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Abstract

A set of policy experiments regarding binding votes on compensation in Switzerland sheds new light on the argument that shareholders may prefer to have limits on their own power. The empirical evidence suggests a trade-off: On the one hand, binding votes on compensation amounts enhance alignment of management interests with shareholders. On the other hand, when shareholders can (partially) set pay levels ex post, this may distort ex ante managerial incentives for extra-contractual, firm-specific investments. Thus, increased shareholder power reduces agency costs, but accentuates hold-up problems. These findings inform the design of policy.

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 of listed companies. This study sheds 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. Such hold-up occurs 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 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 ("SRD II"), implemented in 2019, introduces a mandatory vote on the compensation report throughout the EU by end of 2021 at the latest. Moreover, shareholders will vote on the remuneration policy for the board of directors and the executive management at least every four

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years or if there are significant changes to the compensation structure. Each member country has to decide whether these votes will be binding or advisory. Several countries are considering or have already implemented a (partially) binding shareholder vote on compensation.[1] In the UK, shareholders have an annual advisory vote on the compensation report and a binding vote on the companies' remuneration policy at least every three years. In the U.S., an advisory shareholder vote on executive compensation at least once every three years is mandatory since 2011.

In short, policy-makers worldwide continue to implement and reconsider their say-on-pay regimes, which come at a great variation. 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 natural experiment in Switzerland. The Swiss case is of interest, because (i) the capital market is large, (ii) international investors are important, (iii) compensation levels and structure are similar as in many non-US countries including, 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, 68% of Swiss voters accepted this constitutional amendment (*Event 2*). In June 2013, a draft ordinance for the actual implementation of the law was

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[1]For example, Belgium, Czechia, Denmark, Finland, France, Hungary, Latvia, the Netherlands, Portugal, and Sweden have introduced laws on say-on-pay with partially binding elements. Most often, shareholders are provided with a multi-year binding vote on the remuneration policy and an annual advisory vote on the remuneration report.

[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, in 2008 (2018), on average non-Swiss investors held 57.5% (59.5%) of the disclosed shareholdings of the largest 100 Swiss companies, respectively. At the median, the values were 64.5% (69.8%). As for (iii), see, for example, Table 5 of Edmans, Gabaix, and Jenter (2017).

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. Our study exploits these changing rules by comparing the market reactions to the original say-on-pay Initiative and the one that was finally implemented.

As a baseline, we test the hypothesis that a binding vote on compensation aligns shareholder and manager interests and improves shareholder value (*Hypothesis 1*). More importantly, we test the prediction that enhancing shareholder power may lead to hold-up problems and distort firm-specific investment incentives of CEOs, impacting firm values negatively (*Hypothesis 2*). 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

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[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.

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 to lower firm value. Göx, Imhof, and Kunz (2014) develop this idea theoretically and find support for it in a laboratory experiment, but no empirical field evidence exists so far regarding this prediction.

We test these two hypotheses from two angles. 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.

Hypothesis 1, regarding the alignment benefits of binding shareholder votes on compensation, has been tested in previous literature and also receives support for the Swiss sample. For example, the stock prices of firms with high abnormal variable executive pay reacted positively to the increased alignment.

Our main and novel results pertain to *Hypothesis 2*. Absent direct observable measures for hold-up, we use four largely uncorrelated hold-up proxies, discussed in Section 4.2, to test this hypothesis. 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 2*, these firms reacted more negatively to the Initiative than did firms which use equity-based pay. For all four 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-

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up concern by giving shareholders the opportunity to choose a prospective, budget-based vote on compensation amounts. These results hold controlling for other aspects of corporate governance that were potentially affected by the Initiative.

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 remain. However, one would also expect a blockholder to ameliorate hold-up problems. Indeed, we find that even firms that only pay cash bonuses did not react negatively when a sufficiently large fraction of shares is in the hand of blockholders.

These results from stock price reactions are vindicated by three real adjustments of CEOs and firms following the analyzed events. First, 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. Second, 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. Third, companies used the flexibility offered to them by the OaEC in predictable ways. In particular, shareholders of firms more exposed to hold-up concerns generally were more likely to adopt a fully prospective voting regime.

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

Our study makes four main contributions. *First*, we document that shareholders appear to consider a trade-off when it comes to binding say-on-pay: They welcome binding votes on compensation amounts because such votes help 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.[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. Moreover, we contribute to the hold-up literature pioneered by Grossman and Hart (1986) and Hart and Moore (1990) by showing how affected firms choose institutional settings (in this case, a flexible, prospective compensation approval regime when it became available) to ameliorate the deleterious effects of hold-up.

Second, we contribute to the literature on how shareholders perceive alignment benefits of say-on-pay regulation.[5] Overall, that literature draws a fairly positive conclusion on shareholder rights and alignment benefits (see, e.g., Cai and Walkling (2011), Cuñat, Gine, and Guadalupe (2016), and Iliev and Vitanova (2019) for the U.S., and Ferri and Maber (2013) for the U.K.). In a cross-country study, Kind, Poltera, and Zaia (2020) find that the value of voting rights increases particularly for cases of binding say-on-pay. There are also somewhat more cautious views. For example, Brunarski, Campbell, and Harman (2015) argue that agency problems are aggravated when overpaid managers receive shareholder support for their pay packages, and Gerner-Beuerle and Kirchmaier (2018) argue that say-on-pay reforms may result in high disclosure costs for companies. Larcker, Ormazabal,

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

[5]See Ferri and Göx (2018) and Obermann and Velta (2018) for literature surveys.

and Taylor (2011) document insignificant reactions to events relating to executive pay regulation, but significantly negative for the firms with higher CEO compensation – which supports the view that efforts to limit compensation are detrimental to firm value. Our findings show some alignment benefits of say-on-pay, but extend the literature by providing unique within-country evidence of how alignment benefits vary with different levels of shareholder say-on-pay, and by showing that there is also a downside from strong 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 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. This allows us to more cleanly analyze the real effects of different designs.

Fourth, our paper contributes to the broader literature that has highlighted the limits of ben-

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[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.

efits from other corporate governance elements seemingly "naturally" good for shareholders. For example, while improving proxy access has generally been found to be value-increasing (Becker, Bergstresser, and Subramanian, 2013; Cohn, Gillan, and Hartzell, 2016), SEC attempts to facilitate director nominations by shareholders generally had a negative impact on share prices (Akyol, Lim, and Verwijmeren, 2012). Cai, Garner, and Walkling (2013) find that majority (as opposed to plurality) voting in board elections does not improve firm performance. As another example, while staggered and classified boards are often seen as detrimental to shareholder value and other anti-takeover protections (e.g. Bebchuk and Cohen, 2005; Cohen and Wang, 2013, 2017), other work highlights that these governance elements may induce longer time horizons and better relations with strategic partners (e.g. Chemmanur and Tian, 2018; Cen, Dasgupta, and Sen, 2016; Cremers, Masconale, and Sepe, 2016; Cremers, Litov, and Sepe, 2017; Duru, Wang, and Zhao, 2013; Field and Lowry, 2020; Ge, Tanlu, and Zhang, 2016; Johnson, Karpoff, and Yi, 2015). In this spirit, our paper delivers differentiated insights for the design of say-on-pay.

Finally, 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, thus contributing to the political economy of corporate governance (see Pagano and Volpin (2001), Pagano and Volpin (2005), Perotti (2014), and Roe and Vatiero (2018), among others). 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]

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[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. 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.

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 (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,

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[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.

[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.

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 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, about two thirds of companies chose to vote prospectively on

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[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.

all compensation elements for their executive management (sometimes combined with an advisory vote on the compensation report in the following year), while one third use ex-post voting for their short-term incentive. Section 5.2.5 explores what explains companies' choices.

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.[13]

While the public discussion and media coverage of the Initiative and the OaEC mostly concerned its content related to compensation votes (see Supplementary Appendix C for an overview of the media coverage), we note that the Initiative also contains some other provisions (see Albrecht (2015) for an overview). 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. We control for all of these factors to the extent the data allow us to, and as we document below,

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[13]The political process from 2008 to the public vote in 2013 followed standard procedures of such public Initiatives in Switzerland (see Supplementary Appendix A). The intermediate events during this period were hardly surprising as they followed the standard compromise searching processes and included little additional information that would be relevant for the market.

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: 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. This channel has been established in previous literature, such as for example, Cai and Walkling (2011). If the findings in the Swiss market align with those of previous studies, this is evidence that the results are applicable to markets outside of Switzerland. Particularly, in the case of the binding ex-post votes in Switzerland, we expect this effect to be 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 reasonably expect to receive approval of their pay.

Hypothesis 1, therefore, states: The value impact of binding shareholder votes on compensation is more positive in firms where alignment is currently poor.

This channel already features in existing work on advisory say-on-pay; we extend the extant 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). Following the existing literature, our main proxy for the

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alignment benefits is abnormal CEO compensation. Moreover, we use the level of "other" pay, which in Switzerland in the time period under consideration included severance payments (which were later forbidden by the Initiative). 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.

4.2. Hypothesis 2: Hold-up

Our primary focus is on hold-up. The idea is that 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 in turn recognize that ultimately their own "piece of the pie" will be smaller when such specific investments are not made and know, therefore, that they are better off with less power. This conjecture is grounded 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)).

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 2, 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 and/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

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[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).

propose four (largely uncorrelated) groups of proxies, which we elaborate in more detail in the empirical part: *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*, when managers hold a large equity stake in the their firm, they depend less on receiving explicit rewards through bonuses and, thus, are less exposed to potential hold-up concerns. *Third*, shareholders of firms with higher uncertainty find it more difficult to contract with management efficiently as more contingencies would have to be planned for. *Fourth*, older firms need more energetic development of growth options but performance of management in these activities is harder to assess (Loderer, Stulz, and Waelchli, 2017). Therefore, non-contractability and, thus, hold-up problems loom larger.

Moreover, we test for real effects in line with *Hypothesis 2*. 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 2* 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. We also expect firms more exposed to hold-up concerns to be more likely to choose the prospective voting regime.

4.3. Data

The event study methodology 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, covering 97.9% of the SPI market capitalization in 2007 and 98.6% in 2014. The list of the largest 100 companies in the Swiss Performance Index (SPI) is gathered from the webpage of SIX Exchange. This classification reflects not only market capitalization, but also stock liquidity and free float, amongst other factors. Most of the remaining roughly 100 listed firms in the wider Swiss market are extremely small and thinly traded.

Of the 100 firms we consider, three have a dual-class share structure with both instruments listed. We include the publicly held, more liquid share-class. Limited availability of some variables of interest further reduces the working sample to 81, 83, 84, and 84 firms for Events 1 through 4, respectively.[15]

AFW: Another attempt at rewriting more clearly. Wir sollten mit der dependent variable anfangen. Firm-level stock returns data come from the Compustat Global database. The dependent variables in the event study analysis, cumulative abnormal returns, are calculated relative to the pan-European index provided by Schmidt, von Arx, Schrimpf, Wagner, and Ziegler (2019). See Section 5.1 for more details.

Annual Return is based on the one-year apart levels ending the day before the event window (two days before the events) of the companies' daily total return index in the Compustat Global database. *Annual Volatility* is the annualized volatility of the daily returns of the companies' total return index during the previous financial year.

The free-float adjusted market value (*Market Capitalization*)[16], trading volume, and the SPI industry-segment total return indices (based on ICB industry classification) are collected from

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[15]Data can be missing for several reasons, including new index inclusions, limited disclosure requirements (e.g., exceptions pertaining to CEO compensation), insufficient compliance with disclosure provisions (especially in the early years), and M&A transactions.

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

Refinitiv / Thomson Reuters Datastream.

All data related to *Management Compensation*, including its structure, were hand-collected from firms' annual reports or related disclosure. 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.[17] Compensation numbers and ratios relate to the financial years prior to the event years. *Cash-only Incentive* is a binary indicator variable equal to 1 if the entire variable compensation is paid in cash. In the spirit of Bebchuk, Cremers, and Peyer (2011), we calculate abnormal variable compensation. Specifically, *Abnormal Variable Pay Ratio* is the ratio between the CEO's actual variable remuneration (short- and long-term incentives) and the estimated *normal* variable remuneration granted by the average comparable firm. The prediction of the normal variable CEO compensation is derived by regressing the log variable CEO compensation on the log of *Market Capitalization*, the one-year ICB-*Industry Return*, the company's *Annual Return*, and the numbers of months an executive served for the company in the year under review, *Months*. The *Fraction Other Pay* is the fraction of non-regular compensation (e.g., sign-on payments, fees for extra consulting, social security contributions, termination benefits, etc.) relative to total CEO compensation.

Old Company is a dummy variable equal to one if a company belongs to the oldest quartile of companies in a given year. Data on company age are collected from the yearbook of listed companies provided by the business newspaper "Finanz und Wirtschaft".

From firms' prior-year annual reports, we also hand-collect several other variables, explained in detail in Table 1. These include *CEO turnover*, CEO nationality (*CEO Swiss*), *CEO Loans, CEO Turnover, Change of Control, Individual Election, Notice Periods, Termination Benefits, Maxi-*

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[17]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 are not available for Switzerland, however. The Transparency Act requiring firms to disclose compensation data came into force only in 2007.

mum Directorships as well as the fraction of *Management Shareholdings* in the company. *Major Shareholder* is based on data hand-collected from the Swiss stock exchange mandatory disclosure database and defined as dummy variable equal to one in case a single investor holds at least 20% of a company's outstanding shares. *Fraction Blockholder* is defined as the difference between issued shares and shares in free float, calculated with end of year data pertaining to the financial year prior to the events obtained from Thomson Reuters Datastream.

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, standardized by 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 2. The average company in our sample has a market capitalization of CHF 12.6bn and is 92 years old. About 30% of companies covered in our sample have a blockholder owning more than 20% of the company's outstanding shares. At the time of Event 1, the average CEO receives a total pay package of CHF 4.55m, of which, on average, 37.8% are base compensation, 19.6% variable cash bonus and 32.66% are equity-based compensation. The remaining 10.23% is other compensation. For 24% of the sample companies, all variable pay is allocated through cash bonuses only. Based on summary statistics provided in Edmans, Gabaix, and Jenter (2017), CEOs of Swiss companies generally have a higher base salary and receive less in stock and options than CEOs of US S&P 500 constituents. Compared to the levels in the UK (base salary 48%, cash bonus 17% and stock and options 26%) or non-US more generally (base salary 53%, cash bonus 18% and stock and options 19%), Swiss companies pay slightly lower base compensation, but allocated a higher fraction of total pay in cash bonuses and company shares. There is substantial variation in the compensation structure

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and compensation levels.

Correlations for the most important variables are in Supplementary Appendix Table A1. We note that the correlations of the explanatory variables of interest are, overall, quite low.

TABLE 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 actual adjustments in companies' policies and management 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, using the Schmidt, von Arx, Schrimpf, Wagner, and Ziegler (2019) pan-European index. 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. 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, in line with Gow, Larcker, and Reiss (2016). We then regress abnormal returns on agency and hold-up proxies. Throughout, we include controls for the log of market capitalization, abnormal trading volume, the company event indicator, and industry returns (or industry fixed effects, which yield similar results). We also control for other features relevant in the Initiative, as

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discussed further below. We follow the approach of Larcker, Ormazabal, and Taylor (2011) and pool the events that are expected to impact companies similarly, and we cluster standard errors at the firm level.

5.1.1. Strict regime - Alignment

Table 3 summarizes the regression results for Events 1 and 2. As a baseline, we begin by testing the alignment hypothesis, which has been the focus of much of the literature on say-on-pay. In particular, we consider variation in share price reactions depending on the current pay level.[18] If a company overpays its management, this suggests poor governance. The positive coefficient on abnormal pay in column (1) of Table 3 (and throughout) suggests that indeed the market anticipated positive value effects of say-on-pay. As such, 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). We also observe more positive reactions of firms with large "other pay" in the year before the Initiative. These amounts mostly concern generous contributions to pension funds or severance payments. These results highlight that shareholders do not only care about bonus payments (which receive the largest public attention) but also about the governance of pay.

<div align="center">TABLE 3 ABOUT HERE</div>

Additional factors also point towards improved alignment. In particular, if management was not working in the interest of shareholders before the adoption of a binding shareholder vote on compensation, a firm's stock performance was likely to be poor. Thus, we should observe that firms with poor performance in the past benefit more from the Initiative than those with the best

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[18]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.

performance. In line with this prediction, the results in Table 3 display a negative, though not quite significant relationship between the one year performance and the cumulative abnormal returns.

In what follows, we control for these proxies for the alignment benefits of say-on-pay (and other baseline controls) throughout in order to test whether the hold-up hypothesis can additionally explain variation in stock price reactions.

5.1.2. Strict regime - Hold-up

We consider four arguments and corresponding proxies for variation among firms regarding potential shareholder 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 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.[19] The CEO, in turn, may anticipate this problem and, therefore, not make the firm-specific investments that maximize firm and shareholder value. We expect the resulting distortions to be greatest where executives are mostly compensated with cash bonuses.

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[19]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.

Consistent with this prediction, column (2) of Table 3 shows that the CARs were 1 percentage point 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. This result continues to hold in column (3), where we add control variables further below.

Second, 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 stock volatility exhibited more negative reactions to the Initiative.

Third, older firms have more established and rigid operations and have fewer growth opportunities (Loderer, Stulz, and Waelchli, 2017). Thus, developing growth opportunities in these companies is both more important and requires more effort, but as Loderer, Stulz, and Waelchli (2017) state, "performance of management in developing growth opportunities is much harder to assess" (p. 5). This results in a hold-up problem as ex ante management knows that there is higher uncertainty whether shareholders will in fact agree that management performance was bonus-worthy. (Another channel is that management in older firms has lower equity ownership, but we consider this factor separately.) Column (5) of Table 3 shows evidence in line with this prediction: Firms in the top quartile of firm age reacted most negatively to the Initiative.[20]

Fourth, some management teams participate in the success of their companies not only through yearly bonuses, but also (and indeed in some cases mostly) through appreciation of their shareholdings. The literature shows that equity "delta" has important incentive effects for management. To approximate the extent to which managers participate in the company success, we compute

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[20]The effect appears to be non-linear. Log firm age enters with the same sign, but is not significant on conventional levels.

the percentage of shares held by management.[21] Managers with large shareholdings can anticipate returns on their human capital investments even without relying on the annual say-on-pay vote. Thus, hold-up concerns should play a less pronounced role for these firms. Column (6) shows that indeed these firms responded (mildly) more positively to the Initiative.[22]

All these results hold when including all variables jointly together (column 7). Only firm age loses significance on conventional levels, arguably because management shareholdings and firm age are negatively correlated.

Column (8) presents results of a final test of the channels. We expect managers to worry most about being held up at the time of the say-on-pay vote when they are dealing with a dispersed and often-changing shareholder base. By contrast, when a large fraction of the shares are held by blockholders, who are likely to remain with the firm, hold-up is less likely to occur. Consistent with this hypothesis, in column (8) we find a strongly significant positive interaction term between the fraction of blockholders, defined as the difference between shares outstanding and shares in free float divided by shares outstanding, and cash-only incentives.[23]

Overall, the results support *Hypothesis 2*. It may well be that multiple forces are at work that drive some of the empirical facts we observe. Nonetheless, the extra-contractual investments framework is attractive because it provides a single framework that makes several different predictions that could easily be wrong. The various factors for which it correctly makes predictions are al-

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[21]Option holdings are not systematically disclosed with sufficient information by companies in our sample period.

[22]This finding is interesting because in principle large management shareholdings also indicate that alignment with shareholder interests is already strong. This would suggest a negative relation between announcement returns and managerial shareholdings if the alignment channel would be the only factor at work.

[23]Blockholders can arguably more easily implement the governance and compensation structure they deem most suitable for the company. As a consequence, alignment is not expected to improve further for those firms. In line with this expectation, the fraction of blockholders themselves has a negative effect on announcement returns. 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.

most uncorrelated empirically. None of the four independent predictions – regarding pay structure, uncertainty, firm age, and management shareholdings – is rejected in the data.

5.1.3. Other explanations

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, and v) the maximum number of directorships board members currently have with other Swiss public companies.

Moreover, there are some other provisions of the Initiative that were new to *all* firms. These rules may have heterogeneous effects because firms with greater agency problems can be hypothesized to respond more favorably to such rules. For example, the annual election of each member of the compensation committee, electronic distance voting, and the abolition of bonus payments to corporate executives and board members in the case of firm acquisitions / divestitures were newly introduced for all firms, but the effects can plausibly be hypothesized to be stronger for firms with poor pay-for-performance (high abnormal variable pay) before the Initiative. Therefore, this variable may also pick up part of effects due to these factors (which is a limitation, but a relatively

minor one, given our main interest in the hold-up variables).

For a few new rules, no suitable data are available. In particular, there are no systematic data on pension fund ownership of stocks, thus making it impossible to control for differences in exposure to the provision that pension funds now have to disclose their voting behavior. Finally, there are some rules which can be expected to strengthen any cross-sectional effects. In particular, the potential for board members or executives to go to prison if compensation is paid without approval by the general assembly should make the overall effect of the rules stronger across the board.

Table 3 controls for the six proxies for the different other provisions of the Initiative that clearly vary across firms. We find that firms where board members were "busy" and firms where CEOs had received loans reacted more positively to the Initiative, indicating that the market considered alignment with shareholder interests to improve with the corresponding new rules. The other provisions did not significantly affect stock returns. The main effects on hold-up proxies are unaffected by controlling for these factors.

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

Another potential explanation for the results is unobserved CEO skill. More highly skilled CEOs may have more outside opportunities and would, therefore, be more likely to leave the firm if their contract becomes less attractive. Skill is difficult to measure directly. However, this story would arguably 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.[24]

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 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] The regression results overall suggest that the hold-up problem inherent in the original design of the Initiative (Events 1 and 2) was ameliorated by the possibility for firms to choose more flexible voting regimes. Specifically, the effects of cash-only bonus, annual volatility, and manager shareholdings reversed. Only the negative effect for old companies observed in the first two events persisted. Conversely, however, the negative (though not always) significant interaction effects for abnormal compensation suggest that the alignment benefits of the original Initiative were modestly weakened by the OaEC. For the other pay component, the

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[24]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.

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

OaEC did not change the original rules of the Initiative, that is, certain pay types remain forbidden even under the OaEC. Consistent with this, we do not see any reversal in Events 3 and 4 for this variable.

In sum, the central result revealed in our analysis is a 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.

5.2. Real effects: CEO turnover, compensation practices and voting regime choices

In this section, we extend our previous results based on market reactions with an analysis of actual changes at the firm level. Specifically, we test whether (i) the probability of CEO turnover and (ii) the executive compensation practices (structure and level) changed after the events in a way that is consistent with the results we obtained for the initial market reaction. Finally (iii), we analyze whether the companies' choices of which voting regime to implement (fully prospective or partially retrospective) reflect concerns about hold-up.

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

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.[26] Given that announcement returns reflect these concerns, we expect turnover to be

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[26]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.

particularly high in firms reacting more negatively to the Initiative.

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

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

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

FIGURE 2 ABOUT HERE

Figure 2 shows that indeed companies reacting the most negatively to 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.

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 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 2*, 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:

$$\textit{Cash-share of CEO bonus pay}_{i,t} =$$

$$\alpha + \beta_1 * \mathbb{1}(\textit{CEO}_{i,t} \textit{ received cash-only bonus pre event}) * \textit{Dummy (years post event)} \qquad (2)$$

$$+ \Gamma_1 * \textit{controls} * \textit{Dummy (years post event)} + \Gamma_2 * \textit{firm} + \Gamma_3 * \textit{industry} * \textit{year} + \epsilon$$

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.[27] In line with specification (1), we estimate the following regression for the variable compensation level on the pooled sample:

$$\textit{Abnormal variable pay ratio for CEO}_{i,t} =$$

$$\alpha + \beta_1 * \mathbb{1}(\textit{CEO}_{i,t} \textit{ was over/underpaid pre event}) * \textit{Dummy (years post event)} \qquad (3)$$

$$+ \Gamma_1 * \textit{controls} * \textit{Dummy (years post event)} + \Gamma_2 * \textit{firm} + \Gamma_3 * \textit{industry} * \textit{year} + \epsilon$$

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

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[27]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.

react to the events by increasing alignment, as per Hypothesis 1, 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.[28] Γ_1 is a vector of further control variables and Γ_2 and Γ_3 representing firm and industry-year fixed effects.

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* 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

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

particular shareholder vote anymore.

<center>TABLE 6 ABOUT HERE</center>

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 31.7% to 34.8%, 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 30.8% and 14.1%, 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.

<center>32</center>

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.

5.2.5. Voting Regime Choice: Method

After the OaEC introduced the possibility for firms to choose their voting regime, we expect firms to use this margin of ameliorating hold-up concerns as well. Specifically, we expect that companies more susceptible to hold-up problems, for example, due to their practice of using only cash bonuses, to be more likely to choose a fully prospective voting regime. Firms were free to chose which voting regime to implement, but had to receive approval by their shareholders as this choice had to be included in the company's articles of association. Because this decision only happened after the OaEC was implemented, we include companies in the regression that were in the sample at the time of Event 3. We analyze the determinants of firm i's voting regime choice with a cross-sectional probit regression:

$$Fully\ prospective\ vote_i = \alpha + \beta_1 * (Hold\text{-}up\ and\ alignment\ proxies) + \Gamma_1 * controls + \epsilon, \quad (4)$$

with the dependent variable being an indicator equal to one when the company choose a fully prospective vote, that is, all compensation elements are approved by shareholders for future periods, and zero when some elements of the compensation are subject to an ex-post vote. We use the same hold-up and alignment proxies as those used in Table 3. Γ_1 is a vector of control variables.

5.2.6. *Voting Regime Choice: Results*

Table 7 summarizes the results. Companies that used to pay bonuses in cash had a tendency to choose fully prospective regimes (column 1), in line with the notion that with this approach they could best avoid the hold-up concerns. Similarly, high-volatility companies, for which hold-up is arguably more concerning, were generally less likely to adopt retrospective voting regimes, though this result is only weakly significant (column 2). These results fit with the finding in Table 4 that when the OaEC was implemented, the original negative effect of cash-only bonuses and volatility was reversed. Interestingly, we also find that older companies, for which hold-up concerns in principle are worse, were more likely to adopt retrospective voting regimes (column 3). It is not clear why this occurred; anecdotally, this result may reflect some "traditional" Swiss companies appeared to have used this opportunity as a statement of how closely they want to align themselves with the will of the people. Whatever the motivation, what is noteworthy is that this effect also aligns with Table 4. Specifically, in that table we observe that the OaEC did not help revert the original negative effect of higher firm age. Finally, and again consistent with the hold-up logic, the larger the fraction of shares held by blockholders, the more retrospective voting on bonuses was acceptable; by contrast, with a larger free float, prospective voting was more frequently chosen.

Overall, these results suggest that firms sought to avoid hold-up concerns by choosing a suitable say-on-pay regime, and they further support the interpretation of the results from the stock price reactions.

6. Conclusion

Policy makers around the world are active in enhancing shareholder rights. A particularly important dimension of shareholder rights concerns executive compensation. Several papers document 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, and a broader literature, reviewed in the introduction, has highlighted the benefits of limits of shareholder power, e.g., when it comes to replacing boards. 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 bud-

get 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. We also find that companies arguably most exposed to hold-up concerns used the flexibility afforded to them by the ordinance to implement a prospective say-on-pay system.

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.
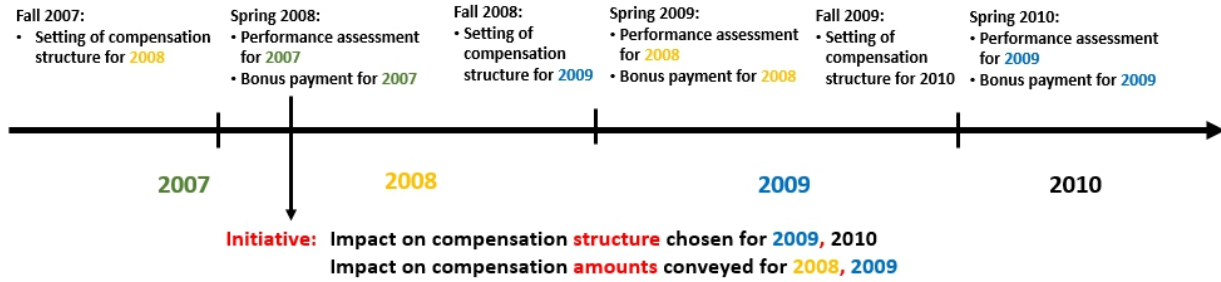
(a) **Impact of the Initiative**
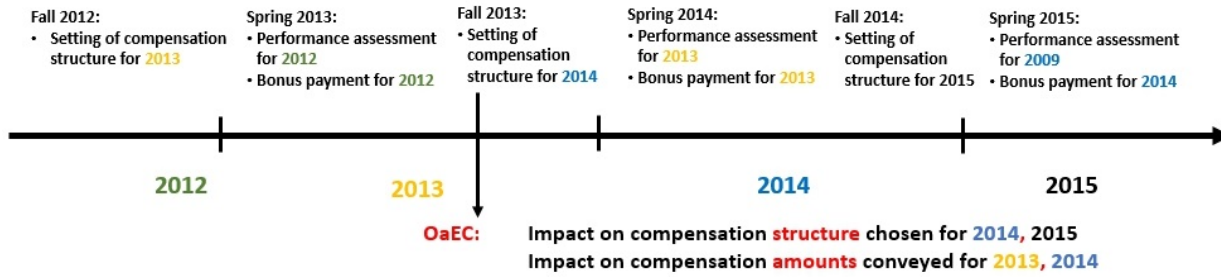
(b) **Impact of the OaEC**

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.
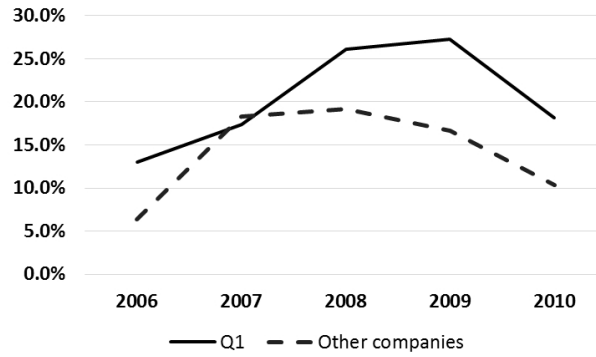
Table 1. Variable descriptions

Variable	Description
Abnormal Trading Volume	Ratio of the difference between the trading volume in the three-day event window and three-times the median trading volume of the respective firm in the previous year, standardized by the median trading volume of the respective firm in the previous year. Information about trading volume was obtained from Refinitiv / Thomson Reuters.
Abnormal Variable Pay Ratio	Ratio of actual variable remuneration (short- and long-term incentives) and the estimated normal variable remuneration granted by the average comparable firm. The prediction of the normal variable CEO compensation is based on log(market capitalization), one-year performance of the company's ICB-industry, the company's annual return and a control for the number of months the CEO served for the company in the year under review. Data on compensation are hand-collected from annual statements.
Annual Return	Annual return is based on the 250 trading days apart daily total return index levels ending two days before each event with data from the Compustat Global database.
Annual Volatility	Annualized volatility of the daily returns of the companies' total return index over the prior financial year, with data from the Compustat Global database.
Cash-only Incentive	Indicator variable equal to 1 if the entire variable compensation is paid in cash. Compensation data are hand-collected.
CEO Loans	Indicator variable equal to 1 if the CEO has outstanding loans provided by the company. Data are hand-collected from companies' annual reports.
CEO Swiss	Indicator variable equal to 1 if the CEO is a Swiss national. Data are hand-collected from companies' annual reports and other publicly available information.
CEO Turnover	Indicator variable equal to 1 in case there was a CEO change in a given year. Data are hand-collected from companies' annual reports and other disclosures.
Change of Control	Indicator variable equal to 1 if the company has a specific change of control clause with respect to executive compensation. Data are hand-collected from companies' annual reports.
Company Event	Indicator variable equal to one if a company communicated results to the media within five days around the event window. This information was hand-collected from the companies' websites.
Cumulative Abnormal Return (CAR)	Abnormal returns calculated on the basis of the market model using a European benchmark index as described in Section 5.1.
Fraction Blockholder	Difference between shares issued and free float shares relative to issued shares, calculated with data obtained from Refinitiv / Thomson Reuters Datastream.
Fraction Other Compensation	Sum of non-standard CEO compensation, such as sign-on payments, payments for consulting services, social security contributions, termination benefits etc. relative to total CEO compensation. All compensation data are hand-collected from companies' annual reports.
Individual Election	Indicator variable equal to 1 if each member of the board of directors is elected individually. Data are hand-collected from companies' annual reports and AGM invitations.
Industry Return	Annual return based on the development of the total return index of the ICB-classified industry segments of the SPI® index of the SIX Swiss Stock Exchange, obtained from Refinitiv-Datastream.
ln(Market Capitalization)	Log of a company's free float adjusted market capitalization, obtained from the Compustat Global database.
Long Notice Period	Indicator variable equal to 1 if the CEO has a notice period longer than the regular 12 months. Data are hand-collected from companies' annual reports.
Major Shareholder	Indicator variable equal to 1 if a single investor holds at least 20% of a company's outstanding shares. Data are hand-collected from information published by SIX Swiss Stock Exchange.
Management Shareholdings	Management shareholdings measures the fraction of shares outstanding held by management and the board of directors. Data on management shareholdings are hand-collected from annual reports, data on shares outstanding obtained from Refinitiv Datastream.
Maximum Directorships	Highest number of directorships in listed Swiss companies held amongst the members of a board.
Months	Number of months a CEO has served for the company in the previous year
Old Company	Indicator variable equal to 1 if the company belongs to the oldest quartile of companies in the sample. Data on company age are obtained from the annual yearbook of listed companies in Switzerland, issued by Finanz und Wirtschaft, a leading business newspaper in Switzerland.
Termination Benefits	Indicator variable equal to 1 if the company's compensation framework allows for above standard termination benefits. Data are hand-collected from companies' annual reports.

Table 2. Summary statistics

This table displays firm summary statistics for the largest 100 firms in the Swiss Performance Index (SPI) which constitute the base sample. Panel A shows the statistics for each event, in Panels B to F, statistics are shown for Event 1. Limited availability of some variables of interest reduces the working sample in the event study regressions to 81, 83, 84, and 84 firms for Events 1 through 4, respectively. Variable definitions are provided in Table 1.

	Mean	Std. Dev.	Min.	p25	Median	p75	Max.
Panel A: CAR by Event							
CAR Event 1 (in %)	0.77%	4.18%	-14.71%	-0.71%	1.39%	2.83%	9.27%
CAR Event 2 (in %)	0.28%	2.04%	-5.58%	-0.80%	0.16%	1.16%	11.09%
CAR Event 3 (in %)	0.16%	1.53%	-3.42%	-0.77%	0.16%	0.97%	4.96%
CAR Event 4 (in %)	-0.86%	1.72%	-6.27%	-1.65%	-0.91%	0.04%	4.68%
Panel B: Firm Characteristics							
Abnormal Trading Volume (ratio)	1.5517	1.5081	.346065	.8298	1.1780	1.6061	10.6740
Annual Return (in %)	-6.77%	45.44%	-64.56%	-26.40%	-9.41%	3.25%	355.78%
Annual Volatility (in %)	29.33%	12.58%	3.53%	21.76%	27.20%	35.78%	71.04%
Company Age (years)	92	60	9	29	100	145	214
Company Event (binary indicator)	0.20	0.41	0.00	0.00	0.00	0.00	1.00
Fraction Blockholder (in %)	27.69%	25.26%	0.00%	5.00%	22.00%	50.00%	98.00%
Industry Return (in %)	8.22%	20.39%	-43.54%	3.98%		20.16%	26.06%
Major Shareholder (in %)	30.11%	46.12%	0.00%	0.00%	0.00%	100.00%	100.00%
Management Shareholdings (in %)	12.64%	20.24%	0.02%	0.30%	0.75%	17.65%	70.30%
Market Capitalization (in Mio. CHF)	12'642	31'013	313	1'068	2'871	6'864	196'045
Maximum Directorships (#)	2	1	0	2	2	3	4
Panel C: CEO Compensation Amounts							
Base Pay (in CHF)	1'227'496	1'319'367	193488	553'000	801'118	1'490'516	9'429'724
Variable Cash Pay (in CHF)	647'258	956'699	0	102'000	316'415	683'000	4'334'100
Variable Equity Pay (in CHF)	2'168'510	3'672'083	0	221'000	604'438	2'084'279	20'100'000
Other Pay (in CHF)	507'368	1'954'132	0	94'564	182'000	265'407	16'500'000
Total Pay (in CHF)	4'548'086	4'994'580	629'000	1'440'000	2'473'735	5'466'991	22'300'000
Panel D: CEO Compensation Structure (in % of Total Pay)							
Fraction Base Pay (in %)	37.84%	20.36%	3.24%	20.81%	35.22%	51.55%	89.37%
Fraction Variable Cash Pay (in %)	19.63%	18.86%	0.00%	5.49%	14.94%	29.61%	86.16%
Fraction Variable Equity Pay (in %)	32.66%	26.39%	0.00%	10.85%	27.52%	52.89%	89.99%
Fraction Other Pay (in %)	10.23%	12.11%	0.00%	3.23%	7.76%	11.57%	85.85%
Cash-only Incentive (binary indicator)	0.24	0.43	0	0	0	0	1.00
Panel E: Compensation Governance							
CEO Loans (binary indicator)	0.08	0.27	0.00	0.00	0.00	0.00	1.00
CEO Turnover (binary indicator)	0.16	0.37	0.00	0.00	0.00	0.00	1.00
Change of Control (binary indicator)	0.23	0.42	0.00	0.00	0.00	0.00	1.00
Individual Election (binary indicator)	0.52	0.50	0.00	0.00	1.00	1.00	1.00
Long Notice Period (binary indicator)	0.05	0.23	0.00	0.00	0.00	0.00	1.00
Termination Benefits (binary indicator)	0.12	0.32	0.00	0.00	0.00	0.00	1.00

Table 3. Market reactions to binding say-on-pay, Events 1 and 2

This table presents regression results based on Events 1 and 2 where compensation was expected to be subject to *retrospective* shareholder approval. The dependent variable is the Cumulative Abnormal Return during the three day window of each event. The explanatory variables pertain, if not mentioned differently in Section 4.3, to the financial year prior to the event and are defined in Table 1. t-values, reported in parentheses, are calculated based on standard errors clustered at the firm level. Significance levels: * 0.10, ** 0.05, *** 0.01.

Dependent variable:	Cumulative Abnormal Return (%)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cash-only Incentive		-0.010*	-0.010*				-0.012**	-0.032***
		(-1.92)	(-1.77)				(-2.15)	(-3.41)
Annual Volatility				-0.064**			-0.056**	-0.059**
				(-2.42)			(-2.13)	(-2.37)
Old Company					-0.011**		-0.006	-0.006
					(-2.07)		(-1.24)	(-1.04)
Management Shareholdings						0.023	0.025*	0.027**
						(1.63)	(1.76)	(2.01)
Fraction Blockholder * Cash-only Incentive								0.060***
								(3.42)
Abnormal Variable Pay Ratio	0.097**	0.076*	0.071	0.127***	0.088**	0.076*	0.069	0.061
	(2.26)	(1.83)	(1.55)	(2.64)	(2.09)	(1.94)	(1.56)	(1.43)
Fraction Other Pay	0.017***	0.017***	0.014**	0.015**	0.013**	0.016**	0.015**	0.012*
	(3.20)	(3.35)	(2.19)	(2.28)	(2.03)	(2.44)	(2.35)	(1.91)
Annual Return	-0.017	-0.018	-0.017	-0.012	-0.015	-0.016	-0.013	-0.014
	(-1.45)	(-1.50)	(-1.39)	(-1.07)	(-1.29)	(-1.30)	(-1.06)	(-1.12)
Industry Return	-0.043	-0.039	-0.026	-0.035	-0.035	-0.035	-0.041	-0.030
	(-1.60)	(-1.45)	(-0.92)	(-1.30)	(-1.23)	(-1.19)	(-1.45)	(-1.07)
ln(Market Capitalization)	0.006***	0.005***	0.004	0.003	0.005**	0.005**	0.002	0.001
	(3.38)	(2.81)	(1.65)	(1.33)	(2.33)	(2.34)	(0.98)	(0.58)
Company Event	0.021**	0.021**	0.022**	0.022**	0.021**	0.022**	0.022**	0.024**
	(2.13)	(2.19)	(2.12)	(2.12)	(2.07)	(2.19)	(2.26)	(2.53)
Abnormal Trading Volume	-0.004	-0.004	-0.004	-0.005	-0.004	-0.004	-0.005	-0.005
	(-0.78)	(-0.78)	(-0.81)	(-0.98)	(-0.79)	(-0.92)	(-1.04)	(-1.02)
Fraction Blockholder			-0.007	-0.009	-0.009	-0.013	-0.012	-0.026**
			(-0.70)	(-0.87)	(-0.85)	(-1.24)	(-1.13)	(-2.34)
Major Shareholder			0.004	0.004	0.005	0.004	0.002	0.001
			(0.62)	(0.75)	(0.86)	(0.76)	(0.44)	(0.16)
Individual Election			-0.002	-0.001	-0.002	-0.001	-0.002	-0.003
			(-0.42)	(-0.19)	(-0.44)	(-0.19)	(-0.31)	(-0.64)
CEO Loans			0.015*	0.014	0.021**	0.017**	0.017**	0.017*
			(1.86)	(1.64)	(2.44)	(2.10)	(2.02)	(1.95)
Long Notice Period			0.001	-0.001	0.000	-0.001	0.001	-0.001
			(0.08)	(-0.13)	(0.04)	(-0.19)	(0.10)	(-0.20)
Change of Control			0.004	0.008	0.010	0.008	0.008	0.007
			(0.51)	(0.96)	(1.10)	(0.85)	(1.03)	(0.89)
Termination Benefits			0.001	0.000	-0.003	0.002	0.002	0.001
			(0.16)	(0.06)	(-0.34)	(0.28)	(0.25)	(0.16)
Maximum Directorships			0.009***	0.009***	0.010***	0.008**	0.010***	0.009***
			(2.81)	(2.82)	(2.96)	(2.55)	(3.00)	(2.91)
Constant	-0.130***	-0.097**	-0.113**	-0.145***	-0.142***	-0.131***	-0.079*	-0.058
	(-2.84)	(-2.28)	(-2.09)	(-2.83)	(-2.81)	(-2.68)	(-1.66)	(-1.27)
Observations	164	164	164	164	164	163	163	163
R^2	0.204	0.213	0.229	0.250	0.235	0.247	0.292	0.320

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

This table presents regression results based on all four events. The dependent variable is the CAR during the three day window of each event. Events 1 and 2 capture reactions to the original Initiative, requiring *retrospective* shareholder approval of compensation. Events 3 and 4 capture reactions 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 explanatory variables pertain, if not mentioned differently in Section 4.3, to the financial year prior to the event and are defined in Table 1. *Controls* indicate that the regressions include, besides the indicated interacted variables, all explanatory variables used in Table 3 as well as their *OaEC-cross-terms. t-values, reported in parentheses, are calculated based on standard errors clustered at the firm level. Significance levels: * 0.10, ** 0.05, *** 0.01.

Dependent variable:	Cumulative Abnormal Return (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
Cash-only Incentive		-0.013**				-0.014**
		(-2.37)				(-2.50)
Cash-only Incentive * OaEC		0.017***				0.018***
		(2.81)				(2.90)
Annual Volatility			-0.075***			-0.063**
			(-3.04)			(-2.56)
Annual Volatility * OaEC			0.079***			0.060**
			(2.72)			(2.11)
Old Company (Q4)				-0.008		-0.004
				(-1.54)		(-0.79)
Old Company (Q4) * OaEC				0.005		0.001
				(0.86)		(0.13)
Management Shareholdings					0.020	0.023
					(1.47)	(1.63)
Management Shareholdings * OaEC					-0.025	-0.030*
					(-1.65)	(-1.85)
Abnormal Variable Pay Ratio	0.093**	0.065	0.134***	0.088**	0.076**	0.075*
	(2.13)	(1.48)	(2.82)	(2.12)	(2.05)	(1.83)
Abnormal Variable Pay Ratio * OaEC	-0.083	-0.049	-0.131**	-0.081	-0.060	-0.057
	(-1.42)	(-0.81)	(-2.17)	(-1.41)	(-1.23)	(-1.11)
Fraction Other Pay	0.014**	0.014**	0.014**	0.014**	0.016***	0.016***
	(2.56)	(2.61)	(2.45)	(2.43)	(2.78)	(2.86)
Fraction Other Pay * OaEC	0.011	0.004	0.008	0.012	0.012	0.003
	(0.98)	(0.40)	(0.63)	(1.12)	(1.11)	(0.27)
OaEC	0.094	0.057	0.126**	0.094	0.078	0.062
	(1.56)	(0.91)	(2.02)	(1.59)	(1.54)	(1.17)
Constant	-0.131***	-0.094*	-0.140***	-0.125***	-0.117***	-0.079*
	(-2.67)	(-1.92)	(-2.90)	(-2.65)	(-2.67)	(-1.90)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	332	332	332	332	331	331
R-squared	0.185	0.200	0.218	0.189	0.200	0.248

Table 5. CEO Turnover following the events

This table summarizes probit regressions explaining CEO turnover. 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. The explanatory variables pertain, if not mentioned differently in Section 4.3, to the financial year prior to the event and are defined in Table 1 . Regressions in columns (1) and (2) cover the period of the Initiative, 2007 to 2010, while columns (3) and (4) cover the period of the OaEC, 2012 to 2015. t-values, reported in parentheses, are calculated based on standard errors clustered at the firm level. Significance levels: * 0.10, ** 0.05, *** 0.01.

Dependent variable:	CEO Turnover			
	(1)	(2)	(3)	(4)
Event:	Initiative	Initiative	OaEC	OaEC
Low CAR	0.374*	0.380*	-0.390*	-0.502*
	(1.74)	(1.80)	(-1.66)	(-1.89)
Annual Return$_{(t-1)}$	-0.218	-0.209	-0.623*	-0.669*
	(-1.23)	(-1.15)	(-1.85)	(-1.91)
Industry Return$_{(t-1)}$	0.479*	0.492*	-0.146	-0.114
	(1.70)	(1.75)	(-0.28)	(-0.21)
Ln(Market Capitalization)	0.102**	0.086*	0.058	0.073
	(2.16)	(1.71)	(1.06)	(1.14)
M/B	-0.094*	-0.101	0.001	-0.023
	(-1.71)	(-1.58)	(0.03)	(-0.40)
Return on Assets	-0.003	-0.002	-0.006	-0.004
	(-0.35)	(-0.24)	(-0.45)	(-0.22)
CEO Age		-0.015		-0.062***
		(-1.07)		(-3.03)
CEO Swiss		-0.187		0.036
		(-0.95)		(0.17)
Constant	-1.815***	-0.751	-1.557***	1.677
	(-4.42)	(-0.90)	(-3.65)	(1.54)
Observations	347	326	336	314
Pseudo R-squared	0.0622	0.0933	0.092	0.2191

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 fraction of the CEO's 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, as defined in Table 1. 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 between Panel A and Panel B derives from a difference in timing in terms of compensation setting and payout (see Figure 2(b)). Controls are return on assets, total shareholder return, market to book, log of market capitalization and presence of a major shareholder controlling $\geq$20% of a company's shares. t-values, reported in parentheses, are calculated based on standard errors clustered at the firm level. Significance levels: * 0.10, ** 0.05, *** 0.01.

Panel A: Changes in Cash Compensation

Dependent variable:	Cash-share of CEO Incentive			
	(1)	(2)	(3)	(4)
Event:	Initiative	Initiative	OaEC	OaEC
CEO cash-only Incentive pre event	-0.317***	-0.348***	-0.040	-0.076
* dummy(post event)	(-5.11)	(-4.43)	(-0.60)	(-1.17)
Pre/Post Controls	No	Yes	No	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes
Observations	340	334	356	350
R-squared	0.19	0.218	0.105	0.148

Panel B: Changes in Abnormal Variable Compensation (AVC)

Dependent variable:	Abnormal Variable Pay Ratio			
	(1)	(2)	(3)	(4)
Event:	Initiative	Initiative	OaEC	OaEC
$\mathbb{1}$(Pre AVC)*dummy(post event)	-0.279**	-0.308**	-0.175***	-0.141**
	(-2.44)	(-2.58)	(-2.79)	(-2.08)
Pre/Post Controls	No	Yes	No	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes
Observations	330	326	349	348
R-squared	0.193	0.246	0.122	0.184

Table 7. Choice of compensation voting regimes

This table summarizes probit regressions explaining the choice of the compensation voting regime. The dependent variable is an indicator equal to one when the company chose a fully prospective vote, that is, all compensation elements are approved by shareholders for future periods, and zero when some elements of the compensation are subject to an ex-post vote. The sample consists of companies for which data are available for Event 3. The explanatory variables pertain, if not mentioned differently in Section 4.3, to the financial year prior to the event and are defined in Table 1. *Controls* indicate that the regressions include, besides the variables of interest shown in the table, all other explanatory variables that are also used in Table 3 (except the company event indicator). t-values, reported in parentheses, are calculated based on standard errors clustered at the firm level. Significance levels: * 0.10, ** 0.05, *** 0.01.

Dependent variable:	Fully Prospective Vote				
	(1)	(2)	(3)	(4)	(5)
Cash-only Incentive	0.817*				0.880*
	(1.75)				(1.84)
Annual Volatility		3.975*			2.698
		(1.79)			(1.24)
Old Company			-0.637*		-0.646*
			(-1.85)		(-1.74)
Management Shareholdings				1.094	0.813
				(1.24)	(0.97)
Abnormal Variable Pay Ratio	4.531	1.255	2.593	1.922	2.422
	(1.40)	(0.36)	(0.86)	(0.62)	(0.68)
Fraction Other Compensation	-1.724	-1.044	-1.193	-1.225	-1.491
	(-1.11)	(-0.70)	(-0.86)	(-0.83)	(-0.98)
Annual Return	-0.584	-1.157	-0.521	-0.664	-1.009
	(-0.92)	(-1.61)	(-0.84)	(-1.10)	(-1.43)
Industry Return	2.421	2.565	1.895	2.299	1.737
	(1.14)	(1.12)	(0.86)	(1.02)	(0.82)
ln(Market Capitalization)	0.175	0.150	0.078	0.086	0.263
	(1.19)	(1.04)	(0.59)	(0.66)	(1.56)
Fraction Blockholder	-0.963	-0.937	-0.976	-1.231*	-1.145
	(-1.37)	(-1.34)	(-1.36)	(-1.68)	(-1.51)
Constant	-4.564	-1.907	-1.557	-1.167	-3.383
	(-1.19)	(-0.48)	(-0.44)	(-0.33)	(-0.81)
Controls	Yes	Yes	Yes	Yes	Yes
Observations	84	84	84	84	84
Pseudo R-squared	0.1268	0.1294	0.1301	0.1108	0.1923

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. In the spirit of the event-study methodology, 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[29], the content of this final version was also, to a certain extent, unclear before the final release date.

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[29]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. 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 2.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Cash-only Incentive	1.00																			
Annual Volatility	0.05	1.00																		
Company Age	0.07	-0.20	1.00																	
Management Shareholdings	0.10	0.08	-0.05	1.00																
Abnormal Variable Pay Ratio	-0.34	0.38	-0.21	0.22	1.00															
Fraction Other Compensation	0.21	-0.15	0.10	-0.05	-0.36	1.00														
Annual Return	-0.10	0.18	-0.02	-0.01	0.08	-0.12	1.00													
Industry Return	-0.04	0.14	-0.06	0.08	0.12	-0.06	0.21	1.00												
ln(Market Capitalization)	-0.41	-0.19	0.17	-0.14	0.00	-0.13	0.07	0.18	1.00											
Company Event	0.01	0.17	-0.03	0.11	0.19	-0.11	-0.08	-0.02	-0.03	1.00										
Abnormal Trading Volume (in %)	0.12	-0.10	0.00	0.16	0.04	0.03	-0.02	-0.03	-0.15	0.17	1.00									
Fraction Blockholder	0.16	-0.11	0.13	0.15	-0.22	0.10	-0.11	-0.08	-0.21	-0.01	0.20	1.00								
Major Shareholder	-0.06	-0.18	0.20	0.22	-0.06	-0.02	0.03	-0.04	-0.02	-0.04	0.23	0.49	1.00							
Individual Election	-0.09	0.13	0.05	-0.06	0.03	-0.08	-0.18	0.08	0.18	0.03	0.00	0.00	-0.08	1.00						
CEO Loans	0.00	-0.02	0.10	-0.03	-0.06	-0.02	-0.16	-0.15	-0.03	-0.01	0.09	0.10	0.04	0.23	1.00					
Long Notice Period	-0.03	-0.02	0.06	0.00	0.06	-0.05	-0.06	-0.05	0.11	-0.05	-0.01	0.01	0.01	0.17	0.13	1.00				
Change of Control	-0.01	0.12	0.00	-0.04	-0.03	0.08	-0.20	0.08	0.07	0.12	0.01	-0.02	-0.15	0.12	0.00	0.07	1.00			
Termination Benefits	-0.01	0.06	-0.08	-0.07	0.03	-0.05	-0.11	0.18	0.11	-0.04	0.08	-0.05	-0.12	0.18	0.04	0.14	0.38	1.00		
Maximum Directorships	-0.23	0.09	0.17	-0.12	0.17	-0.09	-0.01	0.21	0.54	0.11	-0.18	-0.21	-0.11	0.22	-0.02	-0.03	0.11	0.05	1.00	
CEO Turnover	-0.10	0.11	-0.13	-0.06	0.10	0.06	-0.04	0.07	0.04	0.11	-0.04	-0.02	0.03	0.05	-0.03	0.01	0.00	-0.02	-0.07	1.00

Table A2. Market reaction to binding say-on-pay with industry fixed-effects, Events 1 and 2

This table presents regression outputs based on Events 1 and 2 where compensation was expected to be subject to *retrospective* shareholder approval. The dependent variable is the Cumulative Abnormal Return during the three day event window in each event. The explanatory variables pertain, if not mentioned differently in Section 4.3, to the financial year prior to the event and are defined in Table 1. For simplicity, only variables for interest are shown while control variables were the same as used in Table 3. All regressions include industry fixed effects. t-values, reported in parentheses, are calculated based on standard errors clustered at the firm level. Significance levels: * 0.10, ** 0.05, *** 0.01.

Dependent variable:	Cumulative Abnormal Return (%)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cash-only Incentive		-0.008	-0.008				-0.010	-0.031***
		(-1.37)	(-1.24)				(-1.63)	(-3.20)
Annual Volatility				-0.066**			-0.060**	-0.064**
				(-2.22)			(-2.04)	(-2.28)
Old Company					-0.010*		-0.005	-0.004
					(-1.79)		(-0.80)	(-0.68)
Management Shareholdings						0.027**	0.028**	0.031**
						(2.16)	(2.19)	(2.50)
Fraction Blockholder * Cash-only Incentive								0.063***
								(3.39)
Abnormal Variable Pay Ratio	0.092*	0.077	0.077	0.128**	0.087*	0.077	0.083	0.075
	(1.80)	(1.55)	(1.44)	(2.26)	(1.70)	(1.54)	(1.60)	(1.47)
Fraction Other Compensation	0.015**	0.015**	0.011	0.012	0.012	0.013*	0.013*	0.010
	(2.52)	(2.49)	(1.50)	(1.64)	(1.59)	(1.71)	(1.88)	(1.55)
Annual Return	-0.017	-0.018	-0.017	-0.014	-0.016	-0.016	-0.014	-0.016
	(-1.41)	(-1.47)	(-1.48)	(-1.22)	(-1.40)	(-1.39)	(-1.22)	(-1.31)
ln(Market Capitalization)	0.006***	0.005***	0.005*	0.005*	0.006**	0.006**	0.004	0.003
	(3.22)	(2.73)	(1.94)	(1.94)	(2.48)	(2.53)	(1.58)	(1.29)
Company Event	0.022**	0.022**	0.022**	0.023**	0.021**	0.021**	0.021**	0.024**
	(2.28)	(2.31)	(2.16)	(2.22)	(2.07)	(2.21)	(2.27)	(2.58)
Abnormal Trading Volume	-0.003	-0.003	-0.003	-0.003	-0.002	-0.003	-0.003	-0.003
	(-0.61)	(-0.63)	(-0.59)	(-0.72)	(-0.51)	(-0.61)	(-0.79)	(-0.78)
Fraction Blockholder			-0.009	-0.009	-0.010	-0.015	-0.014	-0.029**
			(-0.85)	(-0.85)	(-0.89)	(-1.38)	(-1.27)	(-2.50)
Major shareholder			0.006	0.006	0.007	0.007	0.004	0.002
			(1.04)	(0.99)	(1.22)	(1.17)	(0.64)	(0.38)
Constant	-0.135**	-0.109**	-0.129*	-0.159**	-0.150**	-0.143**	-0.108*	-0.085
	(-2.34)	(-1.99)	(-1.97)	(-2.50)	(-2.37)	(-2.28)	(-1.85)	(-1.50)
Controls	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.201	0.205	0.220	0.246	0.227	0.255	0.289	0.322
Observations	163	163	163	163	163	162	162	162

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