on pay regime that ultimately failed in 2013 only because the legislative period terminated prior to a final vote in parliament.⁵⁰ Against this background, the 2009 amendments do not react to an abnormal public outcry or a meaningful change in the social perception of managerial compensation that could

⁴⁶ For a detailed discussion see Benedikt Hohaus & Christoph Weber, *Die Angemessenheit der Vorstandsvergütung gem. § 87 AktG nach dem VorstAG* [The Adequacy of Management Board Members' Compensation According to AktG § 87 after the VorstAG], 62 DER BETRIEB [DB] 1515 (2009); Stefan Lingemann, *Angemessenheit der Vorstandsvergütung – Das VorstAG is in Kraft* [Adequacy of Management Board Members' Compensation – The VorstAG Enters into Force], 64 BETRIEBS-BERATER [BB] 1918 (2009).

⁴⁷ AktG, § 116, para. 3.

⁴⁸ Supra at note 7.

⁴⁹ Gesetz über die Offenlegung der Vorstandsvergütungen (VorstOG) [Act on Disclosure of Executive Compensation], Aug. 3, 2005, BGBl. I at 2267. According to the legislative materials, the transparency requirements were put in place to improve shareholder oversight of supervisory board decision making in compensation matters, see Deutscher Bundestag, Entwurf eines Gesetzes über die Offenlegung der Vorstandsvergütungen, May 25, 2005, BT-Drucks. 15/5577 at 5.

⁵⁰ Deutscher Bundestag, Beschlussempfehlung und Bericht des Rechtsausschusses (6. Ausschuss) zu dem Entwurf eines Gesetzes zur Änderung des Aktiengesetzes (Aktienrechtsnovelle 2012), BT-Drucks. 17/14214, at 16-18.

drive results regardless of institutional changes. Instead, the VorstOG seems to belong to a continuous pattern of normatively consistent reactions that occur in a generally skeptical environment.

The prescribed say on pay-vote occurs at the annual general meeting on the initiative of either the management board or a qualified minority of shareholders.⁵¹ At listed companies, votes are cast under a strict one share one vote-rule.⁵² The attendance at the meetings is usually significantly below the number of voting stock outstanding and therefore 25 to 30 percent of the shares carrying voting rights afford a stable majority.⁵³ Finally, the agenda of the general meeting has to include a resolution on the discharge of the members of the management and the supervisory board.⁵⁴ This is important, because the vote on managers' discharge provides for a well-established channel through which shareholders can express their discontent with boards' performance, which should in turn keep say on pay-votes largely free of more general considerations of this type.

D. DATA AND METHODOLOGY

I. SAMPLE DESCRIPTION

To investigate the potential implications of say on pay on management remuneration in Germany, we hand-collected a data set for Germany's major firms, *i.e.* those included in the main stock market index, the DAX30, for the years 2009-2017. We produced data for all members of the management board for the whole period under investigation. In order to identify *ceteris paribus* trends that are attributable to the introduction of say on pay, we concentrated on those companies that were included in the DAX30 at least during a part of the entire period, but existed as listed firms at all times. We thus end up with 34 companies in our sample. This gives us information on 1682 remuneration packages of 415 management board members. The sample comprises 48 CEOs. Furthermore, it contains 147 managers who left their board position at the respective company and 195 managers who were newly appointed to the board during the observation period. The remaining 25 executives were already board members in 2009 and stayed in their position until the end of the observation period without becoming CEO during this time. The average size of the management board in the sample is 6.3 members, with a

⁵¹ See *supra* note 6.

⁵² AktG, § 134, para. 1.

⁵³ See Andreas Cahn, *Der Kontrollbegriff des WpÜG [The Definition of Control in the Takeover Act]*, in 10 Jahre Wertpapiererwerbs- und Übernahmegesetz (WpÜG) [10 Years Tender Offer and Takeover Act] 77 (Peter O. Mülbert et al. eds., 2011) (showing for Germany's largest firms that voting shares present at the annual shareholder meeting amount to only slightly more than 50% of the respective shares outstanding).

⁵⁴ AktG, 120 paras. 1-3.

minimum of 4 and a maximum of 11 managers (including the CEO). The composition of our company base traces very closely the structure of the German economy with five financial firms (two banks,⁵⁵ a financial exchange, and two insurance companies), five car manufacturers and suppliers as well as nine pharmaceutical companies (including chemical firms as well as medicine technique companies). The remaining firms are mainly other manufacturing companies.

Our data sample comprises information on management compensation, firm performance and general firm characteristics (such as size and industry to which the companies belong). The data on management remuneration was taken from the firms' annual reports for the respective years. As a consequence of a 2005 overhaul of the relevant accounting requirements,⁵⁶ executive compensation packages are reported on an individual basis for each member of the management board and have to be itemized with regard to fixed, variable and long-term incentive components.⁵⁷ Hence, we are in a position to track executive compensation over time. In doing so we pay close attention to the applicable accounting standards that particularly affect the representation of long-term components.⁵⁸ We are thus able to consider accurately what the reported figures actually reveal whereas prior research largely treated them as current payout. Information on say on pay-votes (including the percentage turnouts of these votes in favor or against the respective proposals) are also taken from the company accounts. We checked for

⁵⁵ Banks were at all times during our survey subject to prudential regulation that impacted at least on the variable component of managers' remuneration, although the latest and most incisive regime with its cap for variable remuneration at 200% of fixed pay only became effective for the years 2014-2017, see Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC [hereinafter: CRD IV], arts. 92-94, 162(1) and (3). Yet, the organizational and substantive prescriptions in banking regulation did not curb supervisory boards' discretion in setting bank managers' pay in a way that makes these institutions total outliers to be eliminated from the sample. In fact, regulation mainly increased the costs of legitimizing decisions.

⁵⁶ VorstOG, art. 1.

⁵⁷ Handelsgesetzbuch [HGB, Commercial Code], May 10, 1897 RGBl. at 219 as amended, § 314, para. 1, no. 6, item a), sentence 5.

⁵⁸ The relevant standards are laid down in Deutscher Rechnungslegungsstandard [DRS, German Accounting Standard] 17.21 and 17.30. Long-term non-share-based remuneration is reported as a whole for the financial year in which the compensated services were completed, i.e. at the time of the actual payout, DRS 17.21. On the other hand, long-term share-based remuneration is reported at present value for the financial year in which it was granted, DRS 17.30. Hence, key items of variable remuneration receive a critically diverging treatment in compensation reports.

completeness and accuracy by consulting the firms' websites and the corporate register.⁵⁹ The general firm characteristics, such as size and return on assets are drawn from Datastream for the respective years. Information on shareholder returns is also taken from Datastream. We derive the data on ownership structures from Commerzbank's compendium "Wer gehört zu wem".⁶⁰ This data source comprises detailed information on ownership structures of German firms and their changes over time. We impound new information (since 2010) on significant holdings from the corporate register.⁶¹

II. DESCRIPTION OF VARIABLES

The compensation reports—as mandatory items of the company accounts—provide detailed information on the remuneration of individual members of the management board.⁶² Companies report not only the total level of compensation but also its structure in considerable detail. In particular, the different types of variable pay such as cash bonuses, stock options and long-term incentive plans are disclosed. However, this granular reporting makes comparisons across companies and over time quite difficult: not only do the observed compensation structures diverge materially but also the ways of reporting change over time, because firms do not have to comply with a prescribed form that would standardize disclosure.⁶³ Hence, despite the risk of sacrificing some granularity, we decided to focus on the three main pillars of the compensation packages: fixed pay, variable remuneration and pension benefits. While fixed payments and pension contributions paid for the members of the management board are rather uniform, there is quite some variation with regard to variable pay across time and companies, which should be kept in mind.

⁵⁹ Pursuant to AktG, § 130, para. 6, German listed companies have to post detailed information on the votes (yes, no, abstain) for each resolution on their website within seven days. The pertinent information is also filed with the register, *see* AktG, § 130, para 5.

⁶⁰ COMMERZBANK, WER GEHÖRT ZU WEM [WHO BELONGS TO WHOM] (2010).

⁶¹ Wertpapierhandelsgesetz [WpHG, Securities Trading Act], July 26, 1994, BGBl I at 2708, § 33, para 1 – like the identical predecessor norm – compels any person whose shareholdings reaches or exceeds 3%, 5%, 10%, 15%, 20%, 25%, 30%, 50%, or 75% of the voting rights in a listed company or subsequently drops below one of the threshold levels to disclose this fact immediately to the company and the supervisory authority. The pertinent notifications are then filed with the publicly accessible corporate register.

⁶² *See supra* at note 56.

⁶³ Only since 2014, the German Corporate Governance Code (GCGC) which is voluntary on a comply-or-explain-basis recommends the use "model tables" (*available at* https://www.dcgk.de/en/code/current-version/appendix-model-tables.html?file=files/dcgk/usercontent/en/download/code/170214_Code_Annex.pdf) for the reporting of management compensation in order to enhance standardization, cf. GCGC item 4.2.5 para. 3, first indent.

By looking at these three elements of managers' remuneration packages, we cover the main elements of monetary compensation and incentive schemes: fixed pay reflecting the overall participation constraint of management board members, variable pay as pay-for-performance (aligning the objectives of management and shareholders by incentivizing managers to provide effort⁶⁴), and pension contributions paid for management board members as inside debt (to provide incentives to reduce risk and avoid default⁶⁵).

In order to achieve sufficient discrimination we extract four variables from the firms' compensation reports. The first variable (FIX) reflects the fixed payments of the members of the management board, whereas the second variable (VARPAY) is the sum of all variable compensation of the respective manager in a given year. In cases in which incentive plans were designed for more than one year, we divide the total amount reported at grant equally over the respective years and add the split-parts to VARPAY for each year. Our third variable (TEXP) is simply adding up these two elements and hence stands for total yearly payments ex pensions. Given that we have missing observations for pension contributions in a number of cases, we rely on this variable as our main measure of total compensation. Last but not least, our PENSION variable denotes the annual pension contribution paid for the respective member of the management board. Table 1 provides a summary of our main variables and their definition.

Insert Table 1 about here

In a first step, we look into the main descriptive statistics of our data set. Tables 2a and 2b give a first overview of the main realizations of these variables. We distinguish between the remuneration of CEOs and non-CEO members of the management board.

Insert Tables 2a and 2b about here

With respect to pay structure, these numbers indicate that sources of income which are usually regarded as pay-for-performance are on average the most important remuneration elements for members of the management board. They clearly exceed the sum of fixed payments and pension contributions that managers receive (see Tables 2a and 2b). Surprisingly, pension contributions paid for management board members are rather small. If we compare the mean and median of the different variables we find that this skewedness is not very pronounced. Hence, we can state that there clearly is variation with some (but not many) highly paid top managers (all CEOs), but that the discrepancies are not very large. More generally, a comparison of Tables 2a and 2b reveals visible, though not very large differences in compensation levels (but not structure) of CEOs on the one hand and non-CEO management board members on the other.

⁶⁴ See e.g. Jensen & Murphy *supra* note 16.

⁶⁵ See Rangarjan K. Sundaram, & David L. Yermack, *Pay me later: Inside debt and its role in managerial compensation*, 62 J. FIN. 1551 (2007). In practice, the pension contributions are frequently paid to third party providers which severs the link between deferred payouts and the firm's long-term survival.

Furthermore, we collected data to define a number of variables reflecting firm characteristics and firm performance. Since we aim to relate these variables to the variation in management board compensation and to investigate whether we find an effect of say on pay-votes after including these variables as controls, we focus on those variables that according to the literature are the main determinants of compensation packages for top managers. With respect to firm characteristics, we chose measures for size, namely total assets (TA), and ownership concentration, defined as voting block of 25% or more of the shares outstanding (OWC), as well as industry dummies (for the financial, the car and the pharmaceutical industry). We measure firm performance by return-on-assets incurred in the respective year (ROA) defined as EBIT over TA. Our total shareholder return variable (TSR) comprises share price developments and dividends paid. We also looked into other firm characteristics as well as performance measures but the variables ultimately used turned out to have the closest relation to management compensation. The realizations of these variables are depicted in Tables 3a and 3b.

Insert Table 3a and 3b about here

Table 3a shows that there is substantial variation in firm characteristics and performance. This indicates on the one hand that the DAX30 companies differ, in pertinent respect, to a large extent among themselves. Moreover, as we will show in the next step, there is also substantial variation, especially with respect to profitability, over time.

Before we turn to this analysis, we comment on the say on pay-votes in the DAX30 companies that occurred after the 2009 amendment of the AktG (see Table 3b). Most companies in our data sample had a vote on management board remuneration in 2010. In 2011 to 2017 these votes took only place occasionally which is largely a function of the relevant best practice recommendation in the German Corporate Governance Code.⁶⁶ We construct a variable, which documents the acceptance rate of the votes in the shareholder meeting (SOP); we obtain the latter from the corporate register.⁶⁷ If no vote has taken place, we assign a value of zero to this variable; excluding these values leaves our results largely unaffected.

We observe 72 (out of 237) company data points with say on pay-votes. Most of these resolutions had rather high acceptance rates, most of them above 85%, many of them even above 95%.⁶⁸ There are only four exceptions in which compensation schemes were rejected. At

⁶⁶ The GCGC recommends that the chairman of the supervisory board explains the compensation system once to the general meeting and reverts back to shareholders only if the system is changed, see GCGC, item 4.2.3 para. 6.

⁶⁷ See *supra* at note 59. As a consequence of the standardized reporting requirements in AktG § 130, para. 2, sentences 2 and 3 we see no cross-sectional variation in the way acceptance rates are calculated

⁶⁸ This is in line with the findings across jurisdictions in Thomas & Van der Elst *supra* note 2, at 657; for the U.S. see Thomas Hemphill, *Say - On - Pay Voting: A Five - Year Retrospective*, 124 BUS. & SOC. REV. 63-71 (2019) (showing the average approval amounting to

Heidelberg Cement we observe the lowest acceptance rate of 45.81% in 2010. In 2016 Deutsche Bank received less than 50% yes-votes (48.1%) while the same thing happened in 2017 at Merck (46%) and Münchner Rück (34.3%). In addition, where companies report abstentions⁶⁹ (more than 80% of the observations) we observe only very few of them (typically well below 1%), with no particular trend. There are many reasons other than abstentions that may lead to the sum of yes- and no-votes being lower than the total voting shares represented in the shareholder meeting (e.g. void votes, treasury stock and other specific voting prohibitions). The data does not allow to distinguish between the respective instances. Therefore, we cannot identify the abstentions in the remaining observations. As a general trend, the mean share of supporting say on pay-votes stayed more or less constant over the observation period but went down significantly in 2016 and 2017.

III. HYPOTHESES

We explore two alternative hypotheses to address the impact of say on pay-votes. The **first hypothesis** conjectures that relatively lower acceptance ratios lead to an adjustment (reduction) in the remuneration package of all management board members.⁷⁰ We test this with our SOP

92% of the votes cast in the first five years of the say on pay-regime introduced by Dodd-Franck).

⁶⁹ AktG, § 130 para. 2 sentence 2 No. 3 requires companies to report abstention votes only when they were specifically counted, *i.e.* in those cases where companies count the no-votes, void votes, and abstentions in order to subtract them from the total voting shares – excluding treasury and other stock prohibited from voting in the specific case – represented in the shareholder meeting, a procedure which is typically adhered to if the chairman expects a clearly positive vote, *see e.g.* Ulrich Noack & Dirk Zetzsche, § 130 AktG para. 206, in KÖLNER KOMMENTAR ZUM AKTG (Wolfgang Zöllner & Ulrich Noack eds., 3d ed. 2011).

⁷⁰ This accords with similar findings in empirical studies of the U.K. situation: Ferri & Marber, *supra* note 27 at 529 find a “significant increase in the sensitivity of CEO pay to poor performance” as a result of high shareholder discontent; Carter & Zamora, *supra* note 28 at 24 report that boards respond to sizeable dissent by decelerating compensation increases relative to competitors and curbing diluting stock option grants; Alissa, *supra* note 28 at 26-9, on the other hand, sees no evidence for a change in compensation practices but identifies replacement of CEOs as an alternative response to shareholder dissent; conversely, Conyon & Sadler, *supra* note 28 at 304 find only “little evidence of a relation between CEO pay and shareholder dissent”.

Our first hypothesis also conforms with evidence from the U.S., although some incidents suggest that companies also stay the course and blame misinformed proxy-advisors for negative votes, Thomas, Palmiter & Cotter *supra* note 18, at 1260; on a broader data basis that exploits the five reporting seasons following the enactment of Dodd-Franck, Pawliczek *supra* note 31 shows that higher voting dissent leads to a 2.3% decrease in stock options and a 3.9% increase in performance-vested equity in the total compensation package with an unclear effect of the changes on performance-sensitivity; ; for a highly skeptical view on the U.S. practice pointing

variable while taking further effects into account by including a number of control variables in our panel regressions.

The **second, alternative hypothesis** is that the supervisory board⁷¹ primarily reacts by changing the compensation practices observed in the contracts of newly entering members of the management board and leaves the contracts of the existing executives untouched. This hypothesis seems highly plausible from a basic contract law perspective: although the supervisory board is competent to determine the remuneration of the members of the executive board when they are appointed,⁷² it basically lacks the power to interfere unilaterally with existing employment contracts without cause.⁷³ Hence, it is unlikely that with a view to unfavorable say on pay-votes, supervisory boards adapt (reduce) executive compensation packages immediately and universally. However, at least for those management board members who are appointed after an adverse resolution, compensation arrangements designed with a view to expressed discontent in shareholder polls are intuitive. This leads us to expect significant changes in the compensation packages of newly entering members (compared to prior practice) in reaction to low say on pay-votes: the supervisory board will only gradually implement a new remuneration policy⁷⁴ that is better attuned to shareholder preferences. We test this second hypothesis by splitting our sample and taking newly entering and incumbent board members separately into account.

E. EMPIRICAL RESULTS

I. DESCRIPTIVE ANALYSIS

As a first step of our analysis of the determinants of managers' remuneration (level and structure) we investigate the evolution of the total level of compensation as well as its performance-based fraction together with a key operative measure for firm performance (return on assets) on the aggregate level. We use Table 3c to depict this relationship.

Insert Table 3c about here

particularly to a short term focus of institutional investors in say on pay-voting Stephen F. O'Byrne, *Say on Pay: Is it Needed? Does it Work?*, 30 J. APPLIED CORP. FIN. 30-38 (2018).

⁷¹ Pursuant AktG, § 87 the supervisory board was at all times competent to determine the compensation of individual board members thereby adhering to several substantive principles, *supra* C.

⁷² AktG, § 84, para. 1, sentence 1.

⁷³ Again, this is the case in many jurisdictions around the world outside the United States where board members can be sacked immediately without cause, for a survey of the relevant legal frameworks in Europe see Davies, Hopt, Nowak & van Solinge, *supra* note 12 at 37-45.

⁷⁴ It is important to keep in mind that German shareholders only vote on the overall compensation scheme, *see supra* A.

Table 3c reveals two important first insights. First, it shows that that over the entire period of our analysis there is at the aggregate level a clear-cut upward trend in top management compensation. When we compare the 2009 figures with the ones in 2017, we observe a nominal increase in total compensation ex pensions well above inflation (the average inflation rate was roughly 1.5 percent). By and large, the same is true for fixed compensation. Total compensation ex pensions increases from 2.291 mill. Euro per year in 2009 to 3.143 mill. Euro in 2017. A look at the two remuneration components reveals that the relative proportion of fixed payments and variable compensation stays roughly constant.

Table 3c also indicates the sensitivity of variable management pay to firm performance. The (Pearson) correlation coefficient between TEXP and ROA at the aggregate level (across years) is an astonishing 0.67. The same holds true for variable pay and ROA (0.688). Both coefficients are significantly different from zero (at the ten percent level). Accounting for unobserved time-invariant characteristics by using time fixed effects, the correlation coefficient with ROA becomes lower but is still 0.464, yet no longer significant. If we look into the same correlations with ROA lagging one period, a very similar picture emerges. We investigate this relation in a multivariate setting in the next subsection. German incentive plans are typically based on operative performance measures rather than on share price developments. Therefore, we focus on operative performance measures only.

II. MULTIVARIATE TESTS

Up to now we did not sufficiently take the panel structure of our data set into account. Hence, the aim of this subsection is to exploit the variation in the cross-section as well as over time simultaneously. We run multivariate regressions on our panel data set and take the different compensation variables as dependent variables. This includes our variable measuring total compensation (we initially exclude pensions in order to avoid losing too many observations due to missing entries) as well as our fixed-pay variable. Later on, we also investigate the pension compensation schemes in more detail.

We proceed in various steps. In the first one, we aim to explain the compensation variables by using the information on all board members for the respective compensation variables. Then, we take a more granular look and separate newly appointed members of the corporations' management board from those board members who served in this capacity already for a longer period of time. In particular, we ask how the say on pay votes affected compensation packages of established and newly entering board members differently. Thereby, we test our two alternative hypotheses. Besides using our SOP variable, we reflect findings in the prior literature⁷⁵

⁷⁵ See for instance Xavier Gabaix & Augustin Landier, *Why has CEO pay increased so much?.*, 123 Q. J. ECON. 49-100 (2008) (explaining the influence of firm size on executive compensation). Firm performance, measured by return on assets, is considered in many studies to be a key determinant of executive pay, see Correa & Lel , *supra* note 2.

and control for the effect of firm performance and size on the compensation packages of management board members. In addition, we include industry dummies as well as time and company fixed effects. We thereby account for unobserved heterogeneity across time and companies, which affects the compensation packages.

Hence, we estimate the following equation

$$Pay_{it} = \alpha_i + \sum \beta_i X_{it} + Controls + \mu_{it}$$

with our compensation variables forming the left-hand-side variables and the X_{it} standing for our explanatory variables as described above. The error term is displayed by μ_{it} . In order to take the potential non-linearity of the estimated relationships into account we use the natural logarithms of our compensation variables, firm characteristics, and performance measures. In order to account for correlated error terms at the level of individual board members (e.g. due to the fixed structure of the compensation packages of board members for a pre-determined number of years) we cluster standard errors at this level.

1. EFFECT OF SAY ON PAY ON COMPENSATION

Tables 4 and 5 summarize our findings on the effects on total compensation (TEXP). While Table 4 investigates hypothesis 1, Table 5 looks into hypothesis 2.

Table 4 considers all management board members while Table 5 focusses on the effects of say on pay on newly entering members of the management boards.

Insert Tables 4 and 5 about here

With respect to our say on pay variable we find a mostly positive, yet statistically insignificant effect for the overall sample (see Table 4). Hence, we see no support for our hypothesis 1. The findings in Table 4 are robust to a number of different specifications. Neither the inclusion of year and company fixed effects nor that of industry dummies changes the picture. The same holds true, if we include controls for entering and leaving board members. In order to rule out that special effects are driving our results, we exclude in our analysis of the full sample (we would lose too many observations in the smaller sample) in one specification (see Table 4) Commerzbank, which was bailed-out by the German financial market stabilization fund in 2008 and 2009 and had to comply with regulatory salary caps as a consequence: the government

rescue obliged the bank to limit the remuneration to 500,000 Euro for its top personnel.⁷⁶ We further exclude in this specification the four companies which had say-on-pay votes below 50%. We find that our results remain robust to the exclusion of these observations. Furthermore, the exclusion of newly appointed board members (see last column of Table 4) does not change the picture either.

In order to address our second hypothesis we focus in Table 5 on newly appointed board members. We find that the coefficient of the say on pay variable is statistically significant and positive throughout all our specifications in Table 5 (resembling structurally the ones from Table 4). This implies that say on pay votes have a statistically significant and positive effect on the overall compensation of newly appointed board members. This is clear evidence in favor of our second hypothesis.

Given the restrictions defined in contract law,⁷⁷ our findings do not really come as a surprise. Instead, they can be readily explained by a lack of bargaining power of supervisory boards *vis-à-vis* incumbents. During their tenure, managers cannot be compelled to accept a decrease in their remuneration packages—or any rearrangement with such an effect—if the supervisory board wishes to react to shareholder discontent by slashing managers' pay checks. Moreover, our findings accord with the legislative strategy that empowers shareholders to resolve on the overarching compensation system and not individual compensation packages: this implies that the supervisory board reacts to negative voting turnouts over time when remuneration is up for negotiations. However, for those management board members, who were newly appointed around the promulgation of the VorstAG, compensation arrangements designed with a view to the anticipated shareholder polls or the realized SOP decisions are plausible. In line with this idea we find strong evidence for our second hypothesis. SOP votes have a significant effect on compensation schemes of newly entering members of management boards. In other words, the regulatory strategy works within the binding restrictions put up in contract law. This is an important contribution to the existing literature because it indicates that in all jurisdictions with staggered and entrenched boards say on pay's effects are rather long term. Therefore, they can only be fully gauged if compensation is analyzed over a longer period (ideally full turnover of the entire board⁷⁸) whereas measuring only short-term effects may underestimate the regime's momentum.

⁷⁶ The Fund took a silent partnership interest in December 2008 and a 25% equity stake in January 2009, which triggered the remuneration limits that lasted until the government support was ultimately redeemed in 2013. Cf. Gesetz zur Errichtung eines Finanzmarkstabilisierungsfonds [Act Establishing a Financial Market Stabilization Fund], Oct. 17, 2008, BGBl. I at 1982, § 10, para. 2b, sentence 1.

⁷⁷ See *supra* D.II.

⁷⁸ The maximum tenure permitted by law is 5 years, which regularly makes for deeply staggered management boards. The important takeaway for our analysis is thus that every year about one fifth of the management board should be up for (re-)appointment.

Beyond our results on the effects of say on pay-votes, we find that total compensation of the management board members in Germany's DAX30 companies is clearly influenced by firm structure and firm performance. More profitable and larger firms pay more to their management board members. This pattern emerges consistently across the different models in Tables 4 and 5. The effects are not only statistically but also economically pronounced. A one percent increase in profitability increased total compensation of board members by between 0.5 to 1% (see columns (1)-(6) of Table 4). With respect to size we find a less pronounced and less often significant effect (see Tables 4 and 5).

In Tables 6 and 7 we investigate the effect of say on pay on fixed compensation as well as on the pension packages board members received during the time period under investigation. With respect to fixed payments we observe a similar pattern as with the overall payments. This is a confirmation of our results on our two hypotheses as discussed above. For the overall sample (hypothesis 1) we find statistically insignificant coefficients (see first three columns in Table 6) for a number of specifications (the ones we used previously). On the other hand, if we focus on the newly entering board members – and hence on hypothesis 2 - we observe again a statistically significant coefficient (see last three columns of Table 6). Hence, the very same pattern emerges as in our analysis of the overall compensation.

Insert Tables 6 and 7 about here

The picture is weaker for our analysis of the pension packages. The coefficients of the overall sample are statistically insignificant in two out of three specifications (see columns one and three of Table 7). In one specification we find a weakly significant coefficient (at the ten percent level) which has, however, a negative sign (see column 2 of Table 7). If we focus on entering board members with a new contractual arrangement we find a positive, yet non-significant effect of our say on pay variable (see last two columns of Table 7).

2. ROBUSTNESSCHECKS

After our discussion of the main findings, we now turn to two robustness checks. First, we separate the analysis of the effect of say on pay votes on the compensation packages of CEOs from that of the impact on non-CEO executive board members' compensation packages. This helps us rule out that our results are driven by the effects on one group, say the CEOs, only. Second, we address the effect of ownership concentration in order to investigate if ownership concentration is a potential substitute for a say on pay regime.

a) CEOs VS NON-CEOs

In Table 8 we investigate whether our findings on the effect of say on pay votes on executive compensation are affected if we distinguish between CEOs and non-CEO executive board members. For this purpose we split our sample in a non-CEO subsample (first three columns of Table 8) and a CEO subsample (last two columns of Table 8). Our qualitative results are not affected by this exercise. While the say on pay-variable is insignificant for the estimates that include all members in the respective subsamples (first and last two respective columns of Table

8), the say on pay-coefficient is positive and significant for the new entrants in the non-CEO subsample (column in the middle of Table 8). Unfortunately, due to the very small sample size (nine observations), it is impossible to run a sufficiently powerful regression on the newly entering CEOs. In an untabulated regression with the say on pay-vote as only regressor we find a positive yet non-significant coefficient.

Insert Table 8 about here

b) RELEVANCE OF OWNERSHIP CONCENTRATION

We also bring the role of shareholder composition into the picture.⁷⁹ By using our ownership concentration variable we ask whether the presence of blockholders has an effect on compensation. In particular, whether they act as substitute for say on pay-resolutions. We find partial evidence for the former aspect. In our full-sample regression (Table 9, first two columns) it turns out that more concentrated ownership indeed leads to a statistically significant (positive) effect on overall pay. In the new entrant-sample this effect is not observable (see Table 9, last two columns). But in both cases the introduction of the ownership variable leaves our findings on the say on pay variable qualitatively unchanged indicating that ownership does not act as a substitute for say on pay votes.

Insert Table 9 about here

3. SUMMARY OF FINDINGS

In a nutshell, we can summarize our findings by saying that our analysis allows us to draw inferences on the channels through which say on pay actually works: any evaluation of a shareholder voice-strategy in regulating executive remuneration has to pay close attention to the limits contract law stipulates for the adaptation of existing remuneration agreements. Therefore, it has to take a medium to long-term view that extends to a full turnover-period for board-members. With this important supplement, our results are in line with the general observations in prior research.⁸⁰

F. CONCLUSION

Our main findings can be summarized as follows. First, we observe that the compensation packages of management board members of Germany's DAX30-firms are closely linked to key performance measures such as return-on-assets and size. Second, and most important for our topic, our findings suggest that it is essential to take a closer look at the contractual set-up for the compensation schemes and their structure. When we only consider the compensation packages

⁷⁹ For evidence on the role of concentrated ownership on executive compensation see for instance Jay C. Hartzell & Laura T. Starks, *Institutional investors and executive compensation*. 58 J. FIN. 2351-2374 (2003).

⁸⁰ See Powell & Rapp, *supra* note 42 at 25-6.

of all board members, the hypothesis that remuneration is decreased if shareholder support for compensation schemes is low in say on pay-votes finds only weak support, if any at all.. This is not at all surprising given the rather rigid contractual framework for the compensation of management board members. However, we find that the supervisory board is responsive to say on pay-votes when it comes to the design of compensation packages for newly entering candidates, i.e. within the binding restrictions of contract law, it reacts as envisioned by policy makers. It is a consequence of the way say on pay is supposed to work that our results are driven by the rather few pronouncedly discontent say on pay-votes in corporate Germany – only where disapproval is voiced supervisory boards have reason to change compensation packages. They leave matters unaffected where shareholders show rather strong support for the proposed schemes as is the case in most of the observations in our dataset.

TABLES

Table 1: Variable description

| Variable | Description | Source |
|----------|---|---|
| FIX | Fixed performance unrelated yearly income of board members | Company remuneration reports (annual accounts) |
| TEXP | Total yearly income minus pension | Company remuneration reports (annual accounts) |
| VARPAY | Bonus payments plus discounted long-term incentive payments earned in respective year | Company remuneration reports (annual accounts) |
| PENSION | Net present value of additional pension income earned in respective year | Company remuneration reports (annual accounts) |
| TA | Total assets / Total balance sheet size | Datastream |
| OWC | Ownership concentration: voting block of more than 25% of all outstanding shares | Commerzbank (2010): Wer gehört zu wem; corporate register |
| EBIT | Earnings-before-interest-and-taxes | Datastream |
| ROA | Return on assets=EBIT/TA | Datastream |

| | | |
|-----|--|---|
| TSR | Total shareholder return=Share price growth + annual dividends | Datastream |
| SOP | Acceptance rate in say-on-pay votes | Company accounts and corporate register |

Table 2: Overview on remuneration of DAX30 management board members (in TEUR)

a) Remuneration of non-CEOs

| | Mean | Median | Min | Max | No. of observ |
|---------|------|--------|-----|------|---------------|
| FIX | 827 | 767 | 0 | 1280 | 1403 |
| TEXP | 2591 | 2476 | 590 | 8435 | 1403 |
| VARPAY | 1764 | 1660 | 590 | 7141 | 1403 |
| PENSION | 336 | 280.0 | 0 | 3695 | 831 |

b) Remuneration of non-CEOs

| | Mean | Median | Min | Max | No. of observ |
|--------|------|--------|-----|-------|---------------|
| FIX | 1357 | 1285 | 150 | 4519 | 279 |
| TEXP | 4509 | 4369 | 225 | 17500 | 279 |
| VARPAY | 3152 | 2984 | 0 | 15600 | 279 |

| | | | | | |
|---------|-----|-----|---|------|-----|
| PENSION | 519 | 500 | 0 | 2046 | 167 |
|---------|-----|-----|---|------|-----|

Table 3a: Summary statistics of firm characteristics and SOP votes

| | Mean | Median | Min | Max | No. of observ. |
|---------------------|-------|--------|-------|--------|----------------|
| TA (in bill. EUR) | 216 | 78.3 | 23.2 | 2190 | 1626 |
| OWC | 11.4 | 0 | 0 | 46 | 1235 |
| EBIT (in bill. EUR) | 4.649 | 3.402 | -3.89 | 26.9 | 1626 |
| ROA | 0.795 | .058 | -.047 | 0.4124 | 1626 |
| SOP (if vote) | 91.4 | 95.36 | 34.3 | 99.7 | 355 |

Table 3b: SOP votes over time

| Year | Mean | Min | Max | Standard dev. | #of director observations (if vote) |
|------|------|------|------|---------------|-------------------------------------|
| 2010 | 90.0 | 45.8 | 99.5 | 14.0 | 179 |
| 2011 | 95.7 | 89.8 | 99.7 | 2.9 | 64 |
| 2012 | 89.9 | 65.8 | 97 | 10.2 | 50 |

| | | | | | |
|------|------|------|------|------|----|
| 2013 | 88.0 | 74.0 | 96.4 | 7.8 | 29 |
| 2014 | 96.1 | 93.9 | 97.6 | 1.3 | 31 |
| 2015 | 92.1 | 77.5 | 99.5 | 6.6 | 47 |
| 2016 | 76.8 | 48.1 | 96.5 | 16.8 | 71 |
| 2017 | 72.9 | 34.3 | 96.8 | 22. | 63 |

Table 3c: Evolution of Financial Performance and Compensation

We show in this table the evolution of the mean of our key performance measure (return-on-assets (ROA)=EBIT/TA) as well as the evolution of the mean of the main pay variable (fixed pay (FIX), variable pay (VAR) as well as total pay ex pensions (TEXP)

| Year | Tfix | TEXP | Varpay | ROA | obs |
|------|-------|------|--------|--------|-----|
| 2009 | 725,1 | 2291 | 1565,9 | 0,0398 | 173 |
| 2010 | 780,7 | 2664 | 1883,3 | 0,0641 | 179 |
| 2011 | 822,5 | 2950 | 2127,4 | 0,065 | 181 |
| 2012 | 853,7 | 2943 | 2089,2 | 0,059 | 183 |
| 2013 | 919,3 | 3050 | 2130,7 | 0,094 | 175 |

| | | | | | |
|------|--------|--------|--------|--------|-----|
| 2014 | 1008 | 3103 | 2095 | 0,097 | 189 |
| 2015 | 1046,5 | 3027 | 1980,5 | 0,058 | 196 |
| 2016 | 1013,5 | 3026,5 | 2013 | 0,0624 | 208 |
| 2017 | 1013,2 | 3143,6 | 2130,4 | 0,07 | 207 |

Table 4: The impact of say on pay on total compensation of management board members

We estimate linear regressions on our panel data set with the natural logarithm of total compensation ex pension (TEXP) as left hand side variable. The table shows the estimated effects of the regressions with the standard errors clustered at the level of the management board members. We report standard errors in parentheses. Models (1)-(5) cover all management board members. In model (6) we exclude those board members who have just entered the board in the respective year.

Significance levels are: * p<0.10, ** p<0.05, *** p<0.01.

| | lnTEXP(1) | lnTEXP(2) | lnTEXP(3) | lnTEXP(4) | lnTEXP(5) | lnTEXP(6) |
|---------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| SOP | -0.0003 (0.0003) | 0.0002 (0.0004) | 0.0003 (0.0004) | 0.0004 (0.0003) | 0.0003 (0.0004) | 0.00008 (0.0003) |
| Ln(ROA) | 0.096*** (0.019) | 0.144*** (0.092) | 0.073*** (0.019) | 0.057*** (0.017) | 0.072*** (0.032) | 0.076*** (0.019) |
| Ln(TA) | 0.025* (0.015) | 0.092*** (0.017) | 0.028 (0.015) | 0.022* (0.013) | 0.026 (0.016) | 0.024 (0.015) |

| | | | | | | |
|---------------------|-------|--------|-------|---------|-------|-------|
| Enter/Leaver | No/No | No/No | No/No | Yes/Yes | No/No | No/No |
| Industry dummies | No | No | No | No | Yes | Yes |
| Company FE | Yes | No | Yes | Yes | Yes | Yes |
| Year FE | No | Yes | Yes | Yes | Yes | Yes |
| ExLowvotecomp./Coba | No | No | No | No | Yes | No |
| # Obs | 1682 | 1682 | 1625 | 1682 | 1330 | 1487 |
| Adj. R ² | 29.6% | 12.05% | 32.6% | 44.2% | 36.4% | 36.8% |

Table 5: The impact of say on pay on total compensation of new management board members

We estimate linear regressions on our panel data set with the natural logarithm of total compensation ex pension (TEXP) as left hand side variable. The table shows the estimated effects of the regressions with the standard errors clustered at the level of the management board members. We report standard errors in parentheses. In this table we only look at newly entering board members in the year they have entered. Significance levels are: * p<0.10, ** p<0.05, *** p<0.01.

| | lnTEXP(1) | lnTEXP(2) | lnTEXP(3) | lnTEXP(4) | lnTEXP(5) |
|---------------------|---------------------|---------------------|--------------------|---------------------|---------------------|
| SOP | 0.0029* (0.0015) | 0.003** (0.0015) | 0.005** (0.002) | 0.0047** (0.002) | 0.006*** (0.002) |
| Ln(ROA) | 0.096** (0.039) | 0.053 (0.038) | 0.060 (0.061) | 0.061 (0.060) | -0.007 (0.20) |
| Ln(TA) | 0.10*** (0.044) | 0.135** (0.052) | 0.018 (0.072) | 0.019 (0.073) | 0.008 (0.08) |
| Enter/Leaver | No | No | No | Yes | No |
| Industry dummies | No | Yes | No | No | Yes |
| Company FE | No | No | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes |
| ExLowvotecomp./Coba | No | No | No | No | Yes |
| # Obs | 195 | 195 | 195 | 195 | 153 |
| Adj. R ² | 13.9% | 17.8% | 43.0% | 43.3% | 41.1% |

Table 6: The impact of say on pay on fixed compensation of management board members

We estimate linear regressions on our panel data set with the natural logarithm of fixed compensation (FIX) as left hand side variable.

The table shows the estimated effects of the regressions with the standard errors clustered at the level of the management board members. We report standard errors in parentheses.

Models (1)-(3) cover all management board members, models (4)- (6) only those who have just entered in this year

. Significance levels are: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

| | lnTfix(1) | lnTfix(2) | lnTfix(3) | lnTfix(4) | lnTfix(5) | lnTfix(6) |
|---------------------|---------------------|--------------------|--------------------|---------------------|-----------------------|---------------------|
| SOP | -0.0003 (0.0003) | 0.0001 (0.0003) | 0.0002 (0.0003) | 0.003** (0.0004) | 0.00042** (0.0019) | 0.0043** (0.002) |
| Ln(ROA) | 0.015 (0.0148) | -0.008 (0.014) | -0.022* (0.012) | -0.11*** (0.037) | -0.044 (0.045) | -0.043 (0.045) |
| Ln(TA) | 0.005 (0.017) | 0.0032 (0.018) | -0.003 (-0.016) | 0.137** (0.047) | 0.047 (0.087) | 0.045 (0.086) |
| Enter/Leaver | No/No | No/No | Yes/Yes | No/No | No/No | No/Yes |
| Industry dummies | No | No | No | Yes | No | No |
| Company FE | Yes | Yes | Yes | No | Yes | Yes |
| Year FE | No | Yes | Yes | Yes | Yes | Yes |
| # Obs | 1682 | 1682 | 1682 | 195 | 195 | 195 |
| Adj. R ² | 18.8% | 22.7% | 36.3% | 26.1% | 40.8% | 40.7% |

Table 7: The impact of say on pay on pension payment of management board members

We estimate linear regressions on our panel data set with the natural logarithm of pension contributions (PENSION) as left hand side variable.

The table shows the estimated effects of the regressions with the standard errors clustered at the level of the management board members. We report standard errors in parentheses.

Models (1)-(3) cover all management board members. In models (4) and (5) we focus only on those board members who have just entered the board in the respective year. Significance levels are: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

| | All members | | | New Entrants | |
|---------------------|---------------------|---------------------|--------------------|------------------|-------------------|
| SOP | -0.001 (0.001) | -0.0017* (0.001) | -0.0012 (0.001) | 0.005 (0.007) | 0.0060 (0.007) |
| Ln(ROA) | 0.067*** (0.018) | 0.024 (0.016) | 0.018 (0.016) | -0.014 (0.13) | -0.017 (0.13) |
| Ln(TA) | -0.049 (0.031) | -0.039 (0.042) | -0.009 (0.041) | -0.77 (0.99) | -0.88 (0.97) |
| Enter/Leaver | No/No | No/No | Yes/Yes | No/No | No/Yes |
| Industry dummies | No | No | Yes | No | No |
| Company FE | Yes | Yes | Yes | Yes | Yes |
| Year FE | No | Yes | Yes | Yes | Yes |
| # Obs | 923 | 923 | 923 | 74 | 74 |
| Adj. R ² | 42.3% | 44.4% | 46.8% | 46.8% | 47.5% |

Table 8: The impact of SOP on total compensation: separation of CEOs and non CEOs

We estimate linear regressions on our panel data set with the natural logarithm of total compensation ex pension (TEXP) as left hand side variable. The table shows the estimated effects of the regressions with the standard errors clustered at the level of the management board members. We report standard errors in parentheses. We distinguish between non-CEOs (models (1-3); model (2) only being very not newcomers; model (3) being only new entrants) and CEOs (models 4 and 5 (without new entrants)).

Significance levels are: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

| | | Non-CEO lnTEXP | | CEO lnTEXP | |
|---------------------|---------------------|----------------------|--------------------|--------------------|--------------------|
| SOP | 0.0003 (0.00037) | -0.00006 (0.0004) | 0.005** (0.002) | 0.0007 (0.0005) | 0.0005 (0.0007) |
| Ln(ROA) | 0.057** (0.018) | 0.067*** (0.021) | 0.077 (0.060) | 0.037 (0.053) | 0.103** (0.050) |
| Ln(TA) | 0.016* (0.012) | 0.016*** (0.014) | 0.034 (0.070) | 0.076* (0.045) | 0.092* (0.051) |
| Enter/Leaver | Yes/Yes | No/No | No/No | Yes/Yes | No/No |
| Industry dummies | Yes | Yes | Yes | No | Yes |
| Company FE | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes |
| # Obs | 1400 | 1216 | 184 | 279 | 268 |
| Adj. R ² | 47.6% | 41.5% | 49.1% | 61.5% | 54.9% |

Table 9: The impact of SOP on total compensation: the effect of ownership

We estimate linear regressions on our panel data set with the natural logarithm of total compensation ex pension (TEXP) as left hand side variable. The table shows the estimated effects of the regressions with the standard errors clustered at the level of the management board members. We report standard errors in parentheses. By adding our ownership variable we investigate the impact of ownership concentration on the link between SOP and compensation. Models (1) and (2) use the entire sample, models (3) and (4) only the newly entering members of the management boards.

Significance levels are: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

| | All members: lnTEXP | | New Entrants: ln TEXP | |
|---------------------|------------------------|---------------------|--------------------------|----------------------|
| SOP | 0.0001 (0.0003) | 0.0002 (0.00034) | 0.0035** (0.0014) | 0.0047** (0.0021) |
| Ln(ROA) | 0.78*** (0.018) | 0.063*** (0.017) | --- | 0.057 (0.062) |
| Ln(TA) | 0.036** (0.015) | 0.03** (0.014) | --- | 0.035* (0.075) |
| OWC | 1.32*** (0.265) | 1.34*** (0.241) | -0.534 (0.550) | 1.160 -1.198 |
| Enter/Leaver | No/No | Yes/Yes | No/No | No/No |
| Industry dummies | No | Yes | No | Yes |
| Company FE | Yes | Yes | No | Yes |
| Year FE | No | Yes | No | Yes |
| # Obs | 1674 | 1674 | 195 | 195 |
| Adj. R ² | 33.7% | 45.4% | 15.2% | 43.6% |

Recent Issues

| | | |
|---------|---|--|
| No. 124 | Adrian Buss, Bernard Dumas, Raman Uppal, Grigory Vilkov | The Intended and Unintended Consequences of Financial-Market Regulations: A General Equilibrium Analysis |
| No. 123 | Marie Lalanne, Paul Seabright | The Old Boy Network: The Impact of Professional Networks on Remuneration in Top Executive Jobs |
| No. 122 | Douglas Cumming, Uwe Walz, Jochen Werth | The Dynamics of Entrepreneurial Careers in High-Tech Ventures: Experience, Education, and Exit |
| No. 121 | Elia Berdin, Matteo Sottocornola | Insurance Activities and Systemic Risk |
| No. 120 | Matthias Heinz, Heiner Schumacher | Signaling Cooperation |
| No. 119 | Michael Brennan, Holger Kraft | Leaning Against the Wind: Debt Financing in the Face of Adversity |
| No. 118 | Michael Donadelli, Antonio Paradiso, Max Riedel | A Quasi Real-Time Leading Indicator for the EU Industrial Production |
| No. 117 | Marcel Bluhm | Interbank Funding as Insurance Mechanism for (Persistent) Liquidity Shocks |
| No. 116 | Charles Gottlieb | On the Distributive Effects of Inflation |
| No. 115 | Andreas Fagereng, Charles Gottlieb, Luigi Guiso | Asset Market Participation and Portfolio Choice over the Life-Cycle |
| No. 114 | Nicole Branger, Christian Schlag, Lue Wu | 'Nobody is Perfect': Asset Pricing and Long-Run Survival When Heterogeneous Investors Exhibit Different Kinds of Filtering Errors |
| No. 113 | Bettina Brüggemann, Jinhyuk Yoo | Aggregate and Distributional Effects of Increasing Taxes on Top Income Earners |
| No. 112 | Shafik Hebous, Alfons J. Weichenrieder | On Deficits and Symmetries in a Fiscal Capacity |
| No. 111 | Alfons J. Weichenrieder, Fangying Xu | Are Tax Havens Good? Implications of the Crackdown on Secrecy |
| No. 110 | Dirk Krueger, Alexander Ludwig | On the Optimal Provision of Social Insurance |