MAB MAANDBLAD VOOR ACCOUNTANCY EN BEDRIJFSECONOMIE

Maandblad voor Accountancy en Bedrijfseconomie 100(2) (2026): 59–68
DOI 10.5117/mab.100.180283

Research Articles

The link between executive remuneration incentives and regulatory noncompliance

Siemen Jan Ruben Bouwmeester, Eva Kristina Matthaei

Received 24 November 2025 | **Accepted** 7 January 2026 | **Published** 12 March 2026

Abstract

This study examines how executive remuneration structures relate to corporate misconduct in the form of regulatory noncompliance. Using a panel of US firms over the past 25 years, we link subsidiary-level violations of all major areas of corporate regulation (e.g., antitrust or employment law) to parent-company executive remuneration. We find that equity-based compensation is positively associated with regulatory noncompliance, whereas higher fixed remuneration relative to firm size significantly reduces it. These findings provide novel evidence on the unintended consequences of equity-based incentives and are relevant for boards, remuneration committees, and regulators concerned with executive pay design and compliance risks.

Relevance to practice

This research highlights unintended consequences of executive remuneration structures. By identifying equity-based pay as a factor that increases regulatory noncompliance, while higher fixed pay relative to firm size reduces it, the findings inform the optimal design of executive remuneration. They also support auditors and regulators in assessing corporate misconduct risk.

Keywords

Executive compensation, strategic noncompliance, regulatory violations, corporate misconduct, executive incentives

1. Introduction

Managers are hired to act on behalf of shareholders. Nevertheless, they face personal incentives that create a risk of agency conflicts, i.e., a misalignment between shareholder and executive interests, which in turn generates costs (Jensen and Meckling 1976). In practice, complex remuneration structures are implemented to mitigate agency conflicts, yet these structures may introduce new organizational challenges. This study examines such unintended consequences of executive remuneration by investigating the link between compensation structures and corporate regulatory noncompliance.

Our analysis builds on principal-agent theory (Jensen and Meckling 1976), which holds that conflicting interests between shareholders and managers can be mitigated through incentives embedded in compensation contracts, thereby reducing the need for costly monitoring. Empirical evidence shows that executives generally respond to incentives, though not always in the intended manner (Chen 2020). Performance-based pay may motivate executives to pursue short-term objectives at the expense of long-term value creation. By assessing whether different remuneration structures increase the likelihood that executives promote corporate policies involving regulatory noncompliance, we extend prior research in this field that focuses on executive incentives and excessive risk-taking (Akinsola and Liang 2025; Fahlenbrach and Stulz 2011; Ross 2004). In doing so, we contribute to a small but growing amount of empirical research that directly

Copyright *Siemen Jan Ruben Bouwmeester, Eva Kristina Matthaei.* This is an open access article distributed under the terms of the Creative Commons Attribution License (CC-BY-NC-ND 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Amsterdam University Press

examines the role of executives in firm regulatory violations (Chircop et al. 2025; Gencer 2021; Raghunandan 2021). Our findings help to explain why some executives deliberately tolerate regulatory risk as part of their strategic behavior.

Executive compensation typically combines equity-based and non-equity-based components, each affecting regulatory noncompliance in distinct ways. Regulatory violations can generate short-term cost savings that increase executives' equity-based remuneration. Conversely, more stable, non-equity-based pay may encourage risk-averse executives to engage in risky regulatory noncompliance as they have less personal financial exposure. Using comprehensive panel data for US firms, we aim to clarify the precise mechanism through which executive remuneration affects the likelihood of regulatory noncompliance. Our findings indicate that an equity-focused remuneration structure, i.e., a higher proportion of equity-based pay components relative to the overall remuneration, is associated with an increasing number of regulatory violations. This effect works through two underlying mechanisms. While higher amounts of equity-based remuneration incentivize regulatory noncompliance, non-equity-based remuneration shows the opposite effect: 'safer' remuneration mitigates regulatory violations.

These results help shareholders better anticipate the potential costs arising from agency conflicts, which in the case of regulatory noncompliance can be substantial. Prior research shows that firms with more regulatory violations face higher costs of debt (Duong et al. 2024) and equity (Ho et al. 2024), greater recurrence of regulatory violations (Barrett et al. 2018), decreasing ESG performance (El Shlmani et al. 2025), and suffer damage to the reputation of the firm (Soana et al. 2024). Understanding how remuneration structures influence such risks can help shareholders and boards create more balanced and targeted remuneration structures that discourage (purposefully) committed regulatory violations.

2. Overview of literature and hypothesis development

2.1. Principal-agent problems and executive incentives

A major problem associated with agency conflicts is *managerial short-termism*, i.e., an excessive focus of executives on short-term results at the expense of long-term growth (Edmans et al. 2022). Surveys show that 78% of executives is willing to sacrifice long-term firm value to smooth earnings (Graham et al. 2005), while archival studies show that executives tend to cut R&D investments near the end of their tenure, increasing short-term profits to presumably secure bonuses (Dechow and Sloan 1991). Furthermore, Jensen (2005) shows that executives might have an interest in keeping firm stock overvalued, which in turn is detrimental to the core value of the firm. While it may be optimal for (incumbent) shareholders to incentivize managerial short-termism in speculative stock markets (Bolton et al. 2006), the detrimental long-term effects of these actions on firm value are generally regarded as problematic from a societal point of view. Following Marinovic and Varas (2019), two views on managerial short-termism can be distinguished in the literature: one studying executive behavior under existing incentives and another studying the optimal design of compensation contracts. In this article, we follow the first perspective by empirically assessing how different remuneration structures affect executive behavior.

Next to managerial short-termism, the literature recognizes an additional risk associated with equity-based executive compensation that is relevant to our study: the concept of *gaming the system*. Gaming the system describes the tendency of executives to focus on increasing the chances that performance targets are met and stock options will be paid out to maximize their personal compensation (Fahlenbrach and Stulz 2011). Following financial theory, the higher the volatility of the underlying, the more likely it is for an option to be in the money when vested. In practice, this could be achieved by executives (excessively) increasing leverage or, following our argumentation, seeking out short-term value gains through strategically engaging in regulatory noncompliance ('strategic noncompliance'). However, strategic noncompliance bears the risk of incurring regulatory sanctions in the medium or long-term.

2.2. Strategic noncompliance and hypotheses

Strategic noncompliance, defined as the deliberate or tacitly sanctioned breach of regulatory requirements, has been widely examined in the literature. While previous research examined both causes and consequences of strategic noncompliance, our investigation particularly builds on studies addressing the ways in which executives personally affect regulatory violations. Prior research in this field has shown that, for example, higher frequency of visits by top executives can reduce the occurrence and scope of facility-level misconduct (Heese and Pérez-Cavazos 2020). In addition, evidence suggests that executives' personal liability for wage theft affects firm regulatory noncompliance (Raghunandan 2021).

Most closely related to our own approach are recent studies by Chircop et al. (2025), Gencer (2021), and Park et al. (2025), which, too, investigate the relationship between executive compensation and regulatory noncompliance in the US. Chircop et al. (2025) find that equity-based incentives positively affect workplace misconduct; Gencer (2021) notes that compensation structures that exclude certain cost savings from executive rewards mitigate corporate violations across various regulations; and the results by Park et al. (2025) indicate that option-loaded compensation plans incentivize managers in the restaurant industry to engage in more regulatory noncompliance than their industry average. In addition, Hass et al. (2016) show that equity incentives increase the

likelihood that executives of Chinese listed firms commit regulatory violations. By using a broad set of payment components and regulatory violations, we extend these previous studies. In addition, our approach differs from that of, e.g., Chircop et al. (2025), as we only consider companies that were fined for regulatory violations at least once during the sample period. This approach improves comparability between firms in the sample by eliminating differences between violating and non-violating firms that may otherwise impact our results.

For the purpose of our investigation, we assume a degree of transitivity in the behavior of executives and the actors that engage in behavior that is ultimately in violation of regulations and is fined accordingly. Often executives do not directly violate regulations, and do not personally receive fines for their behavior. These regulatory infractions often occur in lower levels of decision-making in the firms, or even in subsidiaries. In particular, the dataset used consists mainly of employment-related, environment-related, and safety-related fines, which are traditionally associated with lower levels of decision-making. Executives are, however, able to influence firm decision-making on multiple levels, and that decision-making influences strategic noncompliance across the firm. In particular, Mei et al. (2023) found that executive-level ideology can significantly shape firm behavior by affecting the tone and culture at the top and cascading through organizational decision-making structures. Accordingly, our theoretical framework assumes that executives have significant influence over both the frequency and extent of regulatory infractions committed by the firms they lead.

The chosen approach does come with limitations. Regulatory violations may not always reflect deliberate noncompliance, as they can result from limited knowledge or accidental incidents, such as technical malfunctions causing environmental fines. However, given the large sample and prevalence of repeat offenders, unintentional violations are likely rare and are disregarded in this analysis (Duong et al. 2024).

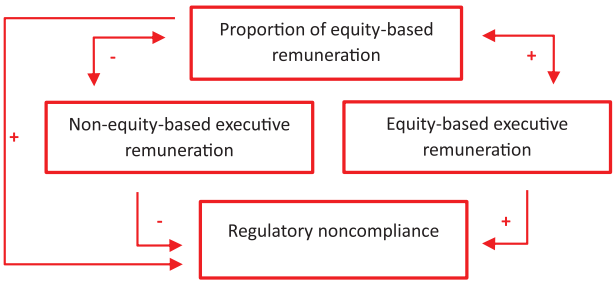
Overall, previous research suggests that executive remuneration structures may incentivize strategic noncompliance, through mechanisms such as short-termism or *gaming the system* behavior. Thereby, it is important to consider the balance between equity-based and non-equity-based pay components as both can have distinct effects. While results by Chircop et al. (2025) and Park et al. (2025) indicate that higher amounts of equity-based incentives increase regulatory noncompliance, based on theory the opposite might hold true. Higher amounts of equity-based pay could decrease regulatory violations if executives' fear of losing income when violations are detected prevails. Similarly, higher amounts of 'safe', i.e., non-equity-based, compensation may incentivize or mitigate strategic noncompliance. Accordingly, when considering the overall structure of executive remuneration, i.e., the relative importance of both components, the direction of the resulting overall effect remains unclear. Based on these considerations, we formulate our first hypothesis (Ha1) nondirectionally. The second set of hypotheses (Ha2.1 and Ha2.2) aims to clarify the underlying mechanism. Due to the aforementioned unclear relationship of equity-based and non-equity-based remuneration and strategic noncompliance, any result for Ha1, i.e., both indicating a positive and negative relationship, can be caused by changes in either of the two pay components. We illustrate this dual hypothesis problem inherent in Ha1 for the case of a positive relationship between the proportion of equity-based remuneration and strategic noncompliance in Figure 1. As depicted in the figure, the positive association can result from a negative impact of non-equity linked remuneration, a positive impact of equity-linked remuneration, or a combination of both.

Ha1: The remuneration structure of executives influences the number of regulatory violations committed by the firm they lead.

Ha2.1: Equity-based executive remuneration influences the number of regulatory violations committed by the firm they lead.

Ha2.2: Non-equity-based executive remuneration influences the number of regulatory violations committed by the firm they lead.

Figure 1. Schematic overview of dual hypothesis problem.



3. Research design

3.1. Data selection

Data on regulatory noncompliance is collected from the Violation Tracker of Good Jobs First. The entire database, as of the 20th of January 2025, is processed, containing a total of 662,591 fines issued by U.S. government agencies for firm regulatory violations during the period from 2000 to 2025. Throughout our main analysis, we operationalize regulatory noncompliance as the number of fines levied on a specific firm in a specific year (IF). Table 1 provides an overview of all variables employed in the analysis, including their definitions, data sources, and corresponding abbreviations.

Data on executive remuneration originates from BoardEx, and controls for important firm characteristics are extracted from the LSEG database. We operationalize executive remuneration structure as the proportion of equity-based remuneration (EBRR). The EBRR is calculated as the total executive pay tied to equity-based incentives

relative to the executive's total compensation. Accordingly, total compensation includes all relevant components such as fixed salary, bonuses and options.[1] To further specify the mechanism underlying Ha1, we separately analyze possible explanatory channels in our tests of Ha2.1 and Ha2.2. Consequently, we use several operationalizations for equity and non-equity-based compensation to increase the robustness of our results. We use two operationalizations for non-equity-based payments. Our first measure is executive salary (ES). Executive salary refers to a fixed, annual payout of cash, without regard to company performance. As the overall salary and changes thereof likely depend on firm size, we additionally use a scaled measure of executive salary relative to firm size (RES). To operationalize equity-based remuneration we use three measures in total: relative bonuses (RB), i.e., performance-based bonuses relative to firm size, the estimated value of awarded options (EVOA), and the wealth delta (WD), which quantifies the dollar sensitivity of executive compensation to firm performance. While all of these measures are well-established in the executive compensation literature (Edmans and Gabaix 2016; Meulbroek 2001; Ofek and Yermack 2000), to the best of our knowledge, no prior research has utilized these specific measures on such a broad sample of firms and violations to examine the association between executive incentives and strategic noncompliance.

Turning to data constraints, this study is subject to three key limitations regarding the availability and structure of the dataset. First, most of the fines are awarded to subsidiaries, while the remuneration data of BoardEx is only available for parent-level executives. A conservative approach, only matching parent-level fines and remuneration data, results in a total of 1917 firm-year observations from 245 unique firms, which is too few for the proposed analysis. Consequently, fines incurred by subsidiaries are attributed to their respective parent firms, while all other variables remain at the level of the parent organization. Given parent executives' influence on subsidiaries' strategic decisions, there is theoretical justification for linking subsidiary outcomes to parent-level executive data and similar aggregations have been applied by previous research (Chircop et al. 2025).

Second and third, data on executive remuneration is limited to firms publicly listed in the United States, and the Violation Tracker dataset contains both current and historical firm identifiers (ISINs). Historical ISINs concern the ISIN of firms at the time of the violation. Firms' ownership changes through mergers and acquisitions result in different historical and current ISINs. To prevent a mismatch between our remuneration and violation data, we allocate subsidiary violations to parent-level executive data based on historical ISINs.

3.2. Method of analysis

The final sample resulted in a total of 6150 firm-year observations from 684 unique firms. As noted above, this sample only includes firms that have been fined for regulatory violations at least once during the sample period. Summary statistics based on raw data for key variables are shown in Table 2. As can be seen here, numerous variables exhibit elevated standard deviations, attributable to substantial firm heterogeneity within the dataset. The inclusion of both small enterprises and major corporations

Table 1. Variable descriptions.

Variable Name	Variable Description	Source	Data Code
Imposed fines	Number of fines attributed to a firm in a year	Violation Tracker	IF
Average amount of fines	Dollar amount of fines per year divided by number of fines	Violation Tracker	AAF
Offence groups	Seven categories of violation types for each fine	Violation Tracker	
Sector	One of 40 sectors to which firms can belong.	Violation Tracker	
Equity-Based Remuneration Ratio	Equity-based compensation as a proportion of total compensation for the individual based on the closing stock price of the annual report date selected	BoardEx	EBRR
Executive salary	Base annual pay in cash for each executive	BoardEx	ES
Relative Executive Salary	Salary divided by Total Firm Assets	BoardEx, LSEG	RES
Estimated Value of Options Held	A valuation of Options held at the end of the period for the individual based on the closing stock price	BoardEx	EVOA
Wealth Delta	Change in wealth of the executive (Total Equity Linked Wealth) for each 1% change in the stock price at the annual report date selected for the executive	BoardEx	WD
Bonus	Bonus as direct compensation less defined contribution pension/ retirement plan	BoardEx	B
Relative Bonus	Bonus divided by Total Firm Asset	BoardEx, LSEG	RB
Total Firm Assets	Total assets for the firm	LSEG	TFA
Return on Equity	Return on equity for the firm	LSEG	ROE
Stock Return	Stock return of firm stock	LSEG	SR
Profitability	Profitability of the firm	LSEG	PROF
Leverage	Firm leverage	LSEG	DTE

Table 2. Descriptive statistics.

Variable	N	Mean	SD	Median	Min	Max
Number of fines	6150	5.7	14.36	2	0	290
AAF	6150	13,943,608	121,329,611	54,933.5	0	$4.10*10^{9}$
EBRR	6150	0.84	0.15	0.89	0	1
ES	6150	1129.58	436.06	1100	0	8100.00
RES	6150	$4.30*10^{-4}$	$2.61*10^{-4}$	$6.01*10^{-4}$	0	0.02
EVOA	4075	8926.99	24265.05	5716.50	0	$1.32*10^{6}$
WD	6149	1882.25	12570.86	686	0	$4.60*10^{5}$
RB	1990	$6.47*10^{-4}$	$1.06*10^{-3}$	$3.44*10^{-4}$	0	0.02
Total Firm Assets	5476	9,033,870	15,852,838	4,053,106	$5.81*10^{4}$	$1.84*10^{8}$
Return on Equity	6177	22.77	208.48	14.68	-675.21	$2.88*10^{4}$
Stock Return	6302	0.34	2.37	0.22	-26.75	55.50
Profitability	6363	8.03	16.40	7.82	-407.24	117.70
DTE	6276	110.59	185.98	74.83	-1180.00	$3.22*10^{4}$

(e.g. Microsoft, Amazon) enhances analytical scope but amplifies statistical dispersion.

Where necessary, we transform the raw data of our measures for the following analysis to ensure methodological validity. For example, the distribution of Total Firm Assets (TFA) is heavily skewed. We account for this by scaling the variable, a standardization process involving centering the mean at zero. Other variables are transformed using a log1p transformation. In addition, for leverage (DTE), some extreme outliers were found and corrected by excluding the top and bottom 1% of results. Overall, transformed variables are EBRR, EVOA, RB, ROE, SR, PROF, DTE, RES and AAF.

Given the unique characteristics of the sample, this study employs panel data analysis using a negative binomial fixed effects model. This approach controls for differences between firms and over time, preventing bias from unobserved characteristics in the sample that vary across firms and years. The inclusion of entity and time fixed effects is theoretically well-justified (Chircop et al. 2025; Eugster et al. 2024). It is assumed that firm-level heterogeneity is present in the data and the inclusion of time fixed effects captures unobserved temporal variation (Park et al. 2025). For example, unobserved factors such as regulatory reforms, or shifts in enforcement priorities may influence the observation of regulatory violations. The chosen approach is further supported by indicators for the explanatory power of our statistical model. However, it is noteworthy that while firm fixed effects account for much variation in regulatory noncompliance, a model including both firm and year (two-way) fixed effects offers little additional explanatory power based on the Akaike information criteria (AIC), Bayesian information criteria (BIC), and the Log-Likelihood.[2]

We test our first hypothesis, i.e., whether the structure of executive remuneration affects the number of regulatory violations committed by firms, using the baseline model in formula 1. Given that the EBRR operationalizes executive remuneration structure, we are most interested in estimation results for β_1. TFA, ROE, SR, PROF, and DTE denote the respective firm-level control variables, while FEs denote firm and year fixed effects. To account for the sensitivity of our results to different controls and increase the robustness of our results, we use a stepwise approach for the inclusion of firm-level controls and fixed effects in our analysis.

$$IF_{it} = \beta_0 + \beta_1 EBRR_{it} + \beta_2 TFA_{it} + \beta_3 ROE_{it} + \beta_4 SR_{it} + \beta_5 PROF_{it} + \beta_6 DTE_{it} + FEs + \varepsilon_{it} \quad (1)$$

Based on our methodological approach so far, the exact channel through which executive remuneration affects regulatory noncompliance remains unclear. Either changes in equity-based, non-equity-based, or both compensation components can result in changes in the EBRR. To identify the underlying mechanisms, we test Ha2.1 and Ha2.2 based on the model presented in formula 1, substituting each of the measures of equity-based (RB, EVOA, WD) and non-equity-based (ES, RES) compensation components for EBRR in separate regressions.

4. Results

4.1. EBRR & strategic noncompliance

The results of our analysis regarding our first hypothesis are shown in Table 3. Across all model specifications, the proportion of executive equity-based compensation (EBRR) is positively associated with regulatory noncompliance. Specifically, an increase in EBRR of 20 percent (0.4 to 0.48) is associated with an increase in the number of fines of 16.5% based on the estimation results in column 6 of Table 3. The size and statistical significance of the effect remain mostly stable when accounting for different firm-level control variables; they only drop slightly when accounting for firm size (Total Firm Assets).

Nevertheless, when additionally including year fixed effects in the model both the magnitude and statistical significance of the effect decline substantially. This suggests that the baseline association is, at least partly, driven by year-specific factors. However, another possible

explanation is that the structure of executive compensation exhibits time-related patterns that overlap with the year fixed effects. A visual examination of the development of the EBRR over time supports this suspicion. The EBRR follows a clear time trend with a steeply increasing proportion of equity-based remuneration in the years preceding the financial crisis followed by small fluctuations around a generally upward-sloping trend. Accordingly, the estimates in column 7 of Table 3 should be interpreted with caution, as the specification may provide limited scope to isolate the effect of relative equity-based compensation (EBRR).

Regarding firm-level characteristics, our results show that especially increasing firm size is positively associated with regulatory noncompliance. An intuitive interpretation would be that larger firms have more opportunities for regulatory violations due to their expansive and widespread operations.

Overall, we conclude that the results affirm our theoretical expectations. Increases in equity-based pay relative to overall compensation appear to incentivize CEOs to engage in strategic noncompliance. To further specify the underlying mechanism, we now turn to our analysis of different equity-based and non-equity-based pay components.

4.2. Equity- and non-equity-based remuneration effects

The results of our tests of Ha2.1 and Ha2.2 are shown in Table 4. Regarding non-equity-based remuneration, operationalized as executive salary (ES), no significant effects are found. However, introducing Relative Executive Salary (RES), executive salary scaled by firm size, yields a significant negative association. Large differences exist in the dataset between different firms' base pay for executives, necessitating this measure. This finding supports the hypothesis that the observed effect operates, at least in part, through the non-equity remuneration channel, i.e., a 'safer' remuneration structure can mitigate executives' likelihood to engage in strategic noncompliance.

With respect to equity-based remuneration, neither performance-based bonuses (RB) nor the estimated value of awarded options (EVOA) has a significant association with regulatory noncompliance. In contrast, the wealth delta (WD), which quantifies the dollar sensitivity of executive compensation to firm performance, exhibits a strong positive relationship with imposed fines. This suggests that WD captures the equity channel through which EBRR interacts with regulatory noncompliance. Both WD and EBRR display positive coefficients with the number of fines, indicating that increasing exposure to equity incentives may encourage executives to engage in or tolerate strategic noncompliance, thereby reinforcing the relevance of the equity-based remuneration mechanism.

4.3. Additional analyses and study limitations

Robustness

The results presented in Table 4 provide important insights into the effects of both equity and non-equity-based remuneration on strategic noncompliance. To further improve the robustness of our conclusions so far, we have run a number of additional analyses. Given the extent of the results of these robustness tests, we only present them in a simplified overview in Table 5.

The first additional analysis examines the assumption that regulatory violations are fined in the same year that changes in the remuneration structures of executives took effect. While this assumption aligns well with the notion that executives try to achieve short-term performance improvements, changing the culture of the firm to promote misconduct may take additional time. Furthermore,

Table 3. Stepwise overview of regressions involving EBRR, with concise measures of model performance.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
EBRR	0.735***	0.825***	0.731***	0.702***	0.649***	0.504**	0.105
	(0.188)	(0.200)	(0.238)	(0.240)	(0.234)	(0.231)	(0.211)
Dispersion (θ)	6.424***						
	(0.709)						
Return on Equity		-0.002	0.001	-0.037	-0.075*	-0.025	0.011
		(0.019)	(0.021)	(0.039)	(0.043)	(0.041)	(0.046)
Stock Return			-0.028**	-0.027**	-0.027**	-0.017	-0.010
			(0.013)	(0.013)	(0.013)	(0.015)	(0.021)
Profitability				0.066	0.115**	0.068	0.008
				(0.050)	(0.055)	(0.055)	(0.071)
DTE					0.055*	0.027	0.012
					(0.031)	(0.030)	(0.030)
Total Firm Assets						0.200***	0.133***
						(0.045)	(0.047)
Num.Obs.	6150	5514	4485	4480	4475	3808	3808
R2 Within Adj.	0.131	0.141	0.147	0.147	0.147	0.158	0.162
FE: id	X	X	X	X	X	X	X
FE: time							X

Table 4. Overview of final, fixed effects regressions performed for hypotheses 2.1 and 2.2.

	(4.2.1)		(4.2.2)		(4.2.3)		(4.2.4)		(4.2.5)	
ES	0.023	0.001								
	(0.023)	(0.019)								
RES			-0.202***	-0.149***						
			(0.054)	(0.054)						
RB					-0.063	0.006				
					(0.055)	(0.062)				
EVOA							0.002	0.009		
							(0.022)	(0.024)		
WD									0.073***	0.072***
									(0.018)	(0.020)
Return on Equity	-0.034	0.011	-0.017	0.013	0.021	0.043	0.024	0.066	-0.029	0.010
	(0.041)	(0.046)	(0.040)	(0.045)	(0.081)	(0.111)	(0.053)	(0.054)	(0.041)	(0.046)
Stock Return	-0.018	-0.010	-0.017	-0.008	-0.043	-0.074	-0.032*	-0.022	-0.018	-0.010
	(0.016)	(0.021)	(0.015)	(0.021)	(0.035)	(0.045)	(0.017)	(0.021)	(0.016)	(0.022)
Profitability	0.088	0.009	0.054	0.003	0.077	0.069	0.020	-0.069	0.064	-0.004
	(0.057)	(0.070)	(0.057)	(0.071)	(0.137)	(0.219)	(0.072)	(0.074)	(0.056)	(0.070)
DTE	0.035	0.013	0.027	0.015	-0.025	-0.028	0.023	0.005	0.034	0.017
	(0.031)	(0.030)	(0.030)	(0.030)	(0.063)	(0.063)	(0.037)	(0.038)	(0.030)	(0.029)
Total Firm Assets	0.210***	0.133***	0.181***	0.129***	0.322***	0.171*	0.349***	0.252***	0.194***	0.125***
	(0.045)	(0.047)	(0.043)	(0.046)	(0.116)	(0.088)	(0.040)	(0.041)	(0.044)	(0.046)
Num.Obs.	3808	3808	3808	3808	1190	1190	2570	2570	3807	3807
R2 Within Adj.	0.158	0.162	0.160	0.163	0.191	0.199	0.178	0.183	0.159	0.164
FE: id	X	X	X	X	X	X	X	X	X	X
FE: time		X		X		X		X		X

it is likely that not all regulatory violations are uncovered within the same period, but that detection and punishment occur at a later date. A common method to account for such delays in the timing of effects is the inclusion of lags in the estimation model. Therefore, we rerun our analysis substituting the payment variable (EBRR, ES, RES, EVOA, WD) of two years and one year preceding the regulatory fine for the payment variable of the same year as the fine in formula 1. A central shortcoming of this approach is that it results in an additional loss of observations in the sample. The results regarding a one-year lag of remuneration structure support and actually strengthen our previous conclusions regarding the incentivizing (mitigating) effect of equity-based (non-equity-based) pay components on strategic noncompliance. Conversely, using a two-year lag renders the previously detected effects statistically insignificant. This is likely due to limited model power based on the low remaining number of observations.

Second, the sample contains a large variety in the height of fines imposed on the firms. It is therefore of interest to weigh each fine by its height to account for the severity of the occurring regulatory violations. So far, each fine had equal weight. We now introduce the measure of AAF (Average Amount of Fines), the total amount of annual fines divided by the number of fines. We normalize the AAF using a log1p transformation to account for skewness and analyze it using a standard fixed effects regression. The results show a general loss of statistical significance. However, all estimations indicate a very poor model fit. While it could be argued that a general attitude of executives toward regulatory risk-taking would not discern between large or small violations based on these findings, the regression results should be interpreted with caution given the limitations of our dataset. Future research is encouraged to replicate the analysis using more comprehensive and granular data to enhance robustness and generalizability.

Heterogeneity

Next, we examine firms in the financial sector separately, as they face a special regulatory environment and risk profile. Financial firms operate under unique market structures, regulations, and risk exposures that can influence test results. In particular, this sector is under intensified scrutiny from governments, with strict governance rules on executive pay (Ferrarini and Ungureanu 2018). Accordingly, the relationship between executive remuneration and strategic noncompliance in the financial sector may differ from that observed in other sectors. We define the Banking sector, Private Equity sector, Insurance sector, Life Assurance sector, and the Other Finance sector as the financial sector.

The analysis of the financial sector suffers from a severe lack of observations, reduced to only 80 data points. The significant positive effects of the EBRR, and the WD are no longer supported. However, option-based

Table 5. Overview of significant coefficients of the four robustness check categories.*

	One year lag		Two year lag		Severity of fines		Financial sector		pre- and post-financial crisis	
EBRR	+								+/-	/-
ES								+		
RES	-	-					-	-		
EVOA	+	+			+	+	+			
WD	+	+								
FE: id	X	X	X	X	X	X	X	X	X	X
FE: time		X		X		X		X		X

*) '+' indicates a significant positive relation, '-' a significant negative relation, and an empty cell the lack of significance.

pay now indicates that equity-based pay components may incentivize strategic noncompliance. At the same time, the results of non-equity-based pay are mixed. The mitigating effect of total salary relative to firm size (RES) remains robust, while total executive salary (ES) exhibits a significant positive relationship to the number of fines when accounting for time fixed effects. This may reflect sector-specific dynamics in the risks and benefits of 'safe' executive remuneration; however, the results have to be interpreted with severe caution given the low number of observations.

To further account for heterogeneity between the different kinds of regulatory violations, we further divide the sample into nine categories: consumer-protection-related fines, environment-related fines, employment-related fines, finance-related fines, safety-related fines, healthcare-related fines, government contracting-related fines, competition-related fines, and miscellaneous fines. Unfortunately, dividing the sample into these separate categories severely limits the reliability of results. A subset of offence categories is notably more present in the sample (employment, environment, safety) than others and the computational effort is very extensive.[3] If one were to draw an overall conclusion, we find inconclusive results for EVOA, whereas findings for EBRR, RES, and WD align with our earlier findings.

Finally, the regressions are re-estimated using a divided sample into pre- and post-financial crisis periods. The main reason for this division of the sample concerns the relevance of the financial crisis as a structural breakpoint, particularly with respect to its influence on executive remuneration practices. It is generally believed that (excessive) executive pay, and the incentives it created for short-termism, partially contributed to the conditions that gave rise to the financial crisis (Yeoh 2010). Even more, as Yeoh (2010) found, after the financial crisis the U.S. government introduced regulation to, as they perceived it, address excessive executive risk-taking induced by perverse incentive-based remuneration schemes. The results of a separate analysis of the period before and after 2008 are largely insignificant. Most notably we find that there may be a shift in the relationship between the proportion of equity-based pay and regulatory noncompliance after the financial crisis. Unfortunately, it is hard to account for the underlying mechanism given the lack of statistically significant results for the separate pay components. Therefore, we encourage future researchers to investigate this indicated finding further.

Limitations of the analysis

Despite the extensive analysis presented so far, important limitations remain regarding our research approach. First of all, it is important to note that we are unable to observe executives' behavior directly or indirectly. Making behavioral observations simply lies outside the scope of the current study. Another limitation is the data aggregation of regulatory noncompliance at the parent-level firm. Therefore, we encourage future research to replicate our analysis accounting for subsidiary-level managers and their respective remuneration structures when possible. Given current data restrictions, case studies may also offer a powerful tool in this regard. Finally, our dataset only contains detected and fined cases of regulatory noncompliance. Generalizability of our conclusions to all incidents of regulatory violations requires the assumption that unobserved violations do not differ structurally from observed ones. This assumption, however, is highly debatable.

5. Discussion and conclusion

This study provides empirical evidence that the composition of executive incentives influences a firm's propensity for regulatory noncompliance. Our analysis is based on a comprehensive sample of US firms over the past 25 years. Using negative binomial fixed effects models, we show that increases in the proportion of equity-based remuneration (EBRR) of executives are associated with a significant rise in fines imposed on firms led by these executives. Our results further indicate that the size of this effect is economically significant. A 20% increase in the relative amount of equity-based pay of top-level executives results in a 16.5% increase in the number of regulatory violations detected for their corporate group. Given the vast negative consequences associated with corporate regulatory noncompliance, these results are highly relevant to boards, remuneration committees, and regulators concerned with executive pay design and compliance risks.

To further clarify the pay components responsible for this result based on the relative remuneration composition, the study explored whether equity or non-equity-based remuneration served as the primary driver of the aforementioned relation. The analysis shows that a higher amount of fixed executive salary relative to firm size (RES) significantly mitigates the number of fines imposed on firms. On the contrary, the Wealth Delta (WD), measuring how changes in the market value of equity affect executive wealth, exhibited a significant positive relation with regulatory noncompliance. These results suggest that when faced with low-risk rewards, such as higher RES, executives tend to be more compliant with regulations. Conversely, when faced with riskier equity-based rewards, executives have a greater propensity to engage in strategic noncompliance.

To ensure the robustness of our findings and to explore potential heterogeneity across different industries, regulatory domains, and time frames, we conducted a series of additional analyses. Unfortunately, several of these estimations suffer from an insufficient number of observations, which results in an additional need for caution regarding their interpretation. Overall, the additional analyses largely supported the main findings. In particular, accounting for a time delay between changes in executive remuneration and the recognition of fines strengthened the practical and theoretical implications of our main results.

This study extends prior research on managerial short-termism and 'gaming the system'-behavior due to equity-heavy executives' remuneration structures adding to the small but growing number of empirical investigations that link such behavior to corporate misconduct. Despite the extensive analysis presented here, several limitations of our research approach open up new avenues for future research. Limitations of the data employed call for a replication of our study using a more fine-grained dataset on executive remuneration. Our analysis assumes managerial influence on regulatory breaches at a subsidiary level, yet the precise behavioral mechanisms remain unclear. Possible explanations include a direct influence, an indirect influence through corporate culture, or an alignment of the remuneration structure across different management levels. Future studies could explore these channels empirically. Lastly, the assumed dichotomy between equity- and non-equity-based pay warrants further scrutiny, particularly regarding how other dimensions of executive incentives shape strategic noncompliance.

- **S.J.R. Bouwmeester – Siemen Jan Ruben** holds an LLB in Civil Law from Radboud University and is currently a candidate for the MSc in Corporate Finance & Control at the same institution.
- **Dr. E.K. Matthaei – Eva Kristina** is an Assistant Professor of Business Economics at Radboud University.

This article is based on Siemen Jan Ruben's master thesis. This makes him one of the winners of the MAB Thesis Award 2025.

Notes

1. EBRR includes salary, bonuses, awarded stock, options, and long-term incentive plans (LTIPs).
2. The Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and Log Likelihood statistics indicate only minor gains in the model's explanatory power when using two-way fixed effects relative to entity fixed effects. Specifically, the AIC values are 28,262.93, 35,897.48, and 28,105.13 for models incorporating entity fixed effects, time fixed effects, and two-way fixed effects, respectively. Corresponding BIC values are 33,065.41, 35,897.48, and 28,105.13, while the log-likelihood statistics are −13,421.46, −17,922.74, and −13,318.56. These results suggest that the inclusion of two-way fixed effects provides only modest improvements over an entity fixed effects specification.
3. The analysis comprises 90 different regressions, derived from estimating nine fine categories against five independent variables: EBRR, ES, RES, EVOA, and WD, under two fixed effects model specifications.

References

- Akinsola OK, Liang W (2025) The Legal Oversight of Executive Compensation and Incentive Structures in Corporate Governance: Regulatory Compliance and Risk Management. https://doi.org/10.2139/ssrn.5128102
- Barrett KL, Lynch MJ, Long MA, Stretesky PB (2018) Monetary penalties and noncompliance with environmental laws: A mediation analysis. American Journal of Criminal Justice 43(3): 530–550. https://doi.org/10.1007/s12103-017-9428-0
- Bolton P, Scheinkman J, Xiong W (2006) Executive compensation and short-termist behaviour in speculative markets. The Review of Economic Studies 73(3): 577–610. https://doi.org/10.1111/j.1467-937X.2006.00388.x
- Chen L (2020) Compensation and Firm Misconduct in Family Firms. Electronic Theses and Dissertations – UTSA Access Only. https://hdl.handle.net/20.500.12588/3200
- Chircop J, Tarsalewska M, Trzeciakiewicz A (2025) CEO risk taking equity incentives and workplace misconduct. The Accounting Review 100(1): 139–167. https://doi.org/10.2308/TAR-2020-0648
- Dechow PM, Sloan RG (1991) Executive incentives and the horizon problem: An empirical investigation. Journal of Accounting

and Economics 14(1): 51–89. https://doi.org/10.1016/0167-7187(91)90058-S

- Duong HN, Khalifa M, Sheikhbahaei A, Sualihu MA (2024) Corporate noncompliance: Do corporate violations affect bank loan contracting? Journal of Banking & Finance 166: 107225. https://doi.org/10.1016/j.jbankfin.2024.107225
- Edmans A, Gabaix X (2016) Executive compensation: A modern primer. Journal of Economic Literature 54(4): 1232–1287. https://doi.org/10.1257/jel.20161153
- Edmans A, Fang VW, Huang AH (2022) The long-term consequences of short-term incentives. Journal of Accounting Research 60(3): 1007–1046. https://doi.org/10.1111/1475-679X.12410
- El Shlmani Z, Ibrahim H, Tahir M, Al-khazaleh S (2025) Corporate moral hazard and ESG performance: Unveiling the influence of gross enforcement actions and ownership dynamics in US multinational corporations. Corporate Social Responsibility and Environmental Management 32(2): 1473–1494. https://doi.org/10.1002/csr.2974
- Eugster N, Kowalewski O, Śpiewanowski P (2024) Internal governance mechanisms and corporate misconduct. International Review of Financial Analysis 92: 103109. https://doi.org/10.1016/j.irfa.2024.103109
- Fahlenbrach R, Stulz RM (2011) Bank CEO incentives and the credit crisis. Journal of Financial Economics 99(1): 11–26. https://doi.org/10.1016/j.jfineco.2010.08.010
- Ferrarini G, Ungureanu MC (2018) Executive Remuneration. A Comparative Overview. In: Gordon J, Ringe G (Eds) Oxford Handbook of Corporate Law and Governance. Oxford University Press, 334–362. https://doi.org/10.1093/oxfordhb/9780198743682.013.21
- Gencer P (2021) How Executive Incentive Plans Help Curb Corporate Misconduct. https://doi.org/10.2139/ssrn.3970170
- Graham JR, Harvey CR, Rajgopal S (2005) The economic implications of corporate financial reporting. Journal of Accounting and Economics 40(1): 3–73. https://doi.org/10.1016/j.jacceco.2005.01.002
- Hass LH, Tarsalewska M, Zhan F (2016) Equity incentives and corporate fraud in China. Journal of Business Ethics 138(4): 723–742. https://doi.org/10.1007/s10551-015-2774-2
- Heese J, Pérez-Cavazos G (2020) When the boss comes to town: The effects of headquarters' visits on facility-level misconduct. The Accounting Review 95(6): 235–261. https://doi.org/10.2308/tar-2019-0068
- Ho CY [Chloe], Wu E, Yu J (2024) The price of corporate social irresponsibility in seasoned equity offerings: International evidence. The British Accounting Review 56(4): 101369. https://doi.org/10.1016/j.bar.2024.101369
- Jensen MC (2005) Agency Costs of Overvalued Equity. Financial Management 34(1): 5–19. https://doi.org/10.1111/j.1755-053X.2005.tb00090.x
- Jensen MC, Meckling WH (1976) Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics 3(4): 305–360. https://doi.org/10.1016/0304-405X(76)90026-X
- Marinovic I, Varas F (2019) CEO horizon, optimal pay duration, and the escalation of short-termism. Journal of Finance 74(4): 2011–2053. https://doi.org/10.1111/jofi.12770
- Mei M, Gao X, Min W (2023) The power of belief: CEO political belief and corporate violations. International Journal of Frontiers in Sociology 5(3). https://doi.org/10.25236/IJFS.2023.050309
- Meulbroek LK (2001) The efficiency of equity-linked compensation: Understanding the full cost of awarding executive stock options. Financial Management 30(2): 5–44. https://doi.org/10.2307/3666404
- Ofek E, Yermack D (2000) Taking stock: Equity-based compensation and the evolution of managerial ownership. The Journal of Finance 55(3): 1367–1384. https://doi.org/10.1111/0022-1082.00250
- Park S, Song S, Hwang J (2025) Does equity-based compensation make CEOs engage in more corporate misconduct than industry norm: Evidence from the U.S. restaurant industry. Business Ethics, the Environment & Responsibility. https://doi.org/10.1111/beer.70016
- Raghunandan A (2021) Financial misconduct and employee mistreatment: Evidence from wage theft. Review of Accounting Studies 26(3): 867–905. https://doi.org/10.1007/s11142-021-09602-y
- Ross SA (2004) Compensation, incentives, and the duality of risk aversion and riskiness. The Journal of Finance 59(1): 207–225. https://doi.org/10.1111/j.1540-6261.2004.00631.x
- Soana MG, Schwizer P, Carretta A (2024) The reputational cost of bank misconduct. https://doi.org/10.2139/ssrn.4793761
- Yeoh P (2010) The Impact of the Global Financial Crisis on Corporate Governance and Executive Pay in the US and the UK. Business Law Review, 238–243. https://doi.org/10.54648/BULA2010049