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Agency versus Hold-up: Benefits and Costs of Shareholder Rights

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May 2019

Alexander F. Wagner
University of Zurich, Swiss Finance Institute, CEPR and ECGI

Christoph Wenk
University of Zurich

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Abstract

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Keywords: Say-on-pay, event study, corporate governance, executive compensation

JEL Classifications: G38, G34

Alexander F. Wagner*
Associate Professor of Finance
University of Zurich, Department of Banking and Finance
Plattenstr. 14
8032 Zürich, Switzerland
phone: +41 446 343 963
e-mail: alexander.wagner@bf.uzh.ch

Christoph Wenk
Research Associate
University of Zurich, Department of Banking and Finance
Plattenstrasse 14
8032 Zürich, Switzerland
e-mail: christoph.wenk@bf.uzh.ch

*Corresponding Author

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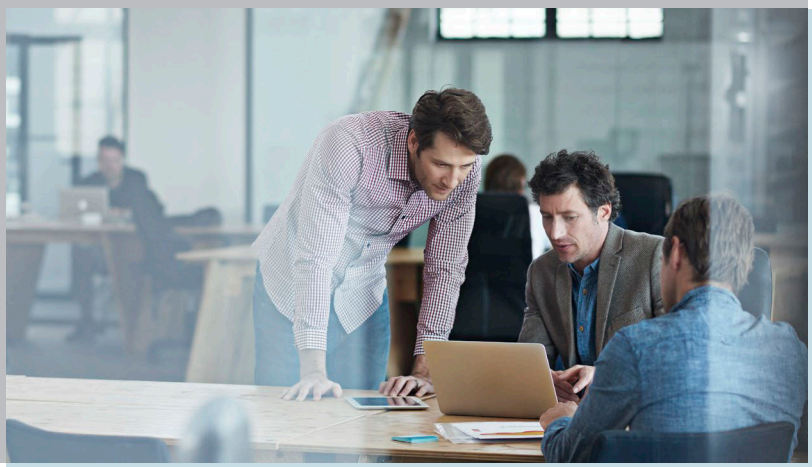

Alexander F. WAGNER
University of Zurich, Swiss Finance Institute, CEPR, and ECGI

Christoph WENK
University of Zurich

Agency versus Hold-up:
Benefits and Costs of Shareholder Rights*

Alexander F. Wagner† Christoph Wenk‡

April 12, 2019

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†University of Zurich, CEPR, ECGI, and Swiss Finance Institute. Mailing address: Department of Banking and Finance, University of Zurich, Plattenstrasse 14, CH-8032 Zurich, Switzerland, Phone: +41-44-634-3963, Email: alexander.wagner@bf.uzh.ch.

‡Department of Banking and Finance, University of Zurich, Email: christoph.wenk@bf.uzh.ch.

1. Introduction

In March 2013, 68% of Swiss voters approved, in a referendum, a constitutional amendment that requires *binding annual* shareholder votes on compensation *amounts* for the executive committee and the board of directors. Strikingly, around 70% of Swiss public corporations responded with negative abnormal stock returns when it became known that the referendum would be held. This result indicates two things. Firstly, there is a tension between society and shareholders in the perception of the necessity and impact of additional shareholder rights. Secondly, and counter-intuitively at first, more shareholder power appears to be eyed critically by shareholders on average.

Motivated by these observations, this study aims to shed light on the value implications of changes in shareholder rights by dissecting the reaction of shareholders and companies to events related to the referendum. We find that alignment benefits of enhanced shareholder rights can explain part of the stock price reactions, but we provide novel evidence that shareholders also worry significantly about the distortion of executives' extra-contractual incentives due to anticipated hold-up when shareholders obtain particularly large power by being able to vote retrospectively on compensation for the elapsed year. We also find corresponding real effects in terms of CEO turnover, compensation structure, and pay levels, indicating the impact such regulation can have on the economy. Overall, our results imply that there is a trade-off between agency and hold-up when it comes to the role of shareholder power in shareholder value creation.

Understanding the advantages and disadvantages of shareholder power and say-on-pay is of significant policy relevance. In particular, as pointed out by Ferri and Göx (2018), the possibilities to structure shareholder votes on compensation are manifold, but our knowledge of the impact of the different schemes is only very limited so far.

For example, the UK began mandating non-binding shareholder votes on executive pay already

in 2002 and revised these rules in 2013 to provide shareholders with a *binding* vote on the companies' pay policies at least every three years. The revised European Union Shareholder Rights Directive, to be implemented in 2019, introduces a mandatory advisory vote on the compensation report throughout the EU. Moreover, shareholders will vote on the remuneration policy for the board of directors and the executive management. Each member country has to decide whether this vote will be binding or advisory. Several countries are considering or have already implemented a (partially) binding shareholder vote on compensation.[1] In the U.S., advisory shareholder votes on executive compensation at least once every three years are mandatory since 2011.

In short, regulators worldwide continue to implement and reconsider their say-on-pay regimes, which come in many different forms. Existing studies (reviewed below) concern predominantly *advisory* compensation votes. By contrast, relatively little is known on the effects of *binding* votes on compensation. It is this gap that the present paper seeks to address, employing a recent natural experiment in Switzerland. The Swiss case is of broad interest, because (i) the capital market is large, (ii) international investors are important, (iii) compensation levels and structure are similar as, for example, in the UK, and (iv) it provides the unique opportunity to compare the effect of different compensation voting regimes within the same legal environment.[2]

We exploit four relevant regulatory events. Specifically, on February 26, 2008 (*event 1*), it became public that enough Swiss voters had signed the "Anti-Rip-Off-Initiative" ("Fat-Cat-Initiative," *"Initiative gegen die Abzockerei"*) to force a constitutional referendum. The initiative's central element was the introduction of binding votes on compensation for shareholders of all publicly traded firms in Switzerland. On March 3, 2013, almost 70% of Swiss voters accepted this constitutional

[1]For example, Belgium, Czechia, Denmark, Finland, France, Hungary, Latvia, the Netherlands, Portugal, and Sweden have previously introduced laws on say-on-pay with partially binding elements.

[2]As for (i), according to the World Federation of Exchanges (2018), Switzerland's stock market ranks 13th worldwide in terms of market capitalization. As for (ii), according to data on investor shareholdings from Orbis, non-Swiss investors hold more than 50% of the disclosed shareholdings in three out of five of the largest 100 Swiss-listed companies. On average, non-Swiss investors hold 55.1% (62.86% median) of the disclosed shareholdings of the largest 100 Swiss companies as of December 2016. As for (iii), see, for example, Table 5 of Edmans, Gabaix, and Jenter (2007).

amendment (*event 2*). In June 2013, a draft ordinance for the actual implementation of the law was released (*event 3*). Since November 20, 2013, the final Ordinance against Excessive Compensation (OaEC) is in place, retaining the basic features of the earlier draft ordinance (*event 4*). The nature of these events was largely unexpected in terms of content and timing, offering an opportunity for studying causal effects of the regulation (c.f. Gow, Larcker, and Reiss (2016)).

The new law provides for annual, binding votes on actual *amounts* of compensation (not merely the compensation system). However, over time, two quite different implementation proposals were made: Under the original initiative (events 1 and 2), only "retrospective" ("ex-post") binding votes on compensation were envisioned: Shareholders would vote, in a binding manner, on compensation amounts for the past year.[3] By contrast, under the OaEC regime (events 3 and 4), a "prospective" ("ex-ante") approach also became possible. Thus, shareholders would vote on a "bonus budget" for the upcoming year.

In this quasi-experimental setting, we test the prediction that enhancing shareholder power may lead to hold-up problems and distort firm-specific investment incentives of CEOs, impacting firm value negatively (*Hypothesis 1*). Burkart, Gromb, and Panunzi (1997) study optimal shareholder ownership dispersion, and Blair and Stout (1999) and Stout (2003) deal with the relationship between the board and shareholders. The common idea of these studies is that when one stakeholder has more power, other stakeholders who make specific investments in the firm are more likely to fear that the more powerful stakeholder "holds them up" (Grossman and Hart, 1986; Hart and Moore, 1990). Applied to the present setting the hypothesis implies that, as shareholders obtain the power to set pay ex post, CEOs expect that they will not receive the full returns on their firm-specific investments, and their ex-ante incentives to engage in such efforts are diminished, leading

[3] An ex-post binding vote on compensation resembles to some extent a clawback option for shareholders. While clawbacks are generally triggered by criminal charges or intentional wrong-doing with negative impact on the company, the ex-post binding votes are only driven by the perception of shareholders about whether an executive deserves a particular compensation amount for the year the vote refers to.

to lower firm value. Gök, Imhof, and Kunz (2014) develop this idea theoretically and find support for this idea in a laboratory experiment, but no empirical field evidence exists so far regarding this prediction. We also consider a competing conjecture based on manager selection, which yields some overlapping, but also some distinct empirical predictions. Additionally, we explore to what extent a binding vote on compensation may align shareholder and manager interests and improve shareholder value (*Hypothesis 2*).

We test these two hypotheses from two viewpoints. First, we consider the cross-sectional variation in stock price reactions of Swiss corporations to the four events. The advantage of considering asset price changes is that they capture current expectations; the researcher does not need to trace all the future changes to cash flows and discount rates separately (Schwert, 1981). Second, we evaluate whether there were real adjustments in companies' management and policies that were in line with the observed market reactions.

Absent direct observable measures for hold-up, we use four largely uncorrelated hold-up proxies, discussed in Section 4.1, to test *Hypothesis 1*. For example, according to the original initiative, *binding ex-post votes* are only mandatory for cash-based bonus elements, but not equity-based pay. The market may, therefore, especially worry about a distortion of the ex ante incentives for executives in cash-only bonus companies. In line with *Hypothesis 1*, these firms reacted more negatively to the initiative than did firms which use equity-based pay. For all hold-up proxies, we find that abnormal stock price declines in events 1 and 2 were more pronounced in the group of firms where hold-up issues were arguably the largest. Moreover, in line with the hypothesis, we find that these firms' stock prices reacted more positively to events 3 and 4, which resolved, or at least significantly ameliorated, the hold-up concern by giving shareholders the opportunity to choose a prospective, budget-based vote on compensation amounts.

Our results further show that larger firms reacted, on average, more positively to the first two

events and that companies with an international CEO did not react differently than companies with a Swiss CEO. These findings are at odds with a story that tries to explain the stock price reaction based on managerial selection. In particular, posit that the most capable managers, who also have the broadest set of outside opportunities, select into the largest companies. If a law requiring a (binding) shareholder vote on compensation amounts makes it relatively less attractive to be employed at a Swiss company (negatively impacting a manager's participation constraint), the selection story would predict, counterfactually, more negative reactions for larger firms (and for non-Swiss CEOs) as these managers are now more likely to leave.

Hypothesis 2, regarding the alignment benefits of binding shareholder votes on compensation, also receives support. Firms with strong past performance experienced particularly substantial abnormal stock price drops, whereas poor performers reacted relatively more positively. Also, the stock prices of firms with high levels of abnormal executive pay (positive or negative) reacted positively to the increased alignment. Again, these effects are stronger for the stricter (events 1 and 2) than for the more flexible compensation voting system (events 3 and 4).

Companies with a large blockholder tended to react more negatively to the initiative. For such companies, benefits from the initiative in terms of better alignment are arguably small, while direct costs from the implementation and, to a lesser extent, from hold-up remain.

Besides the fact that most companies chose the prospective voting system to approve maximum compensation amounts, the changes in CEO turnover behavior and compensation policies following the events also vindicate the stock price reactions: CEO turnover rose markedly in those firms that reacted most negatively to event 1, that is, in companies whose shareholders perceived high hold-up costs and limited alignment benefits. Companies that awarded cash-only bonuses prior to the initiative adjusted their variable compensation structure by reducing the cash-share of CEO pay, thus ameliorating the hold-up problem. Conversely, to improve alignment, companies that

had paid their CEOs abnormally high variable compensation prior to the regulation reduced it in economically and statistically significant ways.

In sum, we obtain considerable evidence that, while the idea of shareholder power may appeal to the public as a control mechanism, shareholders themselves may feel that less can be more when it comes to shareholder rights. Shareholder power reduces agency costs, but accentuates hold-up problems. This trade-off should be recognized and reflected in policy design.

2. Contribution to the literature

By studying a combination of several crucial features in the structuring of a say-on-pay legislation (Ferri and Göx, 2018), our analysis adds to the existing work by extending our understanding of the impact of so far unexplored specifications of shareholder compensation voting regimes in a within-country set-up.

First, we document that shareholders appear to consider a trade-off: They welcome binding votes on compensation amounts because it helps them reign in agency costs, but they also anticipate hold-up problems when they have too much power. This confirms a long-standing theoretical prediction regarding the benefits of limits on shareholder power that so far has not been tested empirically.[4] The only study we know of that addresses potential hold-up effects of binding say-on-pay is Göx, Imhof, and Kunz (2014). Consistent with our empirical evidence from stock price reactions, they show in a laboratory experiment that, while advisory say-on-pay votes do not distort investment decisions, binding votes do so and may thus impair shareholder value.

Second, we contribute to the literature on how shareholders perceive alignment benefits of say-on-pay regulation. Overall, the existing literature draws a fairly positive conclusion on shareholder

[4]See Burkart, Gromb, and Panunzi (1997), Blair and Stout (1999), and Stout (2003).

rights and alignment benefits:[5] For the US, Cai and Walkling (2011) find neutral to slightly positive stock market effects to the 2011 introduction of advisory say-on-pay, with positive outcomes in firms that paid their CEOs large excess compensation. By comparing stock price reactions of firms around a minimum threshold below which say-on-pay votes are not mandatory, Iliev and Vitanova (2019) find a negative reaction for firms below the threshold, thus with no obligation for say-on-pay votes. For the UK, Ferri and Maber (2013) find that the advisory say-on-pay law led to a positive stock price reaction in firms with weak penalties for poor performance. Our findings are consistent with this literature, but extend it by providing unique within-country evidence of how alignment benefits vary with different levels of shareholder say-on-pay, and by suggesting that there is also a downside from strengthening alignment as managers may, depending on the say-on-pay structure, be exposed to hold-up.

Third, we consider the real effects of say-on-pay policies on companies. Several papers consider a single regulation in a specific country. The results have been ambiguous. While Armstrong, Gow, and Larcker (2013) and Conyon and Sadler (2010) find that shareholder votes on equity pay plans or compensation reports, respectively, have little impact on future compensation policies, Alissa (2015) and Thomas, Palmiter, and Cotter (2012) find that firms reduced compensation amounts for their executives and increased the pay-for-performance sensitivity after negative voting outcomes. Balsam, Boone, Liu, and Yin (2016) and Iliev and Vitanova (2019) find a positive correlation between the introduction of advisory say-on-pay and the overall level of CEO pay as well as the fraction of performance-linked pay. In a cross-country study, Correa and Lel (2016) document that

[5] See Ferri and Göx (2018) and Obermann and Velta (2018) for surveys on the current literature and a discussion on still open questions.

say-on-pay laws reduce the upward trend in CEO pay.[6] We extend this literature by exploiting different specifications of binding say-on-pay regimes within one country, Switzerland. This allows us to more cleanly analyze the real effects of different designs.

Fourth, the direct-democratic process by which shareholder votes on compensation was introduced in Switzerland allows us to highlight the basic tension between voter preferences and shareholder reactions, contributing to the political economy of corporate governance (see Pagano and Volpin (2001), Perotti (2014), and Roe and Vatiero (2018) for reviews). Pagano and Volpin (2005) show how the electoral system can shape political preferences and government decisions on investor rights. Tensions between the political majority and shareholders can arise, for example, in Perotti and von Thadden (2006), who show that individuals with lower financial wealth prefer high labor rents to higher financial returns. While elections provide some insight into society's views on corporate governance, a direct-democratic referendum allows us to match a concrete policy chosen by the people (not by a regulator) to stock price reactions in a fairly clean way.[7]

3. Legislative setting and the initiative on binding compensation votes

To provide a better understanding of the setting in which our study is conducted, we first describe the political environment that surrounds it and then describe the main proposals of the binding compensation votes initiative as well as the implementation in actual Swiss law.

[6]They also present additional evidence suggesting that say-on-pay with a binding component, which they define mostly based on "whether or not the board of directors must address shareholder disapproval of executive pay" (p. 517) is less effective than purely advisory say-on-pay in aligning pay and performance. They are careful to note that say-on-pay laws come in many forms. Indeed, each country in their sample implemented the binding element differently. For example, Denmark has votes on forward-looking remuneration policy, Norway requires an advisory vote on the compensation structure of senior management and a binding vote on share-based payments to the board of directors, and South Africa provides only for votes on non-executive director compensation. Switzerland, which requires votes on compensation amounts of both executive management and the board of directors, is not included as a country with legally mandated say-on-pay because their sample period ends in 2012.

[7]Switzerland has a lively tradition of direct democracy (see, for example, Frey (1994)). It is conceivable (but not the subject of our paper) that society's strong support for comprehensive votes on compensation in Switzerland partially occurred because the idea of a shareholder democracy appealed to Swiss voters.

3.1. The Swiss legislation process

The Swiss political system knows two common ways of enacting new laws (see Kloeti, Knoepfel, Kriesi, Linder, Papadopoulos and Sciarini (2007) for a more detailed summary of the Swiss system). One way is through a consensus decision between parliament and senate. The second way is through the public itself, by means of an initiative which can be started by every Swiss citizen. If an initiative receives the backing of at least 100'000 Swiss citizens (about 2% of the electorate of around 5'000'000) within 18 months, it must be put on the agenda for a national vote. In case the public vote supports the initiative, it will turn into an amendment to the Swiss constitution. The fraction of public initiatives that eventually pass the popular vote has been increasing in recent years.

3.2. Content of the initiative and its implementation in law

We consider the so-called "*Initiative gegen die Abzockerei*" ("Anti-Rip-Off-Initiative," "Fat-Cat-Initiative"). This initiative was launched by entrepreneur Mr. Thomas Minder. According to the initiative's text, it was proposed "to protect the economy, private property and the shareholders," making the initiative and the following regulatory events reasonably well suited to study shareholder reactions.

We exploit various steps in the implementation of the initiative from 2008 to 2013. On February 26, 2008, the announcement was made that the above-mentioned threshold of signatures in favor of the initiative had been collected.[8] The initiative affects all publicly listed Swiss limited liability companies. It requires a *binding* annual vote on total compensation amounts (the sum of all pay components, such as fixed and variable pay) for each of the three groups: the board of directors

[8]Unlike many initiatives that are a general call for legal action to parliament and senate rather than original proposals to turn into law, the present initiative had a clear program that it aimed at turning into legislation.

(BOD), the executive board (EB) as well as the advisory council. On March 3, 2013, almost 70% of Swiss voters accepted this constitutional amendment.[9]

The constitutional amendment required an ordinance by the Swiss Federal Government to become actionable law. In June 2013, such a draft ordinance for the actual implementation of the law was released by the Federal Council. Since November 20, 2013, the final Ordinance against Excessive Compensation (OaEC) is in place. It turned out that the Federal Government retained the basic features of the earlier draft ordinance.[10]

Interestingly, the way these binding votes on compensation would be implemented was understood more narrowly when the original initiative was passed (that is, up to March 3, 2013) than what the Federal Government's OaEC now allows for companies.

The main differences concern variable compensation.[11] The original initiative (events 1 and 2) envisioned a distinction for the two typical parts of variable compensation, equity plans and cash bonuses. Equity plans would be enshrined in the company's articles of association. For example, shareholders would once (or every few years, when changes would be necessary) approve, by an amendment of the articles of association, that a certain percentage of base salary would be provided in the form of shares. Shareholders could also approve other types of equity plans, for example, performance share units, that is, equity grants that are subject to performance (and service) vesting conditions. As long as this plan remains the same, no extra vote would be necessary in the following year's annual shareholder meeting; the value of managerial equity granted may simply go up or down. By contrast, cash bonus amounts, which would be handed out depending on company-wide

[9] On February 26, 2008, the probability of the initiative passing into law quickly was seen as substantial and serious enough to catch the attention of the stock market participants. That subsequent political discussions delayed a vote on the initiative is similar to the case that occurred in the US, where it took more than three years for the 2007 U.S. House Say-on-Pay Bill to find its way into law in the form of the Dodd-Frank Act in 2010).

[10] The full text of the initiative can be found in Supplementary Appendix B. An (unofficial) translation of the OaEC is available here: http://bit.ly/OaEC-E.

[11] The original initiative and the OaEC do not differ much with respect to fixed pay (salary). As this does not typically vary much from year-to-year, even under the original initiative there was little question that this amount would be annually approved in advance of the upcoming year.

or individual performance in the prior year, and which could not be specified in suitable detail in the articles, would need to be voted on ex post at the annual general meeting following the performance year. In today's terminology, this corresponds to a *retrospective* vote-on-compensation regime for all firms. The fraction of variable compensation that is conveyed in cash is an indication of the part of compensation that is subject to a retrospective vote. Importantly, the immediate consequences of a turned down retrospective shareholder vote are strict as no compensation can be paid (or has to be reclaimed if already paid out). A survey of international and local institutional investors (SWIPRA, 2016) shows that 38.3% of the respondents would be willing to reject a proposed compensation amount if it is deemed excessive.[12]

The draft and final versions of the OaEC (events 3 and 4), instead, allow shareholders to set the voting mechanism in the articles of association. In particular, they can elect to vote on *all* variable compensation for the executive committee *prospectively*. Thus, shareholders approve, at the annual general meeting in year t (for example, in April 2015) a budget for variable compensation to be available for all members of the executive committee for fiscal year t+1 (2016 in the example). The board of directors is then free to allocate from this budget within t+1 and to hand out bonuses after the end of t+1. In practice, the vast majority of the companies of the Swiss Performance Index, an index covering the majority of all listed companies in Switzerland, have adopted this system for their executive management.[13]

[12]Since the Ordinance against Excessive Compensation was implemented, compensation packages were voted down three times. In 2015, the majority shareholder of Sika, who felt that the board of directors had not acted in her best interest, voted against the compensation of the board (prospective vote). Because the compensation was turned down a second time in 2016, this time in a retrospective vote, the members of the board did not receive any compensation for the financial year 2015. Additionally, in 2017, shareholders voted down prospectively the amount for the executive compensation at GAM. Also in 2017, the executive management of Credit Suisse announced, after the official invitation of the AGM was published, that it will waive 40% of its bonus compensation. This announcement came only shortly after opposition from the largest proxy advisors and some investors' announcements that they would vote against compensation proposals at the AGM.

[13]Over 98% of the companies opted for a partially or fully prospective voting system: about 25% vote prospectively for base and long-term compensation and ex-post for the short-term incentive, while 75% of companies vote on all compensation elements in a prospective manner (sometimes combined with an advisory vote on the compensation report in the following year).

Another difference is that under the original initiative, contracts with new management would be conditional on their pay packages being approved at the next general assembly, with high uncertainty for management and the board. The OaEC also addressed this issue, at least to some extent. In the case of prospective voting, companies can determine in their articles of association a certain amount or percentage of total compensation that is automatically available for additional management appointments if the amount approved by the shareholders is not sufficient. This again provides additional flexibility, especially for firms in an uncertain environment.

Overall, the legal importance and the uncertainty surrounding the chosen events render them attractive from a methodological point of view for studying stock price reactions as well as changes in corporate policies.

While the public discussion and media coverage of the initiative and the OaEC mostly concerned its content related to compensation votes (see Section C in the Appendix for an overview of the media coverage), we note that the initiative also contains some other provisions. Our setting provides an opportunity to test whether the market reacted to these provisions. Specifically, the initiative also prohibits any kind of termination pay or advance payments to the board of directors or the executive management. Other compensation benefits (loans, pension benefits, etc.) need to be set in the firm's articles of association. Further requirements pertain to the election modes of the board of directors and the compensation committee. As we document in Section 6.2 below, the cross-sectional variation in market reactions is not explained by these additional elements.

4. Hypotheses development and data

Sections 4.1 and 4.2 motivate our hypotheses and outline the subsequent empirical predictions. We describe the data used in the empirical analysis in Section 4.3.

4.1. Hypothesis 1: Hold-up

Our primary focus is on a channel that has, for lack of appropriate data and settings, received little empirical attention so far, but that has long been proposed in the theoretical literature on optimal shareholder rights and managerial discretion (see in particular Burkart, Gromb, and Panunzi (1997); Blair and Stout (1999), and Stout (2003)): When shareholders have more power, other stakeholders who make specific investments in the firm are more likely to fear that shareholders "hold them up." Shareholders recognize that ultimately their own "piece of the pie" will be smaller when such specific investments are not made.

Under the plan of the original initiative (events 1 and 2), shareholders vote ex-post on cash bonuses for management effort and performance in the elapsed year ("retrospective vote"). If CEOs expect that they will not receive the full returns on their firm-specific investments, their ex-ante incentives to engage in such efforts are diminished, with negative consequences for firm value.[14]

Hypothesis 1, therefore, states: The value impact of retrospective binding shareholder votes on compensation is more negative in firms where specific investments by CEOs are more difficult or more important to secure.

We first test this hypothesis by considering the cross-section of stock price responses following the events. While there is no obvious direct measure of the intensity of the hold-up problem, we propose four (largely uncorrelated) groups of proxies: *First*, shareholders of firms that use only cash bonuses – which would be subject to an ex-post shareholder vote under the terms of the original initiative, – may especially worry about a distortion of the ex ante incentives for executives. *Second*, shareholders of firms with CEOs that were only recently appointed will find it more difficult to secure firm-specific investments by CEOs as these CEOs likely worry whether their efforts will

[14]This is true even if ex-post renegotiation is costless and efficient; see Grossman and Hart (1986) and Hart and Moore (1990) for seminal work on the hold-up problem. If renegotiation leads to disappointment and psychological costs ex post, this has additional distortional implications (Hart and Moore, 2008).

ultimately be rewarded. *Third*, shareholders of firms with younger CEOs are likely to worry more that their CEOs will have diminished incentives to make firm-specific investments; these CEOs would be more inclined to improve or exercise their outside options. *Fourth*, shareholders of firms with higher uncertainty concerning their annual sales or costs will find it more difficult to contract with management efficiently as more contingencies would have to be planned for.

Moreover, we test whether we find real effects in line with *Hypothesis 1*. In particular, companies most negatively affected by hold-up issues should see an increase in CEO turnover and should shift the compensation structure away from cash bonuses.

We expect *Hypothesis 1* to hold strongly for events 1 and 2. Binding votes on compensation can, however, also come in the form of allowing shareholders to vote *prospectively*, that is, to approve a maximum budget (bonus pool) for the upcoming year. This system is possible under the OaEC, which allows shareholders to choose between retrospective and prospective voting systems. Thus, we expect the hold-up problem to be less value-relevant or indeed avoided under the regime in place after events 3 and 4.

4.2. Hypothesis 2: Agency

Allowing shareholders to votes on compensation may better align shareholder and manager interests and improve governance and firm performance, ultimately resulting in higher firm value (Cai and Walkling, 2011). In the case of binding ex-post votes, this effect is particularly pronounced because management knows they have to convince shareholders of their performance in order to get paid. In this case, good relations with the board of directors, or even a captured board of directors, do not help management in obtaining higher compensation. Only when management's actions are strongly aligned with shareholder interests can they expect, with high probability, to receive approval of their pay.

Hypothesis 2, therefore, states: The value impact of binding shareholder votes on compensation is more positive in firms where alignment is currently poor.

This channel partially features in existing work on advisory say-on-pay; we extend the existing literature by analyzing implications of *binding* votes on compensation amounts. In addition, our setting provides a unique opportunity to test within the same country whether the alignment effect indeed works more strongly under the stricter regime (events 1 and 2) than under the somewhat more flexible regime (events 3 and 4).

As for real effects, this hypothesis implies that the increase in alignment as a result of the initiative as well as the OaEC should lead companies to reduce abnormal compensation levels of their executives.

4.3. Data

The event study requires that we focus on sufficiently liquid stocks, which arguably allow for a fast processing of new information into stock prices. As information is more quickly reflected in stock prices for large firms (Hong, Lim, and Stein, 2000; Hou and Moskowitz, 2005; Peng, 2005), we restrict the sample to those firms classified as large and medium by SIX Swiss Exchange. This corresponds to 100 firms for each year. This classification reflects not only market capitalization, but also stock liquidity and free float, amongst other factors. Of the 100 firms, three have a dual-class share structure with both instruments listed. In our analysis, we only focus on the publicly held, more liquid share-class. Our sample covers 97.9% of the SPI market capitalization in 2007 and 98.6% in 2014. Most of the remaining roughly 100 firms are extremely small and thinly traded.

To calculate firm-level stock returns, we use daily closing prices of the SPI constituent companies from the Thomson Reuters Datastream database. We screen the data following the recommendations of Ince and Porter (2006).

The free-float adjusted market value (*Market Capitalization* in what follows)[15], the value of total assets, other price data for the Swiss Performance Index (which we used to calculate the market return), trading volume, sales volume, the SPI size-segment indices (each SPI stock is assigned to either the small-size, medium-size, or large-size stock index), and the long-term Swiss government bond rate (a proxy for the risk-free interest rate) are also collected from Thomson Reuters Datastream. *Sales Volatility* measures the standard deviation of a firm's sales during a five year window and scales it by the average annual sales of the company during the same period. Return data for the SPI size-segment subindices are used to obtain each stock's size-index adjusted one-year performance (*Relative Performance*).

CEO Age is obtained from Bloomberg and, where necessary, extended by hand-collection from the companies' annual reports.

Compensation, *CEO tenure*, *CEO turnover* and CEO nationality (*CEO Swiss*) data are hand-collected from firms' annual reports. When the CEO is not the highest-paid individual, his compensation does not need to be disclosed, resulting in missing data. This was the case for eight companies in 2008 and two companies in 2013.[16] *CEO Cash Incentives* is the portion of variable compensation conveyed in cash (and not in equity). In the spirit of Bebchuk, Cremers, and Peyer (2011), we calculate abnormal compensation as the difference between total compensation paid and remuneration granted by the average comparable firm (*Abnormal CEO Compensation*). The prediction of the normal CEO compensation is based on the log of market capitalization, *Ln(Market Capitalization)*, and on the one-year, size-index adjusted firm performance, with a further control for executive turnover, *Months*, the number of months an executive worked in the firm during the

[15] In four cases where free-float adjusted market value was not available, we used total market value instead.

[16] Most companies provide business reports in the period January - March of the following year. As such, at the end of February 2008, strictly speaking, information on compensation in all companies in 2007 may not yet have been publicly available. Reliable compensation data for 2006 is not available for Switzerland, however. The Transparency Act requiring firms to disclose compensation data came into force only in 2007.

previous period, as well as *Dual*, a binary indicator stating whether the CEO holds the position as chairman of the board at the same time. To avoid confounding effects of non-regular pay elements (e.g., non-compete payments or replacement awards), in the main analysis we do not consider those three to five observations per year with abnormal compensation levels above CHF 5.0m.[17]

We also hand-collect, from firms' annual reports, the fraction of *Management Shareholdings* in the firm. Variables on shareholder structure are calculated with data from Orbis. To avoid double counting of investors' holdings, Orbis data were screened manually.[18] *Blockholder* is a dummy variable equal to one in case a single investor holds at least 20% of a company's outstanding shares.

Abnormal Trading Volume is the difference between trading volume in the event window and the median trading volume of the respective firm in the previous year, relative to the median trading volume of the respective firm in the previous year. The binary indicator variable *Company Event* is equal to one if a firm communicated its previous year's figures to the media within five days around the event window.

The summary statistics for all variables of interest are collected in Table 1. Due to the sometimes limited availability of certain data, the working sample is smaller for some parts of the analysis. The average company in our sample has a market capitalization of CHF 10.1bn and a CEO that is 53.5 years old. There is substantial variation in firm-level variables such as sales volatility, relative performance, compensation structure, and compensation levels.[19] The average CEO turnover within our sample is 18.75% per year. A third of the companies covered in our sample have a

[17] All regression results remain statistically and economically significant when not imposing this constraint, except for abnormal CEO compensation, where the coefficients retain the sign but fall just below conventional significance levels. Companies excluded were mainly those which paid one-off replacement payments or allowed special vesting conditions for leaving members.

[18] For one company it was not possible to identify all double counts so that shareholder coverage was truncated at 100%.

[19] When estimating normal compensation levels, we only rely on data available at the time of the event to get the most accurate prediction. Estimates for the event in 2008 and the events in 2013 are, therefore, based on a different set of data. Consequently, the average abnormal compensation in our overall sample shown in Table 1 differs from zero. Naturally, in each individual year, the mean abnormal compensation is zero.

blockholder owning more than 20% of the company's outstanding shares.

Correlations for the most important variables are in Table 2. We note that the correlations of the explanatory variables of interest in the sample are overall very low.

TABLES 1 AND 2 ABOUT HERE

5. Results

Section 5.1 discusses the reactions of the stock market to the announcements of the events. In Section 5.2 we provide evidence of adjustments in companies' policies following the events.

5.1. Stock market reactions

In analyzing stock market reactions, we follow standard practices (Kothari and Warner, 2007; MacKinlay, 1997). Based on the four events described in detail in the Supplementary Appendix, Section C, we define an event window that spans ±1 day around the event-day. To calculate abnormal returns (AR), we apply the commonly used market model. Cumulative abnormal returns (CAR) are the sum of the ARs in the three-day event window. For the length of the estimation-window, we choose the well-established duration of 250 trading days ending two days before the event. We follow the most widely used approach in event studies, using a national market index, the Swiss Performance Index (SPI). Overall, due to the unexpected nature and the legal importance of the analyzed events, we expect that any statistically significant abnormal return in the event window can be attributed to the four regulatory steps. This is in line with Gow, Larcker, and Reiss (2016). In the regression analysis of the CARs, we follow the approach of Larcker, Ormazabal, and Taylor (2011) and pool the events that are expected to impact companies similarly.

5.1.1. The market's vote on society's proposal

Although our primary analysis in this section concerns the cross-sectional stock price variation among companies, it is striking to note the contrast between shareholder reactions and voter reactions to the initial proposal. The fact that the initiative received enough public support to be subject to a national ballot alone already indicates strong public support. As even more explicit evidence of support, 68% of voters approved the initiative. By contrast, 70% of CARs were negative in response to event 1. The average CAR was -1.84% and highly statistically significant (p-value below 0.01). The fact that the approval of the initiative only represents a step towards a possible law implies that by studying stock market reactions to the initial announcement, we likely underestimate the true economic impact it would have upon enactment. This overall result provides evidence of a conflict among average shareholder interests and average voter interests.

5.1.2. Strict regime - Hold-up

TABLE 3 ABOUT HERE

We consider four arguments and corresponding proxies for variation among shareholders regarding potential worries about their CEOs' incentives to engage in firm-specific human capital investments. Naturally, the informativeness of the hypothesis tests depends on the (untestable) strength of the link between the observable measures proposed and the true variable of interest, namely, extra-contractual investments that will change once the regulation is put in place. We aim to ameliorate this concern by studying four largely independent arguments.

First, consider the pay structure. In Switzerland, annual incentives are relatively much more important than long-term shareholdings of CEOs compared to countries such as the US. Therefore, changes in the way these annual incentives work can in principle have profound effects on behavior.

As explained in Section 3.2, the timing of how executive pay will be set according to the original initiative would have led to potential distortions: Cash bonuses for the elapsed year would need to be approved at the next shareholder meeting. This is almost a prototypical case of the hold-up problem: Ex post, shareholders have little incentive to approve the awards; moreover, shareholders may have changed over time.[20] The CEO, in turn, may anticipate this problem and, therefore, not make the firm-specific investments that maximize firm and shareholder value. Importantly, we expect the resulting distortions to be greatest where executives are mostly compensated with cash bonuses. Consistent with this prediction, column (1) of Table 3 shows that the CARs were 1.4 percentage points more negative in firms that only use cash bonuses as variable compensation than in firms that use equity-based compensation or a mix of the two.

Second, a CEO's familiarity with the company's specific needs is important to identify value-increasing decisions. Under the binding vote-on-compensation rules, CEOs with a shorter tenure may have relatively lower incentives to invest into firm-specific knowledge as they fear to not be rewarded for this appropriately. In line with this, we find that firms with short-tenured CEOs reacted 0.9 percentage points more negatively to the initiative than companies with longer tenured CEOs; see column (2) of Table 3.

Third, the time horizon of the manager plays a role. Younger CEOs have a relatively higher incentive, under binding ex-post votes on compensation, to invest in general rather than firm-specific skills than older CEOs because young CEOs wish to retain their option to secure a different position. Consistent with this argument, we find that firms with young CEOs reacted 0.9 percentage points more negatively to the initiative than companies with older CEOs; see column (3) of Table 3.[21]

[20] In particular, the shareholders' incentives to approve the bonuses are considerably smaller than the board's: Boards of Swiss companies are explicitly charged to act for the benefit of the overall corporation. Also, their benefits from expropriating management are significantly lower than those of the shareholders.

[21] In the model of Cohn and Rajan (2013) reputational concerns make managers reluctant to implement strategy changes. According to their hypothesis 1, board strength is optimally greater when the manager is young. This is consistent with our results.

Fourth, where uncertainty is high, it is more difficult to contract on all possible contingencies. Therefore, incompleteness of contracts becomes a major concern. Ex-post votes on compensation may further exacerbate the ensuing hold-up problem. In line with this argument, column (4) of Table 3 shows that stock prices of firms with higher-than-median demand or cost uncertainty exhibited 0.8 percentage points larger abnormal declines than firms with lower-than-median uncertainty.

All these results hold when including all variables jointly together with other controls (column (5) of Table 3). We comment on the analysis including alignment benefits in more detail below.

Overall, the results support *Hypothesis 1.* It may well be that multiple forces are at work that drive the empirical facts we observe. Nonetheless, the extra-contractual investments framework is attractive because it provides a "brittle hypothesis:" It is a single framework that makes several different predictions that could easily be wrong. Recall from Table 2 that the various factors for which it correctly makes predictions are almost uncorrelated empirically. None of the four independent predictions – regarding pay structure, time horizon and tenure of the manager, and uncertainty – is rejected in the data.

By contrast, managerial participation and selection effects can only explain some of our results. That story predicts that more highly skilled CEOs have more outside opportunities and would, therefore, be more likely to leave the firm if their contract becomes less attractive. Technically, their participation constraint would not be met anymore as a consequence of the initiative. Thus, selection may explain why firms with young CEOs reacted more negatively: To the extent that these CEOs are less tied to their firm, their outside options are better, and they will, therefore, be more likely to leave. However, the selection story would also predict that larger firms – whose CEOs tend to have more outside opportunities because they are more capable – should respond more negatively. Similarly, companies with an international CEO should react more negatively to events 1 and 2 as their CEOs are more likely to leave than Swiss CEOs. Instead, we find a positive

relationship between firm size and CARs (see Table 3) and no relation between CEO nationality and CARs (not tabulated). These findings suggest that selection is not the main driving force behind our findings.[22]

Summarizing, these considerations lead us to view the extra-contractual investments framework as particularly useful for adding to our understanding of shareholder reactions to enhanced shareholder power.

5.1.3. Strict regime - Alignment

Contrary to the extra-contractual investments/hold-up framework, the alignment channel of say-on-pay is broadly established in the literature. We test the alignment hypothesis in our setting by empirically assessing two common arguments. *First*, if management was not working in the interest of shareholders before the adoption of binding shareholder vote on compensation, firm-specific stock performance was likely to be poor. According to the hypothesis that binding votes on compensation help improve alignment of managerial with shareholder interests, we should observe that firms with poor performance in the past benefit more from the initiative than those with the best performance.

In line with this prediction, the results in Table 3 display a negative relationship between the one year relative performance and the cumulative abnormal return. These findings confirm that, indeed, binding votes on compensation are relatively more attractive for shareholders of firms that have performed poorly than for those that have performed well.[23] (We find similar results for the risk-adjusted performance measure.)

[22] One explanation for the positive association of firm size and CARs is that fixed costs associated with binding compensation votes will weigh less for the largest firms. Moreover, many of the very large Swiss firms had already introduced advisory say-on-pay in 2007. As a result, alignment between shareholders and management in large companies is arguably already better than in small companies that only start interacting with their shareholders as a result of the initiative. An established regular interaction with its largest shareholders allows companies to better explain its compensation and adapt to their feedback, reducing the uncertainty surrounding compensation-related shareholder votes. Consequently, hold-up is arguably less pronounced in larger companies.

[23] This result is also consistent with an explanation based on extra-contractual investments. If performance was high in the past, this suggests that the firm had an able CEO who made substantial firm-specific investments. This CEO, or a successor, may be less likely to continue doing so under the new regime.

Second, we consider variation in share price reactions depending on the current pay level.[24] If a company overpays or underpays its management, this suggests poor governance. The positive quadratic abnormal compensation term in Table 3 (coupled with the negative main effect) suggests that shareholders react more favorably in firms where pay practices are suboptimal in this respect. Our results in Table 3 suggest that for those companies paying their CEOs CHF 1.0m or more above the expected normal compensation level (about 25% of the observations in our sample), alignment benefits outweigh implementation costs.

This result confirms findings in the case of advisory say-on-pay in the US and the UK, where those firms with the highest abnormal pay benefited substantially from enhanced shareholder power (Cai and Walkling, 2011; Ferri and Maber, 2013). In addition, the evidence from Switzerland suggests that the market also believes that underpayment of executives can be a problem that would be resolved once compensation needs to be put to a vote, thus inducing boards to better justify the structure and level of executive compensation in their companies.

Overall, we conclude that shareholders not only perceive hold-up costs (Section 5.1.2), but also some alignment benefits of the strict form of binding votes on compensation.

5.1.4. The move to a more flexible compensation voting regime

TABLE 4 ABOUT HERE

When the OaEC was introduced in June 2013 and confirmed in November 2013, the Swiss business community was noticeably relieved. The OaEC allowed for a more flexible voting regime and in particular does not require shareholders to vote on cash bonuses retrospectively, but also allows them to adopt a prospective, budget-based voting regime. However, there were also critical voices worrying about a dilution of the power of shareholders and a reduction of the alignment

[24] Ertimur, Ferri, and Muslu (2011) document that in the U.S., activists target firms with high CEO pay, but voting support is high and subsequent pay changes occur only at firms with excess CEO pay.

benefits.

Table 4 exploits this setting to compare stock reactions across events and across firms. We define a binary indicator OaEC that is equal to 1 for events 3 and 4, and is equal to 0 otherwise. We then interact this dummy variable with the company characteristics of interest as well as all control variables to account for the two different regimes.[25] Columns (1) to (3) and (6) provide strong evidence that the hold-up problem inherent in the original design of the initiative (events 1 and 2) was eliminated by the possibility for firms to choose more flexible voting regimes. Conversely, however, columns (4) and (5) suggest that the alignment benefits of the original initiative were weakened by the OaEC.

In sum, the central result revealed in our analysis is a so far empirically unexplored trade-off: The overall reaction of shareholders to enhanced power not only reflects the trade-off between alignment benefits and compliance costs, but also a trade-off between alignment benefits and a worsening of the hold-up problem.

5.1.5. Further results: Shareholder structure

When management holds a significant portion of shares, this can mean two (non-exclusive) things. On the one hand, if a manager's wealth invested in the company outweighs his annual flow of compensation, he has incentives to invest in extra-contractual efforts. Thus, a more positive/less negative effect of the initiative is expected. On the other hand, large management shareholdings indicate that alignment with shareholder interests is already strong. Hence, the initiative is contributing little in alignment benefits, but predominantly causes implementation costs for the company (so a less positive effect is expected). The results in Table 3 suggest that the first effect, lower hold-up costs, dominates for events 1 and 2.

[25] A less conservative specification would include the control variables without interaction terms. Our results remain robust in this specification.

We also consider how the presence of a large blockholder, owning more than 20% of a company's outstanding shares, impacts the reaction to the initiative.[26] With a large blockholder, it appears unlikely that the new votes on compensation will change much in the corporate governance structure of this company. The blockholder can arguably always implement the governance and compensation structure he deems most suitable for the company and its shareholder value creation. As a consequence, alignment is not expected to improve further for those firms (so no positive alignment effect is expected). Moreover, a large blockholder can in general credibly commit to a compensation package already ex-ante, significantly reducing, through not entirely avoiding, the hold-up threat (so a smaller negative hold-up effect is expected). With neither hold-up nor alignment playing a major role, what remains are the pure implementation costs of complying with the new law. Table 3 shows that a company with a blockholder indeed has, on average, a CAR that is slightly lower than the CAR of a widely-held company, though this effect is not always statistically significant.

5.2. Real effects: Changes in CEO turnover and compensation practices

In this section, we extend our previous results based on market reactions with an analysis of actual changes at firm level following the discussed events. Specifically, we test whether (i) the probability of CEO turnover and (ii) the executive compensation practices (structure and level) changed after the events.[27]

In 2013, we have two countervailing effects happening in the same year (event 2 (Initiative) and

[26]Shareholder structure can be described in various ways and based on different cut-offs. We conducted the analysis of Tables 3 and 4 using other shareholder structure variables such as holdings of the largest shareholder, holdings of the largest three shareholders, the Herfindahl measure of the total reported holdings of each company as well as blockholder cut-offs of 30% and 50%. The main results, in particular with respect to the hold-up and alignment proxies, remain qualitatively and quantitatively unchanged.

[27]A third potential analysis would concern the choice of the compensation voting regime after implementation of the OaEC. However, as mentioned earlier, the vast majority of companies chose to use the flexibility offered by the OaEC. Therefore, too little variation in choice remains for us to draw statistically significant inferences.

events 3 and 4 (OaEC)). The observed real adjustments made in the consecutive years 2014 and 2015 are, therefore, the result of the final situation at the end of 2013 (i.e., the OaEC rules).

5.2.1. CEO turnover: Method

In line with *Hypothesis 1*, we expect that CEOs who are most concerned about being held-up (either due to their age, their compensation structure, or their industry) look for alternative job opportunities outside the company.[28]

We estimate a normal turnover level at firm level (i) with a probit panel regression:

$$\begin{aligned} &Turnover_{i,t} = \\ &\alpha + \beta_1 * \mathbb{1}(Low\ CAR_{Initiative/OaEC}) + \Gamma_1 * controls + \Gamma_2 * industry + \Gamma_3 * year + \epsilon, \end{aligned} \tag{1}$$

with the indicator $\mathbb{1}$ being equal to 1 if a company's CAR around event 1 or event 3, respectively, was in the lowest CAR quartile. Further, Γ_1 is a vector of control variables and Γ_2 as well as Γ_3 representing industry and year fixed-effects. For the initiative, the regression covers the years 2007 to 2009 and 2012 to 2014 for the OaEC.

5.2.2. CEO turnover: Results

If CEOs worry about hold-up, they are likely to seek alternative employment opportunities that offer a higher degree of certainty regarding their compensation.

FIGURE 2 ABOUT HERE

Consistent with this prediction, Figure 2 shows that companies reacting the most negatively to

[28] It is true that a manager with significant firm-specific human capital is less likely to leave. What we test here is whether, *after* the initiative has been implemented, managers behave consistently with the hold-up hypothesis in that they decrease ongoing firm-specific investment and increase ongoing investment in general human capital and outside options.

event 1 saw a sharp increase in their CEO turnover rate, from 17.4% in 2007 to 27.3% in 2009, while in all other firms CEO turnover remained flat, with 18.3% in 2007 and 16.6% in 2009.

TABLE 5 ABOUT HERE

Table 5 presents the results of a regression analysis of the turnover rate following event 1. Columns (1) and (2) confirm that the turnover rate in companies that reacted the most negatively to event 1 is significantly higher (about 10 percentage points) than for all other companies in the years following the event. This finding is robust to the inclusion of further controls such as firm size, total shareholder return, CEO age, CEO nationality and industry.

One potential concern with these results is that firms that reacted negatively to event 1 have some general characteristic which is associated with higher managerial turnover and which is not captured by the control variables. Thus, the association of negative responses to event 1 and higher turnover would be spurious. To probe this concern, in columns (3) and (4), we run an analogous analysis for the OaEC (event 3). If firms with a particularly negative event 1 reaction in general have higher turnover, this would be true also in this later time window. Instead, we find that those companies that suffered the most from hold-up (low CAR in 2008) and, as a consequence, saw the highest turnover following the initiative in fact had lower turnover rates around the OaEC. Having adjusted already in the years following the initiative, these companies did not need any further change in their CEO position.

The findings on CEO turnover may be the result of two overlapping predictions from the hold-up model and the selection story (even though the latter, as shown earlier, does not explain all results in the cross-section of stock price reactions). While there is some support for the latter hypothesis in this setting, the significant explanatory power of the control variable for companies reacting the most negatively to the announcement of the initiative in event 1 (Low CAR companies) remains even after controlling for firm size.

Overall, observations from actual turnovers following event 1 provide further evidence in favor of our hold-up hypothesis.

5.2.3. Compensation practices: Method

For the analysis of the adjustments to compensation (level and structure), we follow the approach of Chhaochharia and Grinstein (2009). This approach allows us to test empirically whether the companies impacted the most from the initiative adjusted the two variables of interest, the fraction of cash in the CEO bonus and the variable pay ratio, differently from the other companies.

To analyze whether companies subject to the highest hold-up costs following the initiative adjusted the structure of variable compensation the most, we consider changes in the fraction of total variable compensation paid as a cash bonus. According to *Hypothesis 1*, we expect that companies with the highest cash bonus fraction prior to the event will adjust the cash fraction of the their bonus the most to reduce hold-up costs as much as possible. We run the following regression on the pooled sample to test this conjecture:

$$\begin{aligned} &\textit{Cash-share of CEO bonus pay}_{i,t} = \\ &\alpha + \beta_1 * \mathbb{1}(\textit{CEO}_{i,t} \textit{ received cash-only bonus pre event}) * \textit{Dummy (years post event)} \\ &+ \Gamma_1 * \textit{controls} * \textit{Dummy (years post event)} + \Gamma_2 * \textit{firm} + \Gamma_3 * \textit{industry} * \textit{year} + \epsilon \end{aligned} \tag{2}$$

The indicator $\mathbb{1}$ is equal to 1 if a company pays its CEO only a cash bonus and no equity-based pay. Therefore, the coefficient β_1 measures whether the *average change* in the CEO's cash-bonus fraction following the event differs significantly between companies that paid cash-only bonuses prior to the event and all other companies. Γ_1 is a vector of further control variables and Γ_2 and Γ_3 represent firm and industry-year fixed effects.

Compensation levels are assessed on the basis of abnormal compensation (c.f. section 4.3) with

a focus on the level of performance-based *variable* compensation, defined as the ratio of actual variable pay to an estimated normal level of variable pay, as this was specifically targeted by the initiative committee.[29] In line with specification (1), we estimate the following regression for the variable compensation level on the pooled sample:

$$\begin{aligned} &\textit{Abnormal variable pay ratio for } CEO_{i,t} = \\ &\alpha + \beta_1 * \mathbb{1}(\textit{CEO}_{i,t} \textit{ was over/underpaid pre event}) * \textit{Dummy (years post event)} \\ &+ \Gamma_1 * \textit{controls} * \textit{Dummy (years post event)} + \Gamma_2 * \textit{firm} + \Gamma_3 * \textit{industry} * \textit{year} + \epsilon \end{aligned} \tag{3}$$

The indicator $\mathbb{1}$ is equal to 1 if a company overpays its CEO and (-1) if it underpays. The coefficient β_1 captures the average change in the variable pay ratio between companies that deviate from predicted CEO pay and those that are in line with the prediction. In other words, if companies react to the events by increasing alignment, as per Hypothesis 2, we should observe a decrease in abnormal compensation in the years following the event for companies that paid high abnormal variable compensation prior to the event. Conversely, companies that underpay their CEOs prior to the event may increase performance-adjusted pay to improve alignment.[30] Γ_1 is a vector of further control variables and Γ_2 and Γ_3 representing firm and industry-year fixed effects-effects.

In settings (1) and (2), we control for changes in control variables around the events and include firm and industry fixed effects to filter out developments that may be due to a general adjustment in the compensation systems.

Figure 1 lays out the timeline of the initiative's and the OaEC's implementation process and its possible effects on corporate compensation policies. The distinction between compensation *structure*

[29] It is generally more straight-forward for companies to adjust variable compensation than to adjust base compensation. In unreported regressions, we find that effects for total compensation are similar, though, as expected, not as pronounced as for variable compensation.

[30] In untabulated regressions, we explicitly differentiate between under-/overpaying firms and find that the main adjustment happens in overpaying firms.

and *level* has an important implication for the regression specification. While variable compensation structure is generally fixed at the beginning of the financial year, variable compensation levels are decided at the end of the financial year. Therefore, for the study of the initiative's effects we define pre-event for the analysis of compensation structure as 2007 and 2008, while for the analysis of compensation levels, pre-event is defined as 2007. Consistent with the logic for the Ordinance, we define pre-event for the analysis of compensation structure as 2012 and 2013, while for the analysis of compensation levels, pre-event is defined as 2013.

5.2.4. Compensation practices: Results

We hypothesize that those companies that paid their CEOs with *cash-only bonuses* would be concerned the most with hold-up in the future. Consequently, they would adjust their compensation structure the most, away from cash-only bonuses, in the years following the analyzed events. No effect is expected for the OaEC, as cash-based variable compensation was no longer subject to a particular shareholder vote anymore.

TABLE 6 ABOUT HERE

In panel A of Table 6, we analyze how the cash fraction of a CEO's bonus changed around the events. The baseline regressions in columns (1) and (3) show that companies which have awarded cash-only bonuses prior to event 1 reduced, on average, the cash share of the CEO's variable compensation by 43.5%, while the cash fraction remained unchanged following the events in 2013. These results remain robust after including additional controls for return on assets, total shareholder return, market to book, log of market capitalization and presence of a blockholder.

We also hypothesize that those companies that paid their CEOs the highest *abnormal variable compensation*, arguably as a result of low shareholder alignment, will react the most, by reducing their abnormal compensation levels, in the years following the analyzed events.

For CEO abnormal variable pay, baseline regressions in columns (1) and (3) in panel B of Table 6 show that companies that paid an abnormal variable compensation prior to the event adjusted their abnormal variable compensation in a statistically significant way during the two years following the event towards the expected normal variable compensation level. This holds for the event in 2008 as well as the events in 2013. The effect suggests that, on average, previously over-/underpaying companies reduced/increased their abnormal compensation by 16.6% and 21.3%, respectively, following the regulatory steps. This effect remains unchanged for both events after we introduce various controls for other changes possibly occurring around the event year (regressions (2) and (4) of Table 6). These results are also in line with the stock price reaction found earlier: Shareholders of companies with the most overpaid CEOs reacted most positively because these companies indeed reduced excessive variable compensation. These findings differ from the results presented by Armstrong, Gow, and Larcker (2013) for the US and point out the significant differences that can arise from alternative calibrations of the shareholder voting regime on executive compensation. Unlike in Armstrong, Gow, and Larcker (2013), the voting regimes we consider here covers the entire compensation package (compared to equity-based compensation elements only) and comes with different timing specifications (ex-ante and ex-post votes).

In sum, for both compensation practice channels, the initial share price reaction (which was based on expected company policy changes) is vindicated by what companies actually did in terms of real changes.

6. Robustness

6.1. Parallel trends of CARs before the events

By considering cross-sectional variation of abnormal returns during the event windows, we have established that firms exhibited different reactions to the regulatory changes. It is conceivable,

however, that firms already exhibited different pre-event trends. This could lead to erroneous inferences regarding the causal effects of the events.

We examine this issue in Figure 3 for events 1 and 2 by plotting the daily level of cumulative abnormal returns during a window of 20 days (four trading weeks) before and 20 days after events 1 and 2. For presentational reasons, we choose two portfolio splits each for *Hypothesis 1* and for *Hypothesis 2*, but very similar results obtain also for the other sample splits.

FIGURE 3 ABOUT HERE

As can be seen, in all cases, cumulative abnormal returns of the two respective portfolios (for example, the portfolio with younger CEOs and the portfolio of firms with older CEOs) behaved very similarly *before* the event window. In fact, a t-test does not reject the hypothesis that the average trends of cumulative abnormal returns in the respective two portfolios before the event are equal.

The similar *pre*-event trends are comforting and suggest that the divergence of CARs *at* the event window, which we discussed above, was caused by the events.

6.2. Other elements of the initiative

The initiative contains a number of other provisions in addition to binding votes on compensation (c.f. Supplementary Appendix B). While the public and the policy discussions were almost exclusively about the compensation voting component of the initiative, it is still possible that shareholders also reacted to some extent to these other proposals. To investigate this possibility, we compare market reactions in firms that currently use a provision that would be forbidden (or limited) under the initiative with the reactions in firms that do not use such a provision. Specifically, we consider the following governance attributes: i) whether the board is elected through an individual or a global vote, ii) whether the CEO has a notice period longer than 12 months, iii) whether the CEO

has any loans from the company outstanding, iv) whether the company has change in control clause that would benefit the current management, v) whether the CEO has termination benefits.

In Table A1, we provide regressions including proxies for the different other provisions of the initiative. All previous findings retain their sign and significance. There is a modest indication that change in control clauses entail, on average, an agency problem and that their abolishment is impacting a company's value positively. None of the other variables related to the initiative have a significant association with the CARs.

Overall, these findings confirm that the primary aspect to which shareholders reacted was the new compensation-related voting regime.

7. Conclusion

Policy makers around the world are active in enhancing shareholder rights. A particularly important dimension of shareholder rights concerns executive compensation. So far, the literature generally documents that enhanced proxy access and provisions shifting power to shareholders are met with positive reactions in firms with pronounced agency problems (Becker, Bergstresser, and Subramanian, 2013; Cohn, Gillan, and Hartzell, 2016; Cuñat, Gine, and Guadalupe, 2016).

However, these results do not necessarily mean that extending shareholder rights related to governance and, in particular, executive compensation decisions is always in the best interest of shareholders. For example, Larcker, Ormazabal, and Taylor (2011) document negative market reactions to legal developments that suggest higher probabilities of governance and executive pay regulation. From a theoretical perspective, it is also not clear that more is always better for shareholders. Moreover, the literature survey by Ferri and Göx (2018) concludes that there is only limited evidence of how different specifications of shareholder rights related to compensation decisions impact outcomes for shareholders, if at all.

This paper addresses these gaps in our knowledge. Specifically, this analysis uses a series of regulatory events in Switzerland to investigate how different specifications of shareholder power in the form of binding votes on compensation impacts shareholder value.

The cross-sectional variation in stock price reactions to various steps in the implementation of a new law is consistent with the view that shareholders rationally anticipate that increased shareholder power has benefits and costs for them. Greater power provides shareholders with an enhanced ability to ensure alignment of managerial interests with shareholder value. But we also find evidence of the negative side of binding votes on compensation. Theory predicts that this additional ex-post power of shareholders can ex-ante distort extra-contractual managerial investments that are specific to the firm. Consistent with this prediction, companies more exposed to this problem reacted more negatively. In the second phase of the regulatory process – when an ordinance allowing a more flexible voting system including, for example, a prospective bonus budget system, was released – shareholders needed to worry less about the hold-up problem, but also realized a somewhat reduced alignment benefit. This again was reflected in stock price reactions. We find that managerial turnover and compensation practices changed in ways consistent with the stock price reactions. That these real effects occurred already in response to the initial events is consistent with the idea that expectations about policy changes can already lead to behavioral responses by managers and companies.

By highlighting the resulting trade-off between agency versus hold-up, we believe that this is one of the first papers to empirically support the argument, so far mostly presented in theoretical discussions, that it may be in the best interests of shareholders *not* to maximize their power.

These findings have important implications for the current policy discussion on how to design compensation-related shareholder rights' laws. Policymakers should recognize that shareholders may do well to cede some control to directors (as they do under advisory say-on-pay, compared to

binding compensation votes, and as they do when they approve prospective compensation budgets, rather than retrospective bonus amounts) and that the specification of how shareholder rights are assigned significantly impacts the reaction of corporations.

Overall, while the idea of "power to the people" (the most explicit form of which is direct democracy) is morally appealing, our findings suggest that a stronger and more direct "shareholder democracy" may not generally be in the interest of shareholders themselves. As such, this study highlights that there can be substantial tensions as regards corporate governance not only within firms (between shareholders and managers) but also between firms (shareholders) and society more broadly. Understanding and mitigating these tensions is important for a stable society, and future research should, therefore, shed more light on these questions.

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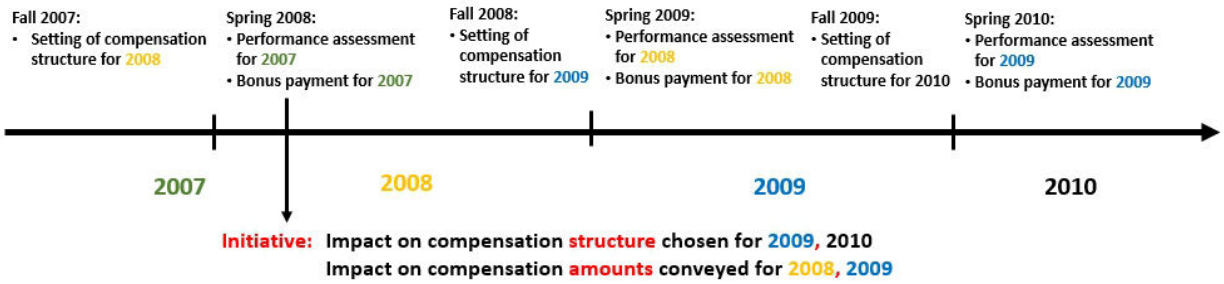
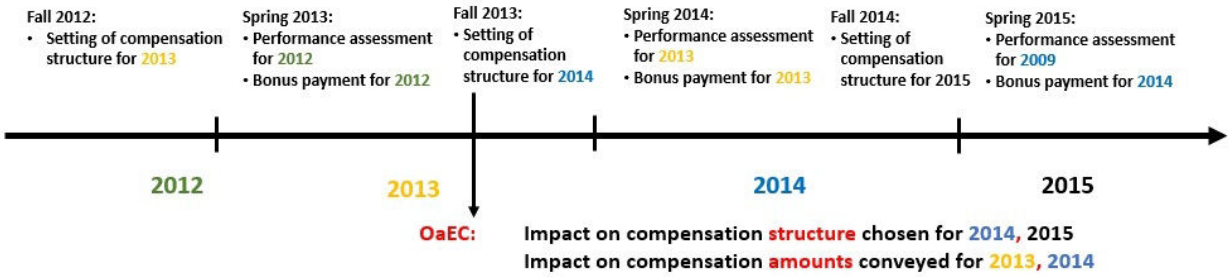
Figure 1. Impact timeline of events

Panel (a) shows how the announcement of the initiative impacted the compensation setting process in a typical sample company. With the announcement of the initiative prior to the AGM season 2008, it likely impacted the setting of the compensation amounts for the financial year 2008 as well as the compensation structure for financial year 2009. Panel (b) shows how the announcement of the Ordinance against Excessive Compensation (OaEC) impacted the compensation setting process in a typical sample company. With the announcement of the OaEC's content in Q3 2013, it likely impacted the setting of the compensation amounts for the financial year 2013 as well as the compensation structure for financial years 2013/14.



(a) **Impact of the initiative**



(b) **Impact of the OaEC**

Figure 2. CEO turnover around event 1

This figure shows the unconditional development of the average CEO turnover rate around event 1. The vertical axis represents the annual turnover rate. The sample is split according to the abnormal cumulative return around event 1, where Q1 represents the companies in the quartile of the lowest (that is, the most negative) cumulative abnormal returns and Other companies represent companies in quartiles 2-4.

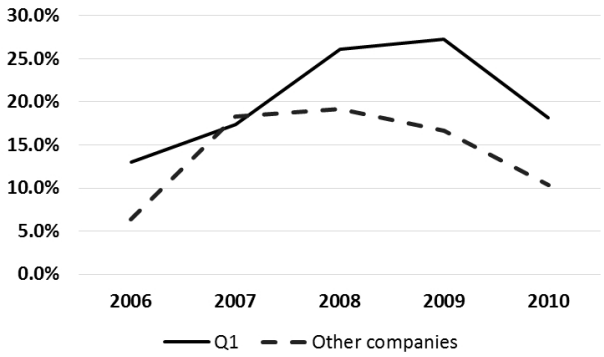
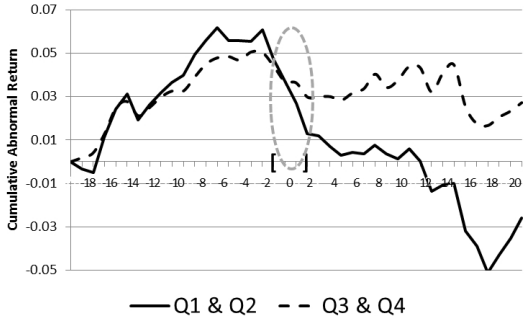
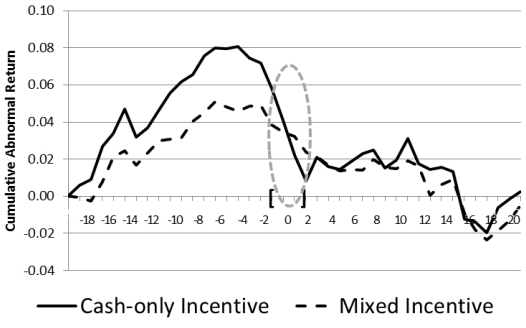


Figure 3. Trends of cumulative abnormal returns of subsamples around events 1 and 2

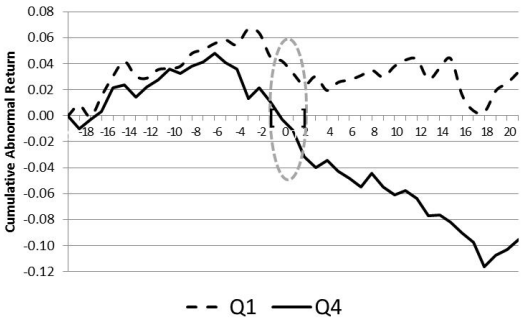
Panels (a) to (d) show the daily level of cumulative abnormal returns for select sample splits of the largest 100 stocks in the Swiss Performance Index during the 40 day window [-20,+20] around events 1 and 2. Cumulation of the abnormal returns starts at t=-20. The vertical axis represents the daily level of the cumulative abnormal return, while the horizontal axis is measured in days relative to the event (t=0). The event window is marked by square brackets on the horizontal axis. Abnormal returns are calculated with the market model. *Panel (a)* splits the sample according to the CEO's age in below median (solid) and above median (dotted) age. *Panel (b)* splits the sample according to the CEO's bonus structure into cash-only incentive (solid) and mixed incentive plan (dotted). *Panel (c)* shows the fourth (solid) and first (dotted) quartile of the sample in terms of the performance of a stock relative to the relevant size index. *Panel (d)* depicts the middle (solid) and corner (dotted) quartiles of the sample split according to abnormal CEO compensation.



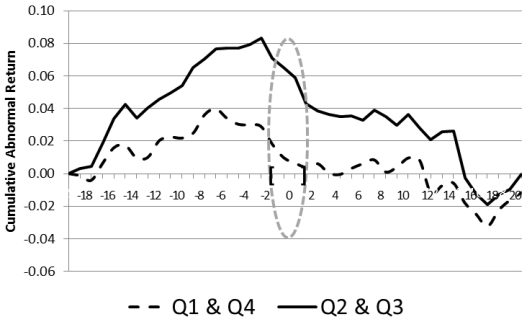
(a) CEO Age



(b) Cash Incentive Share



(c) Relative Performance



(d) Abnormal CEO Compensation

Table 1. Summary statistics

This table displays firm summary statistics averaged over all four events considered in the analysis. The largest 100 firms in the Swiss Performance Index (SPI) constitute the sample for each event. Sales Volatility is a firm's ratio of the standard deviation of sales to the average sales over the last five years. Relative Performance measures the difference between the observed stock return and the return of the corresponding SPI size-index over a one year period prior to the event window. Management Shareholdings is the percentage of outstanding equity held by the firm's management and board. Blockholder is a dummy variable equal to 1 if the largest shareholder owns a stake of more than 20% in the company. Market Capitalization measures the market value of the free float on event day closing. Company Event is a binary indicator equal to one if the firm held an earnings call during a 10 day window around the event window. Abnormal Trading Volume is the ratio between the trading volume in the event window and the median trading volume of the respective firm in the previous year. CEO Cash Incentive Share is the share of a CEO's variable remuneration that is paid in cash. Abnormal CEO Compensation is measured as the difference between paid CEO compensation and estimated CEO normal compensation in terms of firm size, relative performance and tenure within the last year. Only abnormal compensation values below CHF 5.0m are considered. CEO Total Compensation is the sum of a CEO's base and variable pay. CEO Variable Compensation is the sum of all variable CEO pay disbursed in cash and stock. CEO Turnover is a dummy variable equal to 1 if there was a CEO turnover during the calendar year. CEO Swiss is a dummy variable equal to 1 if the CEO's nationality is Swiss. Dual is a dummy variable equal to 1 if the CEO also serves as chairman of the board of the same company. CAR Event 1 - 4 is the cumulative abnormal return of the sample firms during a three day event window. CARs are based on market model estimations.

Variable	Mean	Std. Dev.	Min.	Max.	Firms
Firm Characteristics					
Sales Volatility (ratio)	0.18	0.20	0.02	1.51	116
Relative Performance (p.a.)	0.03	0.28	-0.62	1.49	114
Management Shareholdings (in %)	0.10	0.26	0.00	2.21	115
Blockholder (binary indicator)	0.337	0.455	0	1	115
Market Capitalization (in Mio. CHF)	10'020	29'636	286.1	205'736	116
Company Event (binary indicator)	0.12	0.20	0.00	1.00	116
Abnormal Trading Volume (ratio)	0.49	1.07	-0.62	9.67	114
CEO Compensation & Attributes					
CEO Cash Incentive Share	0.61	0.30	0.00	1.00	116
CEO Tenure (years)	4.47	4.54	0	22	116
CEO Age (years)	53.54	5.85	37.00	73.00	115
Abnormal CEO Compensation (in Mio. CHF)	0.37	1.48	-3.13	4.82	111
CEO Total Compensation (in Mio. CHF)	3.44	3.10	0.48	15.42	116
CEO Variable Compensation (in Mio. CHF)	1.88	2.29	0.00	11.61	116
CEO Turnover (binary indicator)	.19	.35	0	1	116
CEO Swiss (binary indicator)	0.59	0.49	0	1.00	114
Dual (binary indicator)	0.07	0.22	0.00	1.00	114
Events					
CAR Event 1 (in %)	-1.84	4.19	-16.85	6.57	97
CAR Event 2 (in %)	-0.003	2.39	-6.44	10.64	97
CAR Event 3 (in %)	-0.01	1.78	-7.90	4.74	97
CAR Event 4 (in %)	-0.55	1.77	-5.83	5.03	97

Table 2. Correlations of explanatory variables

This table displays average correlations of the explanatory variables of the sample firms over all four events considered in the analysis. Variables are defined in Table 1.

Variables	1	2	3	4	5	6	7	8	9	10	11	12
Cash Incentive Share	1.00											
CEO Tenure	0.17	1.00										
CEO Age	-0.00	0.24	1.00									
Sales Volatility	-0.03	0.01	-0.03	1.00								
Relative Performance	-0.07	0.01	-0.08	0.13	1.00							
Abnormal CEO Comp.	-0.25	0.01	-0.05	0.11	0.02	1.00						
Management Shareholdings	0.15	0.12	0.12	0.08	-0.00	0.11	1.00					
Blockholder	0.11	0.05	0.02	0.01	-0.02	-0.08	0.17	1.00				
ln(Market Capitalization)	-0.51	-0.12	0.15	-0.25	0.01	0.15	-0.16	-0.09	1.00			
Abnormal Trading Volume	0.04	0.04	-0.03	0.17	0.03	-0.03	0.08	0.02	-0.21	1.00		
CEO Turnover	0.11	-0.38	-0.01	0.02	-0.06	-0.01	-0.09	0.01	0.04	-0.07	1.00	
CEO Swiss	0.40	0.28	-0.01	0.04	-0.02	-0.25	0.07	0.01	-0.38	0.09	-0.13	1.00

Table 3. Market reaction to binding say-on-pay, events 1 and 2

Regressions in this table are based on events 1 and 2 where, according to the legislation process, compensation votes were subject to *retrospective* shareholder approval only. The dependent variable is the Cumulative Abnormal Return during the three day event window in each event. Cash-only incentive is a binary indicator equal to 1 if incentive compensation is cash only. Short-tenured CEO is a binary indicator equal to one if the CEO's tenure is below the median. Young CEO is a binary indicator equal to one if the CEO's age is below the median. High Sales Volatility is a binary indicator equal to one if the company's sales volatility is above the median. The other explanatory variables are defined in Table 1. t-values are calculated based on robust standard errors and reported in brackets, with significance levels: * 0.10, ** 0.05, *** 0.01.

Dependent variable:	Cumulative Abnormal Return (%)				
	(1)	(2)	(3)	(4)	(5)
Cash-only Incentive	-0.014*				-0.015**
	(-1.90)				(-2.18)
Short-tenured CEO		-0.009*			-0.010**
		(-1.77)			(-2.02)
Young CEO			-0.009**		-0.007
			(-2.01)		(-1.55)
High Sales Volatility				-0.008*	-0.011**
				(-1.71)	(-2.32)
Relative Performance	-0.026***	-0.024**	-0.022**	-0.023**	-0.027***
	(-3.13)	(-2.55)	(-2.20)	(-2.44)	(-3.67)
Abnormal CEO Compensation	-0.004**	-0.004*	-0.004**	-0.004*	-0.004**
	(-2.29)	(-1.87)	(-2.12)	(-1.92)	(-2.09)
(Abnormal CEO Compensation)^2	0.002	0.002	0.002*	0.002	0.001
	(1.65)	(1.58)	(1.71)	(1.53)	(1.52)
Management Shareholdings	0.033***	0.029***	0.028**	0.032**	0.035***
	(2.77)	(2.63)	(2.34)	(2.55)	(2.83)
Blockholder	-0.007	-0.004	-0.003	-0.003	-0.007*
	(-1.65)	(-0.92)	(-0.68)	(-0.69)	(-1.70)
ln(Market Capitalization)	0.003	0.005**	0.004**	0.004**	0.002
	(1.50)	(2.26)	(1.98)	(2.23)	(1.20)
Company Event	0.003	0.008	0.008	0.008	0.003
	(0.48)	(1.25)	(1.25)	(1.20)	(0.60)
Abnormal Trading Volume	-0.007	-0.005	-0.005	-0.005	-0.007*
	(-1.56)	(-1.21)	(-1.04)	(-1.03)	(-1.81)
Constant	-0.037	-0.099***	-0.103***	-0.089***	0.000
	(-1.59)	(-5.71)	(-5.88)	(-5.75)	(0.01)
Observations	159	164	164	164	159
Adjusted R-squared	0.256	0.192	0.189	0.187	0.306

Table 4. Market reaction to binding say-on-pay, comparing strict and flexible regimes

Regressions are based on all four events. Events 1 and 2 were subject to the original initiative requiring compensation votes subject to *retrospective* shareholder approval. Events 3 and 4 were subject to the Ordinance against Excessive Compensation (OaEC) allowing for a more flexible compensation voting regime. This switch in voting regimes is captured by the variable *OaEC*, which is equal to 1 for events 3 and 4 (flexible voting regime) and 0 for events 1 and 2 (strict voting regime). The interaction terms, marked as **OaEC*, provide an indication of how the switch in voting regime was perceived by the stock market. The dependent variable is the CAR during the three day event window in each event. Cash-only incentive is a binary indicator equal to 1 if incentive compensation is cash only. Short-tenured CEO is a binary indicator equal to one if the CEO's tenure is below the median. Young CEO is a binary indicator equal to one if the CEO's age is below the median. High Sales Volatility is a binary indicator equal to one if the company's sales volatility is above the median. The other explanatory variables are defined in Table 1. *Controls* indicate that the regressions control, besides the indicated interacted variables, for all explanatory variables used in Table 3 as well as their **OaEC*-cross-terms. t-values are calculated based on robust standard errors and reported in brackets, with significance levels: * 0.10, ** 0.05, *** 0.01.

Dependent variable:	Cumulative Abnormal Return (%)				
	(1)	(2)	(3)	(4)	(5)
Cash-only Incentive	-0.015**				-0.017**
	(-2.27)				(-2.59)
Cash-only Incentive * OaEC	0.018**				0.020**
	(2.25)				(2.52)
Short-tenured CEO		-0.009*			-0.010**
		(-1.68)			(-2.03)
Short-tenured CEO * OaEC		0.010*			0.012**
		(1.79)			(2.11)
Young CEO			-0.008*		-0.005
			(-1.82)		(-1.24)
Young CEO * OaEC			0.009*		0.006
			(1.84)		(1.27)
High Sales Volatility				-0.008*	-0.011**
				(-1.68)	(-2.34)
High Sales Volatility * OaEC				0.010*	0.013**
				(1.76)	(2.30)
Relative Performance	-0.027***	-0.026***	-0.023**	-0.024***	-0.028***
	(-3.31)	(-2.74)	(-2.38)	(-2.62)	(-3.88)
Relative Performance * OaEC	0.019**	0.015	0.012	0.013	0.020**
	(2.05)	(1.44)	(1.17)	(1.27)	(2.27)
Abnormal CEO Compensation	-0.004**	-0.003*	-0.004**	-0.003*	-0.004**
	(-2.36)	(-1.92)	(-2.14)	(-1.89)	(-2.21)
Abnormal CEO Compensation * OaEC	0.001	0.002	0.002	0.002	0.001
	(1.50)	(1.53)	(1.64)	(1.45)	(1.35)
(Abnormal CEO Compensation)^2	0.005**	0.003*	0.004**	0.003*	0.004**
	(2.48)	(1.91)	(2.10)	(1.76)	(2.36)
(Abnormal CEO Compensation)^2 * OaEC	-0.002*	-0.002*	-0.002*	-0.002	-0.001
	(-1.73)	(-1.74)	(-1.84)	(-1.60)	(-1.62)
OaEC	0.015	0.031*	0.027	0.022	-0.019
	(0.91)	(1.76)	(1.52)	(1.30)	(-1.06)
Constant	-0.022	-0.043**	-0.039*	-0.037**	0.011
	(-1.16)	(-2.12)	(-1.95)	(-1.99)	(0.59)
Controls	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	329	344	344	344	329
Adjusted R-squared	0.226	0.171	0.168	0.169	0.259

Table 5. CEO Turnover following the events

The dependent variable, CEO Turnover, is a dummy variable equal to 1 if the CEO has left the company in a given year. Low CAR is a binary indicator equal to 1 if the company is in the most negative CAR quartile in event 1 or event 3, respectively. CEO Swiss is a dummy variable equal to 1 if a company's CEO has a Swiss citizenship. The remaining variables are described in Table 1. Regressions in columns (1) and (2) cover the period of the initiative, 2007 to 2009, while columns (3) and (4) cover the period of the OaEC, 2012 to 2014. t-values are calculated based on standard errors clustered at company level and reported in brackets, with significance levels: * 0.10, ** 0.05, *** 0.01.

Dependent variable:	CEO Turnover			
	(1)	(2)	(3)	(4)
Event:	Initiative	Initiative	OaEC	OaEC
Low CAR	0.477*	0.441*	-0.507	-0.841*
	(1.82)	(1.68)	(-1.48)	(-1.77)
Relative Performance$_(t-1)$	-0.173	-0.178	-0.459	-0.331
	(-1.07)	(-1.07)	(-1.30)	(-0.81)
Ln(Market Capitalization)$_(t-1)$	0.149**	0.126*	0.073	0.083
	(2.16)	(1.67)	(1.05)	(0.90)
CEO Age		-0.035**		-0.110***
		(-2.34)		(-3.70)
CEO Swiss		-0.339		0.175
		(-1.40)		(0.49)
Constant	-2.131***	-0.139	-1.827***	3.589**
	(-3.16)	(-0.15)	(-2.69)	(2.13)
Industry fixed effects	Yes	Yes	Yes	Yes
Observations	223	223	196	196
R-squared	0.051	0.083	0.046	0.138

Table 6. Adjustments in compensation following the events

Regressions in this table are based on events 1 and 2 (Initiative) and events 3 and 4 (OaEC). In Panel A, the dependent variable is the Cash-share of a CEO's Bonus Pay, i.e., the fraction of variable compensation paid in cash for a given year. Cash-only is a dummy variable equal to 1 if a company paid the entire bonus in cash prior the Initiative (2007/2008) and the OaEC (2012/2013), respectively. Post event is a dummy variable equal to 1 for 2009 and 2010 (Initiative) and for 2014 and 2015 (OaEC). In Panel B, the dependent variable is the Abnormal Variable Pay Ratio, defined as the ratio between actual variable compensation to an estimated normal variable compensation as defined in section 5.1. Variable compensation covers all compensation that is performance related. AVC is short for abnormal variable compensation. Pre and post refer to the year of the event (2008 for the initiative and 2013 for the OaEC) considered in the regression. For the Initiative, pre event is equal to 1 for 2007 and 0 otherwise, while post event is equal to 1 for 2008 and 2009 and zero otherwise. For the OaEC, pre event is equal to 1 for 2012 and 0 otherwise while post event is equal to 1 for 2013 and 2014 and zero otherwise. $\mathbb{1}$(Pre AVC) is an indicator variable equal to (1) if AVC is positive and (-1) if AVC is negative. Pre positive (negative) AVC is the actual value of AVC if AVC>0 (<0). The differences in pre/post event definitions in the two panels derives from a difference in timing in terms of compensation setting and payout (see Figure 3). Controls are return on assets (ROA), total shareholder return (return), market to book (M/B), log of market capitalization (ln(market capitalization)) and presence of a blockholder controlling $\geq$20% of a company's shares (blockholder). t-values are calculated based on standard errors clustered at company level and reported in brackets, with significance levels: * 0.10, ** 0.05, *** 0.01.

Panel A: Changes in Cash Compensation

Dependent variable:	Cash-share of CEO Bonus Pay			
	(1)	(2)	(3)	(4)
Event:	Initiative	Initiative	OaEC	OaEC
CEO cash-only bonus pre event	-0.435***	-0.500***	0.011	0.016
* dummy(post event)	(-3.72)	(-3.21)	(0.20)	(0.25)
Pre/Post Controls	No	Yes	No	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes
Observations	268	251	296	289
R-squared	0.115	0.135	0.095	0.124

Panel B: Changes in Abnormal Variable Compensation

Dependent variable:	Abnormal Variable Pay Ratio			
	(1)	(2)	(3)	(4)
Event:	Initiative	Initiative	OaEC	OaEC
$\mathbb{1}$(Pre AVC)*dummy(post event)	-0.249**	-0.263**	-0.294***	-0.283***
	(-2.27)	(-2.00)	(-3.99)	(-3.64)
Pre/Post Controls	No	Yes	No	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes
Observations	216	204	306	296
R-squared	0.185	0.297	0.281	0.324

Supplementary Appendix

A. Initiative / OaEC Development

The initiative was mentioned in the first week of August 2006, officially verified in mid-October 2006, and the collection of signatures started on the last day of October 2006. On February 26, 2008 it was publicly announced that the initiative has received enough public support to be subject to a national ballot with, subject to a public approval, potentially large impacts on the Swiss corporate law landscape. On December 5, 2008 the Swiss Federal Government's executive council issued a public statement in which it recommended to vote against the initiative and drafted a direct counter proposal that would offer the public a less stringent alternative than the initiative at the time the ballot is held. On June 11, 2009 the Senate proposed an indirect counter proposal that would be adopted in case the originators of the initiative agreed to withdraw the initiative (in which case the direct counter proposal would also be void) and abstain from a national ballot. On March 16, 2012 Parliament and Senate agreed to the terms of this indirect counter proposal, but failed, on June 15, 2012 to come to terms on the direct counter proposal. On March 3, 2013 the national ballot was ultimately held and turned out in favor of the initiative and thus rendered the indirect counter proposal obsolete. On June 14, 2013 the executive council issued a first draft of the bill that would implement the initiative into law, namely, the before-mentioned Ordinance against Excessive Compensation (OaEC). The Federal Government released the final Ordinance on November 20, 2013.

B. Initiative

The initiative proposes a concrete legal text. Specifically, it reads:

"The federal constitution of April 18, 1999 is amended as follows:

Art. 95 Par. 3 (new): To protect the economy, private property and the shareholders and in the spirit of sustainable corporate management, this law regulates Swiss companies, listed nationally and internationally, according to the following principles: a) The general assembly votes annually on the total compensation (monetary and in-kind) of the board of directors, the executive board, and the advisory board. It elects annually the chairman of the board and, individually, the members of the board, the members of the compensation committee, and the independent vote representative. Pension funds vote in the interest of the insured and disclose their voting behavior. Shareholders can use electronic / distance voting. There is no proxy voting by company representatives or depository institutions. b) The board of directors and the executive board receive no severance or any other payment upon their leaving the firm, no advance compensation, no bonus payments in the case of firm acquisitions / divestures, and no additional consulting or employment contract by another company of the group. Executive management cannot be delegated to another firm. c) The articles of association contain provisions for the amounts of credit, loans, and retirement pensions to corporate executives and board members, their performance and share / participation plans, and the maximum number of external mandates as well as the duration of their employment contracts. d) Violation of these provisions is punishable by a jail sentence of up to three years and a fine of up to six times annual compensation."

C. The events and their coverage in the media

A broad outline of the initiative's development and the most notable milestones are summarized in Supplementary Appendix A. To retain the validity of our empirical analysis, we focus on those events that received the largest public attention and were the least predictable by the market.

Event 1 was on February 26, 2008, when it was announced that a sufficient number of signatures in favor of the initiative had been collected to force a popular vote. This event was hardly predictable for market participants since there was no publicly available signatures count. The news of the announcement were to some extent also picked up internationally; for example, after having posted the announcement by the Swiss News Agency (SDA) in German in the early afternoon, Bloomberg further reported on the initiative's success in the late afternoon in English under the heading "*Swiss May Vote to Expand Shareholder Rights Over Executive Pay.*"

Event 2 took place on March 3, 2013, when the public voted in favor of the initiative which directly impacted the Swiss corporate law. The news coverage of this positive outcome was large and resonated internationally as the initiative approved by the Swiss public was one of the most stringent frameworks internationally. It was also followed closely by foreign lawmakers involved in drafting bills that deal with shareholder power.

Event 3 was the release of the first draft of the OaEC on June 14, 2013. This draft defined the general framework in which the final implementation of the initiative would be set. The date of release of this draft was not known by stock market participants in advance. As the content of this first draft was also largely unknown up to its release, its publication received great attention from the business community.

Event 4, the release of the final version of the OaEC on November 2013, was picked because it had ultimately the largest real effects as it forced a new legal framework on the Swiss corporate

landscape. The November date was known a few weeks before the release. Given that many different opinions had been voiced about the initial draft[31], the content of this final version was also, to a certain extent, unclear before the final release date.

[31]Between June 14 and July 28, 2013, a total of 71 participants, ranging from political parties, listed issuers, pension funds, asset managers, lawyers, proxy advisors as well as various associations, voiced their opinion and made suggestions on how to amend the initial draft.

Table A1. Other provisions of the initiative

Regressions in this table are based on events 1 and 2, related to the original initiative requiring *retrospective* shareholder approval for compensation. The dependent variable is the Cumulative Abnormal Return during the three day event window around each event. In this table, we control for other provisions of the initiative: Single Election is a dummy variable equal to 1 if board members are elected individually, Long Notice Period is a dummy variable equal to 1 if the notice period for the CEO is longer than 12 months, CEO Loans is a dummy variable equal to 1 if the CEO has outstanding loans with the company, Change of Control is a dummy variable equal to 1 if the company has a change in control clause with respect to the CEO's position, Termination Benefits is a dummy variable equal to 1 if the CEO has contractually guaranteed termination benefits. Cash-only incentive is a binary indicator equal to 1 if all incentive compensation is paid in cash. Short-tenured CEO is a binary indicator equal to one if the CEO's tenure is below the median. Young CEO is a binary indicator equal to one if the CEO's age is below the median. High Sales Volatility is a binary indicator equal to one if the company's sales volatility is above the median. All other explanatory variables are defined in Table 1. *Controls* indicate that the regressions control, besides the indicated variables, for all explanatory variables used in Table 3. t-values are calculated based on robust standard errors and reported in brackets, with significance levels: * 0.10, ** 0.05, *** 0.01.

Dependent variable:	Cumulative Abnormal Return (%)				
	(1)	(2)	(3)	(4)	(5)
Single Election	-0.002				
	(-0.35)				
Long Notice Period		0.004			
		(0.59)			
CEO Loans			0.012		
			(1.45)		
Change of Control				0.011*	
				(1.80)	
Termination Benefits					0.002
					(0.20)
Cash-only Incentives	-0.019**	-0.016**	-0.017**	-0.015**	-0.016**
	(-2.45)	(-2.18)	(-2.16)	(-2.15)	(-2.14)
Short Tenure	0.001**	0.001**	0.001**	0.001**	0.001**
	(2.40)	(2.32)	(2.25)	(2.42)	(2.22)
Young CEO	-0.009*	-0.008*	-0.009*	-0.009*	-0.009*
	(-1.79)	(-1.72)	(-1.88)	(-1.79)	(-1.95)
High Sales Volatility	-0.015***	-0.014***	-0.012**	-0.013***	-0.014***
	(-2.82)	(-2.68)	(-2.39)	(-2.65)	(-2.77)
Relative Performance	-0.030***	-0.030***	-0.029***	-0.029***	-0.030***
	(-6.99)	(-6.01)	(-5.01)	(-6.11)	(-6.01)
Abnormal CEO Compensation	-0.004**	-0.004**	-0.002	-0.005***	-0.004**
	(-2.46)	(-2.46)	(-1.42)	(-2.90)	(-2.44)
(Abnormal CEO Compensation)^2	0.000	0.000	0.000	0.000**	0.000
	(1.50)	(1.53)	(0.81)	(2.18)	(1.51)
Constant	-0.008	-0.010	-0.007	-0.064***	-0.062***
	(-0.35)	(-0.43)	(-0.32)	(-4.49)	(-4.10)
Controls	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	136	142	133	138	138
Adjusted R-squared	0.390	0.378	0.382	0.402	0.384

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c/o University of Geneva, Bd. Du Pont d'Arve 42, CH-1211 Geneva 4
T +41 22 379 84 71, rps@sfi.ch, www.sfi.ch

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